HRG
Herbert, Rowland & Grubic, Inc.
Engineering & Related Services
AN EMPLOYEE-OWNED COMPANY

GREATER HERSHEY REGIONAL TRANSPORTATION STUDY

DAUPHIN COUNTY, PA

Submitted to:

TRI-COUNTY REGIONAL PLANNING COMMISION
112 Market Street, 2nd Floor
Harrisburg, Pennsylvania 17101-2015

Submitted by:

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369 East Park Drive
Harrisburg, Pennsylvania 17111

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Borough of Hummelstown

The Township of Derry
Hershey, PA
Where It's Just Sweeter

Londonderry Township

Date: November 24, 2020

GREATER HERSHEY REGIONAL TRANSPORTATION STUDY

DERRY TOWNSHIP, HUMMELSTOWN BOROUGH, AND LONDONDERRY TOWNSHIP, DAUPHIN COUNTY, PENNSYLVANIA

PREPARED FOR:
TOWNSHIP OF DERRY
600 CLEARWATER ROAD
HERSHEY, PENNSYLVANIA 17033

PREPARED BY:
Herbert, Rowland & Grubic, Inc.

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EXECUTIVE SUMMARY

Study Purpose and Limitations

- Significant growth and development is anticipated within the Greater Hershey region in the coming years.
- This 20-year plan focuses on the geometric intersection configurations while noting that actual future traffic patterns may deviate from the projections.
- This study was prepared with the fundamental goal of identifying anticipated future development and quantifying potential roadway widening that may be required to mitigate future traffic congestion. Potential mitigating strategies identified herein will be used for future consideration to preserve rights-of-way, identify locations for new or relocated utilities, and for long-range budgeting and funding procurement.
- In recognition of the growing burden of traffic congestion in the Greater Hershey region, the scope of the study was focused on identifying potential "Supply Side" infrastructure strategies, specifically "potential roadway infrastructure mitigations" as a planning tool to alleviate future traffic congestion associated with future potential development growth in the study area.
- Infrastructure Supply Side strategies are just one tool in planning for mitigating traffic congestion and should be considered in conjunction with "Demand Side" strategies, such as transit improvements, off-site parking/shuttle services, ride-share services, etc.
- Many of these "potential roadway infrastructure mitigations" generate concerns over right-of-way and potential environmental impacts. Each municipality should manage growth and evaluate alternative methods of accommodating the travel demand (i.e., manage development and/or applying "demand side" strategies).
- While this study is solely focused on "Supply Side" strategies, the Greater Hershey Regional Transportation Study is one of several planning tools available for the local municipalities and planning agencies to utilize in the future transportation project development process (Refer to Figure 1.1 below from PennDOT Design Manual 1).
    - In order for potential mitigation strategies identified in this report to be implemented, several additional planning and programming steps are necessary, especially for the larger, more impactful measures.
    - Planning partners including PennDOT and Tri-County Regional Planning Commission also identify potential transportation problems and evaluate alternative and mitigating measures. While the potential mitigating measure identified within this report would be considered, the exact improvements identified are unlikely to be realized verbatim.
    - During any project development process, the project planners will identify additional potential alternatives and determine appropriate improvements with respect to the transportation needs, environmental responsibility, property impacts, funding limitations, et cetera.

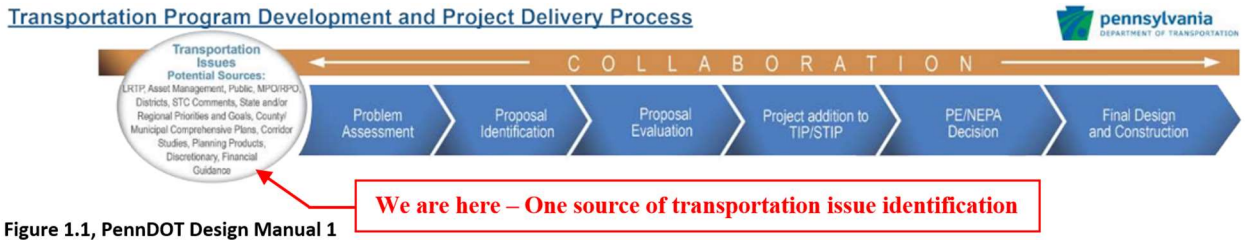


Figure 1.1, PennDOT Design Manual 1

Goals and Objectives

Through coordination with Steering and Stakeholder Committees, including representatives from Derry Township, Londonderry Township, Hummelstown Borough, Tri-County Regional Planning Commission and PennDOT, several goals and objectives were identified to improve transportation conditions and mitigate the collective impact of new development. The goals and objectives, which are generally consistent with those identified in the HATS RTP 2040, include the following:

- Develop "complete streets" that facilitate safe and efficient vehicular flow, while also accommodating bicycle and pedestrian needs throughout the study area.
- Create an integrated, multimodal transportation network while targeting Vision Zero initiatives, which has an established goal of zero roadway fatalities.
- Accommodate Smart Growth - maintain acceptable traffic flow and mobility despite significant anticipated development.
- Accommodate pass-through traffic outside of the Hershey Village and downtown corridor and reinforce the "destination" within the Hershey downtown.
    - Protect the character within the Hershey Village and other residential areas.
    - Establish and complement the Hershey downtown corridor.
    - Keep traffic on arterials, not on rural, collector roads that were not designed for heavy through or event traffic.
    - Mitigate the impact of navigation apps.
- Improve mobility on key corridors – Middletown Road, Hersheypark Drive, Route 322.
- Improve connectivity and north-south mobility.
- Provide safe and efficient integration of the area's comprehensive off-road multi-use trail network with commercial/business destinations, residential neighborhoods and on-road bicycle and pedestrian facilities.
- Improve pedestrian mobility between Hummelstown and Derry Township as development closes the spacing between the two municipalities – Main Street, Walton Avenue, Waltonville Road, and Hanover Street.
- Preserve the safety of pedestrians around school campuses – Lower Dauphin Middle and High Schools, Derry Township School complex, Milton Hershey school.

Potential Mitigation

To mitigate the projected traffic deficiencies and improve multimodal connectivity, potential roadway improvements should be considered to maintain acceptable traffic flow. However, due to evolving transportation issues and trends and their unknown effect on long range regional transportation planning, several items should be further considered prior to implementing the potential mitigation. These include:

- "Demand-side" strategies
- Long-term effects of COVID-19
- Mobile navigation applications
- Autonomous vehicles
- I-81 to PA Turnpike connection (East of Hershey)
- Environmental impacts
- Private property impacts
- Transit enhancements
- Significant variations from future land use assumptions

The improvements indicated in the following table have been identified as potential mitigation.

Potential Improvements for Mitigation					
Project Number	**Location**	**Time Span**	**Improvements**	**Total Estimated Improvement Cost (2020 Dollars)**	**Anticipated Funding Sources**
Middletown Road Corridor					
Long-Term Improvement: Widen Middletown Road to provide an additional northbound and an additional southbound through lane from the SR 283 interchange to the SR 322 Eastbound Off Ramp. *					**TIP**
I-1-M	**Intersection 1: SR 2003 (Middletown Rd) & Route 322 EB Off Ramp/Service Rd**	**MID**	Widen the Route 322 Off Ramp to the south to provide an eastbound right turn lane. Widen Service Road to the south to provide a westbound left turn lane. Restripe Middletown Road on the bridge over Route 322 to install a southbound left turn lane. Add sidewalk along Middletown Road (See Project P-18-L).	**$800K to $1.2M**	**CFA or PennDOT MTF, Developer**
I-2-S	**Intersection 2: SR 2003 (Middletown Rd) & Wood Rd**	**SHORT**	Convert Wood Road approach to right-in/right-out only upon construction of new connector roadway to Waltonville Road.	**$150K to $220K**	**Municipal, Developer**
I-3-L	**Intersection 3: SR 2003 (Middletown Rd) & Deer Run Dr/Stoverdale Rd**	**LONG**	Widen Middletown Road from 1050' south to 1000' north of Deer Run Dr/Stoverdale Road to provide an additional northbound and an additional southbound through lane; this will provide a 5-lane typical section including a center left turn lane.	**$2.4M to $3.6M**	**TIP**
I-4-L	**Intersection 4: SR 2003 (Middletown Rd) & Locust Ln/Kaylor Rd**	**LONG**	Widen Middletown Road from 3500' south to 1050' north of Locust Lane/Kaylor Road to provide an additional northbound and an additional southbound through lane; this will provide a 5-lane typical section including a center left turn lane from.	**$4.9M to $7.3M**	**TIP**
I-35-S	**Intersection 35: SR 2003 (Middletown Rd) & Proposed Connector Rd (Includes construction of Connector Road)**	**SHORT**	Construct connector road to improve east-west flow from Middletown Road to Hershey Medical Center. Install a traffic signal. Construct a westbound left turn lane and a northbound right turn lane. Restripe the two-way left turn lane to provide a southbound left turn lane. Widen for additional NBT and SBT lanes additional through lanes; this will provide a 5-lane typical section on Middletown Road including a center left turn lane.	**$3.8M to $5.7M**	**Municipal, Developer, CFA & PennDOT MTF**
I-35-M		**MID**	Widen Middletown Road to a Four lane section between the Route 322 EB Off Ramp and the southern Gramercy Place intersection. The second northbound through lane will terminate in the north at the NBR turn lane onto the Service Road. The widening to the south will terminate at the southbound right turn lane onto Deer Run until the rest of Middletown Road is widened toward S.R. 283.	**$5.3M to $7.9M**	**TIP**
P-18-L	**Middletown Road**	**LONG**	Construct sidewalk from Grove Street to Willow Street. Extend to southern Gramercy Place intersection (this portion should be done concurrently with land development effort and is not included in cost).	**$400k to $500k**	**DCNR Trail, TA Set-Aside, CFA & PennDOT MTF, Municipal, Developer, CMAQ**
P-28-L	**Middletown Road**	**LONG**	Construct sidewalk from the Proposed Connector Road to Grove Street.	**$179k to $268k**	**Developer**
P-19-S	**East of Middletown Road**	**SHORT**	Construct an off-alignment shared use path between the Middletown Road & Gramercy Place/Proposed Connector Road intersection to the existing trail south of Grove Street.	**$250k to $350k**	**Municipal, Developer, CMAQ**
P-20-M	**Middletown Road Corridor**	**MID**	Provide bike lanes on the Middletown Road Corridor.	**$125K to $175K**	**Municipal, TA-Set-Aside, CMAQ**

Potential Improvements for Mitigation (continued)					
Project Number	**Location**	**Time Span**	**Improvements**	**Total Estimated Improvement Cost (2020 Dollars)**	**Anticipated Funding Sources**
Waltonville Road/Bullfrog Valley Road Corridors					
I-7-M	**Intersection 7: Bullfrog Valley Rd & Wood Rd**	**MID**	Widen Bullfrog Valley Road to construct a southbound right turn lane.	**$120K to 180K**	**Municipal, Developer, DCIB, ARLE**
I-8-M	**Intersection 8: Bullfrog Valley Rd & Research Blvd / Life Lion Dr**	**MID**	Widen Life Lion Drive to construct a westbound right turn lane. Implement protected/permitted left turn phasing for all approaches.	**$310K to $460K**	**Developer, ARLE**
I-36-L	**Intersection 36: SR 2005 (Waltonville Rd) & Hershey West End Driveway / Service Rd**	**LONG**	Construct a southbound right slip lane. Additional northbound through lane through roundabout	**Developer Funded**	
P-7-S	**Quarry Road from Division Street to the Route 322 bridge.**	**SHORT**	Construct sidewalk on the west side of Quarry Road from Division Street to the Route 322 bridge. This will likely require grading and walls to make the connection from the existing sidewalk at Division Street to the existing sidewalk across the bridge.	**$400K to $500K**	**DCNR Trail, TA Set-Aside, Municipal, Developer**
P-8-S	**Waltonville Road from Hershey West End Roundabout to the Route 322 bridge.**	**SHORT**	Construct a shared use path on the west side of Waltonville Road from the proposed Hershey West End Roundabout to the bridge over Route 322.	**$50K to $70K**	**Developer**
P-31-M	**Bullfrog Valley Road, Roush Road, and Sand Hill Road**	**MID**	Construct sidewalk along Bullfrog Valley from Shank Park to Roush Road, along Roush Road from Bullfrog Valley Road to Sand Hill Road, and along Sand Hill Road from Laurel Drive to the existing sidewalk near the school.	**$550K to $840K**	**DCNR Trail, TA Set-Aside, Municipal**
P-32-S	**Waltonville Road from Randall Road to south of Jill Drive.**	**SHORT**	Construct a sidewalk on the east side of Waltonville Road from Randall Road to the existing sidewalk south of Jill Drive.	**$80K to $125K**	**DCNR Trail, TA Set-Aside, Municipal**
Hersheypark Drive Corridor					
Long-Term Improvement: Widen to 6 through lanes between Walton Avenue and Laudermilch Rd. Provide designated bike lanes between Walton Avenue and North Lingle Avenue. Coordinate the traffic signals on the Hersheypark Corridor from Walton Avenue / Mae St to N. Lingle Avenue. Adaptive signals should be considered along the corridor and the technology should be monitored as there are improvements in the field to determine its viability. *					**GLG, TIP, TA-Set-Aside, DCIB, Municipal**
Route 322/Route 422/ Hersheypark Drive Interchange		**LONG**	Reconstruct and reconfigure the 422/322 interchange to make Hersheypark Drive the through movement from Route 322 to redirect through traffic away from downtown Hershey and the Village. Construct a separated, shared-use path across the interchange.	**$50M to $60M**	**TIP**
I-9-M	**Intersection 9: Walton Ave & E Main St/Driveway**	**MID**	Widen Walton Ave to the north to provide a second receiving lane for the dual northbound left turn lanes on Hersheypark Drive (two WB lanes at intersection, a left turn lane onto E. Main Street, and a through/right lane). The Bob Evans driveway will be relocated to the north leg of the intersection.	**See Intersection 10**	

Potential Improvements for Mitigation (continued)

Project Number	Location	Time Span	Improvements	Total Estimated Improvement Cost (2020 Dollars)	Anticipated Funding Sources
I-10-S	Intersection 10: Route 39 (W Hersheypark Drive) & Walton Ave/ Mae St	SHORT	Adjust the signal timings based on new traffic counts.	-	-
I-10-M		MID	Widen Walton Avenue to the north to provide an additional lane between Hersheypark Drive and Main Street. This will yield a six-lane section; one westbound left turn lane, one westbound shared through-right lane, two eastbound left turn lanes, one eastbound through lane and an eastbound right turn lane.Widen Mae Street to provide dual westbound left turn lanes.Widen Hersheypark Drive in order to provide dual northbound left turn lanes and a northbound right turn lane.	$3.7M to $5.5M	Developer, CFA or PennDOT MTF, DCIB
I-10-L		LONG	Implement southbound right overlap phasing. Widen Hersheypark Drive from 900' south to 2800' north to provide an additional northbound and southbound through lane.	$5.0M to $7.5M	TIP
I-11-M	Intersection 11: Route 39 (W Hersheypark Drive)/W Hersheypark Drive & Route 39 (Hershey Rd)/Park Blvd	MID	Widen Route 39 (Hershey Rd) to provide dual southbound left turn lanes.	$600K to $900K	Developer, CFA or PennDOT MTF, DCIB, ARLE
I-11-L		LONG	Widen Hersheypark Drive from 2800' west to 1850' east to providing an additional eastbound and westbound through lane; this will provide a six-lane section. Coordinate signal with Hersheypark Drive corridor.	$7.8M to $11.7M	TIP
I-12-M	Intersection 12: Hersheypark Drive & Park Ave/Sand Beach Road	MID	Widen Park Ave to provide dual northbound left turn lanes.	$370K to $1.0M	Developer, CFA or PennDOT MTF, DCIB
			Widen Hersheypark Drive to the south to provide an additional eastbound through lane and a merge lane.	$2.6M to $4.4M	TIP
I-12-L		LONG	Widen Sand Beach Road to provide a southbound right turn lane.	$144K to $215K	Developer
			Widen Hersheypark Drive from 1600' west to 1500' east to the north to provide an additional westbound through lane; this will provide a total of six through lanes. Coordinate signal with Hersheypark Drive corridor.	$2.9M to $4.4M	TIP, GLG
I-13-M	Intersection 13: E Hersheypark Dr & Laudermilch Rd	MID	Widen Hersheypark Drive to the south to provide dual eastbound left turn lanes. Widen Laudermilch Road to provide a merge lane.	$900K to $1.4M	-
I-13-L		LONG	Widen Hersheypark Drive from 2150' west of Laudermilch Road to the intersection to provide a 6-lane section west of the intersection. East of the intersection will still be a 4-lane section on Hersheypark Drive. Coordinate signal with Hersheypark Drive corridor.	$2.0M to $3.0M	TIP
I-14-L	Intersection 14: E Hersheypark Dr & N Lingle Ave	LONG	Reconfigure the intersection so the eastbound (Hersheypark Drive) and northbound (N. Lingle Avenue) approaches become the through movement. The southbound approach is re-aligned to make a T-intersection. The existing westbound approach is re-aligned to create a new intersection to the north. Coordinate signal with Hersheypark Drive corridor.	$3.1M to $4.7M	CFA or PennDOT MTF, GLG, Municipal, DCIB
P-9-S	Walton Avenue near Allison Drive	SHORT	Construct sidewalk on the north side of Walton Avenue to fill in a 500-foot gap of sidewalk along the roadway.	$50K to $80K	DCNR Trail, TA Set-Aside, Municipal, Developer
P-10-L	Route 39 (Hershey Road)	LONG	Install bike lanes on Hershey Road from Hersheypark Drive to the Derry Township line. Widening the existing bridge over Swatara Creek is recommended when the bridge is to be replaced in order to accommodate the bike lanes.	See Intersection 11	
P-21-M	Hersheypark Drive Corridor	MID	Provide bike lanes on the Hersheypark Drive Corridor. Widen Hersheypark Drive at intersections with right turn lanes and rebuild channelizing islands as required to provide sufficient width for the bike lanes.	$692K to $1.0M	Municipal, TA-Set-Aside, CMAQ, HATS RTP

Potential Improvements for Mitigation (continued)					
Project Number	**Location**	**Time Span**	**Improvements**	**Total Estimated Improvement Cost (2020 Dollars)**	**Anticipated Funding Sources**
P-26-S	**Northwest Drive near Hersheypark Drive**	**SHORT**	Construct sidewalk along the west side of Northeast Drive from the shopping plaza driveway to Hersheypark Drive.	**$42K to $64K**	**Municipal, TA-Set-Aside, CMAQ, HATS RTP**
P-28-M	**Hersheypark Drive Corridor**	**MID**	Evaluate roadway lighting along Hersheypark Drive and install light fixtures to bring the roadway, including crosswalks and future bike lanes, up to standards if deficiencies are found.	**$2.5M to $3.8M**	**Municipal, CFA or PennDOT MTF, TA Set-Aside**
P-36-M	**Park Boulevard**	**MID**	Install bike lanes or shared-use path along Park Boulevard from Hersheypark Drive to the shared-use path that begins at Chocolate World.	**$150K to $230K**	**DCNR Trail, TA-Set-Aside, Municipal**
S.R. 743 Corridor					
I-15-M	**Intersection 15: Park Ave & E. Derry Rd**	**MID**	Signalize after diverting Northeast Drive traffic to E. Derry Road by constructing a connector between E. Derry Road and Northeast Drive.	**$360K to $530K**	**Developer, CFA or PennDOT MTF, DCIB**
I-31-S	**Intersection 31: Route 743 (Fishburn Rd) & Cocoa Ave**	**SHORT**	Allow northbound right turns on red.	**$2K to $3K**	**Municipal**
I-31-L		**LONG**	Widen Fishburn Road to provide a northbound right turn lane.	**$300K to $400K**	**Developer, Municipal, DCIB**
P-4-M	**Route 743 near Giant Shopping Center**	**MID**	Provide a pedestrian connection across SR 743 to the Giant shopping center by either making an agreement with the property owner to use the existing driveway bridge or construct a new culvert across the stream. Then install a pedestrian and bike crossing to access the existing sidewalk on the west side of SR 743.	**$270K to $400K**	**DCNR Trail, TA Set-Aside, Municipal, Developer**
P-6-M	**Route 743 & Valley Road**	**MID**	Provide a pedestrian connection between the Village and the existing trail in the Hershey School campus across from Valley Road. Currently, the trail ends at a stream that runs parallel to SR 743. Negotiations with business may be possible to allow a connection using the existing driveway, rather than constructing a new culvert.	**$260K to $390K**	**DCNR Trail, TA Set-Aside, GTRP, Municipal, Developer, CMAQ, HATS RTP**
P-14-S	**Route 743 and Hartley Road**	**SHORT**	Enhance the pedestrian crossing at the intersection with flashing lights or illuminated signs.	**$50K to $80K**	**DCNR Trail, TA Set-Aside, Municipal, CMAQ, HATS RTP**
P-25-M	**Route 743 near Almond Drive**	**MID**	Provide sidewalk from Almond Drive to the existing sidewalk along Santander Bank.	**$20K to $30K**	**TA Set-Aside, Municipal, CMAQ, HATS RTP**

Potential Improvements for Mitigation (continued)					
Project Number	**Location**	**Time Span**	**Improvements**	**Total Estimated Improvement Cost (2020 Dollars)**	**Anticipated Funding Sources**
Chocolate Avenue (Route 422) Corridor & Hershey Village					
S-3-L	**Chocolate Avenue Corridor**	**LONG**	Designate Hersheypark Drive and N. Lingle Ave as Route 422 from the interchange in the west to the intersection of N. Lingle and E. Chocolate in the east. West Chocolate Ave to East Chocolate Ave would be designated as "Business 422". This should coincide with the reconfiguration of the Route 322/Route 422/Hersheypark Drive interchange.	-	-
S-4-L	**N. Hockersville Road**	**LONG**	Realigning N. Hockersville Road to remove the S-curve near the old sewage treatment plant south of Hersheypark Drive. This would provide a better road that meets design criteria to create a more functional north-south link, particularly with the possible roundabout at the intersection of SR 422 and Old West Chocolate.	-	-
I-17-M	**Intersection 17: Route 422 (W. Chocolate Ave) & University Ave**	**MID**	Widen University Drive to provide dual northbound left turn lanes and a channelized northbound right turn lane.	**$670K to $1.0M**	**Developer**
I-19-M	**Intersection 19: Route 422 (E. Chocolate Ave) & Homestead Rd**	**MID**	Widen Homestead Rd for a northbound right turn lane with an overlapping right turn signal phase. Alternately, a roundabout could be feasible at this intersection and may be installed at developer/property owner expense. Due to the anticipated funding, the costs included in this table only include traditional widening for the right turn lane and signalized intersection.	**$140K to $210K**	**Developer, CFA or PennDOT MTF, DCIB**
I-22-M	**Intersection 22: Hockersville Road and W Areba Avenue**	**MID**	Construct a traffic signal. Additionally, geometric improvements are necessary to provide sufficient stopping sight distance along the crest vertical curve on Hockersville Rd, north of Areba Avenue.	**$1.2M to $1.8M**	**CFA or PennDOT MTF, DCIB**
I-38-S	**Intersection 38: Route 422 (W. Chocolate Ave) & Old West Chocolate Ave**	**SHORT**	Convert the W. Chocolate Avenue and Old West Chocolate Avenue intersection into a single-lane roundabout.	**$1.5M to 2.5M**	**CFA or PennDOT MTF, GLG, Developer, DCIB**
I-39-M	**Homestead & Areba Ave/Java Ave**	**MID**	Reconfigure the intersection of Java Ave, Areba Ave, & Homestead Road such that Java Ave is not used to access Homestead Road. This can be accomplished by extending Caracas Ave to intersect with Homestead Road. Two alternatives are proposed to improve Java Ave: o Make Java Ave one-way with traffic flowing toward Caracas Ave. o Remove Java Ave and replace with green space, multi-use trail and add parking along Homestead Road.	**$390K to $770K**	**Municipal, CFA or PennDOT MTF**
P-1-S	**Route 422 and Route 743 Intersection**	**SHORT**	Install green backed shared lane markers along each approach.	**$1.0K to $1.5K**	**Municipal, TA Set-Aside**
P-2-S	**Route 422 between Mill Road and Orchard Road**	**SHORT**	Add shared lane markings along SR 422 eastbound to alert motorists of potential cyclists and delineate a path for cyclists through the merge point.	**$1.0K to $1.5K**	**Municipal, TA Set-Aside**
P-3-M	**Route 422 and Lucy Avenue**	**MID**	To increase pedestrian connections across SR 422, remove the concrete islands at intersection of Lucy Ave and SR 422 and install a traffic signal with pedestrian crosswalks. This would allow for a pedestrian route to connect from Mae St and Hummelstown into the south half of Derry Township.	**$370K to $550K**	**Developer, DCIB, CFA or PennDOT MTF, TA Set-Aside, CMAQ, HATS RTP**
P-11-L	**Old West Chocolate Avenue**	**LONG**	Enhance tunnel lighting through the underpass to make the tunnel safer for pedestrians and cyclists. Extend sidewalk to Swatara Avenue.	**$350K to $500K**	**CFA or PennDOT MTF, DCIB**

Potential Improvements for Mitigation (continued)					
Project Number	**Location**	**Time Span**	**Improvements**	**Total Estimated Improvement Cost (2020 Dollars)**	**Anticipated Funding Sources**
P-12-M	**Intersection 21: Route 422 (E. Chocolate Ave) & N. Lingle Ave/S. Lingle Ave**	**MID**	Install video or radar stop bar detection at the intersection as the loop detectors do not detect cyclists. This would help prevent cyclists from crossing SR 422 on red due to an inoperable traffic signal that is not detecting them at the stop bar. Install shared lane markings along SR 422 at the intersection. Install an R4-4 "Right Turn Lane Yield to Bikes" sign at the taper of the westbound right turn lane to alert potential motorists of the conflict point.	**$30K to $40K**	**GLG, Municipal**
P-13-S	**Route 422 and Valley Road**	**SHORT**	Enhance the pedestrian crossing at the intersection with flashing lights or illuminated signs.	**$50K to $80K**	**Municipal**
P-15-S	**Areba Ave**	**SHORT**	Establish a bike route on Areba Ave by installing sharrows.	**$1.0K to $1.5K**	**Municipal or TA Set-Aside**
P-16-S	**Elm Ave**	**SHORT**	Add marked crosswalks across Elm Ave. Consider traffic calming measures, such as speed humps, pending a formal traffic calming evaluation.	**$10K to $15K**	**Municipal**
P-17-S	**E. Derry Road**	**SHORT**	Construct sidewalk on E. Derry Road from W. Mansion to the existing sidewalk on E. Derry Road. Extend the sidewalk to Northeast Drive (anticipated to be completed through land development and costs for this portion are not included).	**$17K to $27K**	**Developer, TA Set-Aside, CFA or PennDOT MTF, DCNR Trails, DCIB, CMAQ, HATS RTP**
P-30-M	**Hockersville Rd**	**MID**	Construct sidewalk along Hockersville Rd from SR 322 to the existing sidewalk near SR 422.	**$255K TO $383K**	**PennDOT MTF, DCNR Trails, CMAQ, HATS RTP**
P-33-S	**SR 422**	**SHORT**	Construct shared-use path along SR 422 from Sipe Ave to University Ave.	**$104K TO $156K**	**CMAQ, HATS RTP, Municipal**
P-34-S	**Mae St and Sipe Ave**	**SHORT**	Install sharrows along Mae St and Sipe Ave to create an on-road path from Hersheypark Drive to SR 422.	**$52K to $78K**	**CMAQ, HATS RTP, Municipal**
Governor Road Corridor & Hershey Medical Center Area					
Immediate Improvement Need: Widen to 5 lanes and bike lanes from Cherry Drive to Route 743; Long-term Improvement Need: Widen to 5 lanes and bike lanes from University Drive to Homestead Drive. *					
I-23-M	**Intersection 23: Route 322 (W Governor Rd) & University Dr**	**MID**	Construct an eastbound right turn lane and remove the lane drop to provide an additional eastbound through lane. Widen Governor Road 900' to the east to provide an additional eastbound receiving lane.	**$1.1M to $1.7M**	**TIP, Developer**
I-23-L		**LONG**	Widen Governor Road 500' to the west to provide an additional westbound through lane. Construct sidewalk on the north side of SR 322.	**$1.7M to $2.6M**	**TIP, Developer**
I-24-M	**Intersection 24: Route 322 (W Governor Rd) & Centerview Dr**	**MID**	Convert NB approach from a shared left/through lane and a right turn lane to a left turn lane and a shared through/right lane.	**$80K to $120K**	**Developer, ARLE**
I-24-L		**LONG**	Widen Governor Road from about 450' west to 1700' east (Beech Ave) to provide additional eastbound and westbound through lanes to provide a minimum 4-lane section. A center left turn lane may also be considered continuously between Centerview Dr and Cherry Dr. Widen the northbound approach of Centerview Drive to provide an exclusive right turn lane. This will result in a four lane section on Centerview Drive (three northbound lanes and one southbound lane). Construct sidewalk on the north side of SR 322.	**$3.7M to $5.6M**	**TIP, Developer** **Sidewalk: DCNR Trail Grant, TA Set-Aside**

Potential Improvements for Mitigation (continued)					
Project Number	**Location**	**Time Span**	**Improvements**	**Total Estimated Improvement Cost (2020 Dollars)**	**Anticipated Funding Sources**
I-25-S	**Intersection 25: Route 322 (W Governor Rd) & Cherry Dr**	**SHORT**	Provide a connection between the crosswalk and the existing trail. This would tie in the trail west of Cherry Drive with the trail along Governor Road east of Cherry Drive. Construct sidewalk on the north side of SR 322.	**$3.6M to $5.3M**	**TIP, Developer**
I-25-M		**MID**	Widen Governor Road from about 1700' west (Beech Ave) to 525' east to provide additional eastbound and westbound through lanes to provide a minimum 4-lane section. A center left turn lane may also be considered continuously between Centerview Dr and Cherry Dr.	**$5.0K to $8.0K**	**DCNR Trail Grant, TA Set-Aside**
I-26-M	**Intersection 26: Route 322 (W Governor Rd) & Fishburn Rd/Hockersville Rd**	**MID**	Widen Governor Road from about 450' west to 1300' east (Glen Rd) to provide additional eastbound and westbound through lanes to provide a minimum 4-lane section. A center left turn lane may also be considered east of the intersection, but may not be practical due to property impacts. The design should evaluate the feasibility of avoiding the brownstone building (located on the southeast quadrant) or relocating the building to the rear of the lot. If deemed infeasible, the roadway section, bicycle and pedestrian accommodations should be re-evaluated.	**$3.1M to $4.6M**	**TIP, Developer**
I-26-L		**LONG**	Widen Hockersville for an exclusive southbound right turn lane. Modify the traffic signal to include right turn overlaps for all right turn lanes.	**$300K to $450K**	**Developer, CFA or PennDOT MTF, DCIB, ARLE**
I-28-M	**Intersection 28: Fishburn Rd & Sand Hill Rd**	**SHORT**	Relocate Sand Hill Road to incorporate Hope Drive Extension. Install exclusive eastbound left and right turn lanes. Widen Fishburn Road to install a northbound left turn lane and a southbound right turn lane. Construct trail along Hope Drive Extension and Fishburn Road.	**$3.3M to $5.0M**	**CFA or PennDOT MTF, Gaming Grant, Developer**
I-29-M	**Intersection 29: Route 322 (W Governor Rd/E Governor Rd) & Route 743 (Cocoa Ave)**	**MID**	Widen Governor Road from 900' west (Glen Rd) to 1250' east to provide an additional eastbound & westbound through lane to provide a 5-lane section including a center left turn lane.	**$ 3.5M to $5.2M**	**TIP, Developer**
I-30-M	**Intersection 30: Route 322 (E Governor Rd) & Homestead Rd**	**MID**	Widen Governor Road from 1250' west to 700' east to provide an additional eastbound & westbound through lane to provide a 5-lane section including a center left turn lane.	**$3.1M to $4.7M**	**TIP, Developer**
I-37-M	**Intersection 37: Hope Dr & Cherry Dr**	**MID**	Change eastbound approach from a shared left/through lane and a right turn lane to a left turn lane and a shared through/right lane with protected/permitted phasing.	**See Intersection 28**	
P-5-L	**Fishburn Road between the Giant Shopping Center and Governor Road**	**MID**	Continue the sidewalk along Fishburn Road between the Giant shopping center and Governor Road.	**$300K to $450K**	**DCNR Trail, TA Set-Aside, Developer, CFA or PennDOT MTF, DCIB, Municipal, CMAQ, HATS RTP**
P-22-M	**Governor Road Corridor**	**SHORT**	Provide bike lanes on the Governor Road Corridor.	**$147K to $221K**	**Municipal, TA Set-Aside, CMAQ, HATS RTP**
P-29-M	**Governor Road Corridor**	**MID**	Evaluate roadway lighting along Governor Road and install light fixtures to bring the roadway, including crosswalks and future bike lanes, up to standards if deficiencies are found.	**$1.1M to $1.7M**	**Municipal, CFA or PennDOT MTF, TA Set-Aside**
P-35-M	**Innsbruck Road**	**MID**	Construct a trail from Innsbruck Road to the HMC Mountain Biking trails to establish a connection from the residential community to the Hershey Medical Center.	**$31K to $46K**	**Municipal, TA Set-Aside, CMAQ, HATS RTP**

Potential Improvements for Mitigation (continued)					
Project Number	**Location**	**Time Span**	**Improvements**	**Total Estimated Improvement Cost (2020 Dollars)**	**Anticipated Funding Sources**
Hummelstown (Main Street) Corridor					
I-33-L	**Intersection 33: Main St & Hanover St**	**LONG**	Widen Hanover St two feet and remove the parking lane to provide an exclusive northbound right turn lane.	**$180K to $270K**	**ARLE, DCIB, Municipal**
I-34-M	**Intersection 34: Main St & Quarry Rd**	**MID**	Install a traffic signal.	**$370K to $560K**	**DCIB, Municipal**
P-24-M	**E Main St**	**MID**	Construct sidewalk on the northern side of E. Main St to provide a pedestrian connection between Main St and the shopping center. This would also provide better connectivity with Lower Dauphin Middle School.	**$110K to $175K**	**Municipal**
Londonderry Township					
Capacity analyses indicate the roadways adequately accommodate daily traffic. Improving primary Hershey access routes should deter the use of these roadways for event traffic.					
S-9	**Schoolhouse Road**	**N/A**	None	**-**	**-**
S-10	**Roundtop Road**	**N/A**	None	**-**	**-**
S-11	**Colebrook Road**	**N/A**	None	**-**	**-**
Future Considerations					
Monitor development of key parcels with respect to land use projections within the Study.					
Evaluate legislation or other methods of addressing the re-routing of traffic based on navigation apps.					
For future transportation and maintenance projects, replace non-bicycle safe inlet grates with bicycle safe inlet grates.					
Sidewalk should be added where possible as roadway widening projects are completed to help increase pedestrian connectivity.					
Potential bicycle facilities should be considered during the preliminary stages of the project.					
Green backed bicycle markings are under interim approval by the FHWA. Prior to implementation, verify if they are still under interim approval.					
Consider future north-south roadway and bicycle/pedestrian connections in the region.					

* Cost of corridor widening has been divided halfway between each study intersection.

Legend:

Project No. Codification = Type of Improvement-Number-Term
Type of Improvement - Intersection (I), Segment (S), or Pedestrian/Bike (P)
Term - Short (S), Mid (M), or Long (L) term

Funding Abbreviations:

CFA = Commonwealth Financing Authority, MTF = Multimodal Transportation Fund, DCIB = Dauphin County Infrastructure Bank, GLG = Green Light Go, ARLE = Automated Red Light Enforcement Grant, Municipal = Municipal Funding, GTRP = Greenways, Tails & Recreation Program, TA - Transportation Alternatives; TIP = Transportation Improvement Program; CMAQ = Congestion Mitigation and Air Quality Improvement Program; HATS RTP = HATS RTP Implementation Program

Note: Due to evolving transportation issues and trends and their unknown effect on long range regional transportation planning, several items should be considered prior to implementing the potential mitigation. These include, but are not limited to:

- "Demand-side" strategies
- Long-term effects of COVID-19
- Evolving navigation applications
- Autonomous vehicles
- Potential I-81 to Route 283 and PA Turnpike connection
- Environmental impacts
- Private property impacts
- Transit enhancements
- Significant variations for future land use assumptions

INTRODUCTION

The Greater Hershey region is poised to experience significant growth and development in the coming years that will undoubtedly impact regional transportation infrastructure. It is important that stakeholders throughout the Greater Hershey region collectively consider and adequately plan for prospective major developments. In an effort to plan for this future growth, Derry Township in collaboration with Hummelstown Borough and Londonderry Township has led the comprehensive transportation study for the Greater Hershey region through the Tri-County Regional Planning Commission HATS transportation and PennDOT Connects Program.

Throughout the process, meetings were held with major stakeholders within the planning area to identify long-range plans of each stakeholder. The study includes an assessment of these plans and evaluates compatibility and consistency with each other. Additionally, the study identifies necessary transportation improvements in the Greater Hershey region to accommodate projected long-range plans, with consideration to additional development anticipated based on development trends and existing zoning. The goal of this overall planning effort is to help facilitate the implementation of identified improvements in a coordinated, systematic manner and determine improvements to increase transportation connectivity throughout the Greater Hershey region.

The Greater Hershey region study area includes Derry Township, Hummelstown Borough and the northern portion of Londonderry Township. This transportation study considers potential improvements to key regional arterials and collectors as well as multimodal interconnectivity between major transportation corridors and key destinations.

Scope of Study

This study was prepared specifically to address the following:

- Coordinate with Derry Township, Londonderry Township and Hummelstown Borough officials and regional stakeholders to project anticipated development parcels and intensity over the next 20-year period;
- Using commonly accepted methodology, project future traffic volumes associated with the new development in addition to existing traffic volumes;
- Analyze intersections and roadway to determine if there is adequate vehicular capacity for projected future traffic volumes;
- For locations with undesirable traffic flows, identify physical roadway improvements or new roadway connections to attain acceptable traffic flow;
- Review the existing bicycle and pedestrian network and identify opportunities to enhance connectivity and safety within the study area.

Study Purpose and Limitations

This study was prepared with the fundamental goal of identifying anticipated future development and quantifying potential roadway widening that may be required to mitigate future traffic congestion. This 20-year plan focuses on the geometric intersection configurations while noting that actual future traffic patterns may deviate from the projections. Anticipated future development is projected consistent with

historic development trends and municipal zoning and land use. Future traffic projections were developed using conventional trip generation and traffic projections for the anticipated land uses. If alternate measures are not implemented such as transit improvements, etc., these roadway improvements are anticipated in order to maintain acceptable traffic flow. Factors outside the scope of this study will likely impact traffic patterns and the major mitigating measures identified may not be necessary. However, this study identifies the roadway improvements that may be necessary to provide acceptable traffic flow, in lieu of other mitigating measures.

Mitigating traffic congestion involves many strategies consisting of "Supply Side" strategies and "Demand Side" strategies. "Supply Side" strategies include capacity adding infrastructure improvements to roads and bridges. "Demand Side" strategies provide travelers with enhanced travel choices from Travel mode (i.e. drive/ walk/ bike/transit/carpool) to travel routes to departure times.

In recognition of the growing burden of traffic congestion in the Greater Hershey region, the scope of the study was focused on identifying potential "Supply Side" infrastructure strategies, specifically "potential roadway infrastructure mitigations" as a planning tool to alleviate future traffic congestion associated with future potential development growth in the study area. Recent "Supply Side" examples in the Greater Hershey region include the SR743/US 422 (Hershey Square) reconfiguration to eliminate the offset intersection, the replacement of the functionally obsolete Park Avenue Bridge over Norfolk Southern railroad, and the Park Boulevard relocation projects.

It is recognized that some of these "potential roadway infrastructure mitigations" generate concerns over right-of-way and potential environmental impacts. Each municipality should manage growth and evaluate alternative methods of accommodating the travel demand (i.e., manage development and/or applying "demand side" strategies). Due to large costs and the competition for limited Federal or State funding, project delivery can be many years and even decades away. As such, these infrastructure Supply Side strategies are just one tool in planning for mitigating traffic congestion and should be considered in conjunction with "Demand Side" strategies. The following excerpt from *Mitigating Traffic Congestion: The Role of Demand-Side Strategies*, provides further background on Supply Side and Demand Side strategies. Though this study was published in 2004, it is still relied upon by Transportation professionals and the core concepts remain valid.

> *"Recognizing the growing burden of traffic congestion and the importance of efficient access and mobility, community leaders and transportation planners are actively working on transportation improvements to alleviate traffic congestion. Much needed roadway, bridge, and transit infrastructure projects – considered transportation "supply" or "capacity" enhancements – are underway across the country to mitigate travel delays and accommodate future growth needs.*
>
> *As urban areas mature, however, opportunities for further investments in transportation infrastructure are often limited. Urban transportation corridors increasingly lack the physical space to accommodate more lanes. In some areas, communities voice concerns that impacts to private rights-of-way or sensitive environments outweigh the potential benefits of expanding facilities. Many areas simply lack the funds needed to pay for major roadway or transit projects. Competition for limited federal and state funds is intense, and even where needed infrastructure projects are in the planning or construction stages, project completion can still be years away.*

Effectively tackling traffic congestion increasingly means employing all available strategies. New infrastructure projects – from roads to bridges to transit facilities – remain a core element of comprehensive transportation improvement programs.

Supplementing these "supply-side" investments are a broad array of "demand-side" strategies intended to make existing transportation facilities work better. Demand-side strategies are designed to better balance people's need to travel a particular route at a particular time with the capacity of available facilities to efficiently handle this demand. Many people have attended a sporting event or a concert where everyone tries to leave the same place at the same time. While in the extreme, this is a perfect example of where travel demand exceeds available supply – and severe traffic congestion often results. The focus of demand-side strategies is to provide people with enhanced travel choices – from choices in travel mode (such as driving, using transit or bicycling), to choices in travel route and trip departure-time – and to provide incentives and information for people to make informed travel choices. For example, many sports and concert venues provide incentives for people to arrive a little early or stay a little late, essentially spreading the "peak" of the demand to travel to/from the building, reducing traffic congestion, and improving the visitor's overall experience.

This contemporary understanding of demand-side strategies is broader in scope than prior, more traditional views of transportation demand management – or TDM. To some, the realm of demand management applications is limited primarily to encouraging alternatives to single-occupant vehicle travel for the commute to work. In practice, however, this narrow view is no longer consistent with the broad applications of demand-side strategies currently underway across the country. Today's applications are not only limited to facilitating shifts in travel mode – they also address shifts in travel routes and travel departure-times (for all travelers, including single-occupant vehicle drivers). Today's applications also extend beyond a focus on commute trips. At national parks, sports stadiums, university campuses, and other diverse destinations, transportation and facility managers are implementing demand-side strategies as part of coordinated efforts to reduce congestion. On bridges, and along corridors undergoing roadway reconstruction programs, demand-side strategies are helping travelers avoid congestion by utilizing alternative travel routes, travel times and/or travel modes – or by reducing the need for some trips altogether by facilitating work from home options a few days a month."[1]

(1) Mitigating Traffic Congestion: The Role of Demand-Side Strategies, The Assoc. of Commuter Transportation in partnership with the U.S Department of Transportation Federal Highway Administration, October 2004
https://ops.fhwa.dot.gov/publications/mitig_traf_cong/mitig_traf_cong.pdf

Due to impending development, the scope of the Greater Hershey study focused exclusively on "Supply Side" strategies to establish a baseline on needs to collaborate with developers on mitigation of their impact. It is recognized that that other supplemental efforts and planning tools and "Demand Side" strategies should be considered in conjunction with the potential "Supply Side" infrastructure strategies identified in the study. These "Demand Side" strategies include but are not limited to the following:

- Mode Strategies
  - Guaranteed Ride Home
  - Shared Vehicles
  - Bicycle/Pedestrian Facilities
  - Improved Transit
  - Ride-Share Programs
- Departure Time Strategies
  - Work Site Flex Time
  - Coordinated Event or shift scheduling
- Trip Reduction Strategies
  - Employer Telework Programs
  - Compressed Work Week Programs
- Route Strategies
  - Real Time Route Information
  - Navigation App Collaboration
  - Web-Based Route Planning
- Location/Design Strategies
  - Live near your work
  - Off-site parking/shuttle service

While the Greater Hershey Regional Transportation Study is solely focused on "Supply Side" strategies, this study is one of several planning tools available for the local municipalities and planning agencies to utilize in the future transportation project development process. In order for potential mitigation strategies identified in this report to be implemented, several additional planning and programming steps are necessary, especially for the larger, more impactful measures. Planning partners including PennDOT and Tri-County Regional Planning Commission also identify potential transportation problems and evaluate alternative and mitigating measures. While the potential mitigating measure identified within this report would be considered, the exact improvements identified are unlikely to be realized verbatim. During any project development process, the project planners will identify additional potential alternatives and determine appropriate improvements with respect to the transportation needs, environmental responsibility, property impacts, funding limitations, et cetera.

This Study is one component of the "Transportation Issues Potential Sources" identified in PennDOT's Program Development and Project Delivery Process – one component of the initial stage of a project (See Figure 1.1 from PennDOT Design Manual 1). Multiple other planning initiatives are considered when identifying a specific project to advance; several examples at the Local, County, MPO/RPO, State and National Levels are identified in the below table (Figure 2.1 from PennDOT Design Manual 1A). Refer to PennDOT Publication 10 for further details on the transportation project development process.

http://www.dot.state.pa.us/public/PubsForms/Publications/PUB%2010/Pub%2010%20Title%20Page.pdf

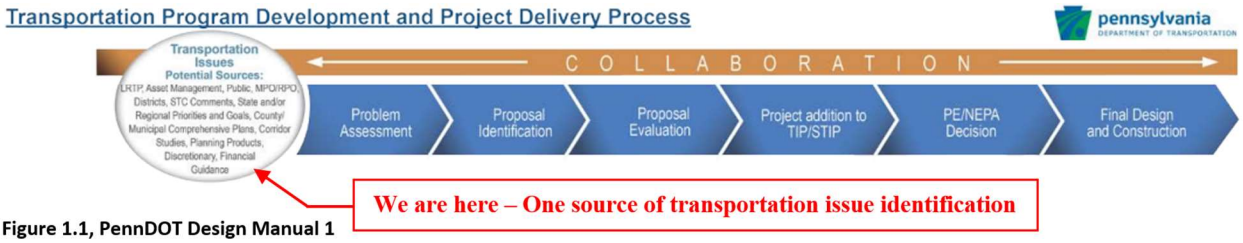


Figure 1.1, PennDOT Design Manual 1

Table 2.1 Examples of Planning and Planning Products at the Local, County, MPO/RPO, State, and National Levels		
	Long-Range/Sub-Area/Program Planning	**Project Planning**

Local
 	
(Township, Borough, Municipal)
	• Comprehensive Plan
	  ○ Zoning Ordinance
	  ○ Subdivision and Land Development Ordinance
	  ○ Official Map
	• Stormwater Management Ordinance/Act 167 Plan
	• Act 537 Plan
	• Neighborhood Strategic Plan
	• Recreation and Greenways Related Plans
	• Transit Improvement District
	• Bicycle and Pedestrian Plan
	• Emergency Operations Plan
	• Redevelopment/"Brownfields" Plan
	• Historical District/Cultural Resources Plan
		• Collaborative Planning Process
		• PennDOT Scoping Field View
		• Site Development Plan
		• Traffic Impact Studies
		• Highway Occupancy Permit

County	• County Comprehensive Plan • Act 167 Plan (SWM) • Transit Improvement District • Greenways/Open Space/Preservation Related Plans • Bicycle and Pedestrian Plan • Emergency Management Plan • Historical/Cultural Resources Plan • Housing Affordability/Availability Plan	• Collaborative Planning Process • PennDOT Scoping Field View • Site Development Plan • Traffic Impact Studies • Highway Occupancy Permit • Project Status Meetings
MPO/RPO	• Regional Long Range Transportation Plan • Transportation Improvement Program • Bicycle and Pedestrian Plan • Congestion Related Plans • Regional Transit and Freight Planning Activities • Intelligent Transportation Systems Planning • Multimodal Connections Study • Road Safety Audit • Corridor Planning Study • Travel Demand Models • Regional Air Quality Conformity • Performance-Based Planning and Programming • Asset Management Plan • Public Involvement	• Collaborative Planning Process • Project screening • PennDOT Scoping Field View • Site Development Plan • Project Status Meetings • Travel Demand Models • Project Air Quality Conformity • Public Involvement • Ride Sharing
State	• Statewide Long Range Transportation Plan • Comprehensive Freight Movement Plan • State Transportation Improvement Program • Twelve Year Program • Bicycle & Pedestrian Plan • Performance-Based Planning and Programming • Asset Management Plan	• Collaborative Planning Process • PennDOT Scoping Field View • Highway Occupancy Permit • Project Status Meetings • Project Air Quality Conformity • Public Involvement

Table 2.1 Examples of Planning and Planning Products at the Local, County, MPO/RPO, State, and National Levels		
State (continued)	• Public Involvement • Inter-city Passenger and Freight Rail Plan • Public Participation Plan for Statewide Planning • ADA Transition Plan • Statewide Airport System Plan • Statewide Highway Safety Plan • Environmental Justice Plan • State Enforcement Plan • Land and Water Trail Network Strategic Plan	
National	• Planning and Environmental Linkages (PEL) • Federal Funding Authorization • National Performance Measures	• Planning and Environmental Linkages (PEL)

Figure 2.1, PennDOT Design Manual 1A

This study focuses on "supply side" strategies and geometric improvements to mitigate potential future congestion and is one of several planning tools available for the local municipalities and planning agencies. It is intended that the potential mitigating strategies identified herein will be used for consideration in order to preserve future rights-of-way, identifying locations for new or relocated utilities, and for long-range budgeting and funding procurement.

As this study is one of several planning tools, it is acknowledged that it is not all-encompassing and has limitations given the scope of the study and future uncertainty. The study does not evaluate "demand-side strategies", future local or regional transit enhancements, long-term traffic effects of COVID19 or automated vehicles, the traffic impact of navigational apps, or community / environmental impacts. However, while not specifically part of this study, we offer the following additional considerations regarding mass transit and environmental impacts:

- **Mass Transit "Demand Side" Strategy Considerations** – The Greater Hershey region is served by Capital Area Transit (CAT) and Lebanon Transit (LT). LT currently has 2 routes and a Share Ride program serving many locations in the Greater Hershey region. CAT provides regular weekday service between downtown Harrisburg and the Greater Hershey region and summertime service to Hershey Park. CAT and LT should study potential expansion of services within the region.
- **Environmental Impact (including Air Quality) Considerations** – The large scale projects identified in the study will likely be funded through federal or state funds. Federal funds will require compliance with the National Environmental Policy Act (NEPA) that was signed into law on January 1, 1970. NEPA requires federal agencies to assess the environmental effects of their proposed actions prior to making decisions. Title I of NEPA contains a Declaration of National Environmental Policy which requires the federal government to use all practicable means to create and maintain conditions under which man and nature can exist in productive harmony.
  https://www.epa.gov/nepa/what-national-environmental-policy-act

  Section 102 in Title I of the Act requires federal agencies to incorporate environmental considerations in their planning and decision-making through a systematic interdisciplinary approach. Specifically, all federal agencies are to prepare detailed statements assessing the environmental impact of and mitigation

alternatives to major federal actions significantly affecting the environment. These statements are commonly referred to as Environmental Impact Statements (EIS) and Environmental Assessments (EA) and Categorical Exclusion Evaluations (CEE). Projects cannot proceed without agency approval of these documents. Previous projects within Derry Township, such as the Route 422/743 Realignment project and the Park Boulevard relocation project have completed environmental assessments and mitigation, as appropriate. Areas that are typically evaluated include:

- Wild or Stocked Trout Streams
- High Quality/EV Streams
- Federal and/or State Wild & Scenic Rivers and Streams
- Groundwater Resources
- Wetlands
- Threatened & Endangered Species
- 4(F)/Section 2002 Resources (i.e. Public Recreation, Cultural Resources)
- Protection from Federal or State recreation grants
- Water Trails
- Navigable Watercourses
- Other Surface Waters
- Hazardous, Residual, Municipal Waste Sites
- Regulated Flood Plains
- Agricultural Resources
- Geological Resources
- Federal and/or State Wilderness, Natural or Wild Areas
- Soil Erosion & Sedimentation Concerns
- Public Community Facilities & Services
- Unique Culture and Modes of Transportation
- Environmental Justice Population
- Coastal Zones
- Vegetation
- Historic Properties & Archeologic Resources
- Air Quality*
- Noise

*Air Quality evaluations begin even earlier in the process. Large scale projects likely require federal and state funding. The process to access this funding is managed by the Harrisburg Area Transportation Study (HATS). HATS is a designated Metropolitan Planning Organization (MPO), an organization of federal, state and local agencies, as well as officials from Cumberland, Dauphin and Perry Counties, the City of Harrisburg and Capital Area Transit, all of whom are accountable for the 3C process.

In this role, HATS develops a Regional Transportation Plan (RTP), which documents the current status of transportation projects and programs, identifies long-term needs and recommends projects to meet those needs. The long-range RTP sets a framework and priorities for the expenditure of federal transportation funds over a 25-year period and seeds the Transportation Improvement Program (TIP).

The TIP is a comprehensive listing of all federal and state-funded transportation improvement projects in the HATS area over the next four years. An Air Quality Conformity Determination process is completed that demonstrates proposed projects will not adversely impact air quality in the region.

TIP & RTP projects are assessed for their potential impact on air quality as reported in the Mobile Sector Group. These project forecasts are documented in the Air Quality Conformity Analysis Report for HATS. Transportation Conformity is conducted for the full regional project list to ensure that federal funding and approval are awarded to transportation activities that are consistent with air quality goals. The pollutants that are analyzed include ozone and fine particulate matter, for which motor vehicle emissions budgets are established for transportation conformity purposes.

https://static1.squarespace.com/static/56dc3f9cb654f9876576bab7/t/5c194975032be49eb721827d/1545161078270/AirQualityHarrisburg.pdf

Goals and Objectives

Through the stakeholder process, the following goals and objectives have been identified –

- Develop "complete streets" that facilitate safe and efficient vehicular flow, while also accommodating bicycle and pedestrian needs throughout the study area.
- Maintain acceptable traffic flow and mobility considering significant anticipated development.
- Accommodate pass-through traffic outside of Hershey Village and downtown corridor.
    - Protect the character within Hershey Village.
    - Establish and complement the Hershey downtown corridor.
    - Keep traffic on arterials, not on rural, collector roads that were not designed for heavy through or event traffic.
    - Mitigate the impact of navigation apps.
- Improve mobility on key corridors – Middletown Road, Hersheypark Drive, Route 322.
- Improve connectivity and north-south mobility.
- Provide safe and efficient integration of the area's comprehensive off-road multi-use trail network with commercial/business destinations, residential neighborhoods and on-road bicycle and pedestrian facilities.
- Improve pedestrian mobility between Hummelstown and Derry Township as development closes the spacing between the two municipalities – Main Street, Waltonville Road and Hanover Street.
- Preserve the safety of pedestrians around school campuses – Lower Dauphin Middle and High Schools, Derry Township School complex, Milton Hershey school.

One of the core study goals includes maintaining and re-establishing the Hershey downtown and protecting the character of the "Village" – the area generally located between Route 322, Route 422 and Homestead Road. For the purposes of this study, the Village includes both the Village of Hershey and the Village of Swatara Station. Varying land uses within the Greater Hershey region [Hersheypark, Giant Center, Hershey Foods production facilities and offices, Penn State Health Milton S. Hershey Medical Center (also known as the Hershey Medical Center), Milton Hershey School, etc.] contribute significant regional economic benefit while introducing daily and event-related traffic challenges. It is imperative to move traffic safely and efficiently along primary arterials to service these facilities, while minimizing impact to the downtown feel and character of the Hershey Village. As such, the potential mitigation identified within the study include enhanced mobility for critical corridors with a goal of limiting pass-through traffic within the Hershey downtown and Village areas.

To identify potential traffic flow deficiencies at intersections and roadway segments, the study includes intersection capacity analysis at key intersections in Derry Township and Hummelstown Borough and segment analysis at key segments in Londonderry Township. To account for an anticipated increase in traffic volumes in the study area, traffic forecasting was completed through a three step model: trip generation, trip distribution, and trip assignment. Roadway improvements at the study intersections proposed in this study are based on maintaining acceptable level of service with the forecasted increase in traffic volumes.

While motor vehicles account for most trips in the region, bicycle and pedestrian mobility is paramount to meet the needs of the community and provide a safe and walkable transportation infrastructure. Improved bicycle mobility is a primary goal of this study throughout the Greater Hershey community, and improved

pedestrian mobility is of utmost importance with Hummelstown Borough and the Hershey downtown and Village. Accordingly, the study includes an evaluation of the area's pedestrian and bicycle facilities to identify enhancement opportunities. Vehicles, bicycles, pedestrians, and public transportation were all considered to provide a comprehensive analysis for the region.

Public Comment Period

A draft of this study was available for download and open for public comment starting on 6/16/2020 with the original deadline for comments set as 8/7/2020. A special meeting of the Derry Township Board of Supervisors was held on 7/28/2020 where residents could speak on the report and voice their concerns. Due to both the outpouring of constructive comments from residents and COVID-19 pandemic, the deadline was extended to 9/8/2020 to ensure all residents who had concerns could express them. Comments from both email and from the special meeting of the Derry Township Board of Supervisors were compiled into one document as they were received, which can be found in Appendix Q.

Of the comments received, two of the most frequent topics were with respect to the widening of roads, such as Route 322 and Middletown Road, and new connector roadways, such as the Gramercy Connector Road and the Indian Run Connector Road. The most frequently discussed topics along with the most cited reasons why residents are opposed to a potential project are summarized in the table below:

Table 1. Comments Regarding Roadway Widening and New Connector Roads

Issue	Unique Comments	Reasons
Widening Route 322	40	Property Impacts (13), Property Values (11), Safety (11), Prefer Mass Transit (7), Historic Preservation (6), Capacity is not needed (6), Stormwater (5), Air Pollution (5), COVID-19 has changed traffic (5), Climate Change (4), Bottlenecking at roundabouts (3), Noise (3), Speeding (3), Serving through traffic, not residents (2)
Widening Middletown Road	12	Property Impacts (6), Prefer Mass Transit (5), Safety (4), Property Values (2), COVID-19 has changed traffic (2)
Indian Run Connector	23	Safety (14), Through traffic through neighborhood (12), Trail Disruption (6), Property Values (3)
Gramercy Connector	6	Safety (2), Through Traffic (2), Trail Disruption (2)

Notably, some of the most cited concerns included property impacts/values, safety, and a desire to expand mass transit options. Additionally, the Indian Run Development Homeowners Association submitted a petition signed by 37 households. Similarly, the Cocoa Townes Homeowners Association submitted a letter to raise concerns about the potential widening of Route 322 along with other corridor concerns.

Many residents made comments proposing new bicycle and pedestrian improvements to implement throughout the study area. Organizations such as the Bicycle South Central PA and Lebanon Valley Bicycle Coalition submitted letters with comments about the study and additional suggestions for potential improvements.

Members of the Derry Township Climate Change Advisory Committee (CCAC) also submitted a letter for public comment citing concerns of increased emissions from passenger vehicles and a lack of public transportation in the study area.

Each comment was reviewed for how well it fit within the scope, it's applicability and how it aligned with the goals of the study. Many suggestions from residents were incorporated, either by new improvements that were added or by improvements that were removed or altered. Yet, other suggestions were considered but not incorporated into the potential mitigating measures as some were outside of the scope or range of this study.

Specifically, the following modifications were incorporated into the study after the Public Comment period:

- Clarified the study scope, purpose and limitations;
- Explained the difference between "Supply Side" strategies and "Demand Side" strategies and clarified that this study focuses on "Supply Side" strategies;
- Clarified that this study is one of several planning tools available to local municipalities, Dauphin County, Tri-County Regional Planning Commission, and PennDOT
- Clarified that the identified potential improvements are not specific recommendations, but rather potential improvements for planning and future consideration;
- Explained why transit enhancements are not included as part of this study;
- Identified the need for further coordination with PennDOT, Lebanon County, and adjacent municipalities for the suggested redesignation of Route 422/Business Route 422;
- Removed the suggested vehicular connection from the Gramercy Connector into the Indian Run development;
- Incorporated considerations for additional bicycle treatments, such as protected bike lanes and bike boxes;
- Reduced the potential mitigation along Route 322 from five-lanes to four-lanes with consideration to a possible center left turn lane;
- Revised references to the potential brownstone building relocation, as this potential relocation is one consideration for modifications at this intersection;
- Incorporated a southbound left turn lane along Middletown Road at the Route 322 Eastbound Off-Ramp/Service Road intersection;
- Incorporated a sidewalk / shared-use path connection between Shank Park and residences to the south;
- Incorporated a missing sidewalk connection along Waltonville Road, south of Wood Road;
- Incorporated long-range potential improvement to include a shard-use path through the reconstructed interchange of Route 322/Route 422/Hersheypark Drive;
- Incorporated a shared-use path along Route 422 from Sipe Avenue to University Avenue;
- Incorporated bike accommodations along Mae Street and Sipe Avenue;
- Incorporate bicycle accommodations along Park Boulevard from Hersheypark Drive to Chocolate World;
- Incorporated sidewalk along Hockersville Road from Route 322 to Route 422;
- Incorporated a bicycle connection between residential neighborhood and the mountain bike trails located south of the Hershey Medical Center.

All public comments were considered within the constraints of this study and incorporated where appropriate. As noted above, four considerations in particular received significant feedback during the public comment period and we offer the following additional discussion regarding these items.

- Widening Route 322 – Many comments indicated a desire to maintain the existing two-lane roadway cross section. The anticipated future traffic flows were further evaluated and the projected need for additional through lanes remains. This potential mitigating measure was reduced from a five-lane cross section to a minimum of four-lane cross section. It is acknowledged that implementation of demand-side strategies and/or other factors / technologies may affect the future traffic flows and the corridor widening may not ultimately be needed. However, it is prudent to begin planning efforts for this corridor widening in the event future traffic flows match the projections.
- Widening Middletown Road – Many comments indicated a desire to maintain the existing two- or three-lane roadway cross section. The anticipated future traffic flows were further evaluated and the projected need for additional through lanes remains. It is acknowledged that implementation of demand-side strategies and/or other factors / technologies may affect the future traffic flows and the corridor widening may not ultimately be needed. However, it is prudent to begin planning efforts for this corridor widening in the event future traffic flows match the projections.
- Indian Run Connector – Many comments indicated a desire to eliminate the potential connection from Indian Run to the Proposed Gramercy Connector. This connection was previously included as a convenience to the residents within Indian Run to provide alternate means of access aside from Middletown Road; it is not required for acceptable traffic flow. As such, and in consideration to the comments received from the public, this potential mitigating measure has been removed from the report.
- Gramercy Connector – Many comments indicated a desire to eliminate this potential east-west connection between Waltonville Road and Middletown Road. This connection has been in various official Township planning documents since the 1970s and would serve to reduce traffic and congestion along alternate parallel routes. This connection is not intended to promote additional development, but rather adequately accommodate planned development as well as existing traffic flows. As this connection is capacity-adding and necessary for traffic flow, this potential mitigating measure remains in the report.

EXISTING CONDITIONS

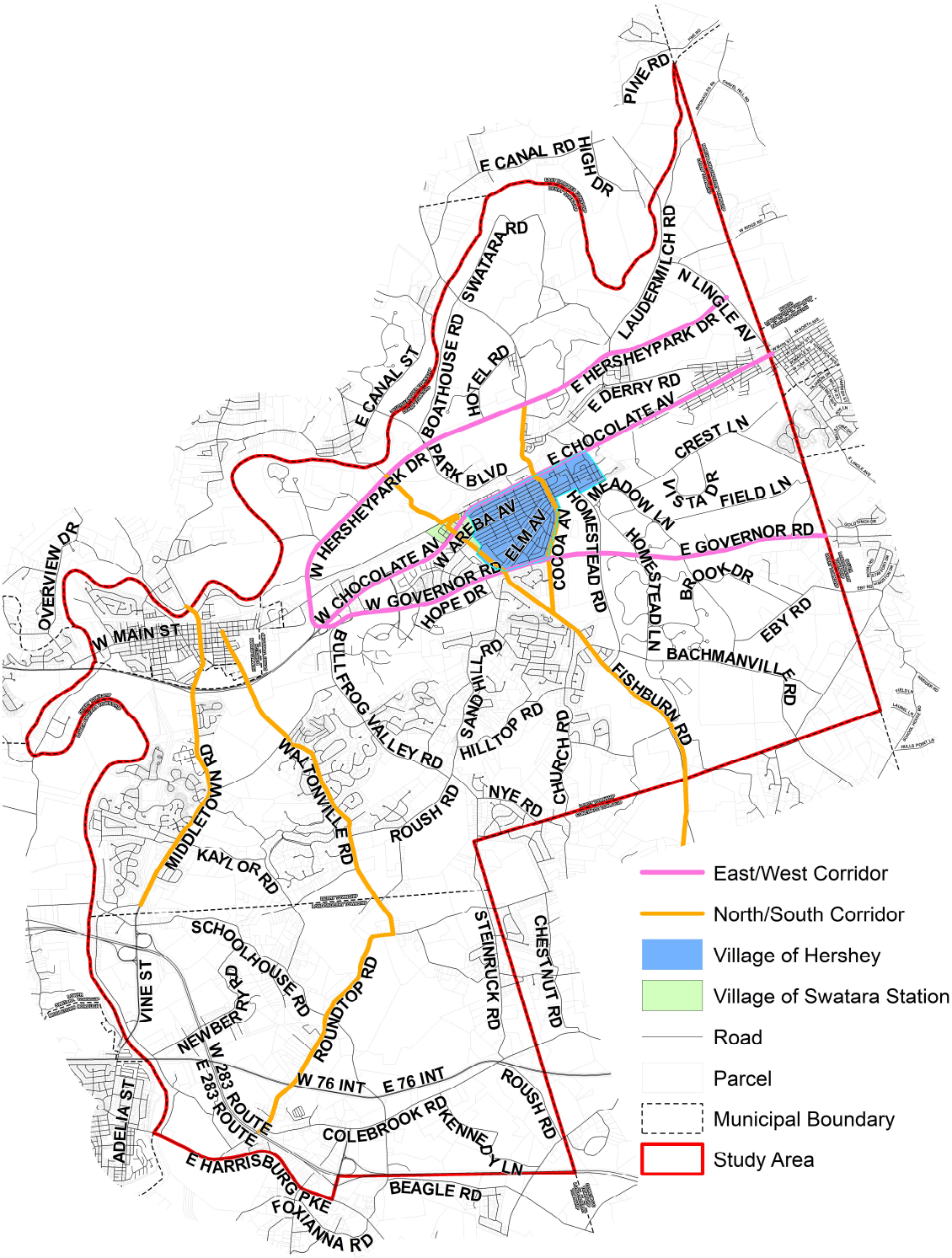
Vehicular Traffic Configuration

Eleven (11) corridors in the region were identified in the scoping process as key corridors to review the characteristics of the roadway, including bicycle and pedestrian facilities, to help identify where facilities are lacking and which roadways are more feasible for improvements. A summary of the existing conditions of these key corridors is provided in Table 2 below:

Table 2. Key Corridors - Existing Conditions

Number	Road Name	Extents	Lane Width	Shoulder Width	ADT (vehicles per day)	Truck %	Speed Limit (mph)	Functional Classification	Sidewalk(s)	On-street Parking
1	**Hanover St (SR 2003)**	**Main St to RT 322**	Main St to Parkside - 11' Parkside to 322 - 12'	Main St to Parkside - None Parkside to RT 322 - Varies 0'-6'	8189	5	25	Minor Arterial	Main St to Parkside Ave	Main St to Poplar
2	**Quarry Rd (SR 2005)**	**Main ST to RT 322**	11'	Main St to Division St - 2' (One Side) Division St to RT 322 - 6'	Main St to Division St - 3440 Division St to RT 322 - 4136	5	RT 322 to Division St (NB) - 30 Division St to Main St (NB) - 25 Poplar to RT 322 (SB) - 30	Urban Collector	Main St to Division St	None
3	**Middletown Rd (SR 2003)**	**RT 322 to Swatara Creek Rd**	11.5'	9' LT | 8' RT	14828	9	RT 322 to Swatara Creek Road - 35 Swatara Creek Road to Swatara Creek - 40	Minor Arterial	Intermittent including adjacent trail	None
4	**Waltonville Rd (SR 2005)**	**RT 322 to Roundtop Rd**	RT 322 to Randall - 10' Randall to Landvater - 10.5' and 21' Landvater to Roundtop - 10.5'	RT 322 to Randall - 5' Randall to Landvater - Varies One Side 0'-10' Landvater to Roundtop - Typically 0'-2'	RT 322 to Wood Rd - 5687 Wood Rd to Roush Rd - 2875 Roush Rd to Roundtop Rd - 1644	5	RT 322 to Deerfield Dr - 35 Deerfield Dr to Roundtop Rd - 40	Urban Collector	Between Quail Hollow and Spring Hill Dr Off Road Trail Adjacent to Waltonville Wood Road to Mid-Block Crossing	Possible Parking South of Randall
5	**RT 422**	**RT 322 to Orchard Rd**	11'-12' Lanes	9.5'	21,500	4	RT 322 to Mill Rd - 50 Mill Rd to Orchard - 35	Principal Arterial	Hillcrest Rd to Orchard Rd	Proposed Hillcrest to Orchard
6	**RT 422**	**Orchard Rd to Township Line**	Orchard to Linden Rd - 15' Linden Rd to Derry Twp. Line - 11'-12'	Orchard to E. Mansion Rd. - None E. Mansion Rd. to 1500' East - 3' 1500' East of E. Mansion Rd to E. Derry - 8' E. Derry to Derry Twp. Line - None	Orchard to Cocoa Ave - 21,539 Cocoa to E. Derry Rd - 15,312 E. Derry Rd to Derry Township Line - 24,807	4	Orchard to Homestead - 25 Homestead to Township Line - 35	Principal Arterial	Orchard Rd to E. Mansion Rd Wilson Ave to Derry Township line	Orchard Rd to L St Intermittent between L St and SR 743
7	**RT 322 (Governor Road)**	**RT 422 to Township Line**	11'	RT 322 to Centerview - 8' One Side Centerview to Cherry Dr - 8' Cherry Dr to SR 743 - None SR 743 to Derry Twp. Line - 8'	RT 422 to Fishburn Rd - 17,291 Fishburn Rd to 743 - 15,266 743 to Derry Twp. Line - 13,721	4	RT 422 to SR 743 - 35 743 to Homestead (40 WB & 35 EB) Homestead Rd to Meadow Lane (40 EB & 50 WB) Meadow Lane to Twp. Line - 50	Principal Arterial	Adjacent Trail Lucy Ave to Cherry Dr Sidewalk between Hockersville and Cocoa Ave	None
8	**SR 743 (Park Ave / Cocoa Ave)**	**Hersheypark Dr to Fishburn Rd**	11-12'	Hersheypark Dr to N. 3rd St - 3' Shoulder (One Side) No Shoulder South of N 3rd St	Hersheypark Dr to RT 422 - 11,192 RT 422 to RT 322 - 6,885 RT 322 to Fishburn - 7,991	4	Hersheypark Dr to RT 322 - 25 RT 322 to Fishburn Rd - 35	Minor Arterial	Sidewalk between E. Derry St to RT 322 (Except around Zoo) Trail from Rt 322 to Fishburn Rd	Valley Rd to Elm Ave
9	**Schoolhouse Rd (SR 2002)**	**Middletown Rd to Colebrook Rd**	11'	None	789	5	35	Rural Collector	None	None
10	**Roundtop Rd (SR 2005)**	**Colebrook Rd to Steinruck Rd / Sandhill Rd**	11'	Varies 0'-1'	Colebrook to Schoolhouse - 640 Schoolhouse to Steinruck/Sand Hill - 1,829	5	~750 feet N. of Schoolhouse (SB) to Colebrook - 35 Waltonville to ~750 feet N. of Schoolhouse (SB) - 40 Schoolhouse to State Game Lands Driveway (NB) - 35 State Game Lands Driveway to Sand Hill / Steinruck (NB) - 40	Colebrook to I-76 - Urban Collector I-76 to Schoolhouse - Rural Minor Collector Schoolhouse to Waltonville Road - Rural Major Collector	None	None
11	**Colebrook Rd (SR 341)**	**SR 230 to Roush Rd**	11'	2'	SR 230 to Roundtop - 2,113 Roundtop to Toll House - 1,462 Toll House to Schoolhouse - 2,642	6	SR 230 to Tollhouse Rd - 35 Tollhouse Rd to Roush Road - 45	West of Schoolhouse - Urban Collector East of Schoolhouse - Rural Major Collector	None	None
12	**Hersheypark Dr**	**Interchange to N. Lingle Ave**	12’	8’-10’	Interchange to Old W Chocolate - 23,807 Old W Chocolate to Laudermilch- 19,200 Laudermilch to N Lingle Ave – 8,284	8	Interchange to Pennsy Dwy - 35 Pennsy Dwy to Park Blvd – 50 Park Blvd to Lingle Ave - 45	Minor Arterial	None	None
13	**Bullfrog Valley Road**	**Roush Rd to Rt 322**	11’	Varies 1’ to 2.5’	RT 322 to Wood Rd – 8,600 Wood Rd. to Roush Rd - 5,100	2	35	Local	Adjacent trail	None

Figure 1. Study Area



The key corridors in the study area primarily run either east and west or north and south. The east/west arterials include Route 322, Route 422 and Hersheypark Drive. The north/south corridors include Middletown Road/Hanover Street, SR 743, Hockersville Road/Fishburn Road, and Waltonville Road/Quarry Road. These main corridors are highlighted on Figure 1 above. Additionally, the Village of Hershey and the Village of Swatara Station are highlighted in blue and green, respectively.

Influence of Navigation Apps and Real-Time Traffic Updates on Existing Road Network

Transportation agencies across the country are faced with new challenges in recent years as motorists have become more reliant on navigation apps, particularly those that provide real-time traffic conditions. In order to minimize travel time for the user, the navigation apps provide updated route selections in order to avoid congested areas or intersections. While this can be beneficial to the individual user and may reduce overall congestion, there are several negative consequences of this re-routing:

- Impacts in residential neighborhoods – Traffic is frequently routed onto residential streets through neighborhoods resulting in noise and safety concerns;
- Impacts on rural collector / local roads – Increased speeds and traffic volumes on rural collector or local roadways that were not designed to accommodate these increased daily traffic volumes, resulting in pavement deterioration and safety concerns;
- Impacts of re-routed truck traffic – Safety, pavement deterioration and noise concerns associated with truck traffic being diverted through residential streets and local roadways.

Transportation networks have been designed and constructed with the goal of keeping car and truck traffic on higher classification highways (i.e. arterials) for the majority of their travel route, only accessing collector roadway or local roads as they leave or approach their destination. However, the recent increased reliance on navigation apps has compromised this strategy and is significantly increasing motorist through traffic on collector and local roadways.

Specifically, within the Greater Hershey region, several roadways have seen an increase in traffic due to re-routing of traffic, which is exacerbated during Hershey events. It is ideal to keep event traffic on the freeway and arterial network to Hersheypark Drive:

- From the east, along Route 322/422 to Lingle Avenue onto Hersheypark Drive
- From the west, along Route 322 to Hersheypark Drive
- From southwest (eastbound PA 283) – along Middletown Road to Route 322 to Hersheypark Drive
- From southeast (westbound PA 283) – along Route 743 to Hersheypark Drive
- From the north – I-81 to Route 39 or Route 743 to Hersheypark Drive

Unfortunately, as there are frequently long delays along these arterial routes during events, the navigation apps are now re-routing traffic onto less-desirable routes (see Map 10).

Under current legislation, the only way to counteract the effect of the navigation apps is to either improve the preferred routes to make these routes faster; or add controls (such as truck restrictions, traffic calming and/or street closures) to the non-preferred routes to keep these routes slower. The navigation apps bring a new set of challenges for the transportation community to ensure efficient traffic flow along the arterial routes while preserving the safety and multi-modal accessibility along secondary routes and within residential neighborhoods. Many of the potential mitigation strategies in this study will improve travel time

on the preferred routes. However, these improvements alone will not solve all of the issues. Therefore, additional controls outside of the scope of the study will need to be considered for event traffic.

Existing Pedestrian and Bike Routes

The Greater Hershey region also has a significant amount of pedestrian and bicycle traffic that uses a combination of sidewalks, on-road bicycle facilities, and shared-use trails. The 13.5 mile Jonathan Eshenour Memorial Trail is a shared use path that connects neighborhoods, parks, and commercial areas throughout Derry Township. The trail provides significant bicycle and pedestrian connectivity to much of Derry Township south of Governor Road with potential to expand to more neighborhoods and commercial areas, particularly north of the Norfolk Southern railroad. Existing on-road bicycle facilities, such as bike lanes and shared lanes provided in Derry Township help expand the reach of the Jonathan Eshenour Memorial Trail where a separate path is not feasible. Shared lanes are delineated with shared lane markings, commonly referred to as sharrows.

Sidewalk encompasses much of Hummelstown and Derry Township, however, some particular areas have a noticeable lack of sidewalk. Sidewalk in Londonderry Township is sparse, as the area is more rural than the generally suburban areas of Hummelstown and Derry Township.

The existing shared use paths, on-road bicycle facilities, and sidewalks are depicted on Map 2.

Existing Public Transportation

Public transit is limited in the study area to a few bus routes, primarily serving in an east-west direction. Additionally, the existing Intermodal Center is a great resource, though underutilized. Capital Area Transit offers a bus route from Harrisburg through Hummelstown to Derry Township and back, operating from the early morning through the evening on weekdays to provide service for typical weekday commuters. Additionally, Lebanon Transit offers three (3) bus routes that travel through Derry Township. One of the routes is a commuter bus service to connect neighboring Lebanon County with downtown Harrisburg that only has one stop in the study area; the Hershey Medical Center. The Route 8 bus runs from Lebanon to the Hershey Medical Center, Hersheypark, and a few other stops in between from Monday to Saturday. The Route 16 bus route connects Lebanon with Hersheypark via N. Lingle Avenue and Hersheypark Drive, but only in the evenings from Monday to Saturday. The existing bus routes are shown on Map 9.

LAND USE ASSUMPTIONS

In order to develop future traffic projections for the study area, the growth and development of the study area was projected by determining future land uses. Parcels anticipated to be developed within 20 years were included in the future traffic projections. Land use assumptions were completed with input from each respective municipality. The list of projected developments is provided in Appendix B and Map 3 depicts the locations of the parcels projected to be developed. Parcels anticipated to be developed within 20 years were included in the future traffic projections.

The developments in the land use assumptions were given IDs (i.e. E-6, C-4, etc.) under the following naming convention: C for commercial developments, R for residential developments, MU for mixed-use developments, and E for developments with existing, submitted plans that have yet to be constructed at the start of this study. The existing developments are identified in Appendix B.

Derry Township anticipates significant growth in the future and has the most parcels with projected development of the three municipalities that cover residential, retail, office, warehousing, and other commercial land uses.

Londonderry Township officials have identified several parcels as candidates for development as residential, retail and warehousing uses and have been included in the study. To note, since the onset of the study, four parcels along Route 230 in Londonderry Township have been identified for potential warehouse development. Two of these parcels were anticipated and included in the traffic projections (Lytle Farms and School Heights Village), though two parcels were not anticipated at the onset of the study and therefore are not included (Saturday's Market and Vision Properties warehouses). Given the size and location of these two developments with proximity to the Greater Hershey region, the additional traffic from these two developments is not anticipated to alter the potential mitigation in the study area.

As most parcels in Hummelstown are already developed, minimal future development is anticipated in the Borough. A few parcels were identified to be developed or redeveloped within 20 years by Borough officials encompassing residential and commercial land uses for the purposes of this study.

The parcels that are projected to be developed within the next 20 years are depicted on Map 3 and summarized in Table 3 and Table 4 below:

Table 3. Residential Land Uses

Map ID	Type/Size	Municipality	Projected to be Built By
R-9	76 Apartments	Derry Township	2028
R-4	27 Single Family Dwelling Units	Derry Township	2038
R-3	16 Single Family Dwelling Units	Derry Township	2038
R-5	48 Single Family Dwelling Units	Derry Township	2038
R-2	48 Single Family Dwelling Units	Derry Township	2038
R-1	58 Single Family Dwelling Units	Derry Township	2038
R-10	54 Senior Housing Units	Derry Township	2028
R-15	30 Senior Housing Units	Derry Township	2028
R-16	12 Townhomes/Apartments	Derry Township	2028
R-12	200 Single Family Dwelling Units; 100 Townhomes/Apartments; 200 Senior Housing Units	Derry Township	2038
R-14	26 Single Family Dwelling Units	Derry Township	2038
MU-3	36 Single Family Dwelling Units;124 Townhomes/Apartments	Derry Township	37.8% in 2028 and 62.2% in 2038
MU-2	123 Single Family Dwelling Units; 614 Townhomes/Apartments; 88 Senior Housing Units; 100 Assisted Living Units	Derry Township	61.8% in 2028 and 38.2% in 2038
R-17	45 Apartments	Hummelstown Borough	2028
R-18	75 Single Family Homes	Hummelstown Borough	2028

Table 4. Non-Residential Land Uses

Map ID	Type/Size	Municipality	Projected to be Built By
E-12	Hersheypark Expansion	Derry Township	2028
E-15	75,000 SF Retail	Derry Township	2028
MU-1	20,000 SF Retail 5,400 SF Restaurant	Derry Township	2028
MU-5	75,000 SF Office Complex Renovations to provide increase from 1,100 to 1,500 employees	Derry Township	2028
C-9	76-Room Hotel	Derry Township	2038
C-10	120,000 SF Retail	Derry Township	50% in 2028 and 50% in 2038
C-5	10,000 SF Office Building; 90-Room Hotel; Two 5,000 SF Restaurants	Derry Township	2028
C-4	75,000 SF Retail; 90-Room Hotel	Derry Township	2038
C-6	75,000 SF Retail; 140-Room Hotel; Four 5,000 SF Restaurants	Derry Township	2028
C-3	400,000 SF Hospital Expansion; 90,000 SF University Expansion; 350,000 SF Research / Development Center; 140-Room Hotel	Derry Township	50% in 2028 and 50% in 2038
MU-3	157,500 SF Office Complex	Derry Township	37.8% in 2028 and 62.2% in 2038
MU-2	9,025 SF Quality Restaurant; 166,355 SF Retail; 48,410 SF Office Building; 150,000 SF Hospital; Two 12,500 SF Restaurants; 140-Room Hotel	Derry Township	61.8% in 2028 and 38.2% in 2038
C-1	Two 6,150 SF Restaurants	Derry Township	2028
C-2	300,000 SF Retail	Derry Township	50% in 2028 and 50% in 2038
C-7	1,500,000 SF High-Cube Warehousing	Londonderry Township	2028
C-8	550,000 SF Retail	Londonderry Township	2038
C-11	850,000 SF High-Cube Warehousing	Londonderry Township	2028
MU-6	34,000 SF Retail 85,000 SF Office 267 Single-Family Homes 304 Apartments 99 Townhomes 300 Condominiums 103 Senior Housing	Londonderry Township	30% in 2028 and 70% in 2038

	400-Unit Continuing Care Retirement Community		
Map ID	**Type/Size**	**Municipality**	**Projected to be Built By**
C-12	60-Unit Motel	Hummelstown Borough	2028
C-13	70-Seat Restaurant / Microbrew	Hummelstown Borough	2028
C-14	80-Seat Restaurant	Hummelstown Borough	2028
C-15	Expanded parking for additional 400 parking spaces	Derry Township	2028
C-16	Redevelopment of shopping center; Addition of right-in access from Route 322	Derry Township	2028

All developments labeled with an "E", those with existing, submitted plans that have yet to be constructed at the start of this study, are assumed to be completed by 2028. The rest of the developments were grouped in to 2028 and 2038 opening years per discussions with each municipality. The traffic from the developments that was anticipated to be completed by 2028 were included in the 2028 traffic analysis which determined the midterm improvements. Conversely, the rest of the development traffic is mitigated by the long term improvements as the developments were anticipated to be open by 2038.

Six of the larger developments are anticipated to be built in phases and thus the traffic volumes were proportionally divided into each design year using the percentages provided in Table 3 and Table 4 above.

Note that the Hershey Medical Center has an abundance of open space within its campus that could be developed. The existing campus contains approximately 2.6MSF of medical uses (hospital, offices, research center, etc.). The 20-year land use projections include approximately 950,000 square-feet of additional medical uses on the campus (parcels E-3 and C-3), in addition to related land use projections on surrounding parcels. This equates to approximately 35% increase in the building size of the hospital campus. Due to high-variability of healthcare industry and large availability of land, these projections may be critical to the roadway needs and the actual development patterns should be monitored.

The parcels and land uses identified were used to forecast future traffic conditions within the study area.

TRANSPORTATION NETWORK ASSESSMENT

Traffic Forecasting and Analysis

Based on discussions with each municipality, the study intersections and roadway segments were established and are depicted on Map 4. Table 5 and Table 6 below include list of all study intersections and study segments, respectively:

Table 5. Study Intersections

Intersection		AM Peak Hour	PM Peak Hour	Prior TMC *
Derry Township				
1	Middletown Road and Route 322 EB Off Ramp		X	X
2	Middletown Rd and Wood Rd		X	X
3	Middletown Road and Deer Run Drive / Stoverdale Road		X	X

Intersection		AM Peak Hour	PM Peak Hour	Prior TMC *
4	Middletown Road and Locust Lane / Kaylor Rd		X	X
5	Waltonville Road and Connector Road / Route 322 EB On-Ramp	X	X	X
6	Waltonville Rd and Wood Road		X	X
7	Bullfrog Valley Rd and Wood Road		X	X
8	Bullfrog Valley Road and Research Blvd / Life Lion Drive	X	X	X
9	Walton Avenue and E. Main St		X	
10	W. Hersheypark Dr and Walton Avenue / Mae St		X	
11	Hersheypark Drive and Park Blvd / Hershey Road	X	X	X
12	Hersheypark Drive and Park Avenue / Sand Beach Road	X	X	
13	Hersheypark Drive and Laudermilch Road		X	
14	Hersheypark Dr and N. Lingle Avenue		X	
15	Park Avenue and Derry Road		X	
16	Park Blvd and N Ridge Road		X	
17	W. Chocolate Avenue and University Dr		X	
18	W. Chocolate Avenue and Hockersville Road		X	
19	E. Chocolate Avenue and Homestead Rd	X	X	X
20	E. Chocolate Avenue and E. Derry Rd		X	
21	E. Chocolate Avenue and N. Lingle Avenue / S. Lingle Avenue		X	X
22	Hockersville Road and W Areba Avenue		X	
23	W. Governor Road and University Dr	X	X	X
24	W. Governor Road and Centerview Ln	X	X	X
25	W. Governor Road and Cherry Dr		X	X
26	W. Governor Rd and Fishburn Rd / Hockersville Rd	X	X	X
27	Sand Hill Rd and Cherry Dr		X	X
28	Fishburn Rd and Sand Hill Rd (Hope Drive Extension for future analysis)		X	X
29	W. Governor Road / E. Governor Road and Cocoa Avenue	X	X	X
30	E. Governor Road and Homestead Road	X	X	
31	Fishburn Road and Cocoa Avenue		X	
32	Fishburn Road and Church Rd		X	
Hummelstown Borough				
33	Main St & Hanover St		X	
34	Main St & Quarry Rd		X	

*Turning Movement Count available from prior study

Table 6. Study Segments

Londonderry Township		
1	Route 2002 (Schoolhouse Rd) from Middletown Rd to Colebrook Rd	PM Peak Hour
2	Route 2005 (Roundtop Rd) from Colebrook Rd to Steinruck Road)	PM Peak Hour
3	Route 341 (Colebrook Rd) from Route 230 to Roush Road	PM Peak Hour

Data Collection

Many of the study intersections have been studied in recent years, and thus some Turning Movement Counts (TMC) were readily available. These intersections have been labeled in

Table 5 above.

New TMCs were conducted at each study intersection during the PM peak period (4 PM - 6 PM) where previous data was not available. Additionally, TMCs were conducted and collected during the AM Peak period (7 AM to 9 AM) at the intersections denoted in

Table 5. All TMCs conducted and collected for this study are compiled in Appendix A.

For any TMCs that were conducted prior to 2018, traffic volumes to and from state routes were grown to account for the general growth of traffic not attributable to any particular development. The traffic projections included a background growth rate of 0.62% to account for growth outside of the study area. This factor was obtained from PennDOT for Dauphin County.

Due to the seasonal operation of Hersheypark, study intersections located in the immediate vicinity of the park have seasonal fluctuations in traffic volumes. Ideally, traffic counts would be conducted during the open season of Hersheypark to be sure park traffic during peak hours is accounted for, however, this was not achievable for every intersection. A few intersections were counted out of season and were adjusted to account for additional trips that typically enter and exit the park during the PM peak period. Traffic volumes during the AM peak period were not adjusted. Traffic counts at the intersection of Hersheypark Drive and the Park Ext/Hotel Road and the intersections of Hersheypark Drive & Park Boulevard / Hershey Road were used to determine the amount of traffic that enters and exits the park during the typical PM peak hour. These trips were then distributed along Hersheypark Drive, Park Boulevard, and Park Ave using the existing distributions. The following intersections were not counted during the park's open season and thus were adjusted:

- Intersection 10. W. Hersheypark Dr and Walton Ave / Mae St
- Intersection 12. Hersheypark Drive and Park Avenue / Sand Beach Road
- Intersection 13. Hersheypark Drive and Laudermilch Road
- Intersection 14. Hersheypark Dr and N. Lingle Ave
- Intersection 15. Park Avenue and Derry Road
- Intersection 16. Park Blvd and N Ridge Road

Analysis of Current Traffic Conditions

The AM and PM peak hours were analyzed at the study area intersections to determine their capacity under existing traffic volume conditions to determine if any of the existing intersections are deficient. The capacities of each intersection in the study area were analyzed using the procedures outlined in the 6th Edition of the *Highway Capacity Manual* as applied by the Synchro software.

The *Highway Capacity Manual (HCM)* defines the Level of Service (LOS) as a function of the delay encountered by motorists, which is a measure of driver discomfort, frustration, fuel consumption, and lost travel time. LOS is a designated letter grade that corresponds to a given average control delay per vehicle. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. Unsignalized intersections are analyzed using unsignalized intersection capacity analyses. The LOS of an unsignalized intersection is determined by each vehicle's delay.

For signalized intersections, the LOS measures the average control delay time per vehicle. Also, the volume to capacity ratio, which is a ratio of the peak hour traffic volumes for a facility to the theoretical maximum traffic volume the facility can handle, also relates to the LOS of a facility.

All ten (10) of the intersections that were analyzed for the AM peak period were found to operate at acceptable levels of service under existing conditions. Two (2) of the existing intersections analyzed during the PM peak period were determined to operate at unacceptable levels of service under existing conditions:

2. Middletown Road & Wood Road
10. Hersheypark Drive & Walton Avenue / Mae St

Improvements at these two intersections should be prioritized to address these existing deficiencies.

Traffic Forecasting

Traffic volumes were forecasted to 2028 (midterm) and 2038 (long term) by both growing the existing traffic volumes and adding traffic caused by projected developments in the study area. Traffic volumes to and from State Routes were grown by PennDOT's growth rate to account for the general growth of traffic not attributable to any particular development. The PennDOT traffic growth rate for Dauphin County that was used is 0.62% for exponential growth. Existing traffic volumes to/from township roads or private developments were not grown as any additional trips within the study area will be accounted for in future development trips.

Future traffic volumes from new developments in the study area were accounted for using a three step traffic model: Trip Generation, Trip Distribution, and Trip Assignment.

Generation

To forecast the increase in traffic due to the future developments, HRG calculated trip generation using the Institute of Transportation Engineers' (ITE) *Trip Generation Manual*, 10th Edition for the parcels indicated in the Land Use Assumptions section of this report. For proposed future developments that already have a Traffic Impact Studies, the trip generation for the development was taken directly from the study.

Primary trips and pass-by trips both were calculated for developments as applicable. A primary trip is defined as a trip from an origin, to a destination, and back to the origin. Pass-by trips are defined as trips made by users that make a trip to the development while en route to their destination. Thus, pass-by trips do not add to the overall traffic in the study area, but merely redirect a portion of the existing traffic volume into development driveways. Pass-by trip reductions were applied to future developments if pass-by rates were provided in the ITE's *Trip Generation Handbook*, 3rd Edition. Pass-by trips are typical for restaurants, coffee shops, banks, etc. Land uses that do not have pass-by trips include residential land uses, office buildings, warehouse, etc.

Distribution and Assignment

Traffic volumes from the proposed future developments were distributed throughout the roadway network using a model based on the existing traffic volumes. Traffic volumes were distributed through intersections such that the proposed development volumes would have the same directional distribution as the existing turning movement's proportions at the intersections to determine all possible paths from the development to the rest of the study area. The model was developed in the programming language Python.

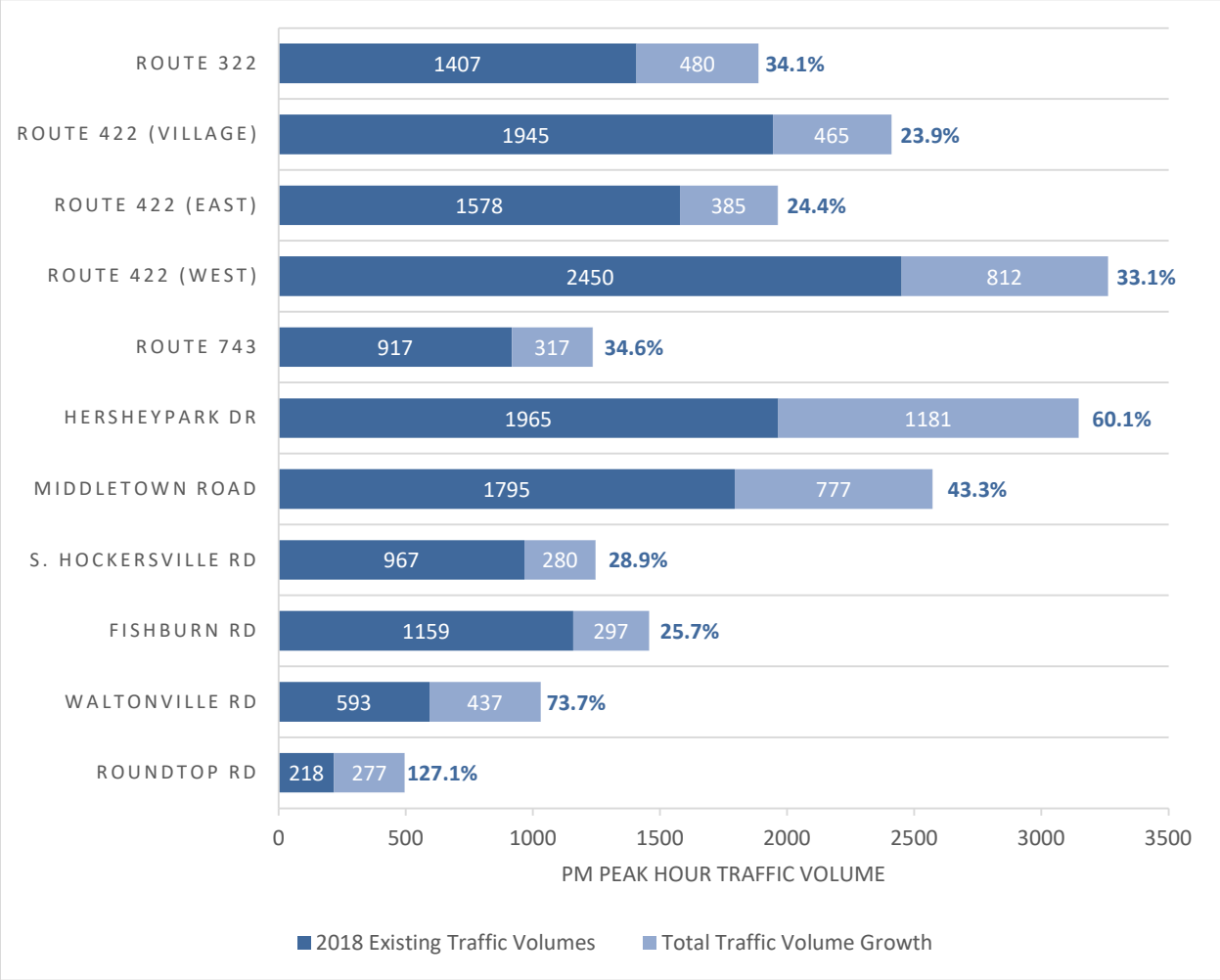
For example, if ten (10) vehicles from a particular development were heading northbound toward an intersection, the existing directional distribution between the northbound left, northbound through, and northbound right turns was first calculated. If that distribution ended up being 20% left turning vehicles, 70% through vehicles, and 10% right turning vehicles, then resulting traffic volumes would be two (2) left turning vehicles, seven (7) through vehicles, and one (1) right turning vehicles. Then the traffic volumes would be carried on to the next intersection in the network and would again be distributed in the same fashion based on the directional distribution of the intersection approach. This would continue until either the path reached an end point, the path left the study area, or the distribution percentage hit 0.1% of the trip generation of the development. Thus, all reasonable traffic paths to and from a development were determined through the model. Paths that have a higher percentage of existing traffic are anticipated to have more development traffic.

The roadway network was setup graphically in Synchro Version 10 and processed by the model that was developed. The roadway network used for the model included all arterials and collector roadways in the study area, as well as some of the key local roads and proposed roadways. Local roads within residential neighborhoods were not included in the roadway network for the model, however, roadway links to large residential areas and other large existing traffic generators were added to the model. This would draw some of the development traffic to existing land uses in the study area to simulate trips to a commercial development that would originate in an existing residential area.

The traffic modelling process was iterative as corrections were made to the model to ensure logical traffic routing, properly model cut through traffic, and confirmed that resulting traffic distributions matched engineering judgement.

The resulting trip assignment to the study intersections is summarized in Appendix F. The increase in traffic due to the anticipated developments on key corridors is shown in Figure 2 below:

Figure 2. Impact of Anticipated Development on Key Corridors



Most development is anticipated to use Hersheypark Drive and Middletown Road, while Route 422 (Chocolate Avenue) has only a relatively minor increase in projected traffic. Note that these traffic volumes depict projected PM Peak traffic volumes only and other peak periods, particularly for event traffic, may vary.

2028 and 2038 Projected Traffic Volumes

The traffic volumes for 2028 & 2038 included growth of the 2018 existing traffic volumes as described above and the projected development volumes (from the traffic model above) that are anticipated to be constructed and operational by 2028 and 2038, respectively, based on the land use assumptions.

The anticipated development opening years are listed in Table 3 and Table 4 in the Land Use Assumptions section of this report.

Since new road segments are proposed to increase the connectivity, some existing traffic volumes were diverted onto the new road segment to bypass the existing roads. The traffic volumes summarized above include adjustments to compensate for changes to the roadway network:

- Traffic was adjusted at the intersection of Wood Road and Waltonville Road to divert traffic from Wood Road onto the new connector.

- Traffic volumes were diverted from Route 422 (through downtown Hershey) to N. Lingle Avenue and Hersheypark Drive. For the purposes of this study, the through traffic assumed to be diverted is 20% of the through movements at the intersection of Route 422 & Lingle Avenue. This traffic volume was removed from the through movements along Route 422 and rerouted through Hersheypark Drive.

The total traffic volumes for the 2028 and 2038 analysis years can be found in Appendix F.

Future Roadway Network

- Through this comprehensive planning study, new roadway connections have been proposed as either strategic improvements to mitigate traffic concerns or as safety improvements. The strategic improvements that were incorporated into the traffic model are as follows: Per their Official Map, Derry Township envisions a new Connector Road parallel to Wood Road from the intersection of Middletown Road and Gramercy Place (southern intersection) to Waltonville Road to the east. The intersection of Middletown Road and Wood Road would be modified to right-in/right-out access only due to intersection constraints. This new roadway would provide access to Middletown Road from the east at a suitable location with the expectation that the new intersection of Middletown Road & Gramercy Place/Connector Road would be signalized. This would also alleviate some of the cut through traffic from motorists using the Sheetz development's access road to use the signal at the Stoverdale intersection.
- The Hope Drive Extension is proposed to provide direct access between the Hershey Medical Center entrance on Cherry Drive and Fishburn Road. As such, Sand Hill Road would terminate at either Hope Drive Extension or in a cul-de-sac.
- Northeast Drive connector road to connect Northeast Drive directly to E. Derry Road. Several alternative locations have been reviewed, but the prevailing location is from Derry Rd & N St intersection through the development approximately 775' feet east of Park Avenue on Northeast Drive.
- Designate Hersheypark Drive as Route 422 and reconfigure the interchange to make Hersheypark Drive the through movement from Route 322 to redirect through traffic away from downtown Hershey and the Village. The reconfigured interchange should also provide multimodal connectivity between Route 422 and Hersheypark Drive, through either off-road facilities or a signalized crossing at Route 422/Sipe Avenue/Mae St or Route 422/Lucy Avenue. More information on the Redesignation of Route 422 is provided in the following section of the report.

To improve the safety of roadways for vehicles, pedestrian, and bicycles the following potential improvements should be considered:

- Realigning N. Hockersville Road to remove the S-curve near the old sewage treatment plant south of Hersheypark Drive. This would provide a better road that meets design criteria to create a more function north-south link, particularly with the possible roundabout at the intersection of Route 422 and Old West Chocolate.
- Reconfigure the intersection of Java Avenue, Areba Avenue, & Homestead Road such that Java Ave is not used to access Homestead Road. This can be accomplished by extending Caracas Avenue to intersect with Homestead Road. Two alternatives are proposed to improve Java Avenue:
    - Make Java Avenue one-way with traffic flowing toward Caracas Avenue.

- Remove Java Avenue and replace with green space, multi-use trail and add parking along Homestead Road.

The proposed connector roads and realignments are sketched in the Appendix N. For additional context of the location of the proposed roadways within the roadway network, the proposed roadways are depicted on Map 6 with dashed red lines.

These new roadways modify existing intersections and add new intersections. The following existing intersections were modified:

Intersection 5: Waltonville Road & Route 322 On Ramps / Service Road - With the Service Road relocation and the elimination of left turns onto the Route 322 On Ramp proposed as part of the Hershey West End project, the intersection would not have any conflicting movements. Thus, under this operation, a capacity analysis is not applicable.

Intersection 28: Fishburn Road & Sand Hill Road – Since Sand Hill Road is proposed to terminate at the proposed Hope Drive Extension, Sand Hill Road will not intersect with Fishburn Road. Thus, for the analysis years of 2028 and 2038, intersection 28 is the intersection of Fishburn Road and Hope Drive Extension.

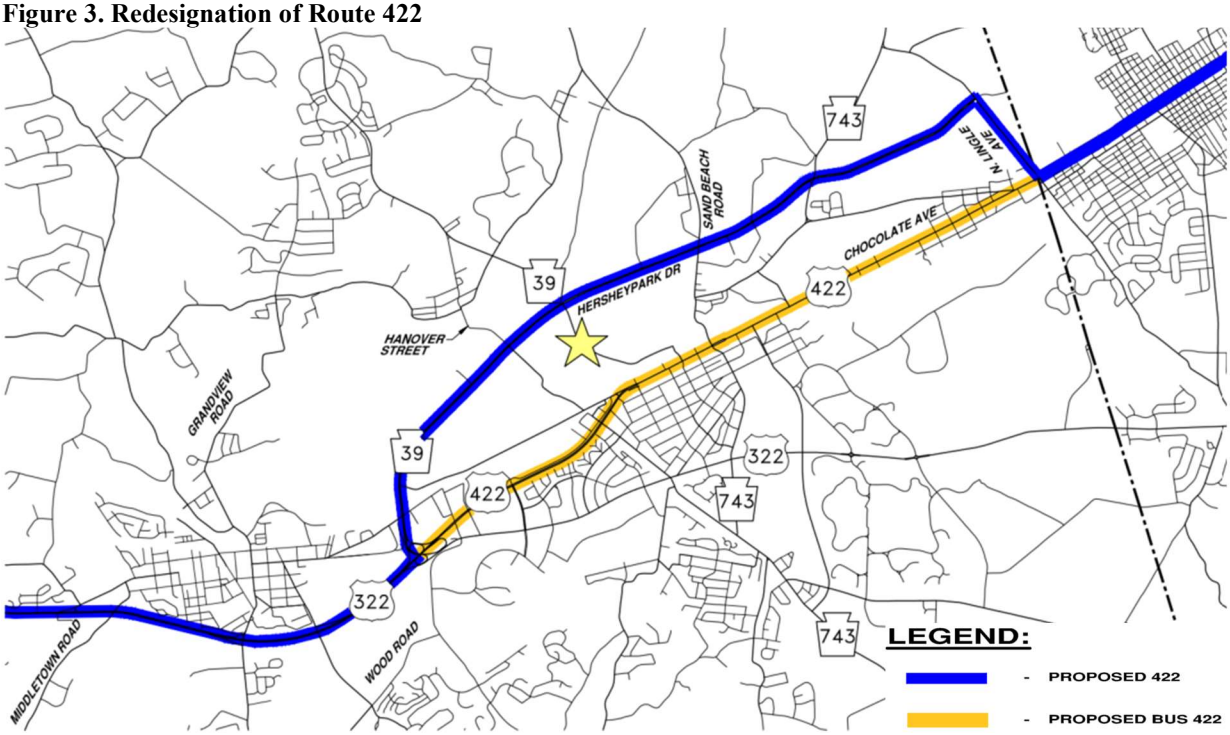
The following proposed intersections were included in the capacity analysis for the 2028 and 2038 analysis years:

Intersection 35: Waltonville Road and Connector Road / Hershey West End Driveway
Intersection 36: Route 2003 (Middletown Rd) & Proposed Connector
Intersection 37: Hope Drive & Cherry Drive

Redesignation of Route 422

In conjunction with the proposed interchange improvement to help divert through traffic around the downtown area, Hersheypark Drive could be redesignated as Route 422, while the existing Route 422 through the downtown area would be redesignated as Business 422.

Figure 3. Redesignation of Route 422



Currently, Hersheypark Drive is designated as four different route numbers along its length from the existing interchange to N. Lingle Ave; Route 39, Route 2016, Route 743, and Route 2036. The proposed redesignation of Hersheypark Drive would clean up the state route numbers by designating the entire length as Route 422, highlighted in blue in Figure 3. The name Hersheypark Drive will remain as the name for the roadway. Additionally, this portion of Lingle Avenue is a Township road; coordination with PennDOT would be required to either transfer ownership or use the Township as part of the designated US route. This change would affect traffic patterns at the intersection of N. Lingle Avenue and Route 422, which is just at the edge of the study area. Prior to pursuing this redesignation, coordination will be needed with Lebanon County and the adjacent municipalities.

Analysis of Future Traffic Conditions

Once traffic volumes for the 2028 and 2038 analysis years was established, intersection capacity and segment capacity analyses were completed for the study intersections and segments. The intersection capacity analysis was completed using the procedures outlined in the 6th Edition of the *Highway Capacity Manual* as applied by Synchro. A description of Level of Service (LOS) is provided in the Section on Analysis of Current Traffic Conditions

The LOS at each intersection was examined to determine if there were any deficiencies in the 2028 or 2038 analysis years. Based on discussions with the municipalities and the stakeholder and steering committees, acceptable levels of service were established for the study area. If an intersection does not meet the following criteria, the intersection for study purposed is deemed deficient:

- An overall LOS C is to be maintained for Middletown Road, Hersheypark Drive, Main Street, Waltonville Road, and the intersections around the Hershey Medical Center on Bullfrog Valley Road, Route 322, Fishburn Road, and Sandhill Road.

- Approaches to intersections must be not be failing (LOS F or a volume to capacity (V/C) ratio greater than 1).
- Otherwise an overall LOS D is to be maintained.

The following intersections are projected to be deficient by 2028:

Intersection 1: Route 2003 (Middletown Road) & Route 322 EB Off Ramp/Service Road
Intersection 2: Route 2003 (Middletown Road) & Wood Road
Intersection 7: Bullfrog Valley Road & Wood Road
Intersection 8: Bullfrog Valley Road & Research Boulevard / Life Lion Drive
Intersection 10: Route 39 (W Hersheypark Drive) & Walton Avenue/Mae Street
Intersection 11: Route 39 (W Hersheypark Drive)/W Hersheypark Drive & Route 39 (Hershey Road)/Park Boulevard
Intersection 12: Hersheypark Drive & Park Avenue/Sand Beach Road
Intersection 15: Park Avenue & E. Derry Road
Intersection 17: Route 422 (W. Chocolate Avenue) & University Avenue
Intersection 19: Route 422 (E. Chocolate Avenue) & Homestead Road
Intersection 22: Hockersville Road and W Areba Avenue
Intersection 23: Route 322 (W Governor Road) & University Drive
Intersection 24: Route 322 (W Governor Road) & Centerview Drive
Intersection 25: Route 322 (W Governor Road) & Cherry Drive
Intersection 26: Route 322 (W Governor Road) & Fishburn Rd/Hockersville Road
Intersection 29: Route 322 (W Governor Road /E Governor Road) & Route 743 (Cocoa Avenue)
Intersection 30: Route 322 (E Governor Road) & Homestead Road
Intersection 34: Main Street & Quarry Road

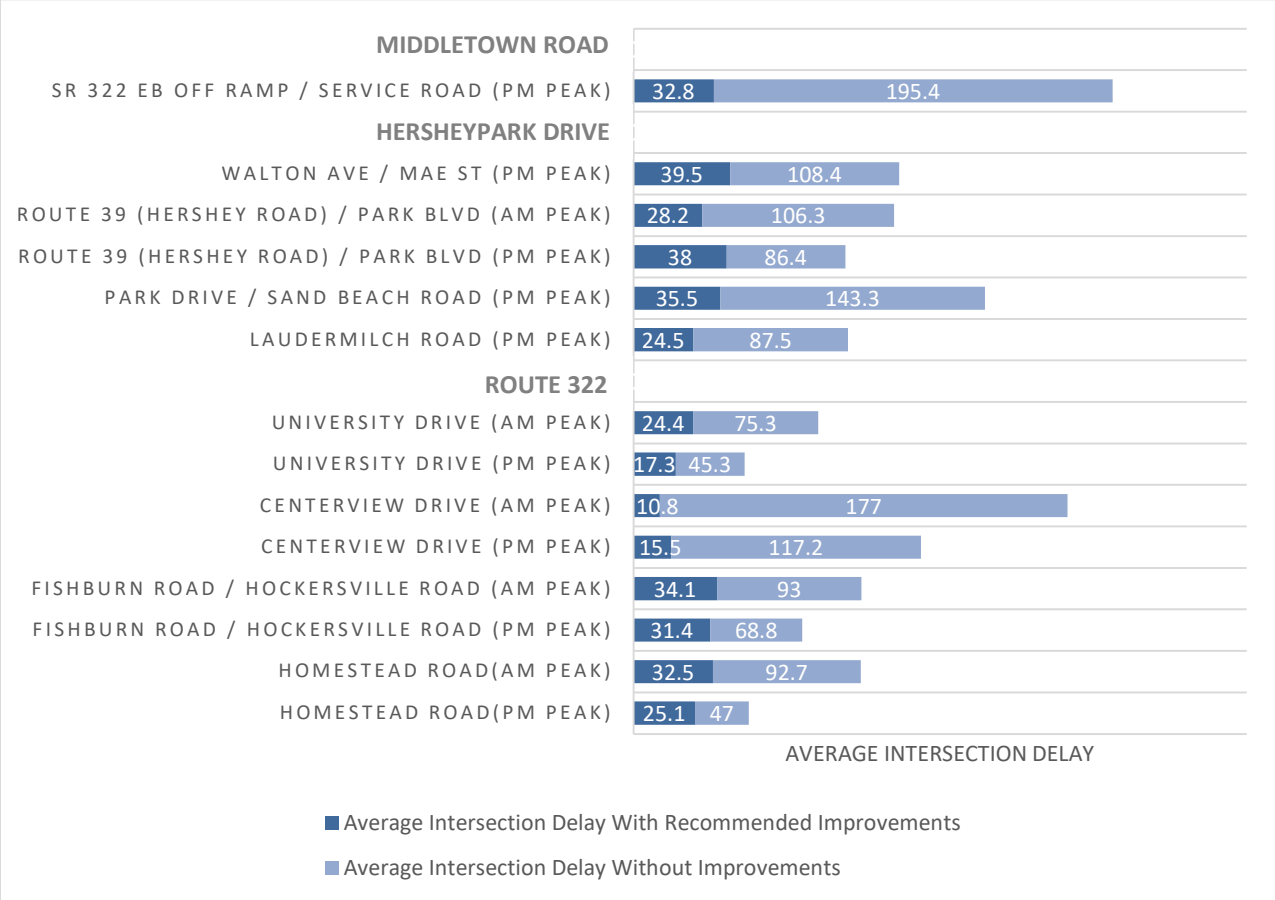
The following intersections are projected to be deficient by 2038:

Intersection 11: Route 39 (W Hersheypark Drive)/W Hersheypark Drive & Route 39 (Hershey Road)/Park Boulevard
Intersection 12: Hersheypark Drive & Park Avenue/Sand Beach Road
Intersection 13: E Hersheypark Drive & Laudermilch Road
Intersection 23: Route 322 (W Governor Road) & University Drive
Intersection 24: Route 322 (W Governor Road) & Centerview Drive
Intersection 26: Route 322 (W Governor Road) & Fishburn Rd/Hockersville Rd
Intersection 31: Route 743 (Fishburn Road) & Cocoa Avenue
Intersection 33: Main Street & Hanover Street

The capacity analysis for the 2028 AM, 2028 PM, 2038 AM, and 2038 PM scenarios can be found in Appendix G, Appendix H, Appendix I, and Appendix J, respectively.

An abbreviated summary of the overall intersection delay at key intersections from the capacity analysis the 2038 Future Traffic Volumes scenarios, both with and without the proposed mitigation, is summarized in Figure 4 below:

Figure 4. Impact of Mitigation at Key Intersections



Many study intersections are projected to see excessive delays as the Greater Hershey Area continues to develop. Mitigation measures such as constructing turn lanes, widening for additional through lanes, and signal modifications, to name a few, are required to reduce they excessive delay at these intersections to maintain sufficient traffic flow throughout the study area. The potential mitigation for the deficiencies at each intersection are described in the Conclusions and Potential Mitigation section of this report.

A table summary of results of the capacity analysis depicting the overall delay and LOS of each study intersection is provided in Appendix L. The analysis year the study intersections and segments are anticipated to be deficient is identified in Map 5.

All three of the Londonderry Township roadway segments are projected to have a LOS A for both the 2028 and 2038 projected traffic volumes. The segment analysis is provided in Appendix K.

Bicycle and Pedestrian Transportation Assessment

While motor vehicles account for most trips in the region, there is significant bicycle and pedestrian usage that must be considered to properly address the transportation needs of the area. Vehicles, bicycles, pedestrians, and mass transit were assessed to provide a comprehensive analysis for the region. Input from constituents was considered and evaluated for feasibility and applicability based on observed field conditions and traffic engineering standards. Sources of input include the Derry Township Bike and Pedestrian Alliance Survey, municipal input, stakeholder feedback, and Lebanon Valley Bicycle Coalition

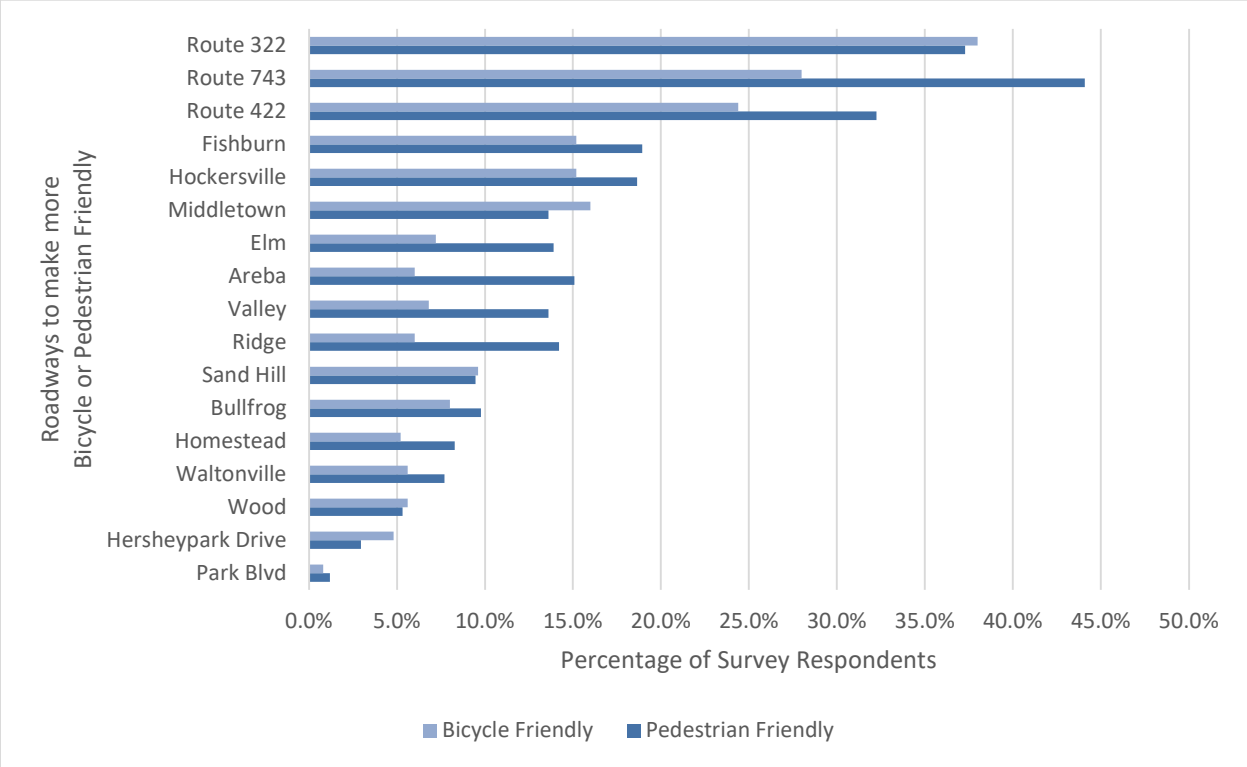
input. Additionally, the existing sidewalk and bicycle facility networks were reviewed and field observations were conducted to determine locations where facilities could be proposed to increase connectivity. While bicyclists and pedestrians were included in the intersection TMCs, no separate pedestrian or bicycle counts were completed for pedestrian and bicycle facilities, such as shared use paths.

Derry Township Bike and Pedestrian Alliance Survey

The Derry Township Bike and Pedestrian Alliance conducted a survey to help determine the bike and pedestrian needs of the region through community input The survey had been advertised on the Derry Township webpage, Derry Township's Facebook page, and circulated through bike-pedestrian advocacy groups generally. A total of 452 people participated in the survey.

Through the responses in the study, specific roads were mentioned more than others, indicating the desirability to make certain roads more pedestrian or bicycle friendly. Figure 5 below depicts the percentage of survey respondents that mentioned they want to see more pedestrian or bicycle facilities on a particular roadway.

Figure 5. Corridors to Improve Bicycle and Pedestrian Facilities



The three (3) roads that were mentioned the most to make more pedestrian friendly and more bicycle friendly include Route 743, Route 322, and Route 422. A total of 338 people answered the question about pedestrian facilities and 250 people answered the question about bicycle facilities. Aside from the key corridors already highlighted in this study, other roads that participants would like to be more pedestrian and bicycle friendly include: Elm Avenue, Ridge Road, and Valley Road. The results of the study are provided in Appendix P.

Some specific areas of concern that were discussed in the survey include:

1. Route 322/422/Hersheypark Drive interchange lacks pedestrian and bicycle facilities. This either creates a barrier for cyclists and pedestrians or the underpass is used despite the lack of safety.
2. There is a lack of sidewalk and bike lanes on Park Boulevard to help pedestrians and cyclists entering Hersheypark from Hersheypark Drive. Often for events at the Hersheypark Stadium and Star Pavilion, people will park in the fields on the north side of Hersheypark Drive and walk the rest of the way to the Giant Center. There are pedestrian crossings at the intersection of Hersheypark Drive and Park Boulevard, but the crossings don't lead to a pedestrian facility on Park Boulevard or Hersheypark Drive.
3. Route 39 bridge into South Hanover Township has narrow shoulders that are not suitable for cyclists or pedestrians.
4. Pedestrians and cyclists do not have a safe route between the Village and N. Hockersville Road to get to Hersheypark Drive.
    a. The intersection of Route 422 & Old West Chocolate does not have pedestrian crossings.
    b. The underpass of the railroad on Old West Chocolate Avenue is too narrow to safely allow pedestrians.
5. A lack of safe pedestrian crossings across Route 422. One specific area where additional safety enhancements may be appropriate is Valley Road.
6. The existing trail along Cocoa Avenue does not provide a connection to cross Cocoa Avenue to access the Giant Shopping Center.
7. Better identified crosswalks across Elm Avenue and speed control along Elm Avenue.
8. At the intersection of Fishburn Road & Hartley Road, survey participants found it difficult to cross Fishburn Road for pedestrians and cyclists. The crossing is marked and provides access to the residential neighborhood from the Jonathan Eshenour Memorial Trail.

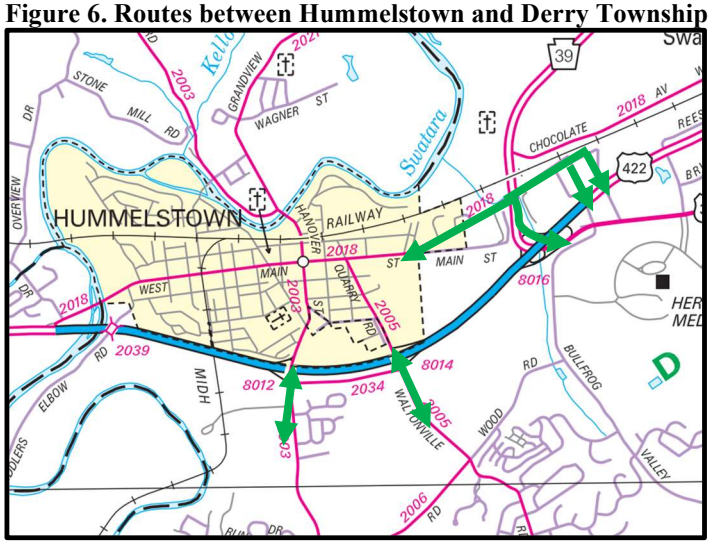
The results of the survey are provided in Appendix P.

Other Areas of Concern for Pedestrians and Bicyclists

The sidewalk and bicycle facilities were reviewed in the region to determine if improvements could be made to increase connectivity. Pedestrian and bicycle routes between the municipalities, between residential areas, and between residential and commercial developments have been examined to find areas of potential improvements.

Pedestrian and bicycle routes between Hummelstown and Derry Township are already limited to two (2) overpasses over Route 322 (Hanover St / Middletown Road and Quarry Road / Waltonville Road) and crossing at the Hersheypark Drive and Walton Avenue / Mae Street intersection. These routes are highlighted in green on Figure 6 below:

Figure 6. Routes between Hummelstown and Derry Township



Between downtown Hummelstown and Hersheypark Drive, there are gaps in the sidewalk which present a problem as pedestrians have to walk on the shoulder to get to and from destinations. Route 422 presents a problem as well as there are concrete islands blocking both vehicles and pedestrians from crossing Route 422 at Lucy Avenue and Sipe Avenue.

Additionally, there are gaps in sidewalks on Hanover Street and Waltonville Road. The bridge over Route 322 does have sidewalk on the western side of the road, but sidewalk has yet to be constructed to the north and south to connect developed areas. With more development anticipated adjacent to Waltonville Road, more pedestrian trips would be anticipated supporting proper access.

Across from Valley Road there is an existing shared use path that connects to the Hershey High School campus. This path suddenly terminates prior to the intersection of Route 743 and Valley Road because of a stream that runs parallel to Route 743. The gap in the path is shown in

Figure 7 below. The path should be extended over the stream to the intersection, the path would provide a good pedestrian and bicycle connection between the Village and the Hershey High School campus.

Figure 7. Valley Road to Derry High School Connection

Another issue for pedestrians are the crosswalks across Hersheypark Drive during events at Hersheypark Stadium and Star Pavilion. Currently, a significant amount of event traffic parks on the north side of Hersheypark Drive in the old airfield on either side of Hotel Road and walk across the road to enter the park. Derry Township Police Department stops traffic at the intersection of Hersheypark Drive and Hotel Road / Park Exit completely to make the crossing safer. Vehicular traffic may be stopped for up to 45 minutes to allow pedestrians to cross. At the time of this study Hersheypark is working with the engineering firm HDR to evaluate possible improvements.

Most signalized intersections throughout the study area have normal pedestrian intervals that start when the green interval for the adjacent through lane begins. While this is fairly typical, leading pedestrian intervals should be evaluated as signal timings are updated throughout the study area, particularly in high pedestrian areas. A leading pedestrian interval starts the walk interval before the vehicular traffic so a pedestrian has

time to get into the intersection before the vehicle, making the movement safer, but will negatively impact intersection capacity as the clearance times for vehicular movements would be extended.

Additional Considerations for the Potential Bicycle and Pedestrian Improvements

As bicycle use increases across the United States broadly, new strategies emerge to enhance cyclists' useability and safety of roads. Features such as bike boxes allow cyclists to ride in the bike lane to the front of separated turn lanes without having to ride in the vehicular lane. When bike lanes are installed along corridors in the study area, the installation of bike boxes should be evaluated for feasibility, particularly along multilane roads. At the time of this study, bike boxes are under Interim Approval from the Federal Highway Administration (FHWA) and the latest Interim Approvals should be checked prior to implementation in the study area.

Protected bike lanes are another measure to enhance cyclist safety by putting a buffer between the motor vehicle lanes and the bike lane. Since protected bike lanes require a wider roadway footprint, protected bike lanes could be given a trial run where the roadway is sufficiently wide, such as Cocoa Avenue. If supported and utilized, a more widespread adoption throughout the study area could be considered.

While the focus of this study is within Dauphin County, connections into Lebanon County should be evaluated with neighboring municipalities in Lebanon County. One such example is a potential connection between Crest Lane in Derry Township with S. Lingle Avenue in Palmyra Borough and South Londonderry Township. Crest Lane is a dead end privately-owned street that ends near the Derry Township line. This could be extended as a bicycle path through either Palmyra Borough or South Londonderry Township, depending on the proposed alignment of the trail. Thus, coordination between municipalities and with the roadway owner would be required.

The bicycle and pedestrian improvements are summarized in the Conclusions and Potential Improvements for Mitigation section of the report.

Public Transportation

Public transit can reduce the impact that passenger vehicles have on the existing roadway network and provide a greener transportation option to residents of the region. There is currently one Capital Area Transit (CAT) bus line that provides service in Derry Township and Hummelstown. Additionally, the existing Intermodal Center is a great resource that is underutilized. Younger generations are typically more enthusiastic about public transportation and would more likely take advantage of options if present. As the region continues to grow and demographics change, public opinion should be monitored to determine if additional mass transit would be successfully utilized by the public. Considering the land uses and demographics in the Greater Hershey region, improved public transportation options should be evaluated. Due to the evolving landscape of transit service and demands, transit agencies should monitor needs in the Greater Hershey region on an ongoing basis and identify opportunities for improvement.

FUNDING

Funding strategies will be critical to the successful implementation of the identified improvements. This will require collaboration between the three (3) municipalities, Dauphin County, Tri-County Regional Planning Commission, PennDOT, and the developer community. The funding strategies should include the following potential Funding Programs:

- Federal Funding
  - TIP Funding
  - HATS RTP Implementation
  - Other future grant programs (i.e., TIGER Grant successor)
- State Funding
  - Transportation Alternatives (TA) Set-Aside Program – For shared use paths, sidewalks, and bicycle facilities
  - DCNR Trail Grants – For shared use paths, sidewalks, and bicycle facilities
  - Greenways, Trail & Recreation Program (GTRP) – For recreational trails
  - Green Light Go – For traffic signal enhancements and improved coordination
  - Automated Red Light Enforcement (ARLE) Grant – Low cost improvements at signalized intersections
  - PennDOT Multimodal Transportation Fund – See below information
  - Commonwealth Financing Authority (CFA) Multimodal Transportation Fund – See below information
  - Redevelopment Assistance Capital Program – See below information
- County Funding
  - Dauphin County Infrastructure Bank
  - Local Share Gaming Grants
- Other Funding
  - New land development may trigger the need for roadway improvements to mitigate site traffic as determined by a Transportation Impact Study. Typically, these improvements would be the responsibility of the developer.
  - Greater Hershey region stakeholders collaborate to identify supplemental funding sources.

FEDERAL FUNDING PROGRAMS

Federal Funding for Transportation Projects

Harrisburg Area Transportation Study (HATS) was created as a result of the Federal-Aid Highway Act of 1962, which mandated regional planning as a condition of receiving federal funds for transportation projects. To this day, the planning must be supported through a continuing, comprehensive, coordinated (3C) process.

HATS is a designated Metropolitan Planning Organization (MPO), an organization of federal, state and local agencies, as well as officials from Cumberland, Dauphin and Perry Counties, the City of Harrisburg

and Capital Area Transit, all of whom are accountable for the 3C process. Tri-County Regional Planning Commission (TCRPC) serves as the lead staff agency for the Harrisburg Area Transportation Study.

In this role, HATS develops a Regional Transportation Plan (RTP), which documents the current status of transportation projects and programs, identifies long-term needs and recommends projects to meet those needs. The long-range RTP sets a framework and priorities for the expenditure of federal transportation funds over a 25-year period.

The RTP is updated by HATS staff through identification of specific need via submission of a HATS Transportation Need Form. Once a Need Form is received, HATS staff discusses the issue with both the sponsor and the municipality to gather additional information and determine possible funding options. The municipality's presence is essential in these discussions since most federal funding sources require a local match.

The Transportation Improvement Program (TIP) is a comprehensive listing of all federal and state-funded transportation improvement projects in the HATS area over the next four years. HATS develops and updates the TIP every two years with projects derived from the RTP.

Total Funds Available for Award:
- Undetermined (2019-2022 $59 million Dauphin County)

Eligible Applicants:
- Transportation Agencies and Municipalities

Eligible Uses:
- Surface Transportation Infrastructure

HATS RTP Implementation Program

Grant Amount:
- Local match of 20% of total project cost

Eligible Applicants:
- Municipalities within HATS region
- Transportation Service Provider within HATS region

Total Funds Available for Award:
$1,000,000 Federal Funds per year for Dauphin County

Eligible Uses:
- Feasibility or planning studies
- Non-motorized trail expansion or enhancements
- Improved transit
- Streetscape projects with traffic calming
- Improved roadway connections
- Redevelopment of existing streets into neighborhood streets
- Improvements to non-motorized mobility
- Low-cost safety or congestion improvements
- Roundabouts
- Safety Improvements

STATE FUNDING PROGRAMS

Transportation Alternatives (TA) Set-Aside Program

Funding Amount:

- $50,000 to $1,000,000
- Applicant pays 100% of pre-construction costs
- Projects are funded at 100% of construction cost (including construction inspection)

Eligible Applicants:

- Municipalities and transportation authorities
- Transit agencies
- School district
- Natural resource or public land agency
- Non-profit organizations that oversee the administration of local transportation safety programs

Eligible Uses:

- On-road and off-road sidewalk or trail facilities
- Traffic calming, lighting, other safety-related improvements
- ADA compliance

Total Funds Available for Award:

- $850 million nationwide

DCNR Trail Grants

Grant Amount:

- Total project cost; varies depending on project type and funding source
- Local match required; varies depending on project type and funding source

Eligible Applicants:

- Municipalities
- Non-Profit Organizations
- For-Profit Organizations

Eligible Uses:

For the development of recreational trails to close priority trail gaps or rehabilitate/upgrade existing trails for use by the public:

- Land Acquisition
- Planning
- Construction, rehabilitation, maintenance
- Development and operation of trail educational programs

Application Deadline:

- Pre-application Conference required
- April 22, 2020 / Spring of each year

Planned Award Announcement Date:

- Fall of each year

Commonwealth Financing Authority – Greenways, Trails and Recreation Program (GTRP)

Grant Amount:

- Up to $250,000
- Need 15% match of the total project cost

Eligible Applicants:

- Municipalities
- Councils of Government
- Authorized Organizations (not-for-profit)
- Institutions of Higher Learning
- Watershed Organizations
- For-Profit Businesses (other than "producers" of natural gas)

Total Funds Available for Award:

- Varies. (In 2019, $20.8 million total amount for all 7 programs under Act 13 funding)

Eligible Uses:

Funds may be used for the development, rehabilitation, and improvement for public park and recreation areas; greenways and trails; and rivers conservation projects.

Application Deadline:

- May 31 of each year

Planned Board Approval Date:

- September of each year

Application Fee:

- $100 non-fundable application fee

PennDOT Multimodal Transportation Fund (MTF)

Grant Amount:

- Minimum project cost of $100,000
- Maximum grant award of $3,000,000
- Local match required – at least 30% of the award amount
- Approximately $40,000,000 total funds available annually

Eligible Applicants:

- Municipalities
- Councils of Government
- Businesses
- Economic Development Organizations
- School Districts
- Non-Profits
- Public Transportation Agency
- Ports

Eligible Uses:

Funds may be used to coordinate local land use with transportation assets to enhance existing communities; related streetscapes, lighting, sidewalk enhancement, and pedestrian safety; improve connectivity or utilization of transportation assets; and related to transit-oriented development.

Application Deadline:

- Fall/Winter of each year

Planned Award Announcement Date:

- Spring/Summer of each year

Commonwealth Financing Authority - Multimodal Transportation Fund (MTF)

Grant Amount:

- Total project cost of $100,000 - $3,000,000
- Need 30% match of non-federal share of the total project cost

Eligible Applicants:

- Municipalities
- Councils of Government
- Businesses
- Economic Development Organizations
- Public Transportation Agency
- Ports – Rail/Freight

Total Funds Available for award:

Varies ($79 million awarded in 2019)

Eligible Uses:

Funds may be used to coordinate local land use with transportation assets to enhance existing communities; related streetscapes, lighting, sidewalk enhancement, and pedestrian safety; improve connectivity or utilization of transportation assets; and related to transit-oriented development.

Application Deadline:

- July 31 of each year
- $100 non-refundable application fee

Planned Board Approval Date:

- September of each year

PennDOT Automated Red Light Enforcement (ARLE) Grant Program

Grant Amount:

- No funding limits, but should be "relatively low-cost"
- No local match is required, but cost sharing is encouraged

Eligible Applicants:

- Municipalities
- Counties
- Metropolitan Planning Organizations (MPOs)
- Rural Planning Organizations (RPOs)
- County Planning Organizations
- Commonwealth Agencies

Total Funds Available for award:

- Varies ($13.1 million in 2019)

Eligible Projects:

- Traffic Control Signal Improvements
- Roadway Capacity, Mobility & Safety Upgrades
- Bicycle & Pedestrian Improvements
- Local Technical Assistance Program Projects

Application Period:

- June 1 through June 30 each year

Award Date:

- December of each year

PennDOT Green Light-Go: Pennsylvania's Municipal Signal Partnership Program

Grant Amount:

- Need 20% match of the total project cost

Municipal and Private Match Options:

- Municipal general funds
- Liquid fuels funds
- Pennsylvania Infrastructure Bank (PIB) loans
- Municipal private loans
- Developer contributions
- Act 209 (Transportation Impact fees)
- In-Kind services
- Act 89 funding (Title 75, County $5 Fee)

Eligible Applicants:

- Municipalities
- Planning Organizations

Total Funds Available for award:

- Varies ($5 million in 2019)

Eligible Projects:

- LED Replacement
- Traffic Signal Retiming
- Study and Removal of Unwarranted Traffic Control Signals
- Real-Time and/or Historic Performance Monitoring
- Innovative Technologies
- Communications/Connections Back to Traffic Management Center
- Detection and/or Controller Upgrades
- Modernization Upgrades
- Intelligent Transportation System Applications

Application Period:

- Fall/Winter of each year

Redevelopment Assistance Capital Program (RACP)

Grant / Project Amount:

- Grant amount varies based on available funding for the Capital Project Itemization Bill line item
- Minimum $1,000,000 total project costs
- Minimum 50% match of total project costs

Eligible Applicants:

- Redevelopment Authorities
- Industrial Development Authorities
- General Purpose Unit of Local Government
- Local Development District
- Public Authority
- Industrial Development Authority

Total Funds Available for award:

Based on available funding for the Capital Project Itemization Bill line item.

Eligible Uses:

Funds may be used for economic development project that is further defined by the Capital Project Itemization Bill line item

Application Deadline:

- Annual deadline varies

Planned Board Approval Date:

- Award announcement varies

Application Fee:

- $500 non-fundable application fee

COUNTY FUNDING

Dauphin County Infrastructure Bank

Grant Amount:

- Unlimited funding request
- Low-interest loan

Eligible Applicants:

- Dauphin County
- Municipalities within Dauphin County
- Municipal and redevelopment authorities within Dauphin County
- Private entities (including non-profit organizations) with eligible projects located in Dauphin County
- School districts

Eligible Uses:

Projects that will improve the safety and mobility of local surface transportation, are publicly owned and are Liquid Fuels Tax eligible

Local Share Gaming Funds

Grant Amount:

- No set amount. (In 2020, awards ranged from $2,500 to $745,000.)

Eligible Applicants:

- East Hanover Township
- Municipalities contiguous with East Hanover Township and located within Dauphin County (Derry, Middle Paxton, Rush, South Hanover, and West Hanover Townships)
- Dauphin County
- Non-contiguous municipalities within Dauphin County may be eligible if sponsored by an eligible local municipality or Dauphin County
- Non-municipal entities may apply if sponsored by an eligible local municipality or Dauphin County

Total Funds Available for award:

- Amount varies and based on gaming revenues. (In 2020, total $6.3 million was awarded.)

Eligible Uses:

Funds may be used for 1) Human Service costs, infrastructure improvements, facilities, emergency services, and health and public safety expenses related to the licensed gaming facility and 2) health, safety, transportation, and public interest/quality of life projects for the residents and communities.

Application Deadline:

- Early August of each year – Pre-application Conference required
- Early September of each year – Applications due

Planned Board Approval Date:

- Early March of each year

Application Fee:

- None

CONCLUSIONS AND POTENTIAL MITIGATION

Based on the findings outlined in the report for the vehicular traffic analysis and pedestrian and bicycle assessment, potential improvements for the mitigation of traffic, pedestrian, and bicycle deficiencies have been identified to satisfy the goals and objectives of this study. In summary of the key corridors of this study, the following key strategies have been identified to move traffic safely and efficiently along primary arterials, minimize impact to the downtown feel and character of the Hershey Village, and enhance pedestrian and bicycle mobility:

Middletown Road Corridor

- Average Daily Traffic (ADT) projected to increase from approximately 15,000 to 22,000 vehicles per day.
- Roadway is transforming in character and purpose from a minor arterial to a principal arterial (Suburban Neighborhood Corridor Arterial), resulting in more emphasis on traffic mobility and intracommunity continuity, with less emphasis on land access.
- New access points should be limited to right-in / right-out unless signalized.
- New signals should be strategically placed to maximize access from both sides of road.
- Corridor widening for additional through lanes, shoulders and a center left turn lane from PA 283 to Route 322 to improve capacity and safety.
- Provide bicycle and pedestrian interconnectivity between the residential areas along the west side with the Jonathan Eshenour Memorial Trail and the Hershey Medical Center.

Waltonville Road / Bullfrog Valley Road Corridors

- ADT projected to increase from approximately 5,700 to 10,000 vehicles per day along Waltonville Road.
- Minor intersection improvements to improve capacity.
- Construct new east-west collector roadway to connect between Hershey Medical Center and Middletown Road.
- Improve north/south pedestrian interconnection into Hummelstown.

Hersheypark Drive

- ADT projected to increase from approximately 20,000 to 32,000 vehicles per day.
- Emphasis on the movement of through vehicles and event traffic. Consider re-designating roadway as “Route 422”.
- Reconfigure Route 322/422 interchange to maintain Hersheypark Drive as the through movement to/from Route 322.
- Consider adaptive traffic signals to move traffic more efficiently.
- Delineate bike lanes on both sides of roadway.
- Install continuous sidewalk along north side of Main Street and Walton Avenue into Hummelstown.
- Considerations to grade-separated pedestrian facilities to reduce conflicts and improve traffic flow during events via private investment by others.

Route 743 (Cocoa Avenue / Park Avenue)

- ADT projected to increase from approximately 8,000 to 11,000 vehicles per day.
- Isolated capacity-adding intersection improvements.
- Emphasis on bicycle and pedestrian crossings and connections between residential areas and the Jonathan Eshenour Memorial Trail / commercial areas.

Route 422 (Chocolate Avenue)

- ADT projected to increase from approximately 21,000 to 27,000 vehicles per day.
- Minimal capacity-adding improvements.
- Emphasis on bicycle and pedestrian mobility and connectivity.
- Improve north/south connectivity west of Orchard for vehicular and bicycle/pedestrian traffic (Old West Chocolate; University Drive; Mae Street/Lucy Avenue).
- Reinforce and enhance the downtown character and deter pass-through traffic. Consider designating Chocolate Avenue as "Business Route 422" from Route 322 interchange to Lingle Avenue.
- Reconfigure Route 322/422 interchange to maintain Hersheypark Drive as the through movement to/from Route 322 to better deter through traffic.

Route 322 (Governor Road)

- ADT projected to increase from approximately 15,000 to 20,000 vehicles per day.
- Emphasis on improved vehicular mobility. Immediate need for additional capacity or demand-reducing strategies.
- Corridor widening for additional through lanes and potential center left turn lane from Route 322/Route 422 interchange through the intersection with Homestead Road.
- Additional isolated intersection improvements.
- Provide bike lanes.
- Ensure pedestrian connectivity along the corridor.

Fishburn Road/Hockersville Road

- Establish a north/south connection from N. Hockersville Road to S. Hockersville Road by constructing a roundabout at the intersection of Chocolate Avenue and Old West Chocolate.
- Remove the S-curve on N. Hockersville Road to increase safety and make the road more viable to vehicular traffic.

The improvement strategies outlined above have been utilized to develop a specific list of improvements to develop complete streets, maintain acceptable traffic flow, and improve connectivity throughout the region for vehicles, pedestrians, and bicyclists. The improvement list is detailed in the "Potential Improvements for Mitigation" table in the Executive Summary.

Limited Access Connection Considerations

As a part of other transportation planning efforts in the Harrisburg region, a new limited access freeway could be considered from Route 283 to I-81 with an interchange on the PA Turnpike I-76. This new freeway connection would provide more direct access for Hershey event and seasonal traffic and reduce traffic

volumes along other north/south routes in the study area. This connection would also improve overall regional connectivity.

This freeway could possibly be located near the Dauphin and Lebanon County boundary. While the impacts of this connection are outside the scope of this study, a new freeway would have inter-regional effects on traffic. The potential roadway improvements in this study may need to be reevaluated if a new limited access roadway gains traction.

Traditionally, an investment of this magnitude would involve the Long Range Planning process through HATS. However, other planned freeway improvements already underway (I-81 widening) will likely preclude federal funding for this concept for an extended time. However, this concept could be advanced through a Public-Private Partnership (P3) initiative.

Implementation Strategy

The need for several capacity-adding improvements (i.e., signalization, turn lanes and through-lane widening) will largely be driven by growth within the region, making it difficult to project a specific build schedule. The "Potential Improvements for Mitigation" table in the Executive Summary includes a suggested implementation timeframe, including "Short-Term" (within next 5 years), "Mid-Term" (within 5-10 years) and "Long-Term" (within 10-20 years). The rankings should be used as a guide when determining the sequencing of the improvements; implementation should be refined based on actual development patterns and evolving transportation needs. However, several identified short-term improvements should be pursued in the near future. Additionally, active planning efforts for the more substantial long-term improvement project could begin now. Specifically, the following action items should be advanced:

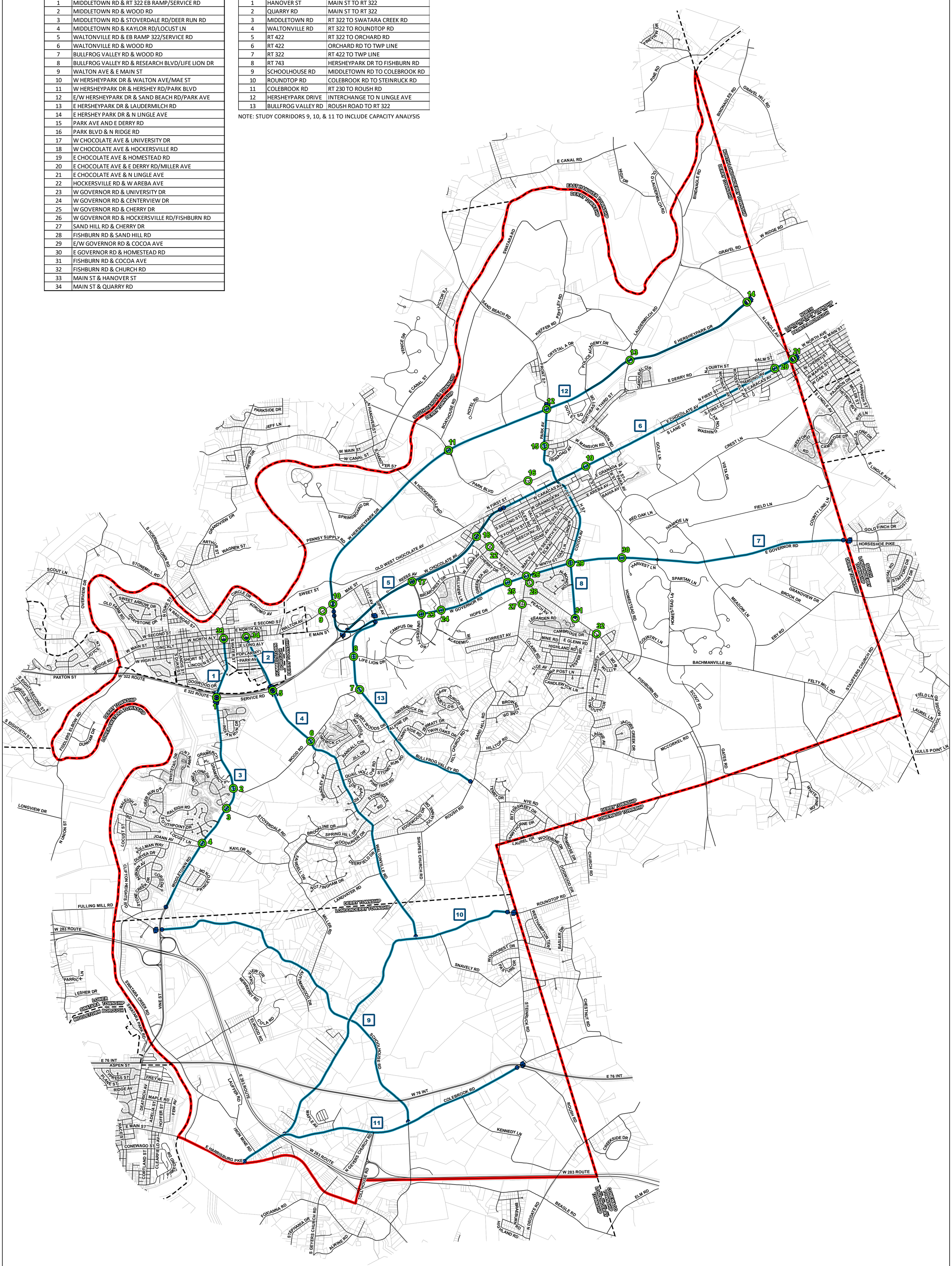
- Evaluate potential "demand side" strategies to offer alternate modes of transportation and more efficient travel to minimize the need for geometric improvements and corridor widening.
- Actively monitor and update traffic conditions and projections based on developing trends, specifically with regard to new development, transit enhancements, long-term effects of COVID-19, automated vehicle industry, the effect of navigational apps.
- Monitor traffic conditions along the Middletown Road and Route 322 corridors; reserve right-of-way and utility clearances for potential future corridor widening.
- Planning and lobbying efforts for long-range improvements
    - Route 322/Route 422 Interchange reconfiguration; associated establishment of "Business Route 422"
    - Roundabout at Route 422 and Old West Chocolate Avenue
    - New Connector Road from Middletown Road to Waltonville Road
    - Middletown Road corridor widening
    - Route 322 corridor widening
    - Hersheypark Drive corridor widening
    - New Connector Road between Northeast and
    - New north/south connection (University or Mae/Lucy extensions)
    - Java / Caracas improvements
- Develop implementation strategy for missing sidewalk connections or extensions
- Develop implementation strategy for low-cost bicycle improvements (bike lanes, markings and signing improvements)

MAPS

STUDY INTERSECTIONS	
NUMBER	NAME
1	MIDDLETOWN RD & RT 322 EB RAMP/SERVICE RD
2	MIDDLETOWN RD & WOOD RD
3	MIDDLETOWN RD & STOVERDALE RD/DEER RUN RD
4	MIDDLETOWN RD & KAYLOR RD/LOCUST LN
5	WALTONVILLE RD & EB RAMP 322/SERVICE RD
6	WALTONVILLE RD & WOOD RD
7	BULLFROG VALLEY RD & WOOD RD
8	BULLFROG VALLEY RD & RESEARCH BLVD/LIFE LION DR
9	WALTON AVE & E MAIN ST
10	W HERSHEYPARK DR & WALTON AVE/MAE ST
11	W HERSHEYPARK DR & HERSHEY RD/PARK BLVD
12	E/W HERSHEYPARK DR & SAND BEACH RD/PARK AVE
13	E HERSHEYPARK DR & LAUDERMILCH RD
14	E HERSHEY PARK DR & N LINGLE AVE
15	PARK AVE AND E DERRY RD
16	PARK BLVD & N RIDGE RD
17	W CHOCOLATE AVE & UNIVERSITY DR
18	W CHOCOLATE AVE & HOCKERSVILLE RD
19	E CHOCOLATE AVE & HOMESTEAD RD
20	E CHOCOLATE AVE & E DERRY RD/MILLER AVE
21	E CHOCOLATE AVE & N LINGLE AVE
22	HOCKERSVILLE RD & W AREBA AVE
23	W GOVERNOR RD & UNIVERSITY DR
24	W GOVERNOR RD & CENTERVIEW DR
25	W GOVERNOR RD & CHERRY DR
26	W GOVERNOR RD & HOCKERSVILLE RD/FISHBURN RD
27	SAND HILL RD & CHERRY DR
28	FISHBURN RD & SAND HILL RD
29	E/W GOVERNOR RD & COCOA AVE
30	E GOVERNOR RD & HOMESTEAD RD
31	FISHBURN RD & COCOA AVE
32	FISHBURN RD & CHURCH RD
33	MAIN ST & HANOVER ST
34	MAIN ST & QUARRY RD

STUDY CORRIDORS		
NUMBER	ROAD NAME	EXTENTS
1	HANOVER ST	MAIN ST TO RT 322
2	QUARRY RD	MAIN ST TO RT 322
3	MIDDLETOWN RD	RT 322 TO SWATARA CREEK RD
4	WALTONVILLE RD	RT 322 TO ROUNDTOP RD
5	RT 422	RT 322 TO ORCHARD RD
6	RT 422	ORCHARD RD TO TWP LINE
7	RT 322	RT 422 TO TWP LINE
8	RT 743	HERSHEYPARK DR TO FISHBURN RD
9	SCHOOLHOUSE RD	MIDDLETOWN RD TO COLEBROOK RD
10	ROUNDTOP RD	COLEBROOK RD TO STEINRUCK RD
11	COLEBROOK RD	RT 230 TO ROUSH RD
12	HERSHEYPARK DRIVE	INTERCHANGE TO N LINGLE AVE
13	BULLFROG VALLEY RD	ROUSH ROAD TO RT 322

NOTE: STUDY CORRIDORS 9, 10, & 11 TO INCLUDE CAPACITY ANALYSIS



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Mapping derived from data provided by Dauphin County and Lebanon County.

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Study Intersection
Study Corridor
Road
Parcel
Municipal Boundary
Study Area

Greater Hershey Regional Transportation Study
Map 1. Study Area Boundary
Derry Township, Hummelstown Borough, and Londonderry Township
Dauphin County, Pennsylvania

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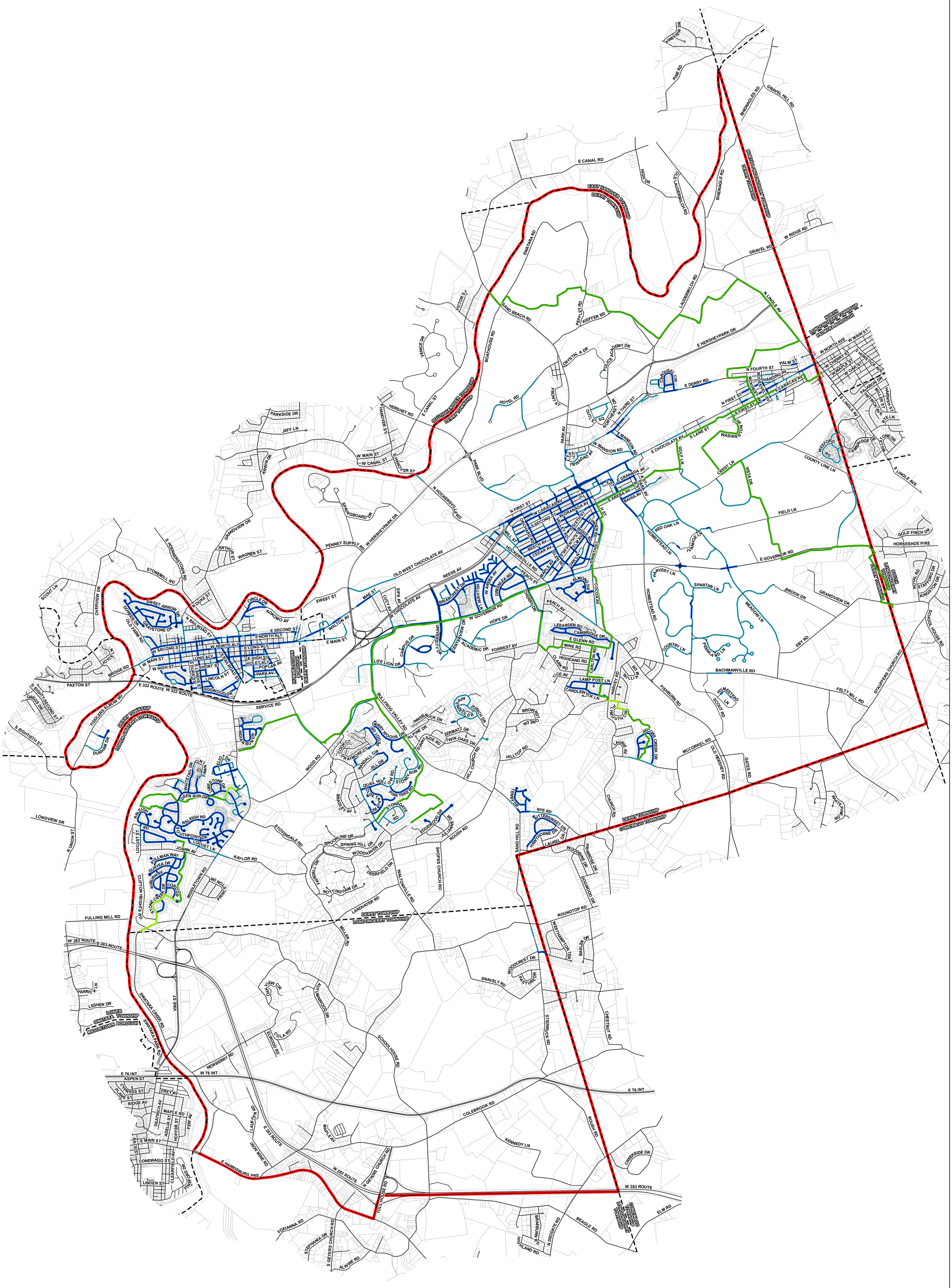

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- Sidewalk On Both Sides Of Roadway
- Sidewalk On One Side Of Roadway
- On-Road Bicycle Network
- Trails
- Road
- Parcel
- Municipal Boundary
- Study Area

Greater Hershey Regional Transportation Study
Map 2. Existing Sidewalks and Bicycle Facilities

Derry Township, Hummelstown Borough, and Londonderry Township
Dauphin County, Pennsylvania

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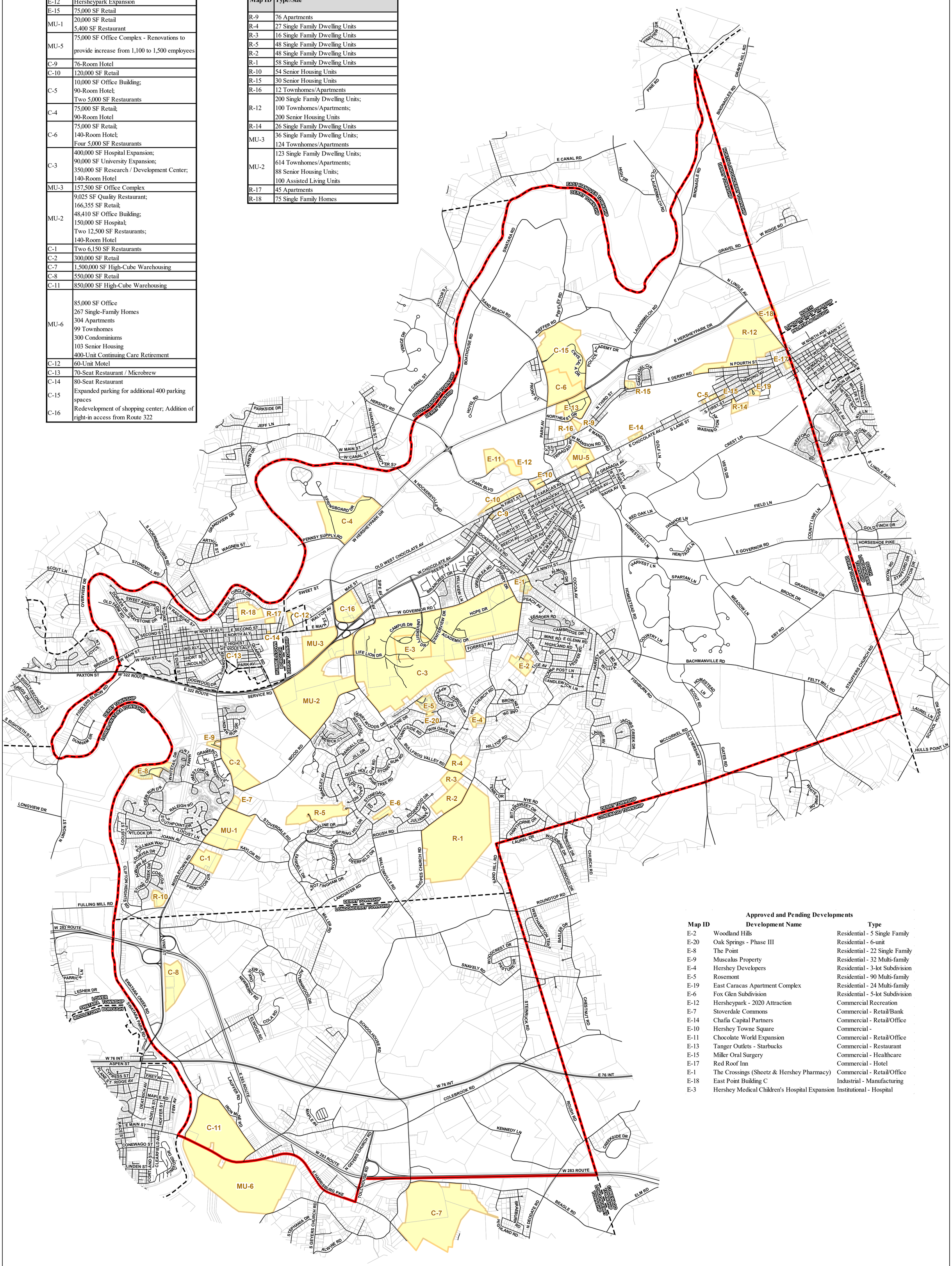
Commercial Developments	
Map ID	**Type/Size**
E-12	Hersheypark Expansion
E-15	75,000 SF Retail
MU-1	20,000 SF Retail 5,400 SF Restaurant
MU-5	75,000 SF Office Complex - Renovations to provide increase from 1,100 to 1,500 employees
C-9	76-Room Hotel
C-10	120,000 SF Retail
C-5	10,000 SF Office Building; 90-Room Hotel; Two 5,000 SF Restaurants
C-4	75,000 SF Retail; 90-Room Hotel
C-6	75,000 SF Retail; 140-Room Hotel; Four 5,000 SF Restaurants
C-3	400,000 SF Hospital Expansion; 90,000 SF University Expansion; 350,000 SF Research / Development Center; 140-Room Hotel
MU-3	157,500 SF Office Complex
MU-2	9,025 SF Quality Restaurant; 166,355 SF Retail; 48,410 SF Office Building; 150,000 SF Hospital; Two 12,500 SF Restaurants; 140-Room Hotel
C-1	Two 6,150 SF Restaurants
C-2	300,000 SF Retail
C-7	1,500,000 SF High-Cube Warehousing
C-8	550,000 SF Retail
C-11	850,000 SF High-Cube Warehousing
MU-6	85,000 SF Office 267 Single-Family Homes 304 Apartments 99 Townhomes 300 Condominiums 103 Senior Housing 400-Unit Continuing Care Retirement
C-12	60-Unit Motel
C-13	70-Seat Restaurant / Microbrew
C-14	80-Seat Restaurant
C-15	Expanded parking for additional 400 parking spaces
C-16	Redevelopment of shopping center; Addition of right-in access from Route 322

Residential Developments	
Map ID	**Type/Size**
R-9	76 Apartments
R-4	27 Single Family Dwelling Units
R-3	16 Single Family Dwelling Units
R-5	48 Single Family Dwelling Units
R-2	48 Single Family Dwelling Units
R-1	58 Single Family Dwelling Units
R-10	54 Senior Housing Units
R-15	30 Senior Housing Units
R-16	12 Townhomes/Apartments
R-12	200 Single Family Dwelling Units; 100 Townhomes/Apartments; 200 Senior Housing Units
R-14	26 Single Family Dwelling Units
MU-3	36 Single Family Dwelling Units; 124 Townhomes/Apartments
MU-2	123 Single Family Dwelling Units; 614 Townhomes/Apartments; 88 Senior Housing Units; 100 Assisted Living Units
R-17	45 Apartments
R-18	75 Single Family Homes



Approved and Pending Developments		
Map ID	**Development Name**	**Type**
E-2	Woodland Hills	Residential - 5 Single Family
E-20	Oak Springs - Phase III	Residential - 6-unit
E-8	The Point	Residential - 22 Single Family
E-9	Muscalus Property	Residential - 32 Multi-family
E-4	Hershey Developers	Residential - 3-lot Subdivision
E-5	Rosemont	Residential - 90 Multi-family
E-19	East Caracas Apartment Complex	Residential - 24 Multi-family
E-6	Fox Glen Subdivision	Residential - 5-lot Subdivision
E-12	Hersheypark - 2020 Attraction	Commercial Recreation
E-7	Stoverdale Commons	Commercial - Retail/Bank
E-14	Chafia Capital Partners	Commercial - Retail/Office
E-10	Hershey Towne Square	Commercial -
E-11	Chocolate World Expansion	Commercial - Retail/Office
E-13	Tanger Outlets - Starbucks	Commercial - Restaurant
E-15	Miller Oral Surgery	Commercial - Healthcare
E-17	Red Roof Inn	Commercial - Hotel
E-1	The Crossings (Sheetz & Hershey Pharmacy)	Commercial - Retail/Office
E-18	East Point Building C	Industrial - Manufacturing
E-3	Hershey Medical Children's Hospital Expansion	Institutional - Hospital

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Road
Parcel
Future Development
Municipal Boundary
Study Area

Greater Hershey Regional Transportation Study
Map 3. Future Developments
Derry Township, Hummelstown Borough, and Londonderry Township
Dauphin County, Pennsylvania

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STUDY INTERSECTIONS	
NUMBER	NAME
1	MIDDLETOWN RD & RT 322 EB RAMP/SERVICE RD
2	MIDDLETOWN RD & WOOD RD
3	MIDDLETOWN RD & STOVERDALE RD/DEER RUN RD
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23	W GOVERNOR RD & UNIVERSITY DR
24	W GOVERNOR RD & CENTERVIEW DR
25	W GOVERNOR RD & CHERRY DR
26	W GOVERNOR RD & HOCKERSVILLE RD/FISHBURN RD
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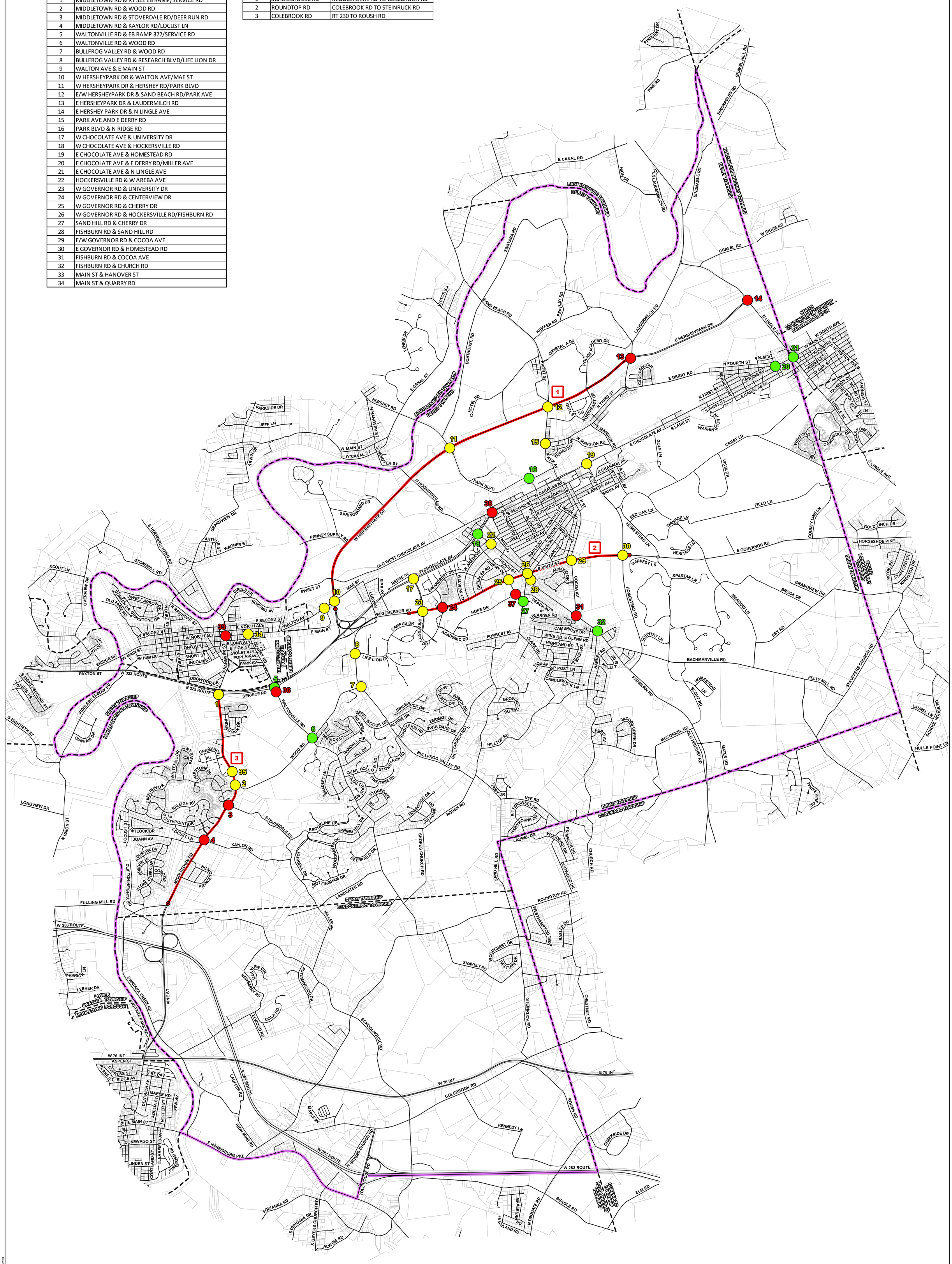
30	E GOVERNOR RD & HOMESTEAD RD
31	FISHBURN RD & COCOA AVE
32	FISHBURN RD & CHURCH RD
33	MAIN ST & HANOVER ST
34	MAIN ST & QUARRY RD

STUDY CORRIDORS		
NUMBER	ROAD NAME	EXTENTS
1	SCHOOLHOUSE RD	MIDDLETOWN RD TO COLEBROOK RD
2	ROUNDTOP RD	COLEBROOK RD TO STEINRUCK RD
3	COLEBROOK RD	RT 230 TO ROUSH RD



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Study Intersections
- Intersection Over Capacity
- Intersection Nearing Capacity
- Intersection Under Capacity

Study Corridors
- Segment Over Capacity
- Segment Nearing Capacity
- Segment Under Capacity

- Road
- Parcel
- Municipal Boundary
- Study Area

Greater Hershey Regional Transportation Study
Map 4. Existing Conditions Capacity Analysis
Derry Township, Hummelstown Borough, and Londonderry Township
Dauphin County, Pennsylvania

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STUDY INTERSECTIONS	
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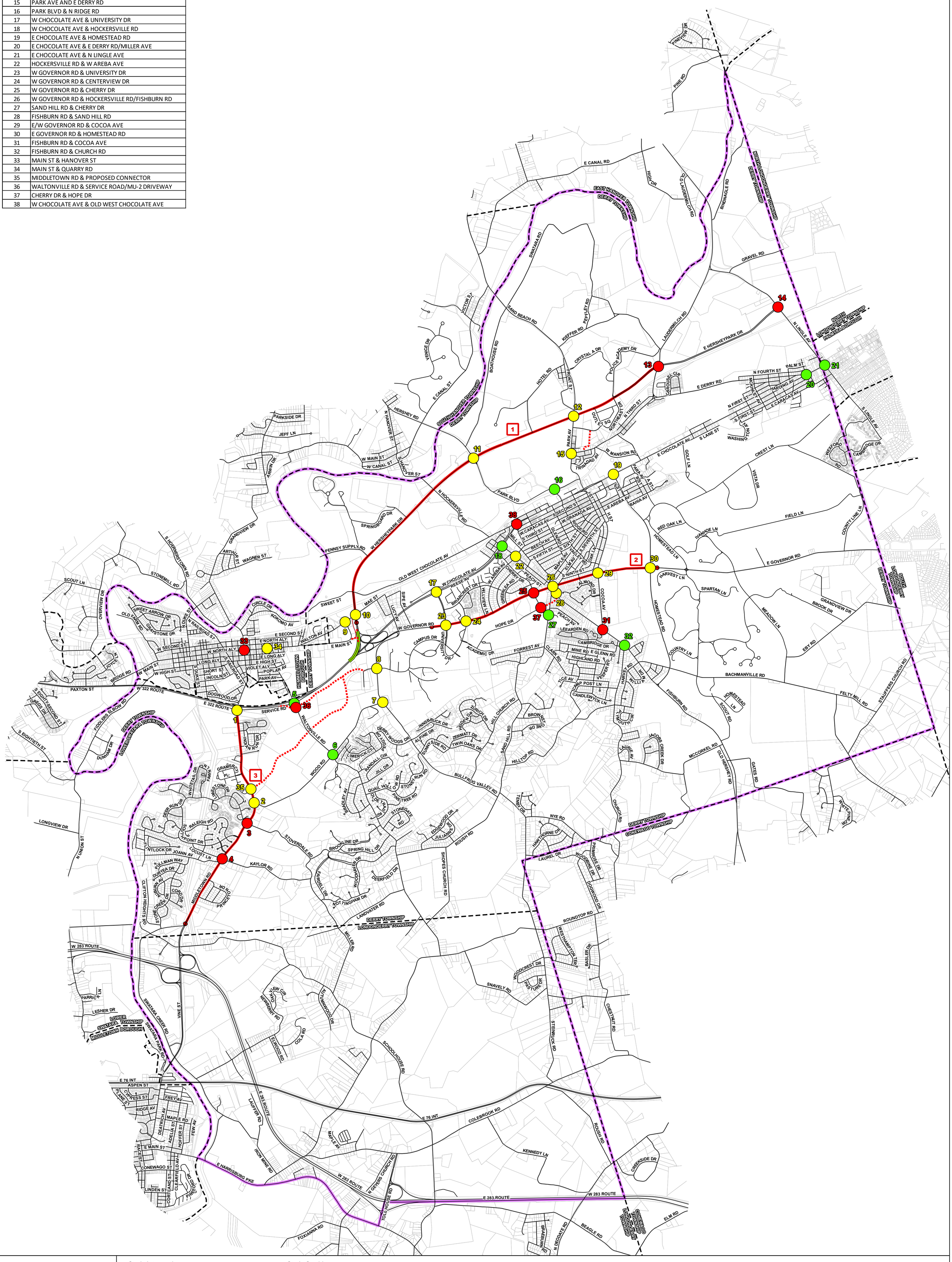
12	E/W HERSHEYPARK DR & SAND BEACH RD/PARK AVE
13	E HERSHEYPARK DR & LAUDERMILCH RD
14	E HERSHEY PARK DR & N LINGLE AVE
15	PARK AVE AND E DERRY RD
16	PARK BLVD & N RIDGE RD
17	W CHOCOLATE AVE & UNIVERSITY DR
18	W CHOCOLATE AVE & HOCKERSVILLE RD
19	E CHOCOLATE AVE & HOMESTEAD RD
20	E CHOCOLATE AVE & E DERRY RD/MILLER AVE
21	E CHOCOLATE AVE & N LINGLE AVE
22	HOCKERSVILLE RD & W AREBA AVE
23	W GOVERNOR RD & UNIVERSITY DR
24	W GOVERNOR RD & CENTERVIEW DR
25	W GOVERNOR RD & CHERRY DR
26	W GOVERNOR RD & HOCKERSVILLE RD/FISHBURN RD
27	SAND HILL RD & CHERRY DR
28	FISHBURN RD & SAND HILL RD
29	E/W GOVERNOR RD & COCOA AVE
30	E GOVERNOR RD & HOMESTEAD RD
31	FISHBURN RD & COCOA AVE
32	FISHBURN RD & CHURCH RD
33	MAIN ST & HANOVER ST
34	MAIN ST & QUARRY RD
35	MIDDLETOWN RD & PROPOSED CONNECTOR
36	WALTONVILLE RD & SERVICE ROAD/MU-2 DRIVEWAY
37	CHERRY DR & HOPE DR
38	W CHOCOLATE AVE & OLD WEST CHOCOLATE AVE

STUDY CORRIDORS		
NUMBER	ROAD NAME	EXTENTS
1	SCHOOLHOUSE RD	MIDDLETOWN RD TO COLEBROOK RD
2	ROUNDTOP RD	COLEBROOK RD TO STEINRUCK RD
3	COLEBROOK RD	RT 230 TO ROUSH RD



2,000 0 2,000 Feet

Mapping derived from data provided by Dauphin County and Lebanon County.

10/16/2020	PM: EJS	GIS: CBM	QA: TMH	R002484.0484

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Study Intersections

- Improvements Required for 2038 Projected Traffic
- Improvements Required for 2028 Projected Traffic
- No Projected Improvements

Study Corridors

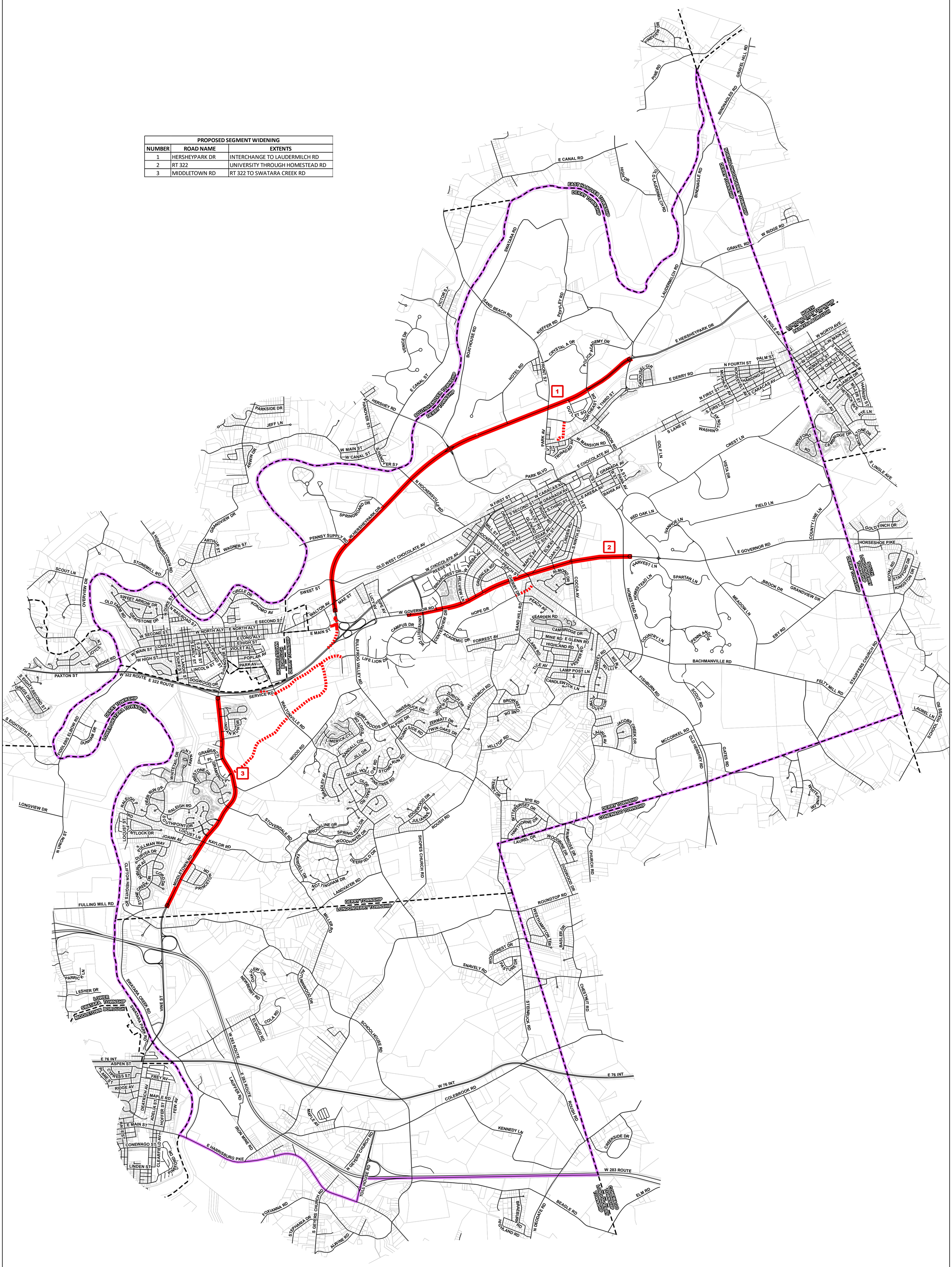
- Segment Over Capacity
- Segment Nearing Capacity
- Segment Under Capacity
- Proposed Roads

- Road
- Parcel
- Municipal Boundary
- Study Area
- Proposed Interchange Reconfiguration

Greater Hershey Regional Transportation Study
Map 5. Overall Capacity Analysis Summary

Derry Township, Hummelstown Borough, and Londonderry Township
Dauphin County, Pennsylvania

PROPOSED SEGMENT WIDENING		
NUMBER	ROAD NAME	EXTENTS
1	HERSHEYPARK DR	INTERCHANGE TO LAUDERMILCH RD
2	RT 322	UNIVERSITY THROUGH HOMESTEAD RD
3	MIDDLETOWN RD	RT 322 TO SWATARA CREEK RD



2,000 0 2,000 Feet

Mapping derived from data provided by Dauphin County and Lebanon County.

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Road
Proposed Roads
Parcel
Municipal Boundary
Study Area

Capacity

PROPOSED SEGMENT WIDENING

Greater Hershey Regional Transportation Study
Map 6. Segment Widening Summary
Derry Township, Hummelstown Borough, and Londonderry Township
Dauphin County, Pennsylvania

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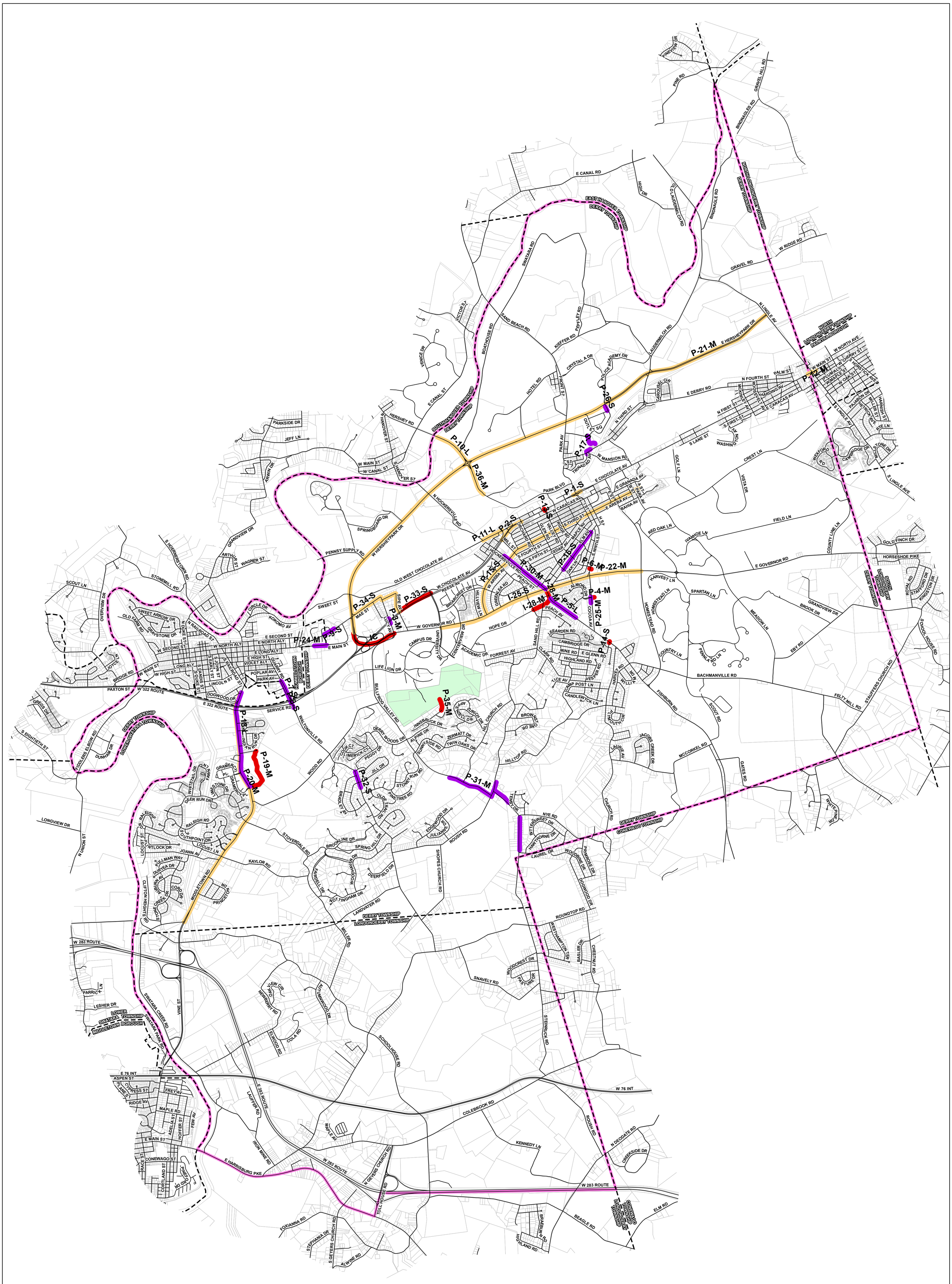

2,000 0 2,000 Feet

Mapping derived from data provided by Dauphin County and Lebanon County.

11/12/2020	PM: EJS	GIS: CBM	QA: TMH	R002484.0484

Road
Parcel
Municipal Boundary
Study Area
Proposed On-Road Bike Network
Proposed Trail
Proposed Sidewalk

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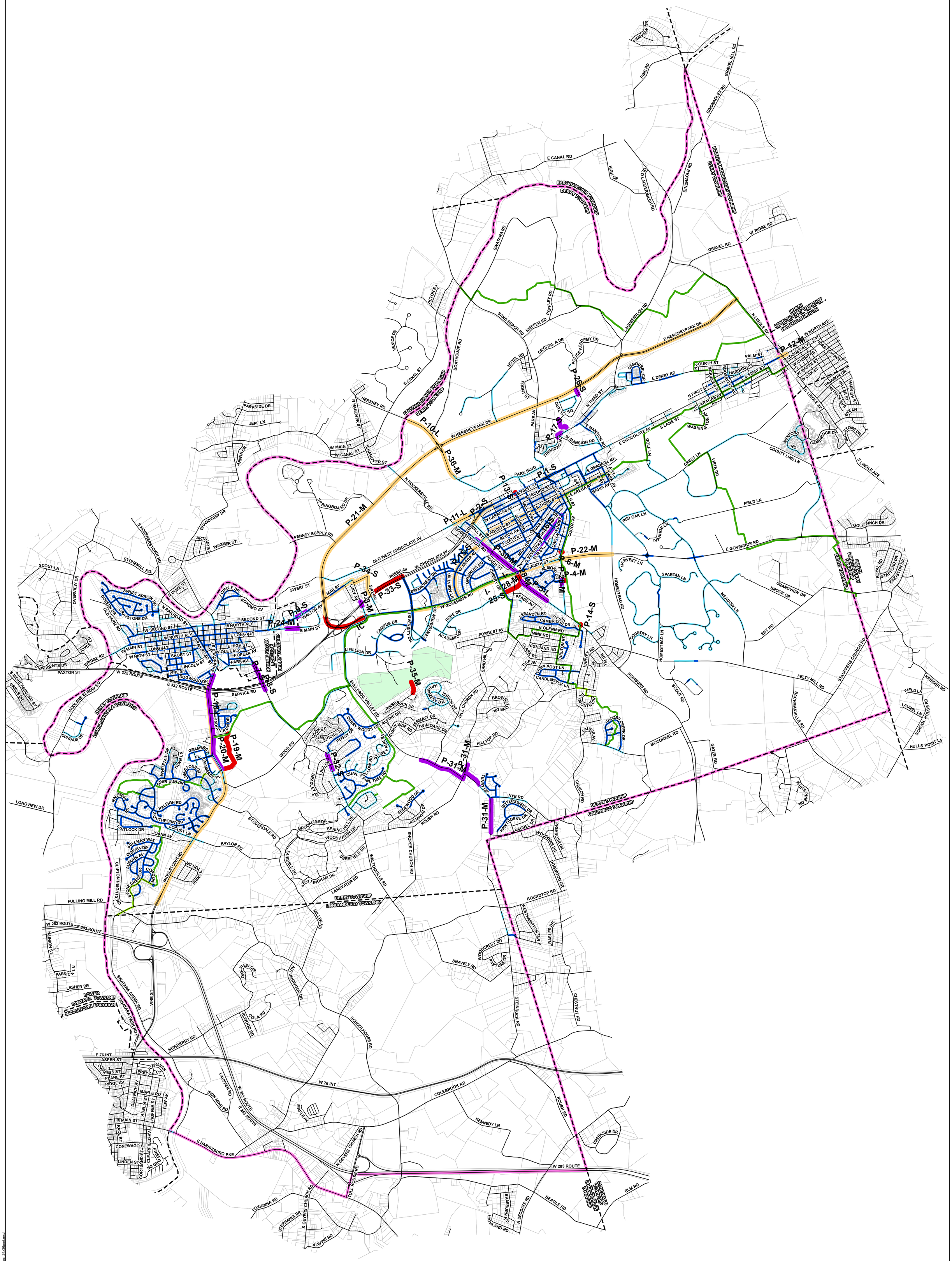
Greater Hershey Regional Transportation Study
Map 7. Proposed Sidewalks and Bicycle Facilities
Derry Township, Hummelstown Borough, and Londonderry Township
Dauphin County, Pennsylvania

P:\002484\002484_0484\GIS\Projects\GHRTE_Only_Proposed_Sidewalks_Bikes_24x36port.mxd



2,000 0 2,000 Feet

Mapping derived from data provided by Dauphin County and Lebanon County.

11/12/2020	PM: EJS	GIS: CBM	QA: TMH	R002484.0484

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- Sidewalk On Both Sides Of Roadway
- Sidewalk On One Side Of Roadway
- Road
- Parcel
- Municipal Boundary
- Study Area
- On-Road Bicycle Network
- Trails
- Proposed On-Road Bike Network
- Proposed Trail
- Proposed Sidewalk
- Bike Destination

Greater Hershey Regional Transportation Study
Map 8. Existing and Proposed Sidewalks and Bicycle Facilities
Derry Township, Hummelstown Borough, and Londonderry Township
Dauphin County, Pennsylvania

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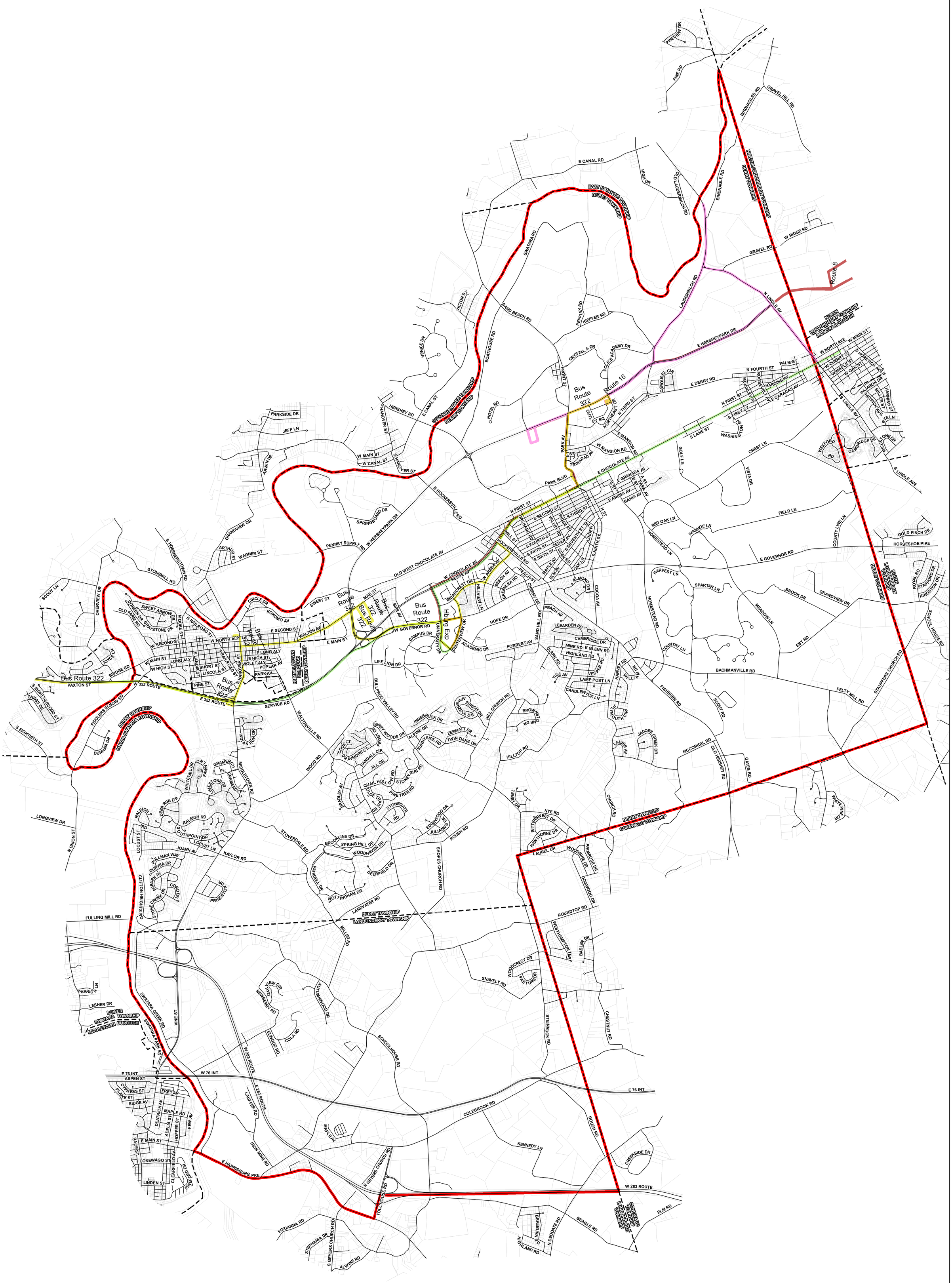

2,000 0 2,000 Feet

Mapping derived from data provided by Dauphin County and Lebanon County.

3/10/2020	PM: EJS	GIS: CBM	QA: TMH	R002484.0484

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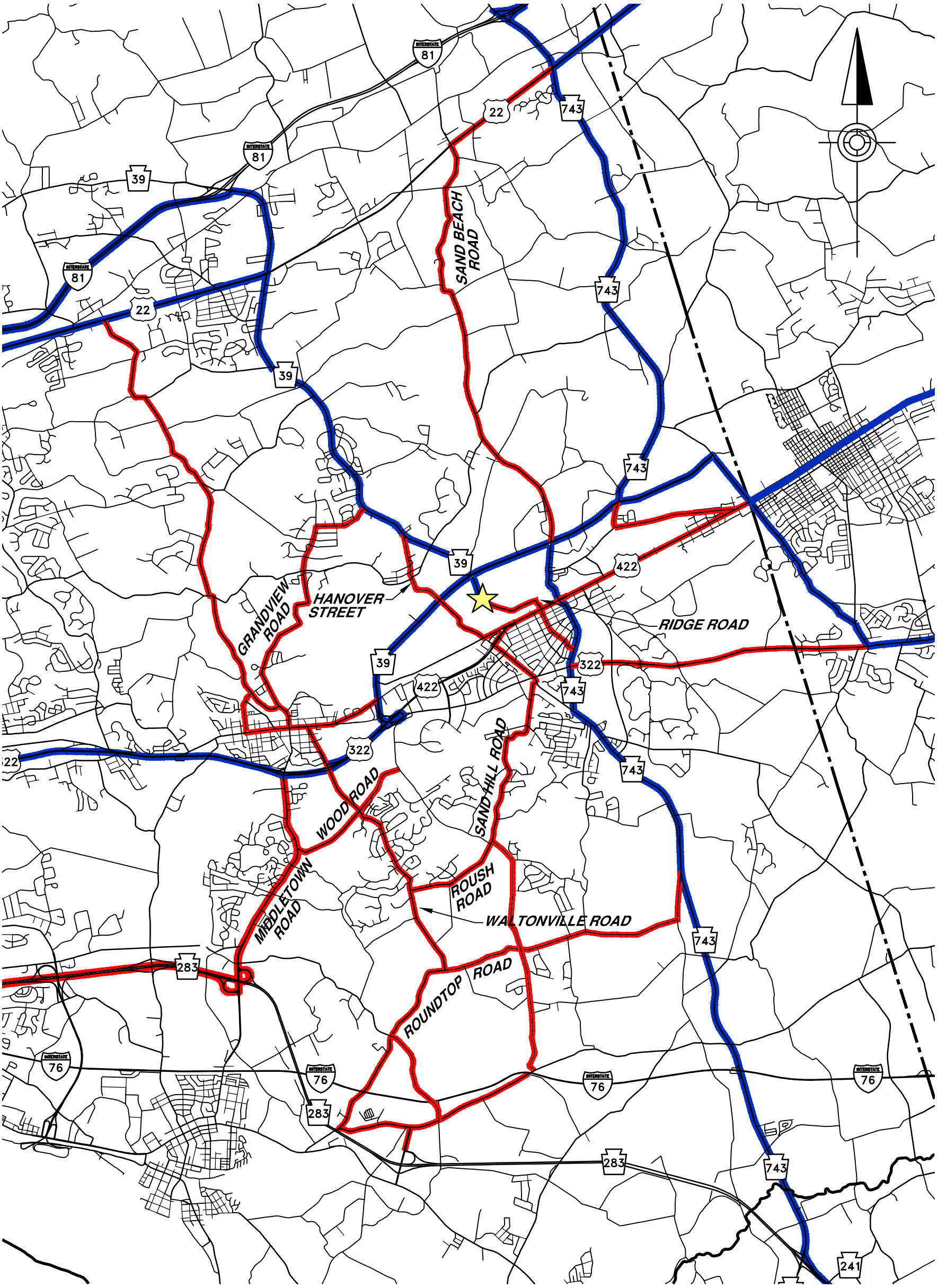
ROUTE

- Hburg Exp
- Route 16
- Route 8
- 322 Bus Route
- Road
- Parcel
- Municipal Boundary

Greater Hershey Regional Transportation Study
Map 9. Existing Bus Routes
Derry Township, Hummelstown Borough, and Londonderry Township
Dauphin County, Pennsylvania



LEGEND:

- UNDESIREABLE COLLECTOR ROUTES
- OPTIMAL COLLECTOR ROUTES

GRAPHIC SCALE

6000' 3000' 0' 6000'

SCALE: 1"= 6000'

GREATER HERSHEY REGIONAL TRANSPORTATION STUDY

MAP 10. GREATER HERSHEY ROADWAY NETWORK EVENT TRAFFIC

DAUPHIN COUNTY, PENNSYLVANIA

JOB#: R002484.0484 JUNE 2020

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APPENDIX A
TURNING MOVEMENT COUNTS

Herbert, Rowland & Grubic, Inc.
369 East Park Drive
Harrisburg, PA 17111
(717) 564-1121

Intersection #: 5
Job Number: 2484.0484
Date: 6/2/2015
Page No: 1

Greater Hershey Area Study
AM PEAK HOUR

All Vehicles

	SR 2034 Eastbound					Route 322 EB On-Ramp Westbound					Waltonville Road Northbound					Waltonville Road Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
6:00 AM	1	23	0	0	24	0	0	0	0	0	16	9	8	0	33	7	8	33	0	48	105
6:15 AM	4	33	7	0	44	0	0	0	0	0	12	6	7	0	25	4	9	41	0	54	123
6:30 AM	8	41	4	0	53	0	0	0	0	0	21	15	20	0	56	16	11	48	0	75	184
6:45 AM	7	73	2	0	82	0	0	0	0	0	28	25	22	0	75	17	16	70	0	103	260
Total	20	170	13	0	203	0	0	0	0	0	77	55	57	0	189	44	44	192	0	280	672
7:00 AM	14	86	2	0	102	0	0	0	0	0	33	29	49	0	111	20	16	68	0	104	317
7:15 AM	9	82	2	0	93	0	0	0	0	0	26	47	50	0	123	33	26	79	0	138	354
7:30 AM	5	70	4	0	79	0	0	0	0	0	28	17	37	0	82	29	24	81	0	134	295
7:45 AM	7	102	17	0	126	0	0	0	0	0	18	26	47	0	91	28	16	61	0	105	322
Total	35	340	25	0	400	0	0	0	0	0	105	119	183	0	407	110	82	289	0	481	1288
8:00 AM	3	84	11	0	98	0	0	0	0	0	29	13	30	0	72	22	20	53	0	95	265
8:15 AM	7	98	6	0	111	0	0	0	0	0	22	18	43	0	83	23	13	36	0	72	266
8:30 AM	5	78	12	0	95	0	0	0	0	0	38	21	13	0	72	14	18	39	0	71	238
8:45 AM	5	80	17	0	102	0	0	0	0	0	25	25	23	0	73	31	16	54	0	101	276
Total	20	340	46	0	406	0	0	0	0	0	114	77	109	0	300	90	67	182	0	339	1045
Grand Total	75	850	84	0	1009	0	0	0	0	0	296	251	349	0	896	244	193	663	0	1100	3005
Apprch %	7.4	84.2	8.3	0.0							33.0	28.0	39.0	0.0		22.2	17.5	60.3	0.0		
Total %	2.5	28.3	2.8	0.0	33.6	0.0	0.0	0.0	0.0	0.0	9.9	8.4	11.6	0.0	29.8	8.1	6.4	22.1	0.0	36.6	

	SR 2034 Eastbound					Route 322 EB On-Ramp Westbound					Waltonville Road Northbound					Waltonville Road Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From	7:00 AM			to	8:00 AM																
Volume	35	340	25	0	400	0	0	0	0	0	105	119	183	0	407	110	82	289	0	481	1288
Percent	8.8	85.0	6.3	0.0							25.8	29.2	45.0	0.0		22.9	17.0	60.1	0.0		
7:15 AM Volume	9	82	2	0	93	0	0	0	0	0	26	47	50	0	123	33	26	79	0	138	354
Peak Factor																					
High Int.	7:45 AM					6:00 AM					7:15 AM					7:15 AM					
Volume	7	102	17	0	126	0	0	0	0	0	26	47	50	0	123	33	26	79	0	138	
PHF	0.63	0.83	0.37		0.79						0.80	0.63	0.92		0.83	0.83	0.79	0.89		0.87	0.91
Heavy Vehicles %	0%	8%	11%			0%	0%	0%			5%	0%	5%			4%	5%	12%			
Misc.	U-Turn 0		RTOR 6	Bikes 0		U-Turn 0		RTOR 0	Bikes 0		U-Turn 0		RTOR 15	Bikes 0		U-Turn 0		RTOR 71	Bikes 0		

Traffic Count conducted by Traffic Planning & Design, Inc.

Herbert, Rowland & Grubic, Inc.
369 East Park Drive
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(717) 564-1121

Intersection #: 5
Job Number: 2484.0484
Date: 6/2/2015
Page No: 2

Greater Hershey Area Study
AM PEAK HOUR

Heavy Vehicles & Bicycles

	SR 2034 Eastbound					Route 322 EB On-Ramp Westbound					Waltonville Road Northbound					Waltonville Road Southbound					
Start Time	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Int. Total
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch % Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Overall Peak Hour Volume	0	26	3	0	0	0	0	0	0	0	5	0	9	0	0	4	4	34	0	0	0

Traffic Count conducted by Traffic Planning & Design, Inc.

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369 East Park Drive
Harrisburg, PA 17111
(717) 564-1121

Intersection #: 5
Job Number: 2484.0484
Date: 6/2/2015
Page No: 3

Greater Hershey Area Study
AM PEAK HOUR

U-Turn & RTOR

	SR 2034 Eastbound					Route 322 EB On-Ramp Westbound					Waltonville Road Northbound					Waltonville Road Southbound					
Start Time	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	Int. Total
6:00 AM	0		0		0	0		0		0	0		0		0	0		8		8	8
6:15 AM	0		3		3	0		0		0	0		0		0	0		6		6	9
6:30 AM	0		1		1	0		0		0	0		2		2	0		10		10	13
6:45 AM	0		0		0	0		0		0	0		3		3	0		18		18	21
Total	0		4		4	0		0		0	0		5		5	0		42		42	51
7:00 AM	0		0		0	0		0		0	0		5		5	0		16		16	21
7:15 AM	0		0		0	0		0		0	0		2		2	0		19		19	21
7:30 AM	0		0		0	0		0		0	0		4		4	0		19		19	23
7:45 AM	0		6		6	0		0		0	0		4		4	0		17		17	27
Total	0		6		6	0		0		0	0		15		15	0		71		71	92
8:00 AM	0		0		0	0		0		0	0		2		2	0		10		10	12
8:15 AM	0		0		0	0		0		0	0		0		0	0		10		10	10
8:30 AM	0		3		3	0		0		0	0		0		0	0		10		10	13
8:45 AM	0		4		4	0		0		0	0		1		1	0		14		14	19
Total	0		7		7	0		0		0	0		3		3	0		44		44	54
Grand Total	0		17		17	0		0		0	0		23		23	0		157		157	197
Apprch %	0.0	0.0	100.0	0.0							0.0	0.0	100.0	0.0		0.0	0.0	100.0	0.0		
Total %	0.0		8.6		8.6	0.0		0.0		0.0	0.0		11.7		11.7	0.0		79.7		79.7	
Overall Peak Hour Volume	0		6		6	0		0		0	0		15		15	0		71		71	92

Traffic Count conducted by Traffic Planning & Design, Inc.

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Intersection #: 8
Job Number: 2484.0484
Date: 6/2/2015
Page No: 1

Greater Hershey Area Study
AM PEAK HOUR

All Vehicles

	Research Blvd Eastbound					Life Lion Drive Westbound					Bullfrog Valley Road Northbound					Bullfrog Valley Road Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
6:00 AM	3	0	1	0	4	6	1	3	0	10	1	18	24	0	43	14	9	1	0	24	81
6:15 AM	5	2	0	0	7	1	0	4	0	5	2	31	39	0	72	37	13	3	0	53	137
6:30 AM	6	2	2	0	10	9	0	3	0	12	1	30	51	0	82	67	31	9	0	107	211
6:45 AM	5	2	3	0	10	6	0	5	0	11	5	47	95	0	147	69	24	9	0	102	270
Total	19	6	6	0	31	22	1	15	0	38	9	126	209	0	344	187	77	22	0	286	699
7:00 AM	4	2	3	0	9	3	0	13	0	16	6	80	73	0	159	49	15	8	0	72	256
7:15 AM	9	5	4	0	18	13	0	28	0	41	7	69	113	0	189	62	22	17	0	101	349
7:30 AM	8	4	5	0	17	23	0	47	0	70	17	70	103	0	190	71	23	19	0	113	390
7:45 AM	10	8	4	0	22	13	2	24	0	39	20	48	162	0	230	66	35	39	0	140	431
Total	31	19	16	0	66	52	2	112	0	166	50	267	451	0	768	248	95	83	0	426	1426
8:00 AM	8	5	8	0	21	8	0	33	0	41	7	79	112	0	198	49	26	33	0	108	368
8:15 AM	14	6	2	0	22	7	2	11	0	20	11	63	89	0	163	37	36	27	0	100	305
8:30 AM	7	3	4	0	14	13	2	10	0	25	5	59	66	0	130	26	25	27	0	78	247
8:45 AM	15	9	1	0	25	5	2	15	0	22	11	47	58	0	116	37	28	20	0	85	248
Total	44	23	15	0	82	33	6	69	0	108	34	248	325	0	607	149	115	107	0	371	1168
Grand Total	94	48	37	0	179	107	9	196	0	312	93	641	985	0	1719	584	287	212	0	1083	3293
Apprch %	52.5	26.8	20.7	0.0		34.3	2.9	62.8	0.0		5.4	37.3	57.3	0.0		53.9	26.5	19.6	0.0		
Total %	2.9	1.5	1.1	0.0	5.4	3.2	0.3	6.0	0.0	9.5	2.8	19.5	29.9	0.0	52.2	17.7	8.7	6.4	0.0	32.9	

	Research Blvd Eastbound					Life Lion Drive Westbound					Bullfrog Valley Road Northbound					Bullfrog Valley Road Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From	7:15 AM			to	8:15 AM																
Volume	35	22	21	0	78	57	2	132	0	191	51	266	490	0	807	248	106	108	0	462	1538
Percent	44.9	28.2	26.9	0.0		29.8	1.0	69.1	0.0		6.3	33.0	60.7	0.0		53.7	22.9	23.4	0.0		
7:45 AM Volume	10	8	4	0	22	13	2	24	0	39	20	48	162	0	230	66	35	39	0	140	431
Peak Factor																					
High Int.	8:45 AM					7:30 AM					7:45 AM					7:45 AM					
Volume	15	9	1	0	25	23	0	47	0	70	20	48	162	0	230	66	35	39	0	140	
PHF	0.88	0.69	0.66		0.89	0.62	0.25	0.70		0.68	0.64	0.84	0.76		0.88	0.87	0.76	0.69		0.83	0.89
Heavy Vehicles %	3%	5%	0%			5%	100%	7%			2%	3%	0%			1%	20%	2%			
Misc.	U-Turn		RTOR	Bikes		U-Turn		RTOR	Bikes		U-Turn		RTOR	Bikes		U-Turn		RTOR	Bikes		
	0		7	0		0		40	0		0		111	0		0		13	0		

Traffic Count conducted by Traffic Planning & Design, Inc.

Herbert, Rowland & Grubic, Inc.
369 East Park Drive
Harrisburg, PA 17111
(717) 564-1121

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Greater Hershey Area Study
AM PEAK HOUR

Heavy Vehicles & Bicycles

	Research Blvd Eastbound					Life Lion Drive Westbound					Bullfrog Valley Road Northbound					Bullfrog Valley Road Southbound					
Start Time	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Int. Total
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch % Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Overall Peak Hour Volume	1	1	0	0	0	3	2	9	0	0	1	8	1	0	0	3	21	2	0	0	0

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Herbert, Rowland & Grubic, Inc.
369 East Park Drive
Harrisburg, PA 17111
(717) 564-1121

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Greater Hershey Area Study
AM PEAK HOUR

U-Turn & RTOR

	Research Blvd Eastbound					Life Lion Drive Westbound					Bullfrog Valley Road Northbound					Bullfrog Valley Road Southbound					
Start Time	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	Int. Total
6:00 AM	0		0		0	0		1		1	0		4		4	0		0		0	5
6:15 AM	0		0		0	0		2		2	0		1		1	0		0		0	3
6:30 AM	0		0		0	0		1		1	0		2		2	0		0		0	3
6:45 AM	0		1		1	0		2		2	0		11		11	0		1		1	15
Total	0		1		1	0		6		6	0		18		18	0		1		1	26
7:00 AM	0		1		1	0		6		6	0		7		7	0		0		0	14
7:15 AM	0		1		1	0		11		11	0		22		22	0		3		3	37
7:30 AM	0		2		2	0		11		11	0		24		24	0		2		2	39
7:45 AM	0		1		1	0		7		7	0		37		37	0		7		7	52
Total	0		5		5	0		35		35	0		90		90	0		12		12	142
8:00 AM	0		3		3	0		11		11	0		28		28	0		1		1	43
8:15 AM	0		1		1	0		5		5	0		18		18	0		7		7	31
8:30 AM	0		1		1	0		3		3	0		14		14	0		5		5	23
8:45 AM	0		0		0	0		3		3	0		12		12	0		3		3	18
Total	0		5		5	0		22		22	0		72		72	0		16		16	115
Grand Total	0		11		11	0		0		0	0		180		180	0		29		29	220
Apprch %	0.0	0.0	100.0	0.0							0.0	0.0	100.0	0.0		0.0	0.0	100.0	0.0		
Total %	0.0		5.0		5.0	0.0		0.0		0.0	0.0		81.8		81.8	0.0		13.2		13.2	
Overall Peak Hour Volume	0		7		7	0		40		40	0		111		111	0		13		13	171

Traffic Count conducted by Traffic Planning & Design, Inc.

Herbert, Rowland & Grubic, Inc.
369 East Park Drive
Harrisburg, PA 17111
(717) 564-1121

Intersection #: 11
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Greater Hershey Area Study
AM PEAK HOUR

All Vehicles

	Hersheypark Drive (SR 0743) Eastbound					Hersheypark Drive (SR 0743) Westbound					Park Blvd Northbound					Hershey Road (SR 0039) Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
8:00 AM	30	102	24	0	156	14	108	40	0	162	0	14	4	0	18	50	36	69	0	155	491
8:15 AM	41	93	22	0	156	10	104	30	0	144	3	15	5	0	23	51	44	82	0	177	500
8:30 AM	38	108	29	0	175	19	117	51	0	187	9	12	3	0	24	49	48	85	0	182	568
8:45 AM	28	104	75	0	207	43	103	37	1	184	5	17	9	0	31	44	43	81	0	168	590
Total	137	407	150	0	694	86	432	158	1	677	17	58	21	0	96	194	171	317	0	682	2149
9:00 AM	27	107	110	0	244	38	69	32	0	139	0	7	4	0	11	27	47	62	0	136	530
9:15 AM	41	84	85	0	210	66	84	42	0	192	10	16	12	0	38	44	80	67	0	191	631
9:30 AM	38	113	139	0	290	60	99	41	0	200	8	8	7	0	23	43	75	73	0	191	704
9:45 AM	37	97	213	0	347	113	92	30	0	235	9	19	14	0	42	38	105	56	0	199	823
Total	143	401	547	0	1091	277	344	145	0	766	27	50	37	0	114	152	307	258	0	717	2688
10:00 AM	27	98	194	0	319	147	86	47	0	280	9	14	14	0	37	38	83	42	0	163	799
10:15 AM	34	78	189	0	301	112	75	40	0	227	22	24	20	0	66	50	94	66	0	210	804
10:30 AM	46	104	164	0	314	130	100	41	0	271	16	11	20	0	47	42	57	57	0	156	788
10:45 AM	33	104	144	0	281	91	101	41	0	233	24	19	17	0	60	52	76	55	0	183	757
Total	140	384	691	0	1215	480	362	169	0	1011	71	68	71	0	210	182	310	220	0	712	3148
Grand Total	420	1192	1388	0	3000	843	1138	472	1	2454	115	176	129	0	420	528	788	795	0	2111	7985
Apprch %	14.0	39.7	46.3	0.0		34.4	46.4	19.2	0.0		27.4	41.9	30.7	0.0		25.0	37.3	37.7	0.0		
Total %	5.3	14.9	17.4	0.0	37.6	10.6	14.3	5.9	0.0	30.7	1.4	2.2	1.6	0.0	5.3	6.6	9.9	10.0	0.0	26.4	

	Hersheypark Drive (SR 0743) Eastbound					Hersheypark Drive (SR 0743) Westbound					Park Blvd Northbound					Hershey Road (SR 0039) Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From	9:45 AM			to	10:45 AM																
Volume	144	377	760	0	1281	502	353	158	0	1013	56	68	68	0	192	168	339	221	0	728	3214
Percent	11.2	29.4	59.3	0.0		49.6	34.8	15.6	0.0		29.2	35.4	35.4	0.0		23.1	46.6	30.4	0.0		
9:45 AM Volume	37	97	213	0	347	113	92	30	0	235	9	19	14	0	42	38	105	56	0	199	823
Peak Factor																					
High Int.	9:45 AM					10:00 AM					10:15 AM					10:15 AM					
Volume	37	97	213	0	347	147	86	47	0	280	22	24	20	0	66	50	94	66	0	210	
PHF	0.78	0.91	0.89		0.92	0.85	0.88	0.84		0.90	0.64	0.71	0.85		0.73	0.84	0.81	0.84		0.87	0.98
Heavy Vehicles %	3%	3%	3%			2%	4%	2%			1%	2%	1%			1%	1%	4%			
Misc.	U-Turn		RTOR	Bikes		U-Turn		RTOR	Bikes		U-Turn		RTOR	Bikes		U-Turn		RTOR	Bikes		
	0		316	0		0		65	0		0		55	0		0		148	0		

Traffic Count conducted by Traffic Planning & Design, Inc.

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369 East Park Drive
Harrisburg, PA 17111
(717) 564-1121

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Greater Hershey Area Study
AM PEAK HOUR

Heavy Vehicles & Bicycles

	Hersheypark Drive (SR 0743) Eastbound					Hersheypark Drive (SR 0743) Westbound					Park Blvd Northbound					Hershey Road (SR 0039) Southbound					
Start Time	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Int. Total
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch % Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Overall Peak Hour Volume	5	9	21	0	0	12	13	3	0	0	0	1	0	0	0	2	2	8	0	0	0

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Greater Hershey Area Study
AM PEAK HOUR

U-Turn & RTOR

	Hersheypark Drive (SR 0743) Eastbound					Hersheypark Drive (SR 0743) Westbound					Park Blvd Northbound					Hershey Road (SR 0039) Southbound					
Start Time	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	Int. Total
8:00 AM	0		17		17	0		29		29	0		1		1	0		42		42	89
8:15 AM	0		9		9	0		16		16	0		2		2	0		42		42	69
8:30 AM	0		9		9	0		38		38	0		2		2	0		55		55	104
8:45 AM	0		41		41	0		23		23	0		2		2	0		52		52	118
Total	0		76		76	0		106		106	0		7		7	0		191		191	380
9:00 AM	0		31		31	0		11		11	0		4		4	0		41		41	87
9:15 AM	0		23		23	0		14		14	0		8		8	0		40		40	85
9:30 AM	0		49		49	0		20		20	0		5		5	0		56		56	130
9:45 AM	0		68		68	0		13		13	0		11		11	0		37		37	129
Total	0		171		171	0		58		58	0		28		28	0		174		174	431
10:00 AM	0		97		97	0		19		19	0		11		11	0		34		34	161
10:15 AM	0		89		89	0		18		18	0		17		17	0		38		38	162
10:30 AM	0		62		62	0		15		15	0		16		16	0		39		39	132
10:45 AM	0		65		65	0		17		17	0		5		5	0		33		33	120
Total	0		313		313	0		69		69	0		49		49	0		144		144	575
Grand Total	0		560		560	0		0		0	0		84		84	0		509		509	1153
Apprch %	0.0	0.0	100.0	0.0							0.0	0.0	100.0	0.0		0.0	0.0	100.0	0.0		
Total %	0.0		48.6		48.6	0.0		0.0		0.0	0.0		7.3		7.3	0.0		44.1		44.1	
Overall Peak Hour Volume	0		316		316	0		65		65	0		55		55	0		148		148	584

Traffic Count conducted by Traffic Planning & Design, Inc.

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Greater Hershey Area Study
AM PEAK HOUR

All Vehicles

	Hersheypark Drive Eastbound					Hersheypark Drive Westbound					Park Avenue Northbound					Sand Beach Road Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
7:00 AM	8	47	37	0	92	27	183	1	0	211	43	14	16	0	73	5	16	7	0	28	404
7:15 AM	7	76	34	0	117	55	190	5	0	250	46	10	17	0	73	3	25	2	0	30	471
7:30 AM	14	67	48	0	129	57	198	7	1	263	49	20	19	0	88	3	32	10	0	45	525
7:45 AM	14	72	56	0	142	57	156	6	0	219	36	29	20	0	85	4	32	5	0	41	487
Total	43	262	175	0	480	196	727	20	1	943	174	73	72	0	319	15	105	24	0	144	1886
8:00 AM	14	52	44	0	110	33	110	3	0	146	24	29	21	0	74	1	22	3	0	26	356
8:15 AM	8	89	36	0	133	28	93	5	0	126	27	19	24	0	70	4	22	8	0	34	363
8:30 AM	13	58	35	0	106	25	124	6	1	156	44	21	22	0	87	4	23	5	0	32	381
8:45 AM	5	80	43	0	128	24	106	2	0	132	38	21	16	0	75	9	33	8	0	50	385
Total	40	279	158	0	477	110	433	16	1	560	133	90	83	0	306	18	100	24	0	142	1485
Grand Total	83	541	333	0	957	306	1160	36	2	1504	307	163	155	0	625	33	205	48	0	286	3372
Apprch %	8.7	56.5	34.8	0.0		20.3	77.1	2.4	0.1		49.1	26.1	24.8	0.0		11.5	71.7	16.8	0.0		
Total %	2.5	16.0	9.9	0.0	28.4	9.1	34.4	1.1	0.1	44.6	9.1	4.8	4.6	0.0	18.5	1.0	6.1	1.4	0.0	8.5	

	Hersheypark Drive Eastbound					Hersheypark Drive Westbound					Park Avenue Northbound					Sand Beach Road Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From	7:00 AM		to		8:00 AM																
Volume	43	262	175	0	480	196	727	20	1	944	174	73	72	0	319	15	105	24	0	144	1887
Percent	9.0	54.6	36.5	0.0		20.8	77.0	2.1	0.1		54.5	22.9	22.6	0.0		10.4	72.9	16.7	0.0		
7:30 AM Volume	14	67	48	0	129	57	198	7	1	263	49	20	19	0	88	3	32	10	0	45	525
Peak Factor																					
High Int.	7:45 AM					7:30 AM					7:30 AM					8:45 AM					
Volume	14	72	56	0	142	57	198	7	1	263	49	20	19	0	88	9	33	8	0	50	
PHF	0.77	0.86	0.78		0.85	0.86	0.92	0.71	0.25	0.90	0.89	0.63	0.90		0.91	0.75	0.82	0.60		0.80	0.90
Heavy Vehicles %	7%	6%	6%			6%	2%	5%			3%	3%	8%			7%	6%	8%			
Misc.	U-Turn 0		RTOR 73	Bikes 0		U-Turn 0		RTOR 2	Bikes 0		U-Turn 0		RTOR 34	Bikes 1		U-Turn 0		RTOR 9	Bikes 0		

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Greater Hershey Area Study
AM PEAK HOUR

Heavy Vehicles & Bicycles

	Hersheypark Drive Eastbound					Hersheypark Drive Westbound					Park Avenue Northbound					Sand Beach Road Southbound					
Start Time	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Int. Total
7:00 AM	0	1	1	0	2	2	5	0	0	7	1	0	2	0	3	1	3	2	0	6	18
7:15 AM	1	5	1	0	7	2	6	1	0	9	2	0	0	0	2	0	1	0	0	1	19
7:30 AM	1	5	3	0	9	6	4	0	0	10	2	1	1	0	4	0	0	0	0	0	23
7:45 AM	1	4	5	0	10	2	3	0	0	5	1	1	3	0	5	0	2	0	0	2	22
Total	3	15	10	0	28	12	18	1	0	31	6	2	6	0	14	1	6	2	0	9	82
8:00 AM	0	4	2	0	6	2	6	0	0	8	2	3	1	0	6	0	1	0	0	1	21
8:15 AM	0	11	1	0	12	1	4	1	0	6	1	1	3	0	5	1	2	1	0	4	27
8:30 AM	1	3	1	0	5	4	7	0	0	11	8	0	0	0	8	0	0	1	0	1	25
8:45 AM	0	7	4	0	11	3	5	0	0	8	3	1	4	0	8	1	2	0	0	3	30
Total	1	25	8	0	34	10	22	1	0	33	14	5	8	0	27	2	5	2	0	9	103
Grand Total	4	40	18	0	62	22	40	2	0	64	20	7	14	0	41	3	11	4	0	18	185
Apprch %	6.5	64.5	29.0	0.0		34.4	62.5	3.1	0.0		48.8	17.1	34.1	0.0		16.7	61.1	22.2	0.0		
Total %	2.2	21.6	9.7	0.0	33.5	11.9	21.6	1.1	0.0	34.6	10.8	3.8	7.6	0.0	22.2	1.6	5.9	2.2	0.0	9.7	
Overall Peak Hour Volume	3	15	10	0	28	12	18	1	0	31	6	2	6	0	14	1	6	2	0	9	82

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Greater Hershey Area Study
AM PEAK HOUR

U-Turn & RTOR

	Hersheypark Drive Eastbound					Hersheypark Drive Westbound					Park Avenue Northbound					Sand Beach Road Southbound					
Start Time	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	Int. Total
7:00 AM	0		13		13	0		0		0	0		12		12	0		1		1	26
7:15 AM	0		14		14	0		1		1	0		7		7	0		1		1	23
7:30 AM	0		22		22	0		1		1	0		6		6	0		5		5	34
7:45 AM	0		24		24	0		0		0	0		9		9	0		2		2	35
Total	0		73		73	0		2		2	0		34		34	0		9		9	118
8:00 AM	0		23		23	0		1		1	0		9		9	0		2		2	35
8:15 AM	0		15		15	0		4		4	0		6		6	0		2		2	27
8:30 AM	0		25		25	0		0		0	0		11		11	0		4		4	40
8:45 AM	0		18		18	0		0		0	0		4		4	0		2		2	24
Total	0		81		81	0		5		5	0		30		30	0		10		10	126
Grand Total	0		154		154	0		0		0	0		64		64	0		19		19	237
Apprch %	0.0	0.0	100.0	0.0							0.0	0.0	100.0	0.0		0.0	0.0	100.0	0.0		
Total %	0.0		65.0		65.0	0.0		0.0		0.0	0.0		27.0		27.0	0.0		8.0		8.0	
Overall Peak Hour Volume	0		73		73	0		2		2	0		34		34	0		9		9	118

Herbert, Rowland & Grubic, Inc.
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Greater Hershey Area Study
AM PEAK HOUR

All Vehicles

	E. Chocolate Ave Eastbound					E. Chocolate Ave Westbound					Homestead Rd Northbound					Hershey Food Driveway Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
6:00 AM	2	43	5	0	50	32	152	4	0	188	3	2	18	0	23	0	0	0	0	0	261
6:15 AM	2	45	6	0	53	42	149	3	0	194	3	5	31	0	39	0	0	0	0	0	286
6:30 AM	1	87	13	0	101	40	199	7	0	246	5	4	45	0	54	0	1	0	0	1	402
6:45 AM	7	109	29	1	146	64	190	17	0	271	8	12	27	0	47	0	0	1	0	1	465
Total	12	284	53	1	350	178	690	31	0	899	19	23	121	0	163	0	1	1	0	2	1414
7:00 AM	2	92	82	0	176	59	200	16	0	275	9	17	19	0	45	3	1	0	0	4	500
7:15 AM	8	141	78	0	227	83	203	21	0	307	20	16	35	0	71	1	1	3	0	5	610
7:30 AM	9	123	26	0	158	57	217	30	0	304	12	12	51	0	75	2	0	2	0	4	541
7:45 AM	17	120	45	0	182	90	221	26	0	337	6	29	48	1	84	0	0	0	0	0	603
Total	36	476	231	0	743	289	841	93	0	1223	47	74	153	1	275	6	2	5	0	13	2254
8:00 AM	12	128	33	0	173	57	161	22	0	240	15	19	38	0	72	2	0	0	0	2	487
8:15 AM	10	108	41	0	159	52	150	10	0	212	16	21	45	0	82	3	0	2	0	5	458
8:30 AM	11	129	20	0	160	46	191	9	0	246	37	8	36	0	81	0	0	1	0	1	488
8:45 AM	10	132	12	0	154	40	182	12	0	234	10	4	41	0	55	6	3	1	0	10	453
Total	43	497	106	0	646	195	684	53	0	932	78	52	160	0	290	11	3	4	0	18	1886
Grand Total	91	1257	390	1	1739	662	2215	177	0	3054	144	149	434	1	728	17	6	10	0	33	5554
Apprch %	5.2	72.3	22.4	0.1		21.7	72.5	5.8	0.0		19.8	20.5	59.6	0.1		51.5	18.2	30.3	0.0		
Total %	1.6	22.6	7.0	0.0	31.3	11.9	39.9	3.2	0.0	55.0	2.6	2.7	7.8	0.0	13.1	0.3	0.1	0.2	0.0	0.6	

	E. Chocolate Ave Eastbound					E. Chocolate Ave Westbound					Homestead Rd Northbound					Hershey Food Driveway Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From	7:00 AM			to	8:00 AM																
Volume	36	476	231	0	743	289	841	93	0	1223	47	74	153	1	275	6	2	5	0	13	2254
Percent	4.8	64.1	31.1	0.0		23.6	68.8	7.6	0.0		17.1	26.9	55.6	0.4		46.2	15.4	38.5	0.0		
7:15 AM Volume	8	141	78	0	227	83	203	21	0	307	20	16	35	0	71	1	1	3	0	5	610
Peak Factor																					
High Int.	7:15 AM					7:45 AM					7:45 AM					8:45 AM					
Volume	8	141	78	0	227	90	221	26	0	337	6	29	48	1	84	6	3	1	0	10	
PHF	0.53	0.84	0.70		0.82	0.80	0.95	0.78		0.91	0.59	0.64	0.75	0.25	0.82	0.50	0.50	0.42		0.65	0.92
Heavy Vehicles %	0%	3%	12%			3%	1%	0%			6%	0%	5%			0%	0%	0%			
Misc.	U-Turn		RTOR	Bikes		U-Turn		RTOR	Bikes		U-Turn		RTOR	Bikes		U-Turn		RTOR	Bikes		
	0		0	0		0		0	0		0		0	0		0		0	0		

Traffic Count conducted by Grove Miller Engineering, Inc.

Herbert, Rowland & Grubic, Inc.
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(717) 564-1121

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Greater Hershey Area Study
AM PEAK HOUR

Heavy Vehicles & Bicycles

	E. Chocolate Ave Eastbound					E. Chocolate Ave Westbound					Homestead Rd Northbound					Hershey Food Driveway Southbound					
Start Time	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Int. Total
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch % Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Overall Peak Hour Volume	0	13	27	0	0	9	11	0	0	0	3	0	8	0	0	0	0	0	0	0	0

Traffic Count conducted by Grove Miller Engineering, Inc.

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Greater Hershey Area Study
AM PEAK HOUR

All Vehicles

	Governor Rd (SR 0322) Eastbound					Governor Rd (SR 0322) Westbound					University Dr Northbound					University Dr Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
6:00 AM	1	55	28	0	84	21	38	9	0	68	6	3	1	0	10	1	8	0	0	9	171
6:15 AM	5	105	38	0	148	26	59	7	0	92	8	5	7	0	20	5	12	3	0	20	280
6:30 AM	4	149	62	1	216	45	61	5	0	111	2	7	6	0	15	5	12	2	0	19	361
6:45 AM	1	180	73	0	254	49	81	11	0	141	7	9	5	0	21	16	29	1	0	46	462
Total	11	489	201	1	702	141	239	32	0	412	23	24	19	0	66	27	61	6	0	94	1274
7:00 AM	3	140	60	0	203	38	90	19	0	147	9	8	6	1	24	7	19	2	0	28	402
7:15 AM	8	179	64	0	251	60	83	26	2	171	13	18	13	1	45	13	35	3	1	52	519
7:30 AM	6	182	90	0	278	46	83	20	3	152	22	26	31	0	79	16	31	5	0	52	561
7:45 AM	7	169	89	2	267	55	77	18	3	153	19	19	26	0	64	14	34	8	0	56	540
Total	24	670	303	2	999	199	333	83	8	623	63	71	76	2	212	50	119	18	1	188	2022
8:00 AM	3	151	62	0	216	45	81	16	0	142	15	18	14	1	48	8	26	0	0	34	440
8:15 AM	8	144	51	1	204	36	102	20	1	159	14	8	11	0	33	10	18	3	0	31	427
8:30 AM	4	147	65	1	217	38	94	20	1	153	19	7	9	0	35	7	17	7	0	31	436
8:45 AM	18	142	87	1	248	37	96	16	0	149	10	8	9	2	29	7	28	9	0	44	470
Total	33	584	265	3	885	156	373	72	2	603	58	41	43	3	145	32	89	19	0	140	1773
Grand Total	68	1743	769	6	2586	496	945	187	10	1638	144	136	138	5	423	109	269	43	1	422	5069
Apprch %	2.6	67.4	29.7	0.2		30.3	57.7	11.4	0.6		34.0	32.2	32.6	1.2		25.8	63.7	10.2	0.2		
Total %	1.3	34.4	15.2	0.1	51.0	9.8	18.6	3.7	0.2	32.3	2.8	2.7	2.7	0.1	8.3	2.2	5.3	0.8	0.0	8.3	

	Governor Rd (SR 0322) Eastbound					Governor Rd (SR 0322) Westbound					University Dr Northbound					University Dr Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From	7:15 AM			to	8:15 AM																
Volume	24	681	305	2	1012	206	324	80	8	618	69	81	84	2	236	51	126	16	1	194	2060
Percent	2.4	67.3	30.1	0.2		33.3	52.4	12.9	1.3		29.2	34.3	35.6	0.8		26.3	64.9	8.2	0.5		
7:30 AM Volume	6	182	90	0	278	46	83	20	3	152	22	26	31	0	79	16	31	5	0	52	561
Peak Factor																					
High Int.	7:30 AM					7:15 AM					7:30 AM					7:45 AM					
Volume	6	182	90	0	278	60	83	26	2	171	22	26	31	0	79	14	34	8	0	56	
PHF	0.75	0.94	0.85	0.25	0.91	0.86	0.98	0.77	0.67	0.90	0.78	0.78	0.68	0.50	0.75	0.80	0.90	0.50	0.25	0.87	0.92
Heavy Vehicles %	0%	2%	0%			0%	3%	4%			0%	1%	1%			2%	2%	0%			
Misc.	U-Turn		RTOR	Bikes		U-Turn		RTOR	Bikes		U-Turn		RTOR	Bikes		U-Turn		RTOR	Bikes		
	0		51	0		0		18	0		1		28	0		0		1	0		

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AM PEAK HOUR

Heavy Vehicles & Bicycles

	Governor Rd (SR 0322) Eastbound					Governor Rd (SR 0322) Westbound					University Dr Northbound					University Dr Southbound					
Start Time	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Int. Total
6:00 AM	0	3	0	0	3	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	4
6:15 AM	0	2	0	0	2	0	6	0	0	6	0	0	0	0	0	0	1	0	0	1	9
6:30 AM	0	3	1	0	4	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	5
6:45 AM	0	3	2	0	5	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	8
Total	0	11	3	0	14	0	10	0	0	10	0	0	0	0	0	0	2	0	0	2	26
7:00 AM	0	2	2	0	4	0	2	0	0	2	0	1	0	1	2	0	0	0	0	0	8
7:15 AM	0	3	1	0	4	0	1	2	0	3	0	0	0	0	0	0	2	0	0	2	9
7:30 AM	0	6	0	0	6	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	8
7:45 AM	0	3	0	0	3	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	4
Total	0	14	3	0	17	0	5	2	0	7	0	1	1	1	3	0	2	0	0	2	29
8:00 AM	0	5	0	0	5	0	6	1	0	7	0	1	0	0	1	1	1	0	0	2	15
8:15 AM	1	2	0	0	3	0	1	2	0	3	0	0	0	0	0	0	0	0	0	0	6
8:30 AM	0	2	0	0	2	0	5	0	0	5	0	1	0	0	1	0	0	0	0	0	8
8:45 AM	0	1	0	0	1	0	5	0	0	5	0	0	0	0	0	0	1	0	0	1	7
Total	1	10	0	0	11	0	17	3	0	20	0	2	0	0	2	1	2	0	0	3	36
Grand Total	1	35	6	0	42	0	32	5	0	37	0	3	1	1	5	1	6	0	0	7	91
Apprch %	2.4	83.3	14.3	0.0		0.0	86.5	13.5	0.0		0.0	60.0	20.0	20.0		14.3	85.7	0.0	0.0		
Total %	1.1	38.5	6.6	0.0	46.2	0.0	35.2	5.5	0.0	40.7	0.0	3.3	1.1	1.1	5.5	1.1	6.6	0.0	0.0	7.7	
Overall Peak Hour Volume	0	17	1	0	18	0	9	3	0	12	0	1	1	0	2	1	3	0	0	4	36

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AM PEAK HOUR

U-Turn & RTOR

	Governor Rd (SR 0322) Eastbound					Governor Rd (SR 0322) Westbound					University Dr Northbound					University Dr Southbound					
Start Time	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	Int. Total
6:00 AM	0		1		1	0		0		0	0		1		1	0		0		0	2
6:15 AM	0		6		6	0		1		1	0		6		6	0		2		2	15
6:30 AM	0		15		15	0		0		0	0		6		6	0		0		0	21
6:45 AM	0		6		6	0		1		1	0		2		2	0		1		1	10
Total	0		28		28	0		2		2	0		15		15	0		3		3	48
7:00 AM	0		8		8	0		3		3	0		6		6	0		1		1	18
7:15 AM	0		11		11	0		8		8	0		7		7	0		0		0	26
7:30 AM	0		17		17	0		2		2	0		4		4	0		0		0	23
7:45 AM	0		19		19	0		4		4	1		10		11	0		1		1	35
Total	0		55		55	0		17		17	1		27		28	0		2		2	102
8:00 AM	0		4		4	0		4		4	0		7		7	0		0		0	15
8:15 AM	1		13		14	0		2		2	0		7		7	0		1		1	24
8:30 AM	0		9		9	0		1		1	0		6		6	0		1		1	17
8:45 AM	0		7		7	0		6		6	0		2		2	1		2		3	18
Total	1		33		34	0		13		13	0		22		22	1		4		5	74
Grand Total	1		116		117	0		0		0	1		64		65	1		9		10	192
Apprch %	0.9	0.0	99.1	0.0							1.5	0.0	98.5	0.0		10.0	0.0	90.0	0.0		
Total %	0.5		60.4		60.9	0.0		0.0		0.0	0.5		33.3		33.9	0.5		4.7		5.2	
Overall Peak Hour Volume	0		51		51	0		18		18	1		28		29	0		1		1	99

Herbert, Rowland & Grubic, Inc.
369 East Park Drive
Harrisburg, PA 17111
(717) 564-1121

Intersection #: 24
Job Number: 2484.0484
Date: 1/15/2015
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Greater Hershey Area Study
AM PEAK HOUR

All Vehicles

	Governor Rd (SR 0322) Eastbound					Governor Rd (SR 0322) Westbound					Centerview Ln Northbound					Centerview Ln Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
6:00 AM	2	30	23	0	55	29	57	5	0	91	2	0	1	2	5	3	6	2	0	11	162
6:15 AM	0	56	48	0	104	52	86	6	0	144	3	1	4	0	8	3	10	0	0	13	269
6:30 AM	0	57	92	0	149	42	113	2	0	157	2	1	5	0	8	6	15	1	0	22	336
6:45 AM	0	81	108	0	189	59	133	11	0	203	3	1	6	0	10	11	17	1	0	29	431
Total	2	224	271	0	497	182	389	24	0	595	10	3	16	2	31	23	48	4	0	75	1198
7:00 AM	1	80	55	0	136	43	130	4	1	178	11	2	10	0	23	8	13	2	0	23	360
7:15 AM	1	108	87	0	196	45	142	9	0	196	13	2	14	0	29	12	25	1	0	38	459
7:30 AM	0	111	94	0	205	59	147	12	2	220	16	6	21	0	43	5	42	4	0	51	519
7:45 AM	3	113	88	0	204	81	148	11	3	243	12	6	24	0	42	8	74	1	1	84	573
Total	5	412	324	0	741	228	567	36	6	837	52	16	69	0	137	33	154	8	1	196	1911
8:00 AM	1	105	60	0	166	43	125	11	3	182	16	2	14	1	33	8	27	3	0	38	419
8:15 AM	2	105	51	2	160	26	123	9	4	162	18	6	9	0	33	10	14	4	0	28	383
8:30 AM	0	118	38	0	156	24	155	14	0	193	6	2	11	0	19	6	14	3	0	23	391
8:45 AM	4	100	26	0	130	40	145	14	0	199	12	2	16	2	32	5	8	5	0	18	379
Total	7	428	175	2	612	133	548	48	7	736	52	12	50	3	117	29	63	15	0	107	1572
Grand Total	14	1064	770	2	1850	543	1504	108	13	2168	114	31	135	5	285	85	265	27	1	378	4681
Apprch %	0.8	57.5	41.6	0.1		25.0	69.4	5.0	0.6		40.0	10.9	47.4	1.8		22.5	70.1	7.1	0.3		
Total %	0.3	22.7	16.4	0.0	39.5	11.6	32.1	2.3	0.3	46.3	2.4	0.7	2.9	0.1	6.1	1.8	5.7	0.6	0.0	8.1	

	Governor Rd (SR 0322) Eastbound					Governor Rd (SR 0322) Westbound					Centerview Ln Northbound					Centerview Ln Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From	7:15 AM			to	8:15 AM																
Volume	5	437	329	0	771	228	562	43	8	841	57	16	73	1	147	33	168	9	1	211	1970
Percent	0.6	56.7	42.7	0.0		27.1	66.8	5.1	1.0		38.8	10.9	49.7	0.7		15.6	79.6	4.3	0.5		
7:45 AM Volume	3	113	88	0	204	81	148	11	3	243	12	6	24	0	42	8	74	1	1	84	573
Peak Factor																					
High Int.	7:30 AM					7:45 AM					7:30 AM					7:45 AM					
Volume	0	111	94	0	205	81	148	11	3	243	16	6	21	0	43	8	74	1	1	84	
PHF	0.42	0.97	0.88		0.94	0.70	0.95	0.90	0.67	0.87	0.89	0.67	0.76	0.25	0.85	0.69	0.57	0.56	0.25	0.63	0.86
Heavy Vehicles %	0%	8%	0%			0%	3%	5%			4%	6%	0%			0%	0%	0%			
Misc.	U-Turn		RTOR	Bikes		U-Turn		RTOR	Bikes		U-Turn		RTOR	Bikes		U-Turn		RTOR	Bikes		
	0		23	0		0		11	0		0		42	0		0		3	0		

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Greater Hershey Area Study
AM PEAK HOUR

Heavy Vehicles & Bicycles

	Governor Rd (SR 0322) Eastbound					Governor Rd (SR 0322) Westbound					Centerview Ln Northbound					Centerview Ln Southbound					
Start Time	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Int. Total
6:00 AM	0	3	0	0	3	0	1	0	0	1	0	0	0	0	0	1	0	0	0	1	5
6:15 AM	0	4	0	0	4	0	8	0	0	8	0	0	0	0	0	0	0	0	0	0	12
6:30 AM	0	5	0	0	5	1	6	0	0	7	0	1	0	0	1	1	0	0	0	1	14
6:45 AM	0	7	0	0	7	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	10
Total	0	19	0	0	19	1	18	0	0	19	0	1	0	0	1	2	0	0	0	2	41
7:00 AM	0	2	0	0	2	0	4	0	0	4	1	0	0	0	1	2	0	0	0	2	9
7:15 AM	0	4	0	0	4	0	5	0	0	5	1	0	0	0	1	0	0	0	0	0	10
7:30 AM	0	7	0	0	7	0	5	0	0	5	0	1	0	0	1	0	0	0	0	0	13
7:45 AM	0	10	0	0	10	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	11
Total	0	23	0	0	23	0	15	0	0	15	2	1	0	0	3	2	0	0	0	2	43
8:00 AM	0	13	0	0	13	1	6	2	0	9	1	0	0	0	1	0	0	0	0	0	23
8:15 AM	0	4	0	0	4	1	7	0	0	8	1	0	1	0	2	0	0	0	0	0	14
8:30 AM	0	5	0	0	5	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	10
8:45 AM	0	4	1	0	5	0	9	0	0	9	2	0	0	0	2	0	0	0	0	0	16
Total	0	26	1	0	27	2	27	2	0	31	4	0	1	0	5	0	0	0	0	0	63
Grand Total	0	68	1	0	69	3	60	2	0	65	6	2	1	0	9	4	0	0	0	4	147
Apprch %	0.0	98.6	1.4	0.0		4.6	92.3	3.1	0.0		66.7	22.2	11.1	0.0		100.0	0.0	0.0	0.0		
Total %	0.0	46.3	0.7	0.0	46.9	2.0	40.8	1.4	0.0	44.2	4.1	1.4	0.7	0.0	6.1	2.7	0.0	0.0	0.0	2.7	
Overall Peak Hour Volume	0	34	0	0	34	1	17	2	0	20	2	1	0	0	3	0	0	0	0	0	57

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Greater Hershey Area Study
AM PEAK HOUR

U-Turn & RTOR

	Governor Rd (SR 0322) Eastbound					Governor Rd (SR 0322) Westbound					Centerview Ln Northbound					Centerview Ln Southbound					
Start Time	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	Int. Total
6:00 AM	0		1		1	0		0		0	0		0		0	0		0		0	1
6:15 AM	0		0		0	0		1		1	0		1		1	0		0		0	2
6:30 AM	0		0		0	0		1		1	0		4		4	0		1		1	6
6:45 AM	0		2		2	0		1		1	0		6		6	0		1		1	10
Total	0		3		3	0		3		3	0		11		11	0		2		2	19
7:00 AM	0		2		2	0		0		0	0		7		7	0		0		0	9
7:15 AM	0		6		6	0		3		3	0		12		12	0		1		1	22
7:30 AM	0		6		6	0		4		4	0		9		9	0		0		0	19
7:45 AM	0		6		6	0		3		3	0		12		12	0		1		1	22
Total	0		20		20	0		10		10	0		40		40	0		2		2	72
8:00 AM	0		5		5	0		1		1	0		9		9	0		1		1	16
8:15 AM	0		1		1	0		2		2	0		5		5	0		3		3	11
8:30 AM	0		5		5	0		0		0	0		6		6	0		1		1	12
8:45 AM	0		3		3	0		1		1	0		12		12	0		3		3	19
Total	0		14		14	0		4		4	0		32		32	0		8		8	58
Grand Total	0		37		37	0		0		0	0		83		83	0		12		12	132
Apprch %	0.0	0.0	100.0	0.0							0.0	0.0	100.0	0.0		0.0	0.0	100.0	0.0		
Total %	0.0		28.0		28.0	0.0		0.0		0.0	0.0		62.9		62.9	0.0		9.1		9.1	
Overall Peak Hour Volume	0		23		23	0		11		11	0		42		42	0		3		3	79

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Greater Hershey Area Study
AM PEAK HOUR

All Vehicles

	Governor Rd (SR 0322) Eastbound					Governor Rd (SR 0322) Westbound					Fishburn Rd (SR 2011) Northbound					Hockersville Rd (SR 2011) Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
6:00 AM	0	18	5	0	23	4	94	32	0	130	21	23	6	0	50	6	11	5	0	22	225
6:15 AM	2	42	12	0	56	3	110	31	0	144	24	25	6	0	55	7	16	7	0	30	285
6:30 AM	0	39	12	0	51	7	135	53	0	195	40	44	10	0	94	23	15	4	0	42	382
6:45 AM	2	68	16	0	86	13	170	46	0	229	39	50	13	0	102	53	31	6	0	90	507
Total	4	167	45	0	216	27	509	162	0	698	124	142	35	0	301	89	73	22	0	184	1399
7:00 AM	0	65	20	0	85	13	146	37	0	196	37	50	24	0	111	32	25	7	0	64	456
7:15 AM	3	103	27	0	133	7	159	40	0	206	64	43	25	0	132	45	24	7	0	76	547
7:30 AM	5	73	32	0	110	8	197	27	0	232	52	52	13	0	117	26	33	11	0	70	529
7:45 AM	8	84	29	0	121	15	180	33	0	228	59	30	25	0	114	25	28	12	0	65	528
Total	16	325	108	0	449	43	682	137	0	862	212	175	87	0	474	128	110	37	0	275	2060
8:00 AM	4	78	32	0	114	13	128	19	0	160	56	51	15	0	122	18	22	11	0	51	447
8:15 AM	3	81	23	0	107	10	121	34	0	165	49	41	23	0	113	25	23	5	0	53	438
8:30 AM	3	71	35	0	109	19	165	25	0	209	46	38	13	0	97	12	18	4	0	34	449
8:45 AM	6	71	23	0	100	15	142	19	0	176	54	38	19	0	111	12	39	15	0	66	453
Total	16	301	113	0	430	57	556	97	0	710	205	168	70	0	443	67	102	35	0	204	1787
Grand Total	36	793	266	0	1095	127	1747	396	0	2270	541	485	192	0	1218	284	285	94	0	663	5246
Apprch %	3.3	72.4	24.3	0.0		5.6	77.0	17.4	0.0		44.4	39.8	15.8	0.0		42.8	43.0	14.2	0.0		
Total %	0.7	15.1	5.1	0.0	20.9	2.4	33.3	7.5	0.0	43.3	10.3	9.2	3.7	0.0	23.2	5.4	5.4	1.8	0.0	12.6	

	Governor Rd (SR 0322) Eastbound					Governor Rd (SR 0322) Westbound					Fishburn Rd (SR 2011) Northbound					Hockersville Rd (SR 2011) Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From	7:00 AM			to	8:00 AM																
Volume	16	325	108	0	449	43	682	137	0	862	212	175	87	0	474	128	110	37	0	275	2060
Percent	3.6	72.4	24.1	0.0		5.0	79.1	15.9	0.0		44.7	36.9	18.4	0.0		46.5	40.0	13.5	0.0		
7:15 AM Volume	3	103	27	0	133	7	159	40	0	206	64	43	25	0	132	45	24	7	0	76	547
Peak Factor																					
High Int.	7:15 AM					7:30 AM					7:15 AM					6:45 AM					
Volume	3	103	27	0	133	8	197	27	0	232	64	43	25	0	132	53	31	6	0	90	
PHF	0.50	0.79	0.84		0.84	0.72	0.87	0.86		0.93	0.83	0.84	0.87		0.90	0.71	0.83	0.77		0.90	0.94
Heavy Vehicles %	6%	6%	1%			7%	2%	3%			2%	6%	5%			1%	4%	3%			
Misc.	U-Turn		RTOR	Bikes		U-Turn		RTOR	Bikes		U-Turn		RTOR	Bikes		U-Turn		RTOR	Bikes		
	0		12	0		0		6	0		0		48	0		0		11	0		

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Greater Hershey Area Study
AM PEAK HOUR

Heavy Vehicles & Bicycles

	Governor Rd (SR 0322) Eastbound					Governor Rd (SR 0322) Westbound					Fishburn Rd (SR 2011) Northbound					Hockersville Rd (SR 2011) Southbound					
Start Time	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Int. Total
6:00 AM	0	3	0	0	3	0	1	2	0	3	3	1	0	0	4	0	0	0	0	0	10
6:15 AM	0	2	0	0	2	0	3	0	0	3	1	2	0	0	3	1	1	0	0	2	10
6:30 AM	0	0	2	0	2	1	4	1	0	6	2	1	0	0	3	0	2	0	0	2	13
6:45 AM	0	5	0	0	5	0	3	2	0	5	1	2	0	0	3	0	2	0	0	2	15
Total	0	10	2	0	12	1	11	5	0	17	7	6	0	0	13	1	5	0	0	6	48
7:00 AM	0	5	0	0	5	1	3	1	0	5	2	7	1	0	10	0	0	0	0	0	20
7:15 AM	0	2	0	0	2	0	4	1	0	5	1	2	1	0	4	0	0	0	0	0	11
7:30 AM	0	5	1	0	6	0	4	1	0	5	1	1	1	0	3	0	0	1	0	1	15
7:45 AM	1	8	0	0	9	2	4	1	0	7	0	1	1	0	2	1	4	0	0	5	23
Total	1	20	1	0	22	3	15	4	0	22	4	11	4	0	19	1	4	1	0	6	69
8:00 AM	1	11	5	0	17	0	5	0	0	5	2	0	0	0	2	0	0	1	0	1	25
8:15 AM	1	5	0	0	6	0	5	0	0	5	3	2	2	0	7	1	2	0	0	3	21
8:30 AM	0	6	0	0	6	1	4	0	0	5	1	2	0	0	3	0	1	0	0	1	15
8:45 AM	0	3	0	0	3	0	5	0	0	5	3	3	0	0	6	2	2	0	0	4	18
Total	2	25	5	0	32	1	19	0	0	20	9	7	2	0	18	3	5	1	0	9	79
Grand Total	3	55	8	0	66	5	45	9	0	59	20	24	6	0	50	5	14	2	0	21	196
Apprch %	4.5	83.3	12.1	0.0		8.5	76.3	15.3	0.0		40.0	48.0	12.0	0.0		23.8	66.7	9.5	0.0		
Total %	1.5	28.1	4.1	0.0	33.7	2.6	23.0	4.6	0.0	30.1	10.2	12.2	3.1	0.0	25.5	2.6	7.1	1.0	0.0	10.7	
Overall Peak Hour Volume	1	20	1	0	22	3	15	4	0	22	4	11	4	0	19	1	4	1	0	6	69

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AM PEAK HOUR

U-Turn & RTOR

	Governor Rd (SR 0322) Eastbound					Governor Rd (SR 0322) Westbound					Fishburn Rd (SR 2011) Northbound					Hockersville Rd (SR 2011) Southbound					
Start Time	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	Int. Total
6:00 AM	0		1		1	0		0		0	0		3		3	0		1		1	5
6:15 AM	0		3		3	0		2		2	0		3		3	0		1		1	9
6:30 AM	0		1		1	0		3		3	0		3		3	0		1		1	8
6:45 AM	0		1		1	0		1		1	0		11		11	0		0		0	13
Total	0		6		6	0		6		6	0		20		20	0		3		3	35
7:00 AM	0		2		2	0		0		0	0		14		14	0		5		5	21
7:15 AM	0		5		5	0		1		1	0		15		15	0		2		2	23
7:30 AM	0		3		3	0		4		4	0		7		7	0		1		1	15
7:45 AM	0		2		2	0		1		1	0		12		12	0		3		3	18
Total	0		12		12	0		6		6	0		48		48	0		11		11	77
8:00 AM	0		1		1	0		0		0	0		9		9	0		3		3	13
8:15 AM	0		2		2	0		1		1	0		15		15	0		0		0	18
8:30 AM	0		5		5	0		0		0	0		7		7	0		1		1	13
8:45 AM	0		1		1	0		1		1	0		11		11	0		2		2	15
Total	0		9		9	0		2		2	0		42		42	0		6		6	59
Grand Total	0		27		27	0		0		0	0		110		110	0		20		20	157
Apprch %	0.0	0.0	100.0	0.0							0.0	0.0	100.0	0.0		0.0	0.0	100.0	0.0		
Total %	0.0		17.2		17.2	0.0		0.0		0.0	0.0		70.1		70.1	0.0		12.7		12.7	
Overall Peak Hour Volume	0		12		12	0		6		6	0		48		48	0		11		11	77

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Greater Hershey Area Study
AM PEAK HOUR

All Vehicles

	W. Governor Road (SR 322) Eastbound					E. Governor Road (SR 322) Westbound					Cocoa Ave Northbound					Cocoa Ave Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
6:00 AM	3	37	2	0	42	2	96	9	0	107	0	16	1	0	17	5	18	9	0	32	198
6:15 AM	2	56	1	0	59	1	139	3	0	143	2	21	0	0	23	3	21	2	0	26	251
6:30 AM	0	70	0	0	70	1	194	6	1	202	2	32	1	0	35	5	22	6	0	33	340
6:45 AM	1	81	8	0	90	7	177	8	0	192	1	24	0	0	25	10	15	7	0	32	339
Total	6	244	11	0	261	11	606	26	1	644	5	93	2	0	100	23	76	24	0	123	1128
7:00 AM	2	79	3	0	84	6	180	3	0	189	0	39	3	0	42	6	30	5	0	41	356
7:15 AM	4	108	2	0	114	12	178	9	0	199	2	56	6	0	64	8	39	2	1	50	427
7:30 AM	5	101	13	0	119	16	196	7	0	219	2	54	7	0	63	5	34	10	0	49	450
7:45 AM	9	95	7	0	111	17	183	10	1	211	2	61	4	0	67	4	35	11	0	50	439
Total	20	383	25	0	428	51	737	29	1	818	6	210	20	0	236	23	138	28	1	190	1672
8:00 AM	6	93	9	0	108	7	175	2	1	185	3	45	7	0	55	5	35	6	0	46	394
8:15 AM	4	107	14	0	125	20	161	7	1	189	3	46	7	0	56	3	32	11	0	46	416
8:30 AM	7	102	11	0	120	13	152	18	0	183	3	63	10	0	76	16	36	7	0	59	438
8:45 AM	10	87	6	0	103	20	154	12	0	186	4	61	9	0	74	14	37	14	0	65	428
Total	27	389	40	0	456	60	642	39	2	743	13	215	33	0	261	38	140	38	0	216	1676
Grand Total	53	1016	76	0	1145	122	1985	94	4	2205	24	518	55	0	597	84	354	90	1	529	4476
Apprch %	4.6	88.7	6.6	0.0		5.5	90.0	4.3	0.2		4.0	86.8	9.2	0.0		15.9	66.9	17.0	0.2		
Total %	1.2	22.7	1.7	0.0	25.6	2.7	44.3	2.1	0.1	49.3	0.5	11.6	1.2	0.0	13.3	1.9	7.9	2.0	0.0	11.8	

	W. Governor Road (SR 322) Eastbound					E. Governor Road (SR 322) Westbound					Cocoa Ave Northbound					Cocoa Ave Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From	7:15 AM			to	8:15 AM																
Volume	24	397	31	0	452	52	732	28	2	814	9	216	24	0	249	22	143	29	1	195	1710
Percent	5.3	87.8	6.9	0.0		6.4	89.9	3.4	0.2		3.6	86.7	9.6	0.0		11.3	73.3	14.9	0.5		
7:30 AM Volume	5	101	13	0	119	16	196	7	0	219	2	54	7	0	63	5	34	10	0	49	450
Peak Factor																					
High Int.	8:15 AM					7:30 AM					8:30 AM					8:45 AM					
Volume	4	107	14	0	125	16	196	7	0	219	3	63	10	0	76	14	37	14	0	65	
PHF	0.67	0.92	0.60		0.95	0.76	0.93	0.70	0.50	0.93	0.75	0.89	0.86		0.93	0.69	0.92	0.66	0.25	0.98	0.95
Heavy Vehicles %	0%	6%	0%			4%	3%	4%			33%	7%	8%			9%	12%	0%			
Misc.	U-Turn		RTOR	Bikes		U-Turn		RTOR	Bikes		U-Turn		RTOR	Bikes		U-Turn		RTOR	Bikes		
	0		0	0		0		2	0		0		0	0		0		20	0		

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AM PEAK HOUR

Heavy Vehicles & Bicycles

	W. Governor Road (SR 322) Eastbound					E. Governor Road (SR 322) Westbound					Cocoa Ave Northbound					Cocoa Ave Southbound					
Start Time	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Int. Total
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %																					
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Overall Peak Hour Volume	0	22	0	0	0	2	25	1	0	0	3	15	2	0	0	2	17	0	0	0	0

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AM PEAK HOUR

U-Turn & RTOR

	W. Governor Road (SR 322) Eastbound					E. Governor Road (SR 322) Westbound					Cocoa Ave Northbound					Cocoa Ave Southbound					
Start Time	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	Int. Total
6:00 AM	0		0		0	0		0		0	0		0		0	0		9		9	9
6:15 AM	0		0		0	0		0		0	0		0		0	0		1		1	1
6:30 AM	0		0		0	0		0		0	0		0		0	0		4		4	4
6:45 AM	0		0		0	0		0		0	0		0		0	0		6		6	6
Total	0		0		0	0		0		0	0		0		0	0		20		20	20
7:00 AM	0		0		0	0		0		0	0		0		0	0		1		1	1
7:15 AM	0		0		0	0		0		0	0		0		0	0		2		2	2
7:30 AM	0		0		0	0		2		2	0		0		0	0		6		6	8
7:45 AM	0		0		0	0		0		0	0		0		0	0		7		7	7
Total	0		0		0	0		2		2	0		0		0	0		16		16	18
8:00 AM	0		0		0	0		0		0	0		0		0	0		5		5	5
8:15 AM	0		0		0	0		0		0	0		0		0	0		9		9	9
8:30 AM	0		0		0	0		0		0	0		0		0	0		3		3	3
8:45 AM	0		0		0	0		0		0	0		0		0	0		10		10	10
Total	0		0		0	0		0		0	0		0		0	0		27		27	27
Grand Total	0		0		0	0		0		0	0		0		0	0		63		63	63
Apprch %																0.0	0.0	100.0	0.0		
Total %	0.0		0.0		0.0	0.0		0.0		0.0	0.0		0.0		0.0	0.0		100.0		100.0	
Overall Peak Hour Volume	0		0		0	0		2		2	0		0		0	0		20		20	22

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Greater Hershey Area Study
AM PEAK HOUR

All Vehicles

	E.Governor Rd Eastbound					E.Governor Rd Westbound					Homestead Rd Northbound					Homestead Rd Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
7:00 AM	53	78	0	0	131	2	165	18	0	185	1	84	12	0	97	4	30	38	0	72	485
7:15 AM	63	101	4	0	168	6	172	32	0	210	3	111	6	0	120	7	33	65	0	105	603
7:30 AM	25	123	3	0	151	4	190	14	0	208	1	101	12	0	114	5	23	45	0	73	546
7:45 AM	11	91	4	0	106	8	180	8	0	196	4	76	10	0	90	1	21	18	0	40	432
Total	152	393	11	0	556	20	707	72	0	799	9	372	40	0	421	17	107	166	0	290	2066
8:00 AM	22	69	1	0	92	4	137	7	0	148	0	62	6	0	68	3	13	12	0	28	336
8:15 AM	38	75	4	0	117	2	151	7	0	160	0	64	5	0	69	2	17	21	0	40	386
8:30 AM	27	72	2	0	101	6	162	8	0	176	2	61	8	0	71	4	21	68	0	93	441
8:45 AM	10	80	3	0	93	7	134	5	0	146	1	45	8	0	54	1	10	20	1	32	325
Total	97	296	10	0	403	19	584	27	0	630	3	232	27	0	262	10	61	121	1	193	1488
Grand Total	249	689	21	0	959	39	1291	99	0	1429	12	604	67	0	683	27	168	287	1	483	3554
Apprch %	26.0	71.8	2.2	0.0		2.7	90.3	6.9	0.0		1.8	88.4	9.8	0.0		5.6	34.8	59.4	0.2		
Total %	7.0	19.4	0.6	0.0	27.0	1.1	36.3	2.8	0.0	40.2	0.3	17.0	1.9	0.0	19.2	0.8	4.7	8.1	0.0	13.6	

	E.Governor Rd Eastbound					E.Governor Rd Westbound					Homestead Rd Northbound					Homestead Rd Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From	7:00 AM		to		8:00 AM																
Volume	152	393	11	0	556	20	707	72	0	799	9	372	40	0	421	17	107	166	0	290	2066
Percent	27.3	70.7	2.0	0.0		2.5	88.5	9.0	0.0		2.1	88.4	9.5	0.0		5.9	36.9	57.2	0.0		
7:15 AM Volume	63	101	4	0	168	6	172	32	0	210	3	111	6	0	120	7	33	65	0	105	603
Peak Factor																					
High Int.	7:15 AM					7:15 AM					7:15 AM					7:15 AM					
Volume	63	101	4	0	168	6	172	32	0	210	3	111	6	0	120	7	33	65	0	105	
PHF	0.60	0.80	0.69		0.83	0.63	0.93	0.56		0.95	0.56	0.84	0.83		0.88	0.61	0.81	0.64		0.69	0.86
Heavy Vehicles %	4%	4%	0%			15%	3%	1%			0%	4%	10%			12%	14%	10%			
Misc.	U-Turn 0		RTOR 1	Bikes 1		U-Turn 0		RTOR 17	Bikes 0		U-Turn 0		RTOR 27	Bikes 0		U-Turn 0		RTOR 67	Bikes 0		

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Greater Hershey Area Study
AM PEAK HOUR

Heavy Vehicles & Bicycles

	E.Governor Rd Eastbound					E.Governor Rd Westbound					Homestead Rd Northbound					Homestead Rd Southbound					
Start Time	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Int. Total
7:00 AM	5	4	0	0	9	0	7	1	0	8	0	6	3	0	9	1	3	5	0	9	35
7:15 AM	1	5	0	0	6	1	5	0	0	6	0	4	1	0	5	0	4	8	0	12	29
7:30 AM	0	6	0	0	6	1	5	0	0	6	0	5	0	0	5	1	2	1	0	4	21
7:45 AM	0	1	0	0	1	1	3	0	0	4	0	1	0	0	1	0	6	2	0	8	14
Total	6	16	0	0	22	3	20	1	0	24	0	16	4	0	20	2	15	16	0	33	99
8:00 AM	3	2	0	0	5	0	3	0	0	3	0	2	0	0	2	0	1	0	0	1	11
8:15 AM	6	4	0	0	10	0	5	1	0	6	0	2	0	0	2	0	0	0	0	0	18
8:30 AM	0	7	0	0	7	1	5	0	0	6	0	4	2	0	6	1	0	0	0	1	20
8:45 AM	1	9	2	0	12	0	2	1	0	3	1	3	0	0	4	0	1	0	0	1	20
Total	10	22	2	0	34	1	15	2	0	18	1	11	2	0	14	1	2	0	0	3	69
Grand Total	16	38	2	0	56	4	35	3	0	42	1	27	6	0	34	3	17	16	0	36	168
Apprch %	28.6	67.9	3.6	0.0		9.5	83.3	7.1	0.0		2.9	79.4	17.6	0.0		8.3	47.2	44.4	0.0		
Total %	9.5	22.6	1.2	0.0	33.3	2.4	20.8	1.8	0.0	25.0	0.6	16.1	3.6	0.0	20.2	1.8	10.1	9.5	0.0	21.4	
Overall Peak Hour Volume	6	16	0	0	22	3	20	1	0	24	0	16	4	0	20	2	15	16	0	33	99

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AM PEAK HOUR

U-Turn & RTOR

	E.Governor Rd Eastbound					E.Governor Rd Westbound					Homestead Rd Northbound					Homestead Rd Southbound					
Start Time	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	Int. Total
7:00 AM	0		0		0	0		5		5	0		6		6	0		15		15	26
7:15 AM	0		1		1	0		5		5	0		4		4	0		23		23	33
7:30 AM	0		0		0	0		5		5	0		11		11	0		17		17	33
7:45 AM	0		0		0	0		2		2	0		6		6	0		12		12	20
Total	0		1		1	0		17		17	0		27		27	0		67		67	112
8:00 AM	0		0		0	0		1		1	0		4		4	0		11		11	16
8:15 AM	0		0		0	0		2		2	0		5		5	0		8		8	15
8:30 AM	0		1		1	0		2		2	0		4		4	0		29		29	36
8:45 AM	0		0		0	0		1		1	0		5		5	0		17		17	23
Total	0		1		1	0		6		6	0		18		18	0		65		65	90
Grand Total	0		2		2	0		0		0	0		45		45	0		132		132	179
Apprch %	0.0	0.0	100.0	0.0							0.0	0.0	100.0	0.0		0.0	0.0	100.0	0.0		
Total %	0.0		1.1		1.1	0.0		0.0		0.0	0.0		25.1		25.1	0.0		73.7		73.7	
Overall Peak Hour Volume	0		1		1	0		17		17	0		27		27	0		67		67	112

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Greater Hershey Area Study
PM PEAK HOUR

All Vehicles

	Off Ramp 322 Eastbound					Off Ramp 322 Westbound					Middletown Road (SR 2003) Northbound					Middletown Road (SR 2003) Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
3:00 PM	32	9	46	0	87	51	0	12	0	63	0	73	69	0	142	4	46	0	0	50	342
3:15 PM	40	27	39	0	106	62	0	5	0	67	0	78	79	0	157	9	45	0	0	54	384
3:30 PM	58	17	51	0	126	57	0	12	0	69	0	98	93	0	191	5	72	0	0	77	463
3:45 PM	41	16	37	0	94	66	0	17	0	83	0	97	74	0	171	6	74	0	0	80	428
Total	171	69	173	0	413	236	0	46	0	282	0	346	315	0	661	24	237	0	0	261	1617
4:00 PM	30	14	61	0	105	93	0	14	1	108	0	83	63	0	146	4	88	0	0	92	451
4:15 PM	55	21	51	0	127	87	0	15	0	102	0	77	78	0	155	3	71	0	0	74	458
4:30 PM	41	22	43	0	106	77	0	12	0	89	0	105	80	0	185	4	72	0	0	76	456
4:45 PM	53	27	53	0	133	89	0	8	0	97	0	83	87	0	170	2	71	0	0	73	473
Total	179	84	208	0	471	346	0	49	1	396	0	348	308	0	656	13	302	0	0	315	1838
5:00 PM	43	18	72	0	133	91	0	14	0	105	0	71	88	0	159	3	94	0	0	97	494
5:15 PM	43	19	64	0	126	89	0	10	0	99	0	91	65	0	156	2	97	0	0	99	480
5:30 PM	44	32	66	0	142	81	0	12	0	93	0	90	97	0	187	3	79	0	0	82	504
5:45 PM	39	23	44	0	106	90	0	15	0	105	0	98	79	0	177	5	92	0	0	97	485
Total	169	92	246	0	507	351	0	51	0	402	0	350	329	0	679	13	362	0	0	375	1963
Grand Total	519	245	627	0	1391	933	0	146	1	1080	0	1044	952	0	1996	50	901	0	0	951	5418
Apprch %	37.3	17.6	45.1	0.0		86.4	0.0	13.5	0.1		0.0	52.3	47.7	0.0		5.3	94.7	0.0	0.0		
Total %	9.6	4.5	11.6	0.0	25.7	17.2	0.0	2.7	0.0	19.9	0.0	19.3	17.6	0.0	36.8	0.9	16.6	0.0	0.0	17.6	

	Off Ramp 322 Eastbound					Off Ramp 322 Westbound					Middletown Road (SR 2003) Northbound					Middletown Road (SR 2003) Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From	5:00 PM			to	6:00 PM																
Volume	169	92	246	0	507	351	0	51	0	402	0	350	329	0	679	13	362	0	0	375	1963
Percent	33.3	18.1	48.5	0.0		87.3	0.0	12.7	0.0		0.0	51.5	48.5	0.0		3.5	96.5	0.0	0.0		
5:30 PM Volume	44	32	66	0	142	81	0	12	0	93	0	90	97	0	187	3	79	0	0	82	504
Peak Factor																					
High Int.	5:30 PM					4:00 PM					3:30 PM					5:15 PM					
Volume	44	32	66	0	142	93	0	14	1	108	0	98	93	0	191	2	97	0	0	99	
PHF	0.96	0.72	0.85		0.89	0.96		0.85		0.96		0.89	0.85		0.91	0.65	0.93			0.95	0.97
Heavy Vehicles %	1%	0%	0%			2%	0%	0%			0%	1%	3%			0%	1%	0%			
Misc.	U-Turn		RTOR	Bikes		U-Turn		RTOR	Bikes		U-Turn		RTOR	Bikes		U-Turn		RTOR	Bikes		
	0		46	0		0		7	0		0		207	0		0		0	0		

Traffic Count conducted by Traffic Planning & Design, Inc.

Herbert, Rowland & Grubic, Inc.
369 East Park Drive
Harrisburg, PA 17111
(717) 564-1121

Intersection #: 1
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Greater Hershey Area Study
PM PEAK HOUR

Heavy Vehicles & Bicycles

	Off Ramp 322 Eastbound					Off Ramp 322 Westbound					Middletown Road (SR 2003) Northbound					Middletown Road (SR 2003) Southbound					
Start Time	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Int. Total
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch % Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Overall Peak Hour Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Traffic Count conducted by Traffic Planning & Design, Inc.

Herbert, Rowland & Grubic, Inc.
369 East Park Drive
Harrisburg, PA 17111
(717) 564-1121

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Greater Hershey Area Study
PM PEAK HOUR

U-Turn & RTOR

	Off Ramp 322 Eastbound					Off Ramp 322 Westbound					Middletown Road (SR 2003) Northbound					Middletown Road (SR 2003) Southbound					
Start Time	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	Int. Total
3:00 PM	0		17		17	0		2		2	0		23		23	0		0		0	42
3:15 PM	0		3		3	0		0		0	0		17		17	0		0		0	20
3:30 PM	0		5		5	0		0		0	0		25		25	0		0		0	30
3:45 PM	0		12		12	0		0		0	0		28		28	0		0		0	40
Total	0		37		37	0		2		2	0		93		93	0		0		0	132
4:00 PM	0		15		15	0		2		2	0		29		29	0		0		0	46
4:15 PM	0		14		14	0		1		1	0		42		42	0		0		0	57
4:30 PM	0		20		20	0		1		1	0		38		38	0		0		0	59
4:45 PM	0		36		36	0		2		2	0		50		50	0		0		0	88
Total	0		85		85	0		6		6	0		159		159	0		0		0	250
5:00 PM	0		7		7	0		3		3	0		48		48	0		0		0	58
5:15 PM	0		18		18	0		1		1	0		45		45	0		0		0	64
5:30 PM	0		12		12	0		3		3	0		60		60	0		0		0	75
5:45 PM	0		9		9	0		0		0	0		54		54	0		0		0	63
Total	0		46		46	0		7		7	0		207		207	0		0		0	260
Grand Total	0		168		168	0		0		0	0		459		459	0		0		0	627
Apprch %	0.0	0.0	100.0	0.0							0.0	0.0	100.0	0.0							
Total %	0.0		26.8		26.8	0.0		0.0		0.0	0.0		73.2		73.2	0.0		0.0		0.0	
Overall Peak Hour Volume	0		46		46	0		7		7	0		207		207	0		0		0	260

Traffic Count conducted by Traffic Planning & Design, Inc.

Herbert, Rowland & Grubic, Inc.
369 East Park Drive
Harrisburg, PA 17111
(717) 564-1121

Intersection #: 2
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Greater Hershey Area Study
PM PEAK HOUR

All Vehicles

	Private Dwy Eastbound					Wood Rd Westbound					Middletown Rd (SR 2003) Northbound					Middletown Rd (SR 2003) Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
4:45 PM	0	0	0	0	0	36	0	1	0	37	0	194	36	0	230	3	224	0	0	227	494
Total	0	0	0	0	0	36	0	1	0	37	0	194	36	0	230	3	224	0	0	227	494
5:00 PM	0	0	0	0	0	36	0	4	0	40	0	155	41	0	196	5	208	0	0	213	449
5:15 PM	0	0	0	0	0	36	0	4	0	40	0	170	57	0	227	2	218	0	0	220	487
5:30 PM	0	0	0	0	0	39	0	5	0	44	0	183	40	0	223	4	192	0	0	196	463
Total	0	0	0	0	0	111	0	13	0	124	0	508	138	0	646	11	618	0	0	629	1399
Grand Total	0	0	0	0	0	147	0	14	0	161	0	702	174	0	876	14	842	0	0	856	1893
Apprch %						91.3	0.0	8.7	0.0		0.0	80.1	19.9	0.0		1.6	98.4	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	7.8	0.0	0.7	0.0	8.5	0.0	37.1	9.2	0.0	46.3	0.7	44.5	0.0	0.0	45.2	

	Private Dwy Eastbound					Wood Rd Westbound					Middletown Rd (SR 2003) Northbound					Middletown Rd (SR 2003) Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From	4:45 PM		to	5:45 PM																	
Volume	0	0	0	0	0	147	0	14	0	161	0	702	174	0	876	14	842	0	0	856	1893
Percent						91.3	0.0	8.7	0.0		0.0	80.1	19.9	0.0		1.6	98.4	0.0	0.0		
4:45 PM Volume	0	0	0	0	0	36	0	1	0	37	0	194	36	0	230	3	224	0	0	227	494
Peak Factor																					
High Int.	4:45 PM					5:30 PM					4:45 PM					4:45 PM					
Volume	0	0	0	0	0	39	0	5	0	44	0	194	36	0	230	3	224	0	0	227	
PHF						0.94		0.70		0.91		0.90	0.76		0.95	0.70	0.94			0.94	0.96
Heavy Vehicles %	0%	0%	0%			1%	0%	0%			0%	2%	0%			0%	1%	0%			
Misc.	U-Turn 0		RTOR 0	Bikes 0		U-Turn 0		RTOR 0	Bikes 0		U-Turn 0		RTOR 0	Bikes 0		U-Turn 0		RTOR 0	Bikes 0		

Herbert, Rowland & Grubic, Inc.
369 East Park Drive
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Greater Hershey Area Study
PM PEAK HOUR

Heavy Vehicles & Bicycles

	Private Dwy Eastbound					Wood Rd Westbound					Middletown Rd (SR 2003) Northbound					Middletown Rd (SR 2003) Southbound					
Start Time	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Int. Total
4:45 PM	0	0	0	0	0	1	0	0	0	1	0	4	0	0	4	0	3	0	0	3	8
Total	0	0	0	0	0	1	0	0	0	1	0	4	0	0	4	0	3	0	0	3	8
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	4	0	0	4	0	2	0	0	2	6
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	1	0	0	1	3
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	2	0	0	2	4
Total	0	0	0	0	0	0	0	0	0	0	0	8	0	0	8	0	5	0	0	5	13
Grand Total	0	0	0	0	0	1	0	0	0	1	0	12	0	0	12	0	8	0	0	8	21
Apprch %						100.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		0.0	100.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	4.8	0.0	0.0	0.0	4.8	0.0	57.1	0.0	0.0	57.1	0.0	38.1	0.0	0.0	38.1	
Overall Peak Hour Volume	0	0	0	0	0	1	0	0	0	1	0	12	0	0	12	0	8	0	0	8	21

Herbert, Rowland & Grubic, Inc.
369 East Park Drive
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(717) 564-1121

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Greater Hershey Area Study
PM PEAK HOUR

All Vehicles

	Deer Run Drive Eastbound					Stoverdale Road Westbound					Middletown Road (SR 2003) Northbound					Middletown Road (SR 2003) Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
3:00 PM	17	2	5	0	24	14	11	3	0	28	2	155	3	0	160	8	152	15	0	175	387
3:15 PM	11	3	2	0	16	22	5	4	0	31	2	165	0	0	167	6	163	23	0	192	406
3:30 PM	13	0	3	0	16	22	4	4	0	30	6	161	3	0	170	5	179	18	0	202	418
3:45 PM	13	5	2	0	20	24	6	3	0	33	3	192	4	0	199	7	181	23	0	211	463
Total	54	10	12	0	76	82	26	14	0	122	13	673	10	0	696	26	675	79	0	780	1674
4:00 PM	11	1	8	0	20	25	10	5	0	40	6	157	5	0	168	8	178	19	0	205	433
4:15 PM	16	2	6	0	24	41	9	3	0	53	6	168	4	0	178	2	192	23	0	217	472
4:30 PM	20	1	4	0	25	27	9	3	0	39	3	191	5	0	199	9	186	28	0	223	486
4:45 PM	27	6	2	0	35	57	6	2	0	65	10	194	4	0	208	7	194	22	0	223	531
Total	74	10	20	0	104	150	34	13	0	197	25	710	18	0	753	26	750	92	0	868	1922
5:00 PM	20	3	7	0	30	45	12	6	0	63	6	200	1	0	207	6	214	34	0	254	554
5:15 PM	17	1	6	0	24	53	24	5	0	82	7	195	3	0	205	2	204	39	0	245	556
5:30 PM	26	0	7	0	33	51	14	5	0	70	11	236	3	0	250	4	205	31	1	241	594
5:45 PM	23	4	5	0	32	31	12	5	0	48	9	198	4	0	211	5	196	32	0	233	524
Total	86	8	25	0	119	180	62	21	0	263	33	829	11	0	873	17	819	136	1	973	2228
Grand Total	214	28	57	0	299	412	122	48	0	582	71	2212	39	0	2322	69	2244	307	1	2621	5824
Apprch %	71.6	9.4	19.1	0.0		70.8	21.0	8.2	0.0		3.1	95.3	1.7	0.0		2.6	85.6	11.7	0.0		
Total %	3.7	0.5	1.0	0.0	5.1	7.1	2.1	0.8	0.0	10.0	1.2	38.0	0.7	0.0	39.9	1.2	38.5	5.3	0.0	45.0	

	Deer Run Drive Eastbound					Stoverdale Road Westbound					Middletown Road (SR 2003) Northbound					Middletown Road (SR 2003) Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From	4:45 PM			to	5:45 PM																
Volume	90	10	22	0	122	206	56	18	0	280	34	825	11	0	870	19	817	126	1	963	2235
Percent	73.8	8.2	18.0	0.0		73.6	20.0	6.4	0.0		3.9	94.8	1.3	0.0		2.0	84.8	13.1	0.1		
5:30 PM Volume	26	0	7	0	33	51	14	5	0	70	11	236	3	0	250	4	205	31	1	241	594
Peak Factor																					
High Int.	4:45 PM					5:15 PM					5:30 PM					5:00 PM					
Volume	27	6	2	0	35	53	24	5	0	82	11	236	3	0	250	6	214	34	0	254	
PHF	0.83	0.42	0.79		0.87	0.90	0.58	0.75		0.85	0.77	0.87	0.69		0.87	0.68	0.95	0.81	0.25	0.95	0.94
Heavy Vehicles %	0%	0%	9%			1%	0%	0%			0%	1%	0%			0%	1%	1%			
Misc.	U-Turn		RTOR	Bikes		U-Turn		RTOR	Bikes		U-Turn		RTOR	Bikes		U-Turn		RTOR	Bikes		
	0		13	0		0		7	0		0		0	0		0		31	0		

Traffic Count conducted by Traffic Planning & Design, Inc.

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Greater Hershey Area Study
PM PEAK HOUR

Heavy Vehicles & Bicycles

	Deer Run Drive Eastbound					Stoverdale Road Westbound					Middletown Road (SR 2003) Northbound					Middletown Road (SR 2003) Southbound					
Start Time	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Int. Total
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch % Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Overall Peak Hour Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Traffic Count conducted by Traffic Planning & Design, Inc.

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PM PEAK HOUR

U-Turn & RTOR

	Deer Run Drive Eastbound					Stoverdale Road Westbound					Middletown Road (SR 2003) Northbound					Middletown Road (SR 2003) Southbound					
Start Time	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	Int. Total
3:00 PM	0		3		3	0		2		2	0		0		0	0		1		1	6
3:15 PM	0		0		0	0		1		1	0		0		0	0		6		6	7
3:30 PM	0		3		3	0		1		1	0		1		1	0		3		3	8
3:45 PM	0		1		1	0		0		0	0		0		0	0		3		3	4
Total	0		7		7	0		4		4	0		1		1	0		13		13	25
4:00 PM	0		5		5	0		1		1	0		0		0	0		4		4	10
4:15 PM	0		5		5	0		0		0	0		0		0	0		6		6	11
4:30 PM	0		3		3	0		1		1	0		1		1	0		7		7	12
4:45 PM	0		1		1	0		2		2	0		0		0	0		3		3	6
Total	0		14		14	0		4		4	0		1		1	0		20		20	39
5:00 PM	0		3		3	0		1		1	0		0		0	0		9		9	13
5:15 PM	0		5		5	0		0		0	0		0		0	0		10		10	15
5:30 PM	0		4		4	0		4		4	0		0		0	0		9		9	17
5:45 PM	0		2		2	0		2		2	0		0		0	0		6		6	10
Total	0		14		14	0		7		7	0		0		0	0		34		34	55
Grand Total	0		35		35	0		0		0	0		2		2	0		67		67	104
Apprch %	0.0	0.0	100.0	0.0							0.0	0.0	100.0	0.0		0.0	0.0	100.0	0.0		
Total %	0.0		33.7		33.7	0.0		0.0		0.0	0.0		1.9		1.9	0.0		64.4		64.4	
Overall Peak Hour Volume	0		13		13	0		7		7	0		0		0	0		31		31	51

Traffic Count conducted by Traffic Planning & Design, Inc.

Herbert, Rowland & Grubic, Inc.
369 East Park Drive
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(717) 564-1121

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Greater Hershey Area Study
PM PEAK HOUR

All Vehicles

	Locust Lane Eastbound					Kaylor Rd Westbound					Middletown Road (SR 2003) Northbound					Middletown Road (SR 2003) Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
3:00 PM	11	2	1	0	14	8	1	11	0	20	1	138	3	0	142	4	149	3	0	156	332
3:15 PM	20	2	3	0	25	9	2	7	0	18	4	139	3	0	146	13	162	1	0	176	365
3:30 PM	13	2	4	0	19	6	2	9	0	17	2	124	4	0	130	14	180	1	0	195	361
3:45 PM	10	0	0	0	10	16	2	14	0	32	4	187	9	0	200	8	174	4	0	186	428
Total	54	6	8	0	68	39	7	41	0	87	11	588	19	0	618	39	665	9	0	713	1486
4:00 PM	13	1	6	0	20	9	0	13	0	22	6	144	6	0	156	17	174	4	0	195	393
4:15 PM	10	1	4	0	15	18	2	10	0	30	3	159	4	0	166	12	204	4	0	220	431
4:30 PM	13	4	3	0	20	17	1	10	0	28	7	179	11	0	197	13	184	1	0	198	443
4:45 PM	17	2	1	0	20	20	3	16	0	39	2	171	2	0	175	18	211	4	0	233	467
Total	53	8	14	0	75	64	6	49	0	119	18	653	23	0	694	60	773	13	0	846	1734
5:00 PM	13	5	4	0	22	14	2	12	0	28	2	189	5	0	196	16	246	2	0	264	510
5:15 PM	23	1	4	0	28	10	2	10	0	22	8	182	9	0	199	15	218	3	0	236	485
5:30 PM	19	3	4	0	26	19	5	17	0	41	5	217	4	0	226	22	203	2	0	227	520
5:45 PM	23	3	4	0	30	10	3	17	0	30	6	183	5	0	194	15	213	3	0	231	485
Total	78	12	16	0	106	53	12	56	0	121	21	771	23	0	815	68	880	10	0	958	2000
Grand Total	185	26	38	0	249	156	25	146	0	327	50	2012	65	0	2127	167	2318	32	0	2517	5220
Apprch %	74.3	10.4	15.3	0.0		47.7	7.6	44.6	0.0		2.4	94.6	3.1	0.0		6.6	92.1	1.3	0.0		
Total %	3.5	0.5	0.7	0.0	4.8	3.0	0.5	2.8	0.0	6.3	1.0	38.5	1.2	0.0	40.7	3.2	44.4	0.6	0.0	48.2	

	Locust Lane Eastbound					Kaylor Rd Westbound					Middletown Road (SR 2003) Northbound					Middletown Road (SR 2003) Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From	5:00 PM			to	6:00 PM																
Volume	78	12	16	0	106	53	12	56	0	121	21	771	23	0	815	68	880	10	0	958	2000
Percent	73.6	11.3	15.1	0.0		43.8	9.9	46.3	0.0		2.6	94.6	2.8	0.0		7.1	91.9	1.0	0.0		
5:30 PM Volume	19	3	4	0	26	19	5	17	0	41	5	217	4	0	226	22	203	2	0	227	520
Peak Factor																					
High Int.	5:45 PM					5:30 PM					5:30 PM					5:00 PM					
Volume	23	3	4	0	30	19	5	17	0	41	5	217	4	0	226	16	246	2	0	264	
PHF	0.85	0.60	1.00		0.88	0.70	0.60	0.82		0.74	0.66	0.89	0.64		0.90	0.77	0.89	0.83		0.91	0.96
Heavy Vehicles %	0%	0%	0%			0%	0%	0%			0%	2%	0%			0%	2%	0%			
Misc.	U-Turn		RTOR	Bikes		U-Turn		RTOR	Bikes		U-Turn		RTOR	Bikes		U-Turn		RTOR	Bikes		
	0		0	0		0		33	0		0		3	0		0		0	0		

Traffic Count conducted by Traffic Planning & Design, Inc.

Herbert, Rowland & Grubic, Inc.
369 East Park Drive
Harrisburg, PA 17111
(717) 564-1121

Intersection #: 4
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Greater Hershey Area Study
PM PEAK HOUR

Heavy Vehicles & Bicycles

	Locust Lane Eastbound					Kaylor Rd Westbound					Middletown Road (SR 2003) Northbound					Middletown Road (SR 2003) Southbound					
Start Time	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Int. Total
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch % Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Overall Peak Hour Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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369 East Park Drive
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(717) 564-1121

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Greater Hershey Area Study
PM PEAK HOUR

U-Turn & RTOR

	Locust Lane Eastbound					Kaylor Rd Westbound					Middletown Road (SR 2003) Northbound					Middletown Road (SR 2003) Southbound					
Start Time	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	Int. Total
3:00 PM	0		1		1	0		7		7	0		0		0	0		0		0	8
3:15 PM	0		0		0	0		5		5	0		0		0	0		0		0	5
3:30 PM	0		1		1	0		5		5	0		0		0	0		0		0	6
3:45 PM	0		0		0	0		8		8	0		0		0	0		0		0	8
Total	0		2		2	0		25		25	0		0		0	0		0		0	27
4:00 PM	0		4		4	0		2		2	0		1		1	0		1		1	8
4:15 PM	0		2		2	0		5		5	0		0		0	0		0		0	7
4:30 PM	0		0		0	0		5		5	0		1		1	0		1		1	7
4:45 PM	0		0		0	0		9		9	0		1		1	0		2		2	12
Total	0		6		6	0		21		21	0		3		3	0		4		4	34
5:00 PM	0		0		0	0		10		10	0		1		1	0		0		0	11
5:15 PM	0		0		0	0		6		6	0		1		1	0		0		0	7
5:30 PM	0		0		0	0		7		7	0		0		0	0		0		0	7
5:45 PM	0		0		0	0		10		10	0		1		1	0		0		0	11
Total	0		0		0	0		33		33	0		3		3	0		0		0	36
Grand Total	0		8		8	0		0		0	0		6		6	0		4		4	18
Apprch %	0.0	0.0	100.0	0.0							0.0	0.0	100.0	0.0		0.0	0.0	100.0	0.0		
Total %	0.0		44.4		44.4	0.0		0.0		0.0	0.0		33.3		33.3	0.0		22.2		22.2	
Overall Peak Hour Volume	0		0		0	0		33		33	0		3		3	0		0		0	36

Traffic Count conducted by Traffic Planning & Design, Inc.

Herbert, Rowland & Grubic, Inc.
369 East Park Drive
Harrisburg, PA 17111
(717) 564-1121

Intersection #: 5
Job Number: R002484.0484
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Greater Hershey Area Study
PM PEAK HOUR

All Vehicles

	SR 2034 Eastbound					Route 322 EB On-Ramp Westbound					Waltonville Road Northbound					Waltonville Road Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
3:00 PM	7	53	7	0	67	0	0	0	0	0	9	20	17	0	46	19	21	92	0	132	245
3:15 PM	6	66	22	0	94	0	0	0	0	0	9	16	20	0	45	14	25	90	0	129	268
3:30 PM	6	65	20	0	91	0	0	0	0	0	8	25	12	0	45	16	34	101	0	151	287
3:45 PM	7	58	19	0	84	0	0	0	0	0	11	21	22	0	54	24	24	106	0	154	292
Total	26	242	68	0	336	0	0	0	0	0	37	82	71	0	190	73	104	389	0	566	1092
4:00 PM	5	53	16	0	74	0	0	0	0	0	6	25	17	0	48	18	37	82	0	137	259
4:15 PM	15	77	23	0	115	0	0	0	0	0	15	25	21	0	61	10	41	99	0	150	326
4:30 PM	8	63	17	0	88	0	0	0	0	0	10	16	34	0	60	21	33	110	0	164	312
4:45 PM	2	66	18	0	86	0	0	0	0	0	9	26	40	0	75	22	35	90	0	147	308
Total	30	259	74	0	363	0	0	0	0	0	40	92	112	0	244	71	146	381	0	598	1205
5:00 PM	9	69	23	0	101	0	0	0	0	0	12	27	24	0	63	22	34	87	0	143	307
5:15 PM	12	82	23	0	117	0	0	0	0	0	8	36	33	0	77	14	60	106	0	180	374
5:30 PM	10	67	22	0	99	0	0	0	0	0	17	29	52	0	98	28	42	95	0	165	362
5:45 PM	20	70	21	0	111	0	0	0	0	0	14	29	25	0	68	21	39	88	0	148	327
Total	51	288	89	0	428	0	0	0	0	0	51	121	134	0	306	85	175	376	0	636	1370
Grand Total	107	789	231	0	1127	0	0	0	0	0	128	295	317	0	740	229	425	1146	0	1800	3667
Apprch %	9.5	70.0	20.5	0.0							17.3	39.9	42.8	0.0		12.7	23.6	63.7	0.0		
Total %	2.9	21.5	6.3	0.0	30.7	0.0	0.0	0.0	0.0	0.0	3.5	8.0	8.6	0.0	20.2	6.2	11.6	31.3	0.0	49.1	

	SR 2034 Eastbound					Route 322 EB On-Ramp Westbound					Waltonville Road Northbound					Waltonville Road Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From	5:00 PM			to	6:00 PM																
Volume	51	288	89	0	428	0	0	0	0	0	51	121	134	0	306	85	175	376	0	636	1370
Percent	11.9	67.3	20.8	0.0							16.7	39.5	43.8	0.0		13.4	27.5	59.1	0.0		
5:15 PM Volume	12	82	23	0	117	0	0	0	0	0	8	36	33	0	77	14	60	106	0	180	374
Peak Factor																					
High Int.	5:15 PM					3:00 PM					5:30 PM					5:15 PM					
Volume	12	82	23	0	117	0	0	0	0	0	17	29	52	0	98	14	60	106	0	180	
PHF	0.64	0.88	0.97		0.91						0.75	0.84	0.64		0.78	0.76	0.73	0.89		0.88	0.92
Heavy Vehicles %	2%	1%	0%			0%	0%	0%			0%	0%	0%			1%	1%	2%			
Misc.	U-Turn		RTOR	Bikes		U-Turn		RTOR	Bikes		U-Turn		RTOR	Bikes		U-Turn		RTOR	Bikes		
	0		5	0		0		0	0		0		16	0		0		86	0		

Traffic Count conducted by Traffic Planning & Design, Inc.

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369 East Park Drive
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Intersection #: 5
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Date: 6/2/2015
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Greater Hershey Area Study
PM PEAK HOUR

Heavy Vehicles & Bicycles

	SR 2034 Eastbound					Route 322 EB On-Ramp Westbound					Waltonville Road Northbound					Waltonville Road Southbound					
Start Time	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Int. Total
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch % Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Overall Peak Hour Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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369 East Park Drive
Harrisburg, PA 17111
(717) 564-1121

Intersection #: 5
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Greater Hershey Area Study
PM PEAK HOUR

U-Turn & RTOR

	SR 2034 Eastbound					Route 322 EB On-Ramp Westbound					Waltonville Road Northbound					Waltonville Road Southbound					
Start Time	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	Int. Total
3:00 PM	0		1		1	0		0		0	0		1		1	0		23		23	25
3:15 PM	0		3		3	0		0		0	0		5		5	0		22		22	30
3:30 PM	0		5		5	0		0		0	0		1		1	0		20		20	26
3:45 PM	0		1		1	0		0		0	0		2		2	0		28		28	31
Total	0		10		10	0		0		0	0		9		9	0		93		93	112
4:00 PM	0		1		1	0		0		0	0		4		4	0		11		11	16
4:15 PM	0		3		3	0		0		0	0		1		1	0		28		28	32
4:30 PM	0		1		1	0		0		0	0		7		7	0		32		32	40
4:45 PM	0		2		2	0		0		0	0		4		4	0		19		19	25
Total	0		7		7	0		0		0	0		16		16	0		90		90	113
5:00 PM	0		2		2	0		0		0	0		2		2	0		21		21	25
5:15 PM	0		1		1	0		0		0	0		4		4	0		29		29	34
5:30 PM	0		1		1	0		0		0	0		8		8	0		17		17	26
5:45 PM	0		1		1	0		0		0	0		2		2	0		19		19	22
Total	0		5		5	0		0		0	0		16		16	0		86		86	107
Grand Total	0		22		22	0		0		0	0		41		41	0		269		269	332
Apprch %	0.0	0.0	100.0	0.0							0.0	0.0	100.0	0.0		0.0	0.0	100.0	0.0		
Total %	0.0		6.6		6.6	0.0		0.0		0.0	0.0		12.3		12.3	0.0		81.0		81.0	
Overall Peak Hour Volume	0		5		5	0		0		0	0		16		16	0		86		86	107

Traffic Count conducted by Traffic Planning & Design, Inc.

Herbert, Rowland & Grubic, Inc.
369 East Park Drive
Harrisburg, PA 17111
(717) 564-1121

Intersection #: 6
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Date: 7/18/2017
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Greater Hershey Area Study
PM PEAK HOUR

All Vehicles

	Wood Rd Eastbound					Wood Rd Westbound					Waltonville Rd Northbound					Waltonville Rd Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
3:00 PM	9	25	4	0	38	5	28	12	0	45	8	24	5	0	37	5	25	1	0	31	151
3:15 PM	9	19	4	0	32	6	41	8	0	55	4	25	1	0	30	6	24	1	0	31	148
3:30 PM	5	16	7	0	28	10	35	8	0	53	5	28	4	0	37	8	30	5	0	43	161
3:45 PM	10	19	9	0	38	8	30	10	0	48	5	42	4	0	51	5	41	1	0	47	184
Total	33	79	24	0	136	29	134	38	0	201	22	119	14	0	155	24	120	8	0	152	644
4:00 PM	5	28	5	0	38	1	48	9	0	58	8	25	2	0	35	11	37	4	0	52	183
4:15 PM	12	18	5	0	35	6	63	6	0	75	6	45	2	0	53	4	44	2	0	50	213
4:30 PM	10	30	8	0	48	8	72	11	0	91	5	41	1	0	47	10	44	4	0	58	244
4:45 PM	12	23	6	0	41	13	71	8	0	92	3	31	2	0	36	11	54	5	0	70	239
Total	39	99	24	0	162	28	254	34	0	316	22	142	7	0	171	36	179	15	0	230	879
5:00 PM	9	23	7	0	39	10	58	15	0	83	4	51	5	0	60	5	44	3	0	52	234
5:15 PM	21	35	8	0	64	10	69	10	0	89	4	39	6	0	49	13	51	7	0	71	273
5:30 PM	12	31	6	0	49	8	50	8	0	66	6	46	2	0	54	12	45	4	0	61	230
5:45 PM	5	29	8	0	42	7	49	10	0	66	4	52	4	0	60	14	37	4	0	55	223
Total	47	118	29	0	194	35	226	43	0	304	18	188	17	0	223	44	177	18	0	239	960
Grand Total	119	296	77	0	492	92	614	115	0	821	62	449	38	0	549	104	476	41	0	621	2483
Apprch %	24.2	60.2	15.7	0.0		11.2	74.8	14.0	0.0		11.3	81.8	6.9	0.0		16.7	76.7	6.6	0.0		
Total %	4.8	11.9	3.1	0.0	19.8	3.7	24.7	4.6	0.0	33.1	2.5	18.1	1.5	0.0	22.1	4.2	19.2	1.7	0.0	25.0	

	Wood Rd Eastbound					Wood Rd Westbound					Waltonville Rd Northbound					Waltonville Rd Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From	4:30 PM			to	5:30 PM																
Volume	52	111	29	0	192	41	270	44	0	355	16	162	14	0	192	39	193	19	0	251	990
Percent	27.1	57.8	15.1	0.0		11.5	76.1	12.4	0.0		8.3	84.4	7.3	0.0		15.5	76.9	7.6	0.0		
5:15 PM Volume	21	35	8	0	64	10	69	10	0	89	4	39	6	0	49	13	51	7	0	71	273
Peak Factor																					
High Int.	5:15 PM					4:45 PM					5:00 PM					5:15 PM					
Volume	21	35	8	0	64	13	71	8	0	92	4	51	5	0	60	13	51	7	0	71	
PHF	0.62	0.79	0.91		0.75	0.79	0.94	0.73		0.96	0.80	0.79	0.58		0.80	0.75	0.89	0.68		0.88	0.91
Heavy Vehicles %	0%	2%	0%			0%	0%	0%			6%	2%	0%			3%	1%	0%			
Misc.	U-Turn		RTOR	Bikes		U-Turn		RTOR	Bikes		U-Turn		RTOR	Bikes		U-Turn		RTOR	Bikes		
	0		0	0		0		0	0		0		0	0		0		0	0		

Traffic Count conducted by Traffic Planning & Design, Inc.

Herbert, Rowland & Grubic, Inc.
369 East Park Drive
Harrisburg, PA 17111
(717) 564-1121

Intersection #: 6
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Greater Hershey Area Study
PM PEAK HOUR

Heavy Vehicles & Bicycles

	Wood Rd Eastbound					Wood Rd Westbound					Waltonville Rd Northbound					Waltonville Rd Southbound					
Start Time	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Int. Total
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch % Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Overall Peak Hour Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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Herbert, Rowland & Grubic, Inc.
369 East Park Drive
Harrisburg, PA 17111
(717) 564-1121

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Greater Hershey Area Study
PM PEAK HOUR

U-Turn & RTOR

	Wood Rd Eastbound					Wood Rd Westbound					Waltonville Rd Northbound					Waltonville Rd Southbound					
Start Time	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	Int. Total
3:00 PM	0		0		0	0		1		1	0		0		0	0		0		0	1
3:15 PM	0		0		0	0		0		0	0		0		0	0		0		0	0
3:30 PM	0		0		0	0		0		0	0		0		0	0		0		0	0
3:45 PM	0		0		0	0		0		0	0		0		0	0		0		0	0
Total	0		0		0	0		1		1	0		0		0	0		0		0	1
4:00 PM	0		0		0	0		0		0	0		0		0	0		0		0	0
4:15 PM	0		0		0	0		0		0	0		0		0	0		0		0	0
4:30 PM	0		0		0	0		0		0	0		0		0	0		0		0	0
4:45 PM	0		0		0	0		0		0	0		0		0	0		0		0	0
Total	0		0		0	0		0		0	0		0		0	0		0		0	0
5:00 PM	0		0		0	0		0		0	0		0		0	0		0		0	0
5:15 PM	0		0		0	0		0		0	0		0		0	0		0		0	0
5:30 PM	0		0		0	0		0		0	0		0		0	0		0		0	0
5:45 PM	0		0		0	0		0		0	0		0		0	0		0		0	0
Total	0		0		0	0		0		0	0		0		0	0		0		0	0
Grand Total	0		0		0	0		0		0	0		0		0	0		0		0	0
Apprch % Total %	0.0		0.0		0.0	0.0		0.0		0.0	0.0		0.0		0.0	0.0		0.0		0.0	
Overall Peak Hour Volume	0		0		0	0		0		0	0		0		0	0		0		0	0

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Herbert, Rowland & Grubic, Inc.
369 East Park Drive
Harrisburg, PA 17111
(717) 564-1121

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Greater Hershey Area Study
PM PEAK HOUR

All Vehicles

	Wood Rd Eastbound					Westbound					Bullfrog Valley Rd Northbound					Bullfrog Valley Rd Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
3:00 PM	23	0	8	2	33	0	0	0	0	0	7	35	0	0	42	0	44	32	0	76	151
3:15 PM	16	0	7	3	26	0	0	0	0	0	6	28	0	0	34	0	51	49	0	100	160
3:30 PM	14	0	11	1	26	0	0	0	0	0	2	25	0	0	27	0	53	63	0	116	169
3:45 PM	18	0	4	1	23	0	0	0	0	0	8	41	0	0	49	0	56	40	0	96	168
Total	71	0	30	7	108	0	0	0	0	0	23	129	0	0	152	0	204	184	0	388	648
4:00 PM	17	0	11	2	30	0	0	0	0	0	4	32	0	0	36	0	61	57	0	118	184
4:15 PM	19	0	7	2	28	0	0	0	0	0	10	36	0	0	46	0	63	71	0	134	208
4:30 PM	26	0	10	2	38	0	0	0	0	0	6	34	0	0	40	0	83	85	0	168	246
4:45 PM	23	0	11	2	36	0	0	0	0	0	9	19	0	0	28	0	86	84	0	170	234
Total	85	0	39	8	132	0	0	0	0	0	29	121	0	0	150	0	293	297	0	590	872
5:00 PM	25	0	11	6	42	0	0	0	0	0	11	31	0	0	42	0	80	67	0	147	231
5:15 PM	32	0	13	2	47	0	0	0	0	0	9	35	0	0	44	0	63	87	0	150	241
5:30 PM	24	0	11	5	40	0	0	0	0	0	5	29	0	0	34	0	75	61	0	136	210
5:45 PM	30	0	14	4	48	0	0	0	0	0	12	31	0	0	43	0	74	52	0	126	217
Total	111	0	49	17	177	0	0	0	0	0	37	126	0	0	163	0	292	267	0	559	899
Grand Total	267	0	118	32	417	0	0	0	0	0	89	376	0	0	465	0	789	748	0	1537	2419
Apprch %	64.0	0.0	28.3	7.7							19.1	80.9	0.0	0.0		0.0	51.3	48.7	0.0		
Total %	11.0	0.0	4.9	1.3	17.2	0.0	0.0	0.0	0.0	0.0	3.7	15.5	0.0	0.0	19.2	0.0	32.6	30.9	0.0	63.5	

	Wood Rd Eastbound					Westbound					Bullfrog Valley Rd Northbound					Bullfrog Valley Rd Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From	4:30 PM			to	5:30 PM																
Volume	106	0	45	12	163	0	0	0	0	0	35	119	0	0	154	0	312	323	0	635	952
Percent	65.0	0.0	27.6	7.4							22.7	77.3	0.0	0.0		0.0	49.1	50.9	0.0		
4:30 PM Volume	26	0	10	2	38	0	0	0	0	0	6	34	0	0	40	0	83	85	0	168	246
Peak Factor																					
High Int.	5:45 PM					3:00 PM					3:45 PM					4:45 PM					
Volume	30	0	14	4	48	0	0	0	0	0	8	41	0	0	49	0	86	84	0	170	
PHF	0.83		0.87	0.50	0.87						0.80	0.85			0.88		0.91	0.93		0.93	0.97
Heavy Vehicles %	2%	0%	2%			0%	0%	0%			0%	3%	0%			0%	1%	1%			
Misc.	U-Turn		RTOR	Bikes		U-Turn		RTOR	Bikes		U-Turn		RTOR	Bikes		U-Turn		RTOR	Bikes		
	0		0	0		0		0	0		0		0	0		0		0	0		

Traffic Count conducted by Traffic Planning & Design, Inc.

Herbert, Rowland & Grubic, Inc.
369 East Park Drive
Harrisburg, PA 17111
(717) 564-1121

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Greater Hershey Area Study
PM PEAK HOUR

Heavy Vehicles & Bicycles

	Wood Rd Eastbound					Westbound					Bullfrog Valley Rd Northbound					Bullfrog Valley Rd Southbound					
Start Time	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Int. Total
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch % Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Overall Peak Hour Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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Herbert, Rowland & Grubic, Inc.
369 East Park Drive
Harrisburg, PA 17111
(717) 564-1121

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Greater Hershey Area Study
PM PEAK HOUR

All Vehicles

	Research Blvd Eastbound					Life Lion Drive Westbound					Bullfrog Valley Road Northbound					Bullfrog Valley Road Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
3:00 PM	11	2	2	0	15	25	7	39	0	71	2	41	8	0	51	6	55	9	0	70	207
3:15 PM	6	1	3	0	10	29	6	48	0	83	1	37	11	0	49	8	44	9	0	61	203
3:30 PM	9	3	2	0	14	46	2	53	0	101	2	62	11	0	75	12	48	6	0	66	256
3:45 PM	8	6	2	0	16	34	6	46	0	86	4	37	10	0	51	17	44	11	0	72	225
Total	34	12	9	0	55	134	21	186	0	341	9	177	40	0	226	43	191	35	0	269	891
4:00 PM	17	2	12	0	31	58	2	43	0	103	4	27	7	0	38	7	68	11	0	86	258
4:15 PM	14	3	10	0	27	54	0	56	0	110	3	37	11	0	51	14	50	7	0	71	259
4:30 PM	19	2	16	0	37	78	8	70	0	156	3	48	11	0	62	16	66	19	0	101	356
4:45 PM	21	1	22	0	44	50	8	61	0	119	5	46	17	0	68	12	64	17	0	93	324
Total	71	8	60	0	139	240	18	230	0	488	15	158	46	0	219	49	248	54	0	351	1197
5:00 PM	20	3	16	0	39	71	5	78	0	154	1	42	22	0	65	10	76	13	0	99	357
5:15 PM	21	2	16	0	39	60	5	64	0	129	3	51	17	0	71	9	81	13	0	103	342
5:30 PM	21	1	12	0	34	55	9	44	0	108	4	56	15	0	75	10	76	8	0	94	311
5:45 PM	15	1	17	0	33	50	2	38	0	90	0	50	13	0	63	5	70	4	0	79	265
Total	77	7	61	0	145	236	21	224	0	481	8	199	67	0	274	34	303	38	0	375	1275
Grand Total	182	27	130	0	339	610	60	640	0	1310	32	534	153	0	719	126	742	127	0	995	3363
Apprch %	53.7	8.0	38.3	0.0		46.6	4.6	48.9	0.0		4.5	74.3	21.3	0.0		12.7	74.6	12.8	0.0		
Total %	5.4	0.8	3.9	0.0	10.1	18.1	1.8	19.0	0.0	39.0	1.0	15.9	4.5	0.0	21.4	3.7	22.1	3.8	0.0	29.6	

	Research Blvd Eastbound					Life Lion Drive Westbound					Bullfrog Valley Road Northbound					Bullfrog Valley Road Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From	4:30 PM			to	5:30 PM																
Volume	81	8	70	0	159	259	26	273	0	558	12	187	67	0	266	47	287	62	0	396	1379
Percent	50.9	5.0	44.0	0.0		46.4	4.7	48.9	0.0		4.5	70.3	25.2	0.0		11.9	72.5	15.7	0.0		
5:00 PM Volume	20	3	16	0	39	71	5	78	0	154	1	42	22	0	65	10	76	13	0	99	357
Peak Factor																					
High Int.	4:45 PM					4:30 PM					3:30 PM					5:15 PM					
Volume	21	1	22	0	44	78	8	70	0	156	2	62	11	0	75	9	81	13	0	103	
PHF	0.96	0.67	0.80		0.90	0.83	0.81	0.88		0.89	0.60	0.92	0.76		0.94	0.73	0.89	0.82		0.96	0.97
Heavy Vehicles %	1%	0%	0%			0%	0%	0%			0%	2%	0%			2%	0%	2%			
Misc.	U-Turn		RTOR	Bikes		U-Turn		RTOR	Bikes		U-Turn		RTOR	Bikes		U-Turn		RTOR	Bikes		
	0		18	0		0		61	0		0		25	0		0		15	0		

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Greater Hershey Area Study
PM PEAK HOUR

Heavy Vehicles & Bicycles

	Research Blvd Eastbound					Life Lion Drive Westbound					Bullfrog Valley Road Northbound					Bullfrog Valley Road Southbound					
Start Time	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Int. Total
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch % Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Overall Peak Hour Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Traffic Count conducted by Traffic Planning & Design, Inc.

Herbert, Rowland & Grubic, Inc.
369 East Park Drive
Harrisburg, PA 17111
(717) 564-1121

Intersection #: 8
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Greater Hershey Area Study
PM PEAK HOUR

U-Turn & RTOR

	Research Blvd Eastbound					Life Lion Drive Westbound					Bullfrog Valley Road Northbound					Bullfrog Valley Road Southbound					
Start Time	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	Int. Total
3:00 PM	0		1		1	0		9		9	0		1		1	0		1		1	12
3:15 PM	0		1		1	0		17		17	0		2		2	0		2		2	22
3:30 PM	0		0		0	0		14		14	0		1		1	0		0		0	15
3:45 PM	0		0		0	0		14		14	0		3		3	0		2		2	19
Total	0		2		2	0		54		54	0		7		7	0		5		5	68
4:00 PM	0		4		4	0		9		9	0		1		1	0		3		3	17
4:15 PM	0		0		0	0		12		12	0		2		2	0		0		0	14
4:30 PM	0		3		3	0		11		11	0		4		4	0		4		4	22
4:45 PM	0		6		6	0		15		15	0		7		7	0		5		5	33
Total	0		13		13	0		47		47	0		14		14	0		12		12	86
5:00 PM	0		5		5	0		16		16	0		9		9	0		1		1	31
5:15 PM	0		4		4	0		19		19	0		5		5	0		5		5	33
5:30 PM	0		3		3	0		11		11	0		7		7	0		1		1	22
5:45 PM	0		7		7	0		13		13	0		4		4	0		0		0	24
Total	0		19		19	0		59		59	0		25		25	0		7		7	110
Grand Total	0		34		34	0		0		0	0		46		46	0		24		24	104
Apprch %	0.0	0.0	100.0	0.0							0.0	0.0	100.0	0.0		0.0	0.0	100.0	0.0		
Total %	0.0		32.7		32.7	0.0		0.0		0.0	0.0		44.2		44.2	0.0		23.1		23.1	
Overall Peak Hour Volume	0		18		18	0		61		61	0		25		25	0		15		15	119

Traffic Count conducted by Traffic Planning & Design, Inc.

Herbert, Rowland & Grubic, Inc.
369 East Park Drive
Harrisburg, PA 17111
(717) 564-1121

Intersection #: 9
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Greater Hershey Area Study
PM PEAK HOUR

All Vehicles

	Eastbound					Westbound					Northbound					Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
4:00 PM	4	87	4	0	95	64	98	5	0	167	20	2	51	0	73	3	0	0	0	3	338
4:15 PM	2	84	7	0	93	61	99	12	0	172	19	1	48	0	68	3	3	2	0	8	341
4:30 PM	3	72	7	0	82	76	88	2	0	166	26	0	40	0	66	2	1	0	0	3	317
4:45 PM	3	54	4	0	61	68	93	7	0	168	28	0	44	0	72	5	1	0	0	6	307
Total	12	297	22	0	331	269	378	26	0	673	93	3	183	0	279	13	5	2	0	20	1303
5:00 PM	0	58	7	0	65	68	101	4	0	173	29	1	48	0	78	1	0	0	0	1	317
5:15 PM	1	67	7	0	75	67	103	3	0	173	24	0	40	0	64	2	0	0	1	3	315
5:30 PM	0	78	9	0	87	57	95	1	0	153	29	0	52	0	81	1	1	0	1	3	324
5:45 PM	2	69	6	0	77	67	78	2	0	147	20	1	35	2	58	0	0	0	0	0	282
Total	3	272	29	0	304	259	377	10	0	646	102	2	175	2	281	4	1	0	2	7	1238
Grand Total	15	569	51	0	635	528	755	36	0	1319	195	5	358	2	560	17	6	2	3	28	2542
Apprch %	2.4	89.6	8.0	0.0		40.0	57.2	2.7	0.0		34.8	0.9	63.9	0.4		60.7	21.4	7.1	10.7		
Total %	0.6	22.4	2.0	0.0	25.0	20.8	29.7	1.4	0.0	51.9	7.7	0.2	14.1	0.1	22.0	0.7	0.2	0.1	0.1	1.1	

	Eastbound					Westbound					Northbound					Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From	4:00 PM			to	5:00 PM																
Volume	12	297	22	0	331	269	378	26	0	673	93	3	183	0	279	13	5	2	1	21	1304
Percent	3.6	89.7	6.6	0.0		40.0	56.2	3.9	0.0		33.3	1.1	65.6	0.0		61.9	23.8	9.5	4.8		
4:15 PM Volume	2	84	7	0	93	61	99	12	0	172	19	1	48	0	68	3	3	2	0	8	341
Peak Factor																					
High Int.	4:00 PM					5:00 PM					5:30 PM					4:15 PM					
Volume	4	87	4	0	95	68	101	4	0	173	29	0	52	0	81	3	3	2	0	8	
PHF	0.75	0.85	0.79		0.87	0.88	0.95	0.54		0.98	0.83	0.38	0.90		0.96	0.65	0.42	0.25	0.25	0.66	0.96
Heavy Vehicles %	0%	0%	0%			1%	1%	0%			0%	0%	4%			0%	0%	0%			
Misc.	U-Turn		RTOR	Bikes		U-Turn		RTOR	Bikes		U-Turn		RTOR	Bikes		U-Turn		RTOR	Bikes		
	0		0	0		0		2	0		0		90	0		0		1	0		

Herbert, Rowland & Grubic, Inc.
369 East Park Drive
Harrisburg, PA 17111
(717) 564-1121

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Greater Hershey Area Study
PM PEAK HOUR

Heavy Vehicles & Bicycles

	Eastbound					Westbound					Northbound					Southbound					
Start Time	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Int. Total
4:00 PM	0	0	0	0	0	1	1	0	0	2	0	0	4	0	4	0	0	0	0	0	6
4:15 PM	0	0	0	0	0	2	0	0	0	2	0	0	1	0	1	0	0	0	0	0	3
4:30 PM	0	0	0	0	0	1	1	0	0	2	0	0	2	0	2	0	0	0	0	0	4
4:45 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	1	0	0	1	4	2	0	0	6	0	0	7	0	7	0	0	0	0	0	14
5:00 PM	0	1	0	0	1	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	3
5:15 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2
Total	0	3	0	0	3	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	6
Grand Total	0	4	0	0	4	4	5	0	0	9	0	0	7	0	7	0	0	0	0	0	20
Apprch %	0.0	100.0	0.0	0.0		44.4	55.6	0.0	0.0		0.0	0.0	100.0	0.0							
Total %	0.0	20.0	0.0	0.0	20.0	20.0	25.0	0.0	0.0	45.0	0.0	0.0	35.0	0.0	35.0	0.0	0.0	0.0	0.0	0.0	
Overall Peak Hour Volume	0	1	0	0	1	4	2	0	0	6	0	0	7	0	7	0	0	0	0	0	14

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Greater Hershey Area Study
PM PEAK HOUR

U-Turn & RTOR

	Eastbound					Westbound					Northbound					Southbound					
Start Time	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	Int. Total
######	0		0		0	0		1		1	0		31		31	0		0		0	32
######	0		0		0	0		1		1	0		27		27	0		1		1	29
######	0		0		0	0		0		0	0		21		21	0		0		0	21
######	0		0		0	0		0		0	0		11		11	0		0		0	11
Total	0		0		0	0		2		2	0		90		90	0		1		1	93
######	0		0		0	0		0		0	0		15		15	0		0		0	15
######	0		1		1	0		1		1	0		19		19	0		0		0	21
######	0		0		0	0		0		0	0		19		19	0		0		0	19
######	0		0		0	0		0		0	0		2		2	0		0		0	2
Total	0		1		1	0		1		1	0		55		55	0		0		0	57
Grand Total	0		1		1	0		0		0	0		145		145	0		1		1	147
Apprch %	0.0	0.0	100.0	0.0							0.0	0.0	100.0	0.0		0.0	0.0	100.0	0.0		
Total %	0.0		0.7		0.7	0.0		0.0		0.0	0.0		98.6		98.6	0.0		0.7		0.7	
Overall Peak Hc Volume	0		0		0	0		2		2	0		90		90	0		1		1	93

Herbert, Rowland & Grubic, Inc.
369 East Park Drive
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Greater Hershey Area Study
PM PEAK HOUR

All Vehicles

	Walton Ave Eastbound					Mae St Westbound					W. Hersheypark Dr Northbound					W. Hersheypark Dr Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
4:00 PM	81	28	68	0	177	34	50	33	0	117	76	177	33	0	286	18	133	84	1	236	816
4:15 PM	85	38	62	0	185	36	60	21	0	117	78	211	37	0	326	16	140	96	2	254	882
4:30 PM	110	41	71	0	222	34	35	23	1	93	59	222	31	1	313	23	139	100	1	263	891
4:45 PM	74	28	67	0	169	39	49	29	0	117	79	201	32	0	312	22	140	102	0	264	862
Total	350	135	268	0	753	143	194	106	1	444	292	811	133	1	1237	79	552	382	4	1017	3451
5:00 PM	83	32	53	0	168	25	44	43	0	112	83	180	29	0	292	32	132	72	0	236	808
5:15 PM	91	35	69	0	195	40	44	35	0	119	79	179	36	0	294	27	107	71	0	205	813
5:30 PM	82	31	77	0	190	48	58	30	0	136	69	163	35	0	267	22	100	63	2	187	780
5:45 PM	66	33	62	0	161	37	42	23	0	102	62	109	33	0	204	23	95	86	1	205	672
Total	322	131	261	0	714	150	188	131	0	469	293	631	133	0	1057	104	434	292	3	833	3073
Grand Total	672	266	529	0	1467	293	382	237	1	913	585	1442	266	1	2294	183	986	674	7	1850	6524
Apprch %	45.8	18.1	36.1	0.0		32.1	41.8	26.0	0.1		25.5	62.9	11.6	0.0		9.9	53.3	36.4	0.4		
Total %	10.3	4.1	8.1	0.0	22.5	4.5	5.9	3.6	0.0	14.0	9.0	22.1	4.1	0.0	35.2	2.8	15.1	10.3	0.1	28.4	

	Walton Ave Eastbound					Mae St Westbound					W. Hersheypark Dr Northbound					W. Hersheypark Dr Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From	4:00 PM			to	5:00 PM																
Volume	350	135	268	0	753	143	194	106	1	444	292	811	133	1	1237	79	552	382	4	1017	3451
Percent	46.5	17.9	35.6	0.0		32.2	43.7	23.9	0.2		23.6	65.6	10.8	0.1		7.8	54.3	37.6	0.4		
4:30 PM Volume	110	41	71	0	222	34	35	23	1	93	59	222	31	1	313	23	139	100	1	263	891
Peak Factor																					
High Int.	4:30 PM					5:30 PM					4:15 PM					4:45 PM					
Volume	110	41	71	0	222	48	58	30	0	136	78	211	37	0	326	22	140	102	0	264	
PHF	0.80	0.82	0.94		0.85	0.92	0.81	0.80	0.25	0.95	0.92	0.91	0.90	0.25	0.95	0.86	0.99	0.94	0.50	0.96	0.97
Heavy Vehicles %	1%	0%	0%			0%	0%	1%			1%	5%	2%			0%	3%	1%			
Misc.	U-Turn 0		RTOR 194	Bikes 0		U-Turn 0		RTOR 83	Bikes 0		U-Turn 1		RTOR 4	Bikes 0		U-Turn 0		RTOR 98	Bikes 0		

Herbert, Rowland & Grubic, Inc.
369 East Park Drive
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Greater Hershey Area Study
PM PEAK HOUR

Heavy Vehicles & Bicycles

	Walton Ave Eastbound					Mae St Westbound					W. Hersheypark Dr Northbound					W. Hersheypark Dr Southbound					
Start Time	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Int. Total
4:00 PM	0	0	0	0	0	0	0	1	0	1	1	7	1	0	9	0	4	1	0	5	15
4:15 PM	1	0	0	0	1	0	0	0	0	0	0	18	1	0	19	0	7	1	0	8	28
4:30 PM	1	0	0	0	1	0	0	0	0	0	1	11	0	0	12	0	3	1	0	4	17
4:45 PM	0	0	0	0	0	0	0	0	0	0	1	6	0	0	7	0	5	0	0	5	12
Total	2	0	0	0	2	0	0	1	0	1	3	42	2	0	47	0	19	3	0	22	72
5:00 PM	0	0	0	0	0	0	0	0	0	0	2	1	0	0	3	0	4	0	0	4	7
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	4	0	0	4	5
5:30 PM	1	0	0	0	1	0	0	0	0	0	0	6	0	0	6	0	7	1	0	8	15
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	0	6	0	0	6	9
Total	1	0	0	0	1	0	0	0	0	0	2	11	0	0	13	0	21	1	0	22	36
Grand Total	3	0	0	0	3	0	0	1	0	1	5	53	2	0	60	0	40	4	0	44	108
Apprch %	100.0	0.0	0.0	0.0		0.0	0.0	100.0	0.0		8.3	88.3	3.3	0.0		0.0	90.9	9.1	0.0		
Total %	2.8	0.0	0.0	0.0	2.8	0.0	0.0	0.9	0.0	0.9	4.6	49.1	1.9	0.0	55.6	0.0	37.0	3.7	0.0	40.7	
Overall Peak Hour Volume	2	0	0	0	2	0	0	1	0	1	3	42	2	0	47	0	19	3	0	22	72

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Greater Hershey Area Study
PM PEAK HOUR

U-Turn & RTOR

	Walton Ave Eastbound					Mae St Westbound					W. Hersheypark Dr Northbound					W. Hersheypark Dr Southbound					
Start Time	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	Int. Total
4:00 PM	0		46		46	0		26		26	0		0		0	0		15		15	87
4:15 PM	0		47		47	0		19		19	1		1		2	0		20		20	88
4:30 PM	0		49		49	0		15		15	0		2		2	0		34		34	100
4:45 PM	0		52		52	0		23		23	0		1		1	0		29		29	105
Total	0		194		194	0		83		83	1		4		5	0		98		98	380
5:00 PM	0		39		39	0		35		35	0		7		7	0		35		35	116
5:15 PM	0		45		45	0		30		30	0		3		3	0		26		26	104
5:30 PM	0		51		51	0		23		23	2		6		8	0		25		25	107
5:45 PM	0		41		41	0		19		19	1		1		2	0		34		34	96
Total	0		176		176	0		107		107	3		17		20	0		120		120	423
Grand Total	0		370		370	0		0		0	4		21		25	0		218		218	613
Apprch %	0.0	0.0	100.0	0.0							16.0	0.0	84.0	0.0		0.0	0.0	100.0	0.0		
Total %	0.0		60.4		60.4	0.0		0.0		0.0	0.7		3.4		4.1	0.0		35.6		35.6	
Overall Peak Hour Volume	0		194		194	0		83		83	1		4		5	0		98		98	380

Herbert, Rowland & Grubic, Inc.
369 East Park Drive
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Date: 8/17/2017
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Greater Hershey Area Study
PM PEAK HOUR

All Vehicles

	Hersheypark Drive (SR 0743) Eastbound					Hersheypark Drive (SR 0743) Westbound					Park Blvd Northbound					Hershey Road (SR 0039) Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
3:00 PM	75	165	45	0	285	44	145	70	0	259	36	25	31	0	92	40	34	72	0	146	782
3:15 PM	78	180	44	0	302	39	130	61	0	230	40	25	36	0	101	34	37	52	0	123	756
3:30 PM	71	209	41	0	321	30	166	84	0	280	57	23	52	0	132	53	38	69	0	160	893
3:45 PM	87	168	45	0	300	31	163	90	0	284	29	38	40	0	107	49	38	56	0	143	834
Total	311	722	175	0	1208	144	604	305	0	1053	162	111	159	0	432	176	147	249	0	572	3265
4:00 PM	68	177	43	0	288	19	147	85	0	251	33	31	54	0	118	59	40	57	0	156	813
4:15 PM	87	172	35	0	294	19	156	95	0	270	30	40	30	0	100	51	39	44	0	134	798
4:30 PM	75	170	38	0	283	41	151	97	0	289	46	49	47	0	142	50	42	66	0	158	872
4:45 PM	93	208	42	0	343	31	165	86	0	282	60	43	35	0	138	56	45	59	0	160	923
Total	323	727	158	0	1208	110	619	363	0	1092	169	163	166	0	498	216	166	226	0	608	3406
5:00 PM	84	162	43	0	289	32	145	94	0	271	52	46	33	0	131	46	42	58	0	146	837
5:15 PM	81	172	46	0	299	23	199	83	0	305	51	59	42	0	152	54	44	55	0	153	909
5:30 PM	91	157	42	0	290	22	154	75	0	251	51	36	44	0	131	54	36	60	0	150	822
5:45 PM	70	146	40	0	256	27	142	73	0	242	38	42	36	0	116	42	50	77	0	169	783
Total	326	637	171	0	1134	104	640	325	0	1069	192	183	155	0	530	196	172	250	0	618	3351
Grand Total	960	2086	504	0	3550	358	1863	993	0	3214	523	457	480	0	1460	588	485	725	0	1798	10022
Apprch %	27.0	58.8	14.2	0.0		11.1	58.0	30.9	0.0		35.8	31.3	32.9	0.0		32.7	27.0	40.3	0.0		
Total %	9.6	20.8	5.0	0.0	35.4	3.6	18.6	9.9	0.0	32.1	5.2	4.6	4.8	0.0	14.6	5.9	4.8	7.2	0.0	17.9	

	Hersheypark Drive (SR 0743) Eastbound					Hersheypark Drive (SR 0743) Westbound					Park Blvd Northbound					Hershey Road (SR 0039) Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From	4:30 PM			to	5:30 PM																
Volume	333	712	169	0	1214	127	660	360	0	1147	209	197	157	0	563	206	173	238	0	617	3541
Percent	27.4	58.6	13.9	0.0		11.1	57.5	31.4	0.0		37.1	35.0	27.9	0.0		33.4	28.0	38.6	0.0		
4:45 PM Volume	93	208	42	0	343	31	165	86	0	282	60	43	35	0	138	56	45	59	0	160	923
Peak Factor																					
High Int.	4:45 PM					5:15 PM					5:15 PM					5:45 PM					
Volume	93	208	42	0	343	23	199	83	0	305	51	59	42	0	152	42	50	77	0	169	
PHF	0.90	0.86	0.92		0.88	0.77	0.83	0.93		0.94	0.87	0.83	0.84		0.93	0.92	0.96	0.90		0.96	0.96
Heavy Vehicles %	2%	4%	5%			6%	4%	3%			0%	50%	1%			3%	0%	6%			
Misc.	U-Turn		RTOR	Bikes		U-Turn		RTOR	Bikes		U-Turn		RTOR	Bikes		U-Turn		RTOR	Bikes		
	0		113	0		0		301	0		0		78	0		0		183	0		

Traffic Count conducted by Traffic Planning & Design, Inc.

Herbert, Rowland & Grubic, Inc.
369 East Park Drive
Harrisburg, PA 17111
(717) 564-1121

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Greater Hershey Area Study
PM PEAK HOUR

Heavy Vehicles & Bicycles

	Hersheypark Drive (SR 0743) Eastbound					Hersheypark Drive (SR 0743) Westbound					Park Blvd Northbound					Hershey Road (SR 0039) Southbound					
Start Time	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Int. Total
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch % Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Overall Peak Hour Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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(717) 564-1121

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Greater Hershey Area Study
PM PEAK HOUR

U-Turn & RTOR

	Hersheypark Drive (SR 0743) Eastbound					Hersheypark Drive (SR 0743) Westbound					Park Blvd Northbound					Hershey Road (SR 0039) Southbound					
Start Time	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	Int. Total
3:00 PM	0		25		25	0		47		47	0		27		27	0		34		34	133
3:15 PM	0		34		34	0		57		57	0		27		27	0		17		17	135
3:30 PM	0		30		30	0		68		68	0		36		36	0		23		23	157
3:45 PM	0		29		29	0		78		78	0		29		29	0		27		27	163
Total	0		118		118	0		250		250	0		119		119	0		101		101	588
4:00 PM	0		30		30	0		72		72	0		12		12	0		34		34	148
4:15 PM	0		27		27	0		72		72	0		7		7	0		39		39	145
4:30 PM	0		24		24	0		81		81	0		16		16	0		55		55	176
4:45 PM	0		35		35	0		72		72	0		11		11	0		44		44	162
Total	0		116		116	0		297		297	0		46		46	0		172		172	631
5:00 PM	0		27		27	0		76		76	0		21		21	0		38		38	162
5:15 PM	0		27		27	0		72		72	0		30		30	0		46		46	175
5:30 PM	0		33		33	0		67		67	0		27		27	0		43		43	170
5:45 PM	0		32		32	0		64		64	0		26		26	0		58		58	180
Total	0		119		119	0		279		279	0		104		104	0		185		185	687
Grand Total	0		353		353	0		0		0	0		269		269	0		458		458	1080
Apprch %	0.0	0.0	100.0	0.0							0.0	0.0	100.0	0.0		0.0	0.0	100.0	0.0		
Total %	0.0		32.7		32.7	0.0		0.0		0.0	0.0		24.9		24.9	0.0		42.4		42.4	
Overall Peak Hour Volume	0		113		113	0		301		301	0		78		78	0		183		183	675

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Herbert, Rowland & Grubic, Inc.
369 East Park Drive
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(717) 564-1121

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Greater Hershey Area Study
PM PEAK HOUR

All Vehicles

	Hersheypark Drive Eastbound					Hersheypark Drive Westbound					Park Avenue Northbound					Sand Beach Road Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
4:00 PM	8	157	40	0	205	29	126	7	0	162	80	20	48	0	148	9	28	13	0	50	565
4:15 PM	9	209	56	0	274	32	112	5	0	149	50	21	48	0	119	8	22	10	0	40	582
4:30 PM	4	230	37	0	271	34	142	7	0	183	80	19	52	0	151	14	20	13	0	47	652
4:45 PM	7	235	44	0	286	32	101	3	0	136	76	33	38	0	147	9	31	13	0	53	622
Total	28	831	177	0	1036	127	481	22	0	630	286	93	186	0	565	40	101	49	0	190	2421
5:00 PM	9	227	39	0	275	22	133	4	0	159	83	27	37	0	147	3	16	11	0	30	611
5:15 PM	2	198	60	0	260	33	132	4	0	169	68	25	45	0	138	10	28	12	0	50	617
5:30 PM	6	173	60	0	239	29	86	8	0	123	63	25	29	0	117	8	15	6	0	29	508
5:45 PM	6	143	40	0	189	28	95	3	0	126	57	16	29	0	102	4	15	6	0	25	442
Total	23	741	199	0	963	112	446	19	0	577	271	93	140	0	504	25	74	35	0	134	2178
Grand Total	51	1572	376	0	1999	239	927	41	0	1207	557	186	326	0	1069	65	175	84	0	324	4599
Apprch %	2.6	78.6	18.8	0.0		19.8	76.8	3.4	0.0		52.1	17.4	30.5	0.0		20.1	54.0	25.9	0.0		
Total %	1.1	34.2	8.2	0.0	43.5	5.2	20.2	0.9	0.0	26.2	12.1	4.0	7.1	0.0	23.2	1.4	3.8	1.8	0.0	7.0	

	Hersheypark Drive Eastbound					Hersheypark Drive Westbound					Park Avenue Northbound					Sand Beach Road Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From	4:30 PM		to		5:30 PM																
Volume	22	890	180	0	1092	121	508	18	0	647	307	104	172	0	583	36	95	49	0	180	2502
Percent	2.0	81.5	16.5	0.0		18.7	78.5	2.8	0.0		52.7	17.8	29.5	0.0		20.0	52.8	27.2	0.0		
4:30 PM Volume	4	230	37	0	271	34	142	7	0	183	80	19	52	0	151	14	20	13	0	47	652
Peak Factor																					
High Int.	4:45 PM					4:30 PM					4:30 PM					4:45 PM					
Volume	7	235	44	0	286	34	142	7	0	183	80	19	52	0	151	9	31	13	0	53	
PHF	0.61	0.95	0.75		0.95	0.89	0.89	0.64		0.88	0.92	0.79	0.83		0.97	0.64	0.77	0.94		0.85	0.96
Heavy Vehicles %	0%	2%	2%			4%	4%	0%			2%	1%	4%			0%	1%	0%			
Misc.	U-Turn 0		RTOR 0	Bikes 0		U-Turn 0		RTOR 0	Bikes 0		U-Turn 0		RTOR 0	Bikes 0		U-Turn 0		RTOR 0	Bikes 0		

Herbert, Rowland & Grubic, Inc.
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Harrisburg, PA 17111
(717) 564-1121

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Greater Hershey Area Study
PM PEAK HOUR

Heavy Vehicles & Bicycles

	Hersheypark Drive Eastbound					Hersheypark Drive Westbound					Park Avenue Northbound					Sand Beach Road Southbound					
Start Time	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Int. Total
4:00 PM	0	6	0	0	6	4	8	0	0	12	2	1	1	0	4	0	1	1	0	2	24
4:15 PM	0	6	1	0	7	3	10	0	0	13	0	0	1	0	1	0	1	1	0	2	23
4:30 PM	0	6	0	0	6	2	5	0	0	7	1	1	3	0	5	0	0	0	0	0	18
4:45 PM	0	9	0	0	9	2	2	0	0	4	2	0	1	0	3	0	1	0	0	1	17
Total	0	27	1	0	28	11	25	0	0	36	5	2	6	0	13	0	3	2	0	5	82
5:00 PM	0	1	1	0	2	1	9	0	0	10	2	0	0	0	2	0	0	0	0	0	14
5:15 PM	0	1	2	0	3	0	4	0	0	4	2	0	3	0	5	0	0	0	0	0	12
5:30 PM	0	5	2	0	7	1	2	0	0	3	0	0	1	0	1	0	4	0	0	4	15
5:45 PM	0	3	0	0	3	0	4	0	0	4	2	0	1	0	3	0	1	0	0	1	11
Total	0	10	5	0	15	2	19	0	0	21	6	0	5	0	11	0	5	0	0	5	52
Grand Total	0	37	6	0	43	13	44	0	0	57	11	2	11	0	24	0	8	2	0	10	134
Apprch %	0.0	86.0	14.0	0.0		22.8	77.2	0.0	0.0		45.8	8.3	45.8	0.0		0.0	80.0	20.0	0.0		
Total %	0.0	27.6	4.5	0.0	32.1	9.7	32.8	0.0	0.0	42.5	8.2	1.5	8.2	0.0	17.9	0.0	6.0	1.5	0.0	7.5	
Overall Peak Hour Volume	0	17	3	0	20	5	20	0	0	25	7	1	7	0	15	0	1	0	0	1	61

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Greater Hershey Area Study
PM PEAK HOUR

U-Turn & RTOR

	Hersheypark Drive Eastbound					Hersheypark Drive Westbound					Park Avenue Northbound					Sand Beach Road Southbound					
Start Time	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	Int. Total
4:00 PM	1		0		1	0		0		0	0		0		0	0		0		0	1
4:15 PM	0		0		0	0		0		0	0		0		0	0		0		0	0
4:30 PM	0		0		0	0		0		0	0		0		0	0		0		0	0
4:45 PM	0		0		0	0		0		0	0		0		0	0		0		0	0
Total	1		0		1	0		0		0	0		0		0	0		0		0	1
5:00 PM	0		0		0	0		0		0	0		0		0	0		0		0	0
5:15 PM	0		0		0	0		0		0	0		0		0	0		0		0	0
5:30 PM	0		0		0	0		0		0	0		0		0	0		0		0	0
5:45 PM	0		0		0	0		0		0	0		0		0	0		0		0	0
Total	0		0		0	0		0		0	0		0		0	0		0		0	0
Grand Total	1		0		1	0		0		0	0		0		0	0		0		0	1
Apprch %	100.0	0.0	0.0	0.0																	
Total %	100.0		0.0		100.0	0.0		0.0		0.0	0.0		0.0		0.0	0.0		0.0		0.0	
Overall Peak Hour Volume	0		0		0	0		0		0	0		0		0	0		0		0	0

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Greater Hershey Area Study
PM PEAK HOUR

All Vehicles

	Hersheypark Drive Eastbound					Hersheypark Drive Westbound					Laudermilch Road Northbound					Laudermilch Road Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
4:00 PM	100	115	19	0	234	0	66	1	0	67	20	51	0	0	71	3	11	63	0	77	449
4:15 PM	142	130	28	0	300	1	54	0	0	55	11	44	1	0	56	5	23	52	0	80	491
4:30 PM	128	145	26	0	299	1	85	1	0	87	15	43	0	0	58	0	32	64	0	96	540
4:45 PM	153	128	24	0	305	1	57	2	0	60	14	45	0	0	59	2	12	59	0	73	497
Total	523	518	97	0	1138	3	262	4	0	269	60	183	1	0	244	10	78	238	0	326	1977
5:00 PM	136	133	22	0	291	1	63	0	0	64	20	50	2	0	72	3	20	54	0	77	504
5:15 PM	110	158	32	0	300	0	66	1	0	67	17	38	0	0	55	2	25	62	0	89	511
5:30 PM	84	103	26	0	213	0	47	1	0	48	19	47	0	0	66	2	25	49	0	76	403
5:45 PM	76	73	18	0	167	0	55	2	0	57	16	31	0	0	47	2	18	51	0	71	342
Total	406	467	98	0	971	1	231	4	0	236	72	166	2	0	240	9	88	216	0	313	1760
Grand Total	929	985	195	0	2109	4	493	8	0	505	132	349	3	0	484	19	166	454	0	639	3737
Apprch %	44.0	46.7	9.2	0.0		0.8	97.6	1.6	0.0		27.3	72.1	0.6	0.0		3.0	26.0	71.0	0.0		
Total %	24.9	26.4	5.2	0.0	56.4	0.1	13.2	0.2	0.0	13.5	3.5	9.3	0.1	0.0	13.0	0.5	4.4	12.1	0.0	17.1	

	Hersheypark Drive Eastbound					Hersheypark Drive Westbound					Laudermilch Road Northbound					Laudermilch Road Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From	4:30 PM		to		5:30 PM																
Volume	527	564	104	0	1195	3	271	4	0	278	66	176	2	0	244	7	89	239	0	335	2052
Percent	44.1	47.2	8.7	0.0		1.1	97.5	1.4	0.0		27.0	72.1	0.8	0.0		2.1	26.6	71.3	0.0		
4:30 PM Volume	128	145	26	0	299	1	85	1	0	87	15	43	0	0	58	0	32	64	0	96	540
Peak Factor																					
High Int.	4:45 PM					4:30 PM					5:00 PM					4:30 PM					
Volume	153	128	24	0	305	1	85	1	0	87	20	50	2	0	72	0	32	64	0	96	
PHF	0.86	0.89	0.81		0.98	0.75	0.80	0.50		0.80	0.83	0.88	0.25		0.85	0.58	0.70	0.93		0.87	0.95
Heavy Vehicles %	2%	2%	0%			0%	5%	0%			0%	0%	0%			0%	1%	2%			
Misc.	U-Turn 0		RTOR 26	Bikes 0		U-Turn 0		RTOR 3	Bikes 0		U-Turn 0		RTOR 1	Bikes 0		U-Turn 1		RTOR 116	Bikes 0		

Herbert, Rowland & Grubic, Inc.
369 East Park Drive
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(717) 564-1121

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Greater Hershey Area Study
PM PEAK HOUR

Heavy Vehicles & Bicycles

	Hersheypark Drive Eastbound					Hersheypark Drive Westbound					Laudermilch Road Northbound					Laudermilch Road Southbound					
Start Time	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Int. Total
4:00 PM	3	3	0	0	6	0	4	0	0	4	2	1	0	0	3	0	0	4	0	4	17
4:15 PM	3	5	0	0	8	0	1	0	0	1	2	0	0	0	2	0	0	2	0	2	13
4:30 PM	3	5	0	0	8	0	3	0	0	3	0	0	0	0	0	0	1	1	0	2	13
4:45 PM	4	7	0	0	11	0	3	0	0	3	0	0	0	0	0	0	0	2	0	2	16
Total	13	20	0	0	33	0	11	0	0	11	4	1	0	0	5	0	1	9	0	10	59
5:00 PM	1	0	0	0	1	0	4	0	0	4	0	0	0	0	0	0	0	1	0	1	6
5:15 PM	2	2	0	0	4	0	4	0	0	4	0	0	0	0	0	0	0	1	0	1	9
5:30 PM	2	3	0	0	5	0	1	0	0	1	0	0	0	0	0	1	0	0	0	1	7
5:45 PM	3	1	0	0	4	0	3	0	0	3	0	0	0	0	0	1	0	0	0	1	8
Total	8	6	0	0	14	0	12	0	0	12	0	0	0	0	0	2	0	2	0	4	30
Grand Total	21	26	0	0	47	0	23	0	0	23	4	1	0	0	5	2	1	11	0	14	89
Apprch %	44.7	55.3	0.0	0.0		0.0	100.0	0.0	0.0		80.0	20.0	0.0	0.0		14.3	7.1	78.6	0.0		
Total %	23.6	29.2	0.0	0.0	52.8	0.0	25.8	0.0	0.0	25.8	4.5	1.1	0.0	0.0	5.6	2.2	1.1	12.4	0.0	15.7	
Overall Peak Hour Volume	10	14	0	0	24	0	14	0	0	14	0	0	0	0	0	0	1	5	0	6	44

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Greater Hershey Area Study
PM PEAK HOUR

U-Turn & RTOR

	Hersheypark Drive Eastbound					Hersheypark Drive Westbound					Laudermilch Road Northbound					Laudermilch Road Southbound					
Start Time	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	Int. Total
4:00 PM	0		5		5	0		1		1	0		0		0	0		26		26	32
4:15 PM	0		11		11	0		0		0	0		1		1	0		31		31	43
4:30 PM	0		10		10	0		1		1	0		0		0	0		21		21	32
4:45 PM	0		4		4	0		2		2	0		0		0	1		35		36	42
Total	0		30		30	0		4		4	0		1		1	1		113		114	149
5:00 PM	0		4		4	0		0		0	0		1		1	0		31		31	36
5:15 PM	0		8		8	0		0		0	0		0		0	0		29		29	37
5:30 PM	0		10		10	0		1		1	0		0		0	0		31		31	42
5:45 PM	0		11		11	0		0		0	0		0		0	0		33		33	44
Total	0		33		33	0		1		1	0		1		1	0		124		124	159
Grand Total	0		63		63	0		0		0	0		2		2	1		237		238	303
Apprch %	0.0	0.0	100.0	0.0							0.0	0.0	100.0	0.0		0.4	0.0	99.6	0.0		
Total %	0.0		20.8		20.8	0.0		0.0		0.0	0.0		0.7		0.7	0.3		78.2		78.5	
Overall Peak Hour Volume	0		26		26	0		3		3	0		1		1	1		116		117	147

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Greater Hershey Area Study
PM PEAK HOUR

All Vehicles

	Hersheypark Dr Eastbound					Commercial Dwy Westbound					N. Lingle Ave Northbound					N. Lingle Ave Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
4:00 PM	4	6	103	0	113	6	7	3	0	16	61	20	2	0	83	1	23	0	0	24	236
4:15 PM	13	3	117	0	133	3	4	1	0	8	56	25	0	0	81	1	31	4	0	36	258
4:30 PM	13	6	127	0	146	2	6	4	0	12	72	17	2	0	91	3	30	1	0	34	283
4:45 PM	11	5	126	0	142	1	3	3	0	7	61	18	3	0	82	3	37	2	0	42	273
Total	41	20	473	0	534	12	20	11	0	43	250	80	7	0	337	8	121	7	0	136	1050
5:00 PM	15	3	117	0	135	13	11	9	0	33	56	17	3	0	76	3	41	0	0	44	288
5:15 PM	7	2	143	0	152	3	5	2	0	10	53	17	2	0	72	2	47	3	0	52	286
5:30 PM	5	3	102	0	110	3	2	6	0	11	55	32	2	0	89	2	41	1	0	44	254
5:45 PM	2	2	72	0	76	4	5	2	0	11	43	22	3	0	68	2	18	0	0	20	175
Total	29	10	434	0	473	23	23	19	0	65	207	88	10	0	305	9	147	4	0	160	1003
Grand Total	70	30	907	0	1007	35	43	30	0	108	457	168	17	0	642	17	268	11	0	296	2053
Apprch %	7.0	3.0	90.1	0.0		32.4	39.8	27.8	0.0		71.2	26.2	2.6	0.0		5.7	90.5	3.7	0.0		
Total %	3.4	1.5	44.2	0.0	49.1	1.7	2.1	1.5	0.0	5.3	22.3	8.2	0.8	0.0	31.3	0.8	13.1	0.5	0.0	14.4	

	Hersheypark Dr Eastbound					Commercial Dwy Westbound					N. Lingle Ave Northbound					N. Lingle Ave Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From	4:30 PM			to	5:30 PM																
Volume	46	16	513	0	575	19	25	18	0	62	242	69	10	0	321	11	155	6	0	172	1130
Percent	8.0	2.8	89.2	0.0		30.6	40.3	29.0	0.0		75.4	21.5	3.1	0.0		6.4	90.1	3.5	0.0		
5:00 PM Volume	15	3	117	0	135	13	11	9	0	33	56	17	3	0	76	3	41	0	0	44	288
Peak Factor																					
High Int.	5:15 PM					5:00 PM					4:30 PM					5:15 PM					
Volume	7	2	143	0	152	13	11	9	0	33	72	17	2	0	91	2	47	3	0	52	
PHF	0.77	0.67	0.90		0.95	0.37	0.57	0.50		0.47	0.84	0.96	0.83		0.88	0.92	0.82	0.50		0.83	0.98
Heavy Vehicles %	2%	69%	0%			5%	28%	39%			2%	22%	40%			100%	2%	0%			
Misc.	U-Turn 0		RTOR 192	Bikes 0		U-Turn 0		RTOR 8	Bikes 0		U-Turn 0		RTOR 0	Bikes 0		U-Turn 0		RTOR 1	Bikes 0		

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PM PEAK HOUR

Heavy Vehicles & Bicycles

	Hersheypark Dr Eastbound					Commercial Dwy Westbound					N. Lingle Ave Northbound					N. Lingle Ave Southbound					
Start Time	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Int. Total
4:00 PM	0	4	2	0	6	0	3	2	0	5	1	2	0	0	3	0	3	0	0	3	17
4:15 PM	0	3	2	0	5	0	2	1	0	3	0	4	0	0	4	1	1	0	0	2	14
4:30 PM	0	4	0	0	4	0	1	2	0	3	1	5	1	0	7	3	0	0	0	3	17
4:45 PM	1	4	0	0	5	0	0	2	0	2	3	6	1	0	10	3	1	0	0	4	21
Total	1	15	4	0	20	0	6	7	0	13	5	17	2	0	24	7	5	0	0	12	69
5:00 PM	0	2	0	0	2	1	3	2	0	6	1	2	2	0	5	3	1	0	0	4	17
5:15 PM	0	1	1	0	2	0	3	1	0	4	1	2	0	0	3	2	1	0	0	3	12
5:30 PM	0	3	1	0	4	0	1	1	0	2	0	1	0	0	1	2	4	0	0	6	13
5:45 PM	0	2	0	0	2	0	2	1	0	3	1	3	0	0	4	1	1	0	0	2	11
Total	0	8	2	0	10	1	9	5	0	15	3	8	2	0	13	8	7	0	0	15	53
Grand Total	1	23	6	0	30	1	15	12	0	28	8	25	4	0	37	15	12	0	0	27	122
Apprch %	3.3	76.7	20.0	0.0		3.6	53.6	42.9	0.0		21.6	67.6	10.8	0.0		55.6	44.4	0.0	0.0		
Total %	0.8	18.9	4.9	0.0	24.6	0.8	12.3	9.8	0.0	23.0	6.6	20.5	3.3	0.0	30.3	12.3	9.8	0.0	0.0	22.1	
Overall Peak Hour Volume	1	11	1	0	13	1	7	7	0	15	6	15	4	0	25	11	3	0	0	14	67

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PM PEAK HOUR

U-Turn & RTOR

	Hersheypark Dr Eastbound					Commercial Dwy Westbound					N. Lingle Ave Northbound					N. Lingle Ave Southbound					
Start Time	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	Int. Total
4:00 PM	0		26		26	0		0		0	0		1		1	0		0		0	27
4:15 PM	0		31		31	0		0		0	0		0		0	0		1		1	32
4:30 PM	0		51		51	0		1		1	0		0		0	0		0		0	52
4:45 PM	0		38		38	0		1		1	0		0		0	0		1		1	40
Total	0		146		146	0		2		2	0		1		1	0		2		2	151
5:00 PM	0		52		52	0		6		6	0		0		0	0		0		0	58
5:15 PM	0		51		51	0		0		0	0		0		0	0		0		0	51
5:30 PM	0		43		43	0		1		1	0		0		0	0		0		0	44
5:45 PM	0		18		18	0		1		1	0		2		2	0		0		0	21
Total	0		164		164	0		8		8	0		2		2	0		0		0	174
Grand Total	0		310		310	0		0		0	0		3		3	0		2		2	315
Apprch %	0.0	0.0	100.0	0.0							0.0	0.0	100.0	0.0		0.0	0.0	100.0	0.0		
Total %	0.0		98.4		98.4	0.0		0.0		0.0	0.0		1.0		1.0	0.0		0.6		0.6	
Overall Peak Hour Volume	0		192		192	0		8		8	0		0		0	0		1		1	201

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Greater Hershey Area Study
PM PEAK HOUR

All Vehicles

	Eastbound					Derry Road Westbound					Park Avenue Northbound					Park Avenue Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
4:00 PM	0	0	0	0	0	6	0	14	0	20	0	110	6	0	116	7	104	0	0	111	247
4:15 PM	0	0	0	0	0	5	0	12	0	17	0	112	2	0	114	3	115	0	0	118	249
4:30 PM	0	0	0	0	0	2	0	11	0	13	0	131	3	0	134	13	94	0	0	107	254
4:45 PM	0	0	0	0	0	11	0	23	0	34	0	101	9	0	110	7	110	0	0	117	261
Total	0	0	0	0	0	24	0	60	0	84	0	454	20	0	474	30	423	0	0	453	1011
5:00 PM	0	0	0	0	0	7	0	20	0	27	0	115	7	0	122	8	87	0	0	95	244
5:15 PM	0	0	0	0	0	9	0	16	0	25	0	93	6	0	99	8	114	0	0	122	246
5:30 PM	0	0	0	0	0	13	0	20	0	33	0	78	4	0	82	10	85	0	0	95	210
5:45 PM	0	0	0	0	0	5	0	13	0	18	0	96	1	0	97	11	84	0	0	95	210
Total	0	0	0	0	0	34	0	69	0	103	0	382	18	0	400	37	370	0	0	407	910
Grand Total	0	0	0	0	0	58	0	129	0	187	0	836	38	0	874	67	793	0	0	860	1921
Apprch %						31.0	0.0	69.0	0.0		0.0	95.7	4.3	0.0		7.8	92.2	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	3.0	0.0	6.7	0.0	9.7	0.0	43.5	2.0	0.0	45.5	3.5	41.3	0.0	0.0	44.8	

	Eastbound					Derry Road Westbound					Park Avenue Northbound					Park Avenue Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From	4:00 PM			to	5:00 PM																
Volume	0	0	0	0	0	24	0	60	0	84	0	454	20	0	474	30	423	0	0	453	1011
Percent						28.6	0.0	71.4	0.0		0.0	95.8	4.2	0.0		6.6	93.4	0.0	0.0		
4:45 PM Volume	0	0	0	0	0	11	0	23	0	34	0	101	9	0	110	7	110	0	0	117	261
Peak Factor																					
High Int.	4:00 PM					4:45 PM					4:30 PM					5:15 PM					
Volume	0	0	0	0	0	11	0	23	0	34	0	131	3	0	134	8	114	0	0	122	
PHF						0.55		0.65		0.62		0.87	0.56		0.88	0.58	0.92			0.96	0.97
Heavy Vehicles %	0%	0%	0%			4%	0%	0%			0%	3%	5%			0%	4%	0%			
Misc.	U-Turn 0		RTOR 0	Bikes 0		U-Turn 0		RTOR 0	Bikes 0		U-Turn 0		RTOR 0	Bikes 0		U-Turn 0		RTOR 0	Bikes 0		

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PM PEAK HOUR

Heavy Vehicles & Bicycles

	Eastbound					Derry Road Westbound					Park Avenue Northbound					Park Avenue Southbound					
Start Time	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Int. Total
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	3	1	0	4	0	6	0	0	6	10
4:15 PM	0	0	0	0	0	1	0	0	0	1	0	1	0	0	1	0	5	0	0	5	7
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	5	0	0	5	0	1	0	0	1	6
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	0	4	0	0	4	7
Total	0	0	0	0	0	1	0	0	0	1	0	12	1	0	13	0	16	0	0	16	30
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	2	0	0	2	4
5:15 PM	0	0	0	0	0	0	0	1	0	1	0	3	2	0	5	0	2	0	0	2	8
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	6	0	0	6	7
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	2
Total	0	0	0	0	0	0	0	1	0	1	0	8	2	0	10	0	10	0	0	10	21
Grand Total	0	0	0	0	0	1	0	1	0	2	0	20	3	0	23	0	26	0	0	26	51
Apprch %						50.0	0.0	50.0	0.0		0.0	87.0	13.0	0.0		0.0	100.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	2.0	0.0	2.0	0.0	3.9	0.0	39.2	5.9	0.0	45.1	0.0	51.0	0.0	0.0	51.0	
Overall Peak Hour Volume	0	0	0	0	0	1	0	0	0	1	0	12	1	0	13	0	16	0	0	16	30

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Greater Hershey Area Study
PM PEAK HOUR

All Vehicles

	Park Blvd Eastbound					Westbound					N Ridge Road Northbound					Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
4:00 PM	0	44	0	0	44	0	0	0	0	0	42	0	4	0	46	0	0	0	0	0	90
4:15 PM	0	53	0	0	53	0	0	0	0	0	40	0	2	0	42	0	0	0	0	0	95
4:30 PM	0	46	0	0	46	0	0	0	0	0	32	0	2	0	34	0	0	0	0	0	80
4:45 PM	0	49	0	0	49	0	0	0	0	0	48	0	2	0	50	0	0	0	0	0	99
Total	0	192	0	0	192	0	0	0	0	0	162	0	10	0	172	0	0	0	0	0	364
5:00 PM	0	50	0	0	50	0	0	0	0	0	37	0	0	0	37	0	0	0	0	0	87
5:15 PM	0	53	0	0	53	0	0	0	0	0	40	0	2	0	42	0	0	0	0	0	95
5:30 PM	0	40	0	0	40	0	0	0	0	0	31	0	1	0	32	0	0	0	0	0	72
5:45 PM	0	33	0	0	33	0	0	0	0	0	39	0	1	0	40	0	0	0	0	0	73
Total	0	176	0	0	176	0	0	0	0	0	147	0	4	0	151	0	0	0	0	0	327
Grand Total	0	368	0	0	368	0	0	0	0	0	309	0	14	0	323	0	0	0	0	0	691
Apprch %	0.0	100.0	0.0	0.0							95.7	0.0	4.3	0.0							
Total %	0.0	53.3	0.0	0.0	53.3	0.0	0.0	0.0	0.0	0.0	44.7	0.0	2.0	0.0	46.7	0.0	0.0	0.0	0.0	0.0	

	Park Blvd Eastbound					Westbound					N Ridge Road Northbound					Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From	4:00 PM			to	5:00 PM																
Volume	0	192	0	0	192	0	0	0	0	0	162	0	10	0	172	0	0	0	0	0	364
Percent	0.0	100.0	0.0	0.0							94.2	0.0	5.8	0.0							
4:45 PM Volume	0	49	0	0	49	0	0	0	0	0	48	0	2	0	50	0	0	0	0	0	99
Peak Factor																					
High Int.	4:15 PM					4:00 PM					4:45 PM					4:00 PM					
Volume	0	53	0	0	53	0	0	0	0	0	48	0	2	0	50	0	0	0	0	0	
PHF		0.91			0.91						0.84		0.63		0.86						0.92
Heavy Vehicles %	0%	2%	0%			0%	0%	0%			1%	0%	10%			0%	0%	0%			
Misc.	U-Turn		RTOR	Bikes		U-Turn		RTOR	Bikes		U-Turn		RTOR	Bikes		U-Turn		RTOR	Bikes		
	0		0	0		0		0	0		0		0	0		0		0	0		

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Greater Hershey Area Study
PM PEAK HOUR

Heavy Vehicles & Bicycles

	Park Blvd Eastbound					Westbound					N Ridge Road Northbound					Southbound					
Start Time	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Int. Total
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	2	0	0	2	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	3
4:45 PM	0	1	0	0	1	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	2
Total	0	3	0	0	3	0	0	0	0	0	1	0	1	0	2	0	0	0	0	0	5
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	3	0	0	3	0	0	0	0	0	1	0	1	0	2	0	0	0	0	0	5
Apprch %	0.0	100.0	0.0	0.0							50.0	0.0	50.0	0.0							
Total %	0.0	60.0	0.0	0.0	60.0	0.0	0.0	0.0	0.0	0.0	20.0	0.0	20.0	0.0	40.0	0.0	0.0	0.0	0.0	0.0	
Overall Peak Hour Volume	0	3	0	0	3	0	0	0	0	0	1	0	1	0	2	0	0	0	0	0	5

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Greater Hershey Area Study
PM PEAK HOUR

All Vehicles

	W. Chocolate Ave Eastbound					W. Chocolate Ave Westbound					University Dr Northbound					University Dr Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
4:00 PM	1	250	27	0	278	26	193	4	0	223	98	1	69	0	168	19	1	15	0	35	704
4:15 PM	1	256	44	0	301	21	225	2	0	248	76	3	59	0	138	17	1	12	0	30	717
4:30 PM	2	245	26	0	273	21	207	3	0	231	101	5	79	0	185	14	5	17	0	36	725
4:45 PM	3	284	33	0	320	14	195	5	0	214	87	5	63	0	155	12	5	5	0	22	711
Total	7	1035	130	0	1172	82	820	14	0	916	362	14	270	0	646	62	12	49	0	123	2857
5:00 PM	3	301	22	0	326	19	246	6	0	271	101	9	60	0	170	6	3	14	0	23	790
5:15 PM	3	293	32	0	328	22	249	3	0	274	84	5	48	0	137	4	5	9	0	18	757
5:30 PM	4	253	28	0	285	21	170	2	0	193	91	6	43	0	140	6	0	6	0	12	630
5:45 PM	4	223	32	0	259	18	189	1	0	208	61	1	26	0	88	2	2	9	0	13	568
Total	14	1070	114	0	1198	80	854	12	0	946	337	21	177	0	535	18	10	38	0	66	2745
Grand Total	21	2105	244	0	2370	162	1674	26	0	1862	699	35	447	0	1181	80	22	87	0	189	5602
Apprch %	0.9	88.8	10.3	0.0		8.7	89.9	1.4	0.0		59.2	3.0	37.8	0.0		42.3	11.6	46.0	0.0		
Total %	0.4	37.6	4.4	0.0	42.3	2.9	29.9	0.5	0.0	33.2	12.5	0.6	8.0	0.0	21.1	1.4	0.4	1.6	0.0	3.4	

	W. Chocolate Ave Eastbound					W. Chocolate Ave Westbound					University Dr Northbound					University Dr Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From	4:30 PM			to	5:30 PM																
Volume	11	1123	113	0	1247	76	897	17	0	990	373	24	250	0	647	36	18	45	0	99	2983
Percent	0.9	90.1	9.1	0.0		7.7	90.6	1.7	0.0		57.7	3.7	38.6	0.0		36.4	18.2	45.5	0.0		
5:00 PM Volume	3	301	22	0	326	19	246	6	0	271	101	9	60	0	170	6	3	14	0	23	790
Peak Factor																					
High Int.	5:15 PM					5:15 PM					4:30 PM					4:30 PM					
Volume	3	293	32	0	328	22	249	3	0	274	101	5	79	0	185	14	5	17	0	36	
PHF	0.92	0.93	0.86		0.95	0.86	0.90	0.71		0.90	0.92	0.67	0.79		0.87	0.64	0.90	0.66		0.69	0.94
Heavy Vehicles %	0%	1%	1%			0%	1%	6%			1%	0%	1%			0%	6%	2%			
Misc.	U-Turn 0		RTOR 48	Bikes 0		U-Turn 0		RTOR 5	Bikes 0		U-Turn 0		RTOR 64	Bikes 0		U-Turn 0		RTOR 22	Bikes 0		

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Greater Hershey Area Study
PM PEAK HOUR

Heavy Vehicles & Bicycles

	W. Chocolate Ave Eastbound					W. Chocolate Ave Westbound					University Dr Northbound					University Dr Southbound					
Start Time	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Int. Total
4:00 PM	0	8	0	0	8	1	8	1	0	10	4	0	1	0	5	0	0	1	0	1	24
4:15 PM	1	6	0	0	7	2	4	0	0	6	2	0	0	0	2	1	0	0	0	1	16
4:30 PM	0	4	0	0	4	0	1	0	0	1	1	0	1	0	2	0	0	0	0	0	7
4:45 PM	0	4	1	0	5	0	7	0	0	7	1	0	1	0	2	0	0	1	0	1	15
Total	1	22	1	0	24	3	20	1	0	24	8	0	3	0	11	1	0	2	0	3	62
5:00 PM	0	3	0	0	3	0	4	1	0	5	1	0	0	0	1	0	0	0	0	0	9
5:15 PM	0	3	0	0	3	0	1	0	0	1	1	0	0	0	1	0	1	0	0	1	6
5:30 PM	1	1	0	0	2	1	3	0	0	4	1	0	1	0	2	0	0	0	0	0	8
5:45 PM	0	3	1	0	4	0	2	0	0	2	1	0	0	0	1	0	0	1	0	1	8
Total	1	10	1	0	12	1	10	1	0	12	4	0	1	0	5	0	1	1	0	2	31
Grand Total	2	32	2	0	36	4	30	2	0	36	12	0	4	0	16	1	1	3	0	5	93
Apprch %	5.6	88.9	5.6	0.0		11.1	83.3	5.6	0.0		75.0	0.0	25.0	0.0		20.0	20.0	60.0	0.0		
Total %	2.2	34.4	2.2	0.0	38.7	4.3	32.3	2.2	0.0	38.7	12.9	0.0	4.3	0.0	17.2	1.1	1.1	3.2	0.0	5.4	
Overall Peak Hour Volume	0	14	1	0	15	0	13	1	0	14	4	0	2	0	6	0	1	1	0	2	37

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Greater Hershey Area Study
PM PEAK HOUR

U-Turn & RTOR

	W. Chocolate Ave Eastbound					W. Chocolate Ave Westbound					University Dr Northbound					University Dr Southbound					
Start Time	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	Int. Total
4:00 PM	0		14		14	0		2		2	0		25		25	0		6		6	47
4:15 PM	0		20		20	0		1		1	0		15		15	0		4		4	40
4:30 PM	0		15		15	0		2		2	0		19		19	0		12		12	48
4:45 PM	0		14		14	0		1		1	0		14		14	0		1		1	30
Total	0		63		63	0		6		6	0		73		73	0		23		23	165
5:00 PM	0		9		9	0		1		1	0		15		15	0		7		7	32
5:15 PM	0		10		10	0		1		1	0		16		16	0		2		2	29
5:30 PM	0		12		12	0		2		2	1		14		15	0		3		3	32
5:45 PM	0		9		9	0		0		0	1		7		8	0		6		6	23
Total	0		40		40	0		4		4	2		52		54	0		18		18	116
Grand Total	0		103		103	0		0		0	2		125		127	0		41		41	271
Apprch %	0.0	0.0	100.0	0.0							1.6	0.0	98.4	0.0		0.0	0.0	100.0	0.0		
Total %	0.0		38.0		38.0	0.0		0.0		0.0	0.7		46.1		46.9	0.0		15.1		15.1	
Overall Peak Hour Volume	0		48		48	0		5		5	0		64		64	0		22		22	139

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Greater Hershey Area Study
PM PEAK HOUR

All Vehicles

	W Chocolate Avenue Eastbound					W Chocolate Avenue Westbound					Hockersville Road Northbound					Hockersville Road Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
4:00 PM	10	227	100	0	337	29	142	0	0	171	70	28	31	0	129	10	24	1	0	35	672
4:15 PM	9	224	78	0	311	17	165	2	0	184	85	33	27	0	145	8	19	1	0	28	668
4:30 PM	13	252	88	0	353	33	166	3	0	202	69	32	19	0	120	7	32	2	0	41	716
4:45 PM	9	251	91	0	351	32	164	2	0	198	54	32	22	0	108	11	29	0	0	40	697
Total	41	954	357	0	1352	111	637	7	0	755	278	125	99	0	502	36	104	4	0	144	2753
5:00 PM	10	233	105	0	348	19	192	4	0	215	85	27	20	0	132	6	25	5	0	36	731
5:15 PM	13	233	92	1	339	22	184	2	0	208	77	15	21	0	113	7	30	1	0	38	698
5:30 PM	6	190	97	0	293	19	158	2	0	179	54	34	19	0	107	9	24	0	0	33	612
5:45 PM	5	194	72	0	271	26	144	3	0	173	51	22	22	0	95	6	18	1	0	25	564
Total	34	850	366	1	1251	86	678	11	0	775	267	98	82	0	447	28	97	7	0	132	2605
Grand Total	75	1804	723	1	2603	197	1315	18	0	1530	545	223	181	0	949	64	201	11	0	276	5358
Apprch %	2.9	69.3	27.8	0.0		12.9	85.9	1.2	0.0		57.4	23.5	19.1	0.0		23.2	72.8	4.0	0.0		
Total %	1.4	33.7	13.5	0.0	48.6	3.7	24.5	0.3	0.0	28.6	10.2	4.2	3.4	0.0	17.7	1.2	3.8	0.2	0.0	5.2	

	W Chocolate Avenue Eastbound					W Chocolate Avenue Westbound					Hockersville Road Northbound					Hockersville Road Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From	4:30 PM		to		5:30 PM																
Volume	45	969	376	1	1391	106	706	11	0	823	285	106	82	0	473	31	116	8	0	155	2842
Percent	3.2	69.7	27.0	0.1		12.9	85.8	1.3	0.0		60.3	22.4	17.3	0.0		20.0	74.8	5.2	0.0		
5:00 PM Volume	10	233	105	0	348	19	192	4	0	215	85	27	20	0	132	6	25	5	0	36	731
Peak Factor																					
High Int.	4:30 PM					5:00 PM					4:15 PM					4:30 PM					
Volume	13	252	88	0	353	19	192	4	0	215	85	33	27	0	145	7	32	2	0	41	
PHF	0.87	0.96	0.90	0.25	0.99	0.80	0.92	0.69		0.96	0.84	0.83	0.93		0.90	0.70	0.91	0.40		0.95	0.97
Heavy Vehicles %	0%	2%	1%			2%	2%	0%			1%	1%	1%			0%	1%	0%			
Misc.	U-Turn 0		RTOR 166	Bikes 0		U-Turn 0		RTOR 3	Bikes 0		U-Turn 0		RTOR 12	Bikes 0		U-Turn 0		RTOR 3	Bikes 0		

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PM PEAK HOUR

Heavy Vehicles & Bicycles

	W Chocolate Avenue Eastbound					W Chocolate Avenue Westbound					Hockersville Road Northbound					Hockersville Road Southbound					
Start Time	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Int. Total
4:00 PM	0	7	2	0	9	0	9	0	0	9	0	5	1	0	6	0	0	0	0	0	24
4:15 PM	0	5	1	0	6	1	4	0	0	5	1	2	0	0	3	0	0	0	0	0	14
4:30 PM	0	5	1	0	6	1	1	0	0	2	0	1	0	0	1	0	1	0	0	1	10
4:45 PM	0	5	0	0	5	1	6	0	0	7	1	0	0	0	1	0	0	0	0	0	13
Total	0	22	4	0	26	3	20	0	0	23	2	8	1	0	11	0	1	0	0	1	61
5:00 PM	0	2	1	0	3	0	6	0	0	6	1	0	1	0	2	0	0	0	0	0	11
5:15 PM	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
5:30 PM	0	2	0	0	2	3	2	0	0	5	1	0	1	0	2	0	0	0	0	0	9
5:45 PM	0	2	1	0	3	0	1	0	0	1	2	0	1	0	3	0	0	0	0	0	7
Total	0	9	2	0	11	3	9	0	0	12	4	0	3	0	7	0	0	0	0	0	30
Grand Total	0	31	6	0	37	6	29	0	0	35	6	8	4	0	18	0	1	0	0	1	91
Apprch %	0.0	83.8	16.2	0.0		17.1	82.9	0.0	0.0		33.3	44.4	22.2	0.0		0.0	100.0	0.0	0.0		
Total %	0.0	34.1	6.6	0.0	40.7	6.6	31.9	0.0	0.0	38.5	6.6	8.8	4.4	0.0	19.8	0.0	1.1	0.0	0.0	1.1	
Overall Peak Hour Volume	0	15	2	0	17	2	13	0	0	15	2	1	1	0	4	0	1	0	0	1	37

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PM PEAK HOUR

U-Turn & RTOR

	W Chocolate Avenue Eastbound					W Chocolate Avenue Westbound					Hockersville Road Northbound					Hockersville Road Southbound					
Start Time	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	Int. Total
4:00 PM	0		43		43	0		0		0	0		3		3	0		1		1	47
4:15 PM	0		35		35	0		1		1	0		8		8	0		1		1	45
4:30 PM	0		24		24	0		2		2	0		6		6	0		0		0	32
4:45 PM	0		33		33	0		1		1	0		2		2	0		0		0	36
Total	0		135		135	0		4		4	0		19		19	0		2		2	160
5:00 PM	0		60		60	0		0		0	0		2		2	0		2		2	64
5:15 PM	0		49		49	0		0		0	0		2		2	0		1		1	52
5:30 PM	0		48		48	0		0		0	0		2		2	0		0		0	50
5:45 PM	0		22		22	0		0		0	0		6		6	0		0		0	28
Total	0		179		179	0		0		0	0		12		12	0		3		3	194
Grand Total	0		314		314	0		0		0	0		31		31	0		5		5	350
Apprch %	0.0	0.0	100.0	0.0							0.0	0.0	100.0	0.0		0.0	0.0	100.0	0.0		
Total %	0.0		89.7		89.7	0.0		0.0		0.0	0.0		8.9		8.9	0.0		1.4		1.4	
Overall Peak Hour Volume	0		166		166	0		3		3	0		12		12	0		3		3	184

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Greater Hershey Area Study
PM PEAK HOUR

All Vehicles

	E. Chocolate Ave Eastbound					E. Chocolate Ave Westbound					Homestead Rd Northbound					Hershey Food Driveway Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
3:00 PM	5	177	38	0	220	48	155	0	0	203	18	0	30	0	48	4	4	5	0	13	484
3:15 PM	3	200	44	0	247	64	184	2	0	250	20	1	32	0	53	10	10	2	0	22	572
3:30 PM	5	197	22	0	224	65	181	4	0	250	15	1	30	0	46	16	7	7	0	30	550
3:45 PM	1	222	12	0	235	56	190	5	0	251	23	1	31	0	55	3	3	6	0	12	553
Total	14	796	116	0	926	233	710	11	0	954	76	3	123	0	202	33	24	20	0	77	2159
4:00 PM	4	211	25	0	240	60	188	3	0	251	11	0	53	0	64	10	11	12	0	33	588
4:15 PM	5	239	25	0	269	86	192	3	0	281	6	0	42	0	48	12	9	8	0	29	627
4:30 PM	1	257	31	0	289	75	158	2	0	235	11	0	53	0	64	22	16	9	0	47	635
4:45 PM	6	251	22	0	279	80	182	2	0	264	13	3	67	0	83	22	15	14	0	51	677
Total	16	958	103	0	1077	301	720	10	0	1031	41	3	215	0	259	66	51	43	0	160	2527
5:00 PM	1	271	25	0	297	74	200	0	0	274	10	0	42	0	52	18	39	8	0	65	688
5:15 PM	3	260	11	0	274	110	211	2	0	323	10	9	47	0	66	22	8	8	0	38	701
5:30 PM	3	207	31	0	241	123	164	1	0	288	8	2	51	0	61	8	14	13	0	35	625
5:45 PM	4	235	26	0	265	85	175	2	0	262	10	0	58	0	68	15	21	13	0	49	644
Total	11	973	93	0	1077	392	750	5	0	1147	38	11	198	0	247	63	82	42	0	187	2658
Grand Total	41	2727	312	0	3080	926	2180	26	0	3132	155	17	536	0	708	162	157	105	0	424	7344
Apprch %	1.3	88.5	10.1	0.0		29.6	69.6	0.8	0.0		21.9	2.4	75.7	0.0		38.2	37.0	24.8	0.0		
Total %	0.6	37.1	4.2	0.0	41.9	12.6	29.7	0.4	0.0	42.6	2.1	0.2	7.3	0.0	9.6	2.2	2.1	1.4	0.0	5.8	

	E. Chocolate Ave Eastbound					E. Chocolate Ave Westbound					Homestead Rd Northbound					Hershey Food Driveway Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From	4:30 PM			to	5:30 PM																
Volume	11	1039	89	0	1139	339	751	6	0	1096	44	12	209	0	265	84	78	39	0	201	2701
Percent	1.0	91.2	7.8	0.0		30.9	68.5	0.5	0.0		16.6	4.5	78.9	0.0		41.8	38.8	19.4	0.0		
5:15 PM Volume	3	260	11	0	274	110	211	2	0	323	10	9	47	0	66	22	8	8	0	38	701
Peak Factor																					
High Int.	5:00 PM					5:15 PM					4:45 PM					5:00 PM					
Volume	1	271	25	0	297	110	211	2	0	323	13	3	67	0	83	18	39	8	0	65	
PHF	0.46	0.96	0.72		0.96	0.77	0.89	0.75		0.85	0.85	0.33	0.78		0.80	0.95	0.50	0.70		0.77	0.96
Heavy Vehicles %	0%	1%	3%			1%	1%	0%			0%	0%	2%			0%	0%	0%			
Misc.	U-Turn		RTOR	Bikes		U-Turn		RTOR	Bikes		U-Turn		RTOR	Bikes		U-Turn		RTOR	Bikes		
	0		0	0		0		0	0		0		0	0		0		0	0		

Traffic Count conducted by Grove Miller Engineering, Inc.

Herbert, Rowland & Grubic, Inc.
369 East Park Drive
Harrisburg, PA 17111
(717) 564-1121

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Greater Hershey Area Study
PM PEAK HOUR

Heavy Vehicles & Bicycles

	E. Chocolate Ave Eastbound					E. Chocolate Ave Westbound					Homestead Rd Northbound					Hershey Food Driveway Southbound					
Start Time	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Int. Total
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch % Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Overall Peak Hour Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Traffic Count conducted by Grove Miller Engineering, Inc.

Herbert, Rowland & Grubic, Inc.
369 East Park Drive
Harrisburg, PA 17111
(717) 564-1121

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Greater Hershey Area Study
PM PEAK HOUR

All Vehicles

	Chocolate Ave Eastbound					Chocolate Ave Westbound					Northbound					E. Derry Rd Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
4:00 PM	0	239	2	0	241	0	108	17	0	125	0	0	0	0	0	28	0	4	0	32	398
4:15 PM	1	201	0	0	202	0	112	12	0	124	0	0	0	0	0	15	0	6	0	21	347
4:30 PM	0	242	2	0	244	0	126	16	0	142	0	0	0	0	0	19	0	6	0	25	411
4:45 PM	0	235	0	0	235	0	108	5	0	113	0	0	0	0	0	24	0	8	0	32	380
Total	1	917	4	0	922	0	454	50	0	504	0	0	0	0	0	86	0	24	0	110	1536
5:00 PM	0	227	0	0	227	2	121	9	0	132	0	0	0	0	0	23	0	9	0	32	391
5:15 PM	0	222	0	0	222	0	114	25	0	139	0	0	0	0	0	31	0	11	0	42	403
5:30 PM	0	199	0	0	199	0	111	23	0	134	0	0	0	0	0	19	0	11	0	30	363
5:45 PM	0	136	1	0	137	0	103	19	0	122	0	0	0	0	0	11	0	11	0	22	281
Total	0	784	1	0	785	2	449	76	0	527	0	0	0	0	0	84	0	42	0	126	1438
Grand Total	1	1701	5	0	1707	2	903	126	0	1031	0	0	0	0	0	170	0	66	0	236	2974
Apprch %	0.1	99.6	0.3	0.0		0.2	87.6	12.2	0.0							72.0	0.0	28.0	0.0		
Total %	0.0	57.2	0.2	0.0	57.4	0.1	30.4	4.2	0.0	34.7	0.0	0.0	0.0	0.0	0.0	5.7	0.0	2.2	0.0	7.9	

	Chocolate Ave Eastbound					Chocolate Ave Westbound					Northbound					E. Derry Rd Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From	4:30 PM			to	5:30 PM																
Volume	0	926	2	0	928	2	469	55	0	526	0	0	0	0	0	97	0	34	0	131	1585
Percent	0.0	99.8	0.2	0.0		0.4	89.2	10.5	0.0							74.0	0.0	26.0	0.0		
4:30 PM Volume	0	242	2	0	244	0	126	16	0	142	0	0	0	0	0	19	0	6	0	25	411
Peak Factor																					
High Int.	4:30 PM					4:30 PM					4:00 PM					5:15 PM					
Volume	0	242	2	0	244	0	126	16	0	142	0	0	0	0	0	31	0	11	0	42	
PHF		0.96	0.25		0.95	0.25	0.93	0.55		0.93						0.78		0.77		0.78	0.96
Heavy Vehicles %	0%	2%	0%			0%	3%	0%			0%	0%	0%			1%	0%	88%			
Misc.	U-Turn 0		RTOR 0	Bikes 0		U-Turn 0		RTOR 3	Bikes 0		U-Turn 0		RTOR 0	Bikes 0		U-Turn 0		RTOR 1	Bikes 0		

Herbert, Rowland & Grubic, Inc.
369 East Park Drive
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Greater Hershey Area Study
PM PEAK HOUR

Heavy Vehicles & Bicycles

	Chocolate Ave Eastbound					Chocolate Ave Westbound					Northbound					E. Derry Rd Southbound					
Start Time	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Int. Total
4:00 PM	0	8	0	0	8	0	10	0	0	10	0	0	0	0	0	2	0	4	0	6	24
4:15 PM	0	4	0	0	4	0	1	0	0	1	0	0	0	0	0	0	0	5	0	5	10
4:30 PM	0	6	0	0	6	0	6	0	0	6	0	0	0	0	0	0	0	6	0	6	18
4:45 PM	0	6	0	0	6	0	5	0	0	5	0	0	0	0	0	1	0	7	0	8	19
Total	0	24	0	0	24	0	22	0	0	22	0	0	0	0	0	3	0	22	0	25	71
5:00 PM	0	2	0	0	2	0	1	0	0	1	0	0	0	0	0	0	0	8	0	8	11
5:15 PM	0	1	0	0	1	0	2	0	0	2	0	0	0	0	0	0	0	9	0	9	12
5:30 PM	0	4	0	0	4	0	1	0	0	1	0	0	0	0	0	0	0	10	0	10	15
5:45 PM	0	2	0	0	2	0	5	0	0	5	0	0	0	0	0	0	0	11	0	11	18
Total	0	9	0	0	9	0	9	0	0	9	0	0	0	0	0	0	0	38	0	38	56
Grand Total	0	33	0	0	33	0	31	0	0	31	0	0	0	0	0	3	0	60	0	63	127
Apprch %	0.0	100.0	0.0	0.0		0.0	100.0	0.0	0.0							4.8	0.0	95.2	0.0		
Total %	0.0	26.0	0.0	0.0	26.0	0.0	24.4	0.0	0.0	24.4	0.0	0.0	0.0	0.0	0.0	2.4	0.0	47.2	0.0	49.6	
Overall Peak Hour Volume	0	15	0	0	15	0	14	0	0	14	0	0	0	0	0	1	0	30	0	31	60

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Greater Hershey Area Study
PM PEAK HOUR

U-Turn & RTOR

	Chocolate Ave Eastbound					Chocolate Ave Westbound					Northbound					E. Derry Rd Southbound					
Start Time	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	Int. Total
4:00 PM	0		0		0	0		1		1	0		0		0	0		0		0	1
4:15 PM	0		0		0	0		2		2	0		0		0	0		0		0	2
4:30 PM	0		0		0	0		1		1	0		0		0	0		0		0	1
4:45 PM	0		0		0	0		0		0	0		0		0	0		1		1	1
Total	0		0		0	0		4		4	0		0		0	0		1		1	5
5:00 PM	0		0		0	0		2		2	0		0		0	0		0		0	2
5:15 PM	0		0		0	0		0		0	0		0		0	0		0		0	0
5:30 PM	0		0		0	0		1		1	0		0		0	0		0		0	1
5:45 PM	0		0		0	0		0		0	0		0		0	0		0		0	0
Total	0		0		0	0		3		3	0		0		0	0		0		0	3
Grand Total	0		0		0	0		0		0	0		0		0	0		1		1	1
Apprch %																0.0	0.0	100.0	0.0		
Total %	0.0		0.0		0.0	0.0		0.0		0.0	0.0		0.0		0.0	0.0		100.0		100.0	
Overall Peak Hour Volume	0		0		0	0		3		3	0		0		0	0		1		1	4

Herbert, Rowland & Grubic, Inc.
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Greater Hershey Area Study
PM PEAK HOUR

All Vehicles

	E. Chocolate Ave Eastbound					E. Chocolate Ave Westbound					S. Lingle Ave Northbound					N. Lingle Ave Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
3:00 PM	11	106	44	0	161	6	67	22	0	95	43	41	5	0	89	74	92	7	0	173	518
3:15 PM	6	117	43	0	166	3	78	34	0	115	26	39	3	0	68	41	75	4	2	122	471
3:30 PM	8	102	55	0	165	7	103	35	0	145	46	49	2	0	97	44	98	6	0	148	555
3:45 PM	5	103	56	0	164	11	94	21	0	126	42	40	6	0	88	54	92	7	2	155	533
Total	30	428	198	0	656	27	342	112	0	481	157	169	16	0	342	213	357	24	4	598	2077
4:00 PM	8	115	71	0	194	6	73	31	0	110	28	39	2	0	69	41	97	9	1	148	521
4:15 PM	11	126	75	0	212	5	77	15	0	97	32	51	6	0	89	57	93	7	1	158	556
4:30 PM	6	111	89	0	206	4	73	25	1	103	39	46	4	0	89	47	117	6	1	171	569
4:45 PM	1	130	99	0	230	4	88	18	0	110	40	41	8	0	89	29	115	4	0	148	577
Total	26	482	334	0	842	19	311	89	1	420	139	177	20	0	336	174	422	26	3	625	2223
5:00 PM	6	107	99	0	212	8	80	12	0	100	34	61	8	0	103	39	106	5	1	151	566
5:15 PM	4	129	97	0	230	5	77	25	0	107	43	51	3	0	97	52	110	9	3	174	608
5:30 PM	6	101	73	0	180	10	64	19	0	93	41	60	2	0	103	39	98	3	0	140	516
5:45 PM	8	86	47	0	141	10	73	18	1	102	31	36	11	0	78	47	77	13	1	138	459
Total	24	423	316	0	763	33	294	74	1	402	149	208	24	0	381	177	391	30	5	603	2149
Grand Total	80	1333	848	0	2261	79	947	275	2	1303	445	554	60	0	1059	564	1170	80	12	1826	6449
Apprch %	3.5	59.0	37.5	0.0		6.1	72.7	21.1	0.2		42.0	52.3	5.7	0.0		30.9	64.1	4.4	0.7		
Total %	1.2	20.7	13.1	0.0	35.1	1.2	14.7	4.3	0.0	20.2	6.9	8.6	0.9	0.0	16.4	8.7	18.1	1.2	0.2	28.3	

	E. Chocolate Ave Eastbound					E. Chocolate Ave Westbound					S. Lingle Ave Northbound					N. Lingle Ave Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From	4:30 PM			to	5:30 PM																
Volume	17	477	384	0	878	21	318	80	1	420	156	199	23	0	378	167	448	24	5	644	2320
Percent	1.9	54.3	43.7	0.0		5.0	75.7	19.0	0.2		41.3	52.6	6.1	0.0		25.9	69.6	3.7	0.8		
5:15 PM Volume	4	129	97	0	230	5	77	25	0	107	43	51	3	0	97	52	110	9	3	174	608
Peak Factor																					
High Int.	4:45 PM					3:30 PM					5:00 PM					5:15 PM					
Volume	1	130	99	0	230	7	103	35	0	145	34	61	8	0	103	52	110	9	3	174	
PHF	0.71	0.92	0.97		0.95	0.66	0.90	0.80	0.25	0.95	0.91	0.82	0.72		0.92	0.80	0.96	0.67	0.42	0.93	0.95
Heavy Vehicles %	12%	1%	0%			0%	4%	5%			0%	0%	0%			1%	1%	4%			
Misc.	U-Turn		RTOR	Bikes		U-Turn		RTOR	Bikes		U-Turn		RTOR	Bikes		U-Turn		RTOR	Bikes		
	0		0	0		0		0	0		0		0	0		0		0	0		

Traffic Count conducted by Dawood Engineering, Inc.

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369 East Park Drive
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Greater Hershey Area Study
PM PEAK HOUR

Heavy Vehicles & Bicycles

	E. Chocolate Ave Eastbound					E. Chocolate Ave Westbound					S. Lingle Ave Northbound					N. Lingle Ave Southbound					
Start Time	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Int. Total
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch % Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Overall Peak Hour Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Traffic Count conducted by Dawood Engineering, Inc.

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Greater Hershey Area Study
PM PEAK HOUR

All Vehicles

	W Areba Avenue Eastbound					W Areba Avenue Westbound					Hockersville Road Northbound					Hockersville Road Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
4:00 PM	18	28	7	0	53	0	5	22	0	27	7	93	4	0	104	18	110	19	0	147	331
4:15 PM	18	11	13	0	42	1	5	14	0	20	2	99	2	0	103	11	93	12	0	116	281
4:30 PM	20	15	7	0	42	1	5	16	0	22	6	84	5	0	95	7	117	21	0	145	304
4:45 PM	20	41	8	0	69	1	6	13	0	20	8	78	4	0	90	22	119	27	0	168	347
Total	76	95	35	0	206	3	21	65	0	89	23	354	15	0	392	58	439	79	0	576	1263
5:00 PM	23	22	12	0	57	1	3	19	0	23	3	78	3	0	84	13	115	18	0	146	310
5:15 PM	11	15	6	0	32	1	5	14	0	20	4	86	7	0	97	15	121	17	0	153	302
5:30 PM	17	9	11	0	37	1	4	7	0	12	7	84	3	0	94	13	109	15	0	137	280
5:45 PM	14	11	6	0	31	1	4	15	0	20	9	65	0	0	74	7	94	19	0	120	245
Total	65	57	35	0	157	4	16	55	0	75	23	313	13	0	349	48	439	69	0	556	1137
Grand Total	141	152	70	0	363	7	37	120	0	164	46	667	28	0	741	106	878	148	0	1132	2400
Apprch %	38.8	41.9	19.3	0.0		4.3	22.6	73.2	0.0		6.2	90.0	3.8	0.0		9.4	77.6	13.1	0.0		
Total %	5.9	6.3	2.9	0.0	15.1	0.3	1.5	5.0	0.0	6.8	1.9	27.8	1.2	0.0	30.9	4.4	36.6	6.2	0.0	47.2	

	W Areba Avenue Eastbound					W Areba Avenue Westbound					Hockersville Road Northbound					Hockersville Road Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From	4:00 PM			to	5:00 PM																
Volume	76	95	35	0	206	3	21	65	0	89	23	354	15	0	392	58	439	79	0	576	1263
Percent	36.9	46.1	17.0	0.0		3.4	23.6	73.0	0.0		5.9	90.3	3.8	0.0		10.1	76.2	13.7	0.0		
4:45 PM Volume	20	41	8	0	69	1	6	13	0	20	8	78	4	0	90	22	119	27	0	168	347
Peak Factor																					
High Int.	4:45 PM					4:00 PM					4:00 PM					4:45 PM					
Volume	20	41	8	0	69	0	5	22	0	27	7	93	4	0	104	22	119	27	0	168	
PHF	0.95	0.58	0.67		0.75	0.75	0.88	0.74		0.82	0.72	0.89	0.75		0.94	0.66	0.92	0.73		0.86	0.91
Heavy Vehicles %	4%	0%	3%			0%	0%	2%			0%	2%	0%			0%	2%	1%			
Misc.	U-Turn 0		RTOR 0	Bikes 0		U-Turn 0		RTOR 0	Bikes 0		U-Turn 0		RTOR 0	Bikes 0		U-Turn 0		RTOR 0	Bikes 0		

Herbert, Rowland & Grubic, Inc.
369 East Park Drive
Harrisburg, PA 17111
(717) 564-1121

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Greater Hershey Area Study
PM PEAK HOUR

Heavy Vehicles & Bicycles

	W Areba Avenue Eastbound					W Areba Avenue Westbound					Hockersville Road Northbound					Hockersville Road Southbound					
Start Time	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Int. Total
4:00 PM	2	0	1	0	3	0	0	1	0	1	0	3	0	0	3	0	2	0	0	2	9
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	0	1	0	0	1	4
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	2	1	0	3	5
4:45 PM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	3
Total	3	0	1	0	4	0	0	1	0	1	0	8	0	0	8	0	7	1	0	8	21
5:00 PM	1	0	0	0	1	0	0	1	0	1	0	0	0	0	0	0	1	0	0	1	3
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
5:30 PM	1	0	0	0	1	0	0	0	0	0	0	2	0	0	2	0	2	1	0	3	6
5:45 PM	1	0	0	0	1	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	3
Total	3	0	0	0	3	0	0	1	0	1	0	3	1	0	4	0	4	1	0	5	13
Grand Total	6	0	1	0	7	0	0	2	0	2	0	11	1	0	12	0	11	2	0	13	34
Apprch %	85.7	0.0	14.3	0.0		0.0	0.0	100.0	0.0		0.0	91.7	8.3	0.0		0.0	84.6	15.4	0.0		
Total %	17.6	0.0	2.9	0.0	20.6	0.0	0.0	5.9	0.0	5.9	0.0	32.4	2.9	0.0	35.3	0.0	32.4	5.9	0.0	38.2	
Overall Peak Hour Volume	3	0	1	0	4	0	0	1	0	1	0	8	0	0	8	0	7	1	0	8	21

Herbert, Rowland & Grubic, Inc.
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Greater Hershey Area Study
PM PEAK HOUR

All Vehicles

	Governor Rd (SR 0322) Eastbound					Governor Rd (SR 0322) Westbound					University Dr Northbound					University Dr Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
3:00 PM	14	127	49	0	190	19	154	23	3	199	36	40	17	2	95	9	4	9	0	22	506
3:15 PM	16	137	32	0	185	19	129	33	7	188	37	31	24	1	93	8	10	13	0	31	497
3:30 PM	19	122	21	0	162	18	179	39	0	236	54	49	23	2	128	7	12	8	0	27	553
3:45 PM	10	94	29	0	133	12	184	31	9	236	53	43	12	1	109	9	4	12	0	25	503
Total	59	480	131	0	670	68	646	126	19	859	180	163	76	6	425	33	30	42	0	105	2059
4:00 PM	15	108	29	0	152	15	180	52	3	250	53	53	23	4	133	10	10	10	0	30	565
4:15 PM	16	113	25	0	154	16	156	60	2	234	59	56	20	2	137	7	8	9	0	24	549
4:30 PM	17	92	25	0	134	18	166	57	2	243	66	66	36	0	168	12	17	10	0	39	584
4:45 PM	28	102	27	0	157	13	176	58	0	247	55	43	20	2	120	6	18	15	0	39	563
Total	76	415	106	0	597	62	678	227	7	974	233	218	99	8	558	35	53	44	0	132	2261
5:00 PM	21	121	24	1	167	10	175	60	1	246	43	52	27	1	123	5	10	9	0	24	560
5:15 PM	15	89	32	0	136	17	163	45	5	230	52	43	17	0	112	14	7	15	0	36	514
5:30 PM	11	105	26	2	144	14	115	43	0	172	43	39	23	1	106	10	8	7	0	25	447
5:45 PM	17	124	34	0	175	10	138	33	1	182	31	31	18	1	81	10	18	7	0	35	473
Total	64	439	116	3	622	51	591	181	7	830	169	165	85	3	422	39	43	38	0	120	1994
Grand Total	199	1334	353	3	1889	181	1915	534	33	2663	582	546	260	17	1405	107	126	124	0	357	6314
Apprch %	10.5	70.6	18.7	0.2		6.8	71.9	20.1	1.2		41.4	38.9	18.5	1.2		30.0	35.3	34.7	0.0		
Total %	3.2	21.1	5.6	0.0	29.9	2.9	30.3	8.5	0.5	42.2	9.2	8.6	4.1	0.3	22.3	1.7	2.0	2.0	0.0	5.7	

	Governor Rd (SR 0322) Eastbound					Governor Rd (SR 0322) Westbound					University Dr Northbound					University Dr Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From	4:00 PM			to	5:00 PM																
Volume	76	415	106	0	597	62	678	227	7	974	233	218	99	8	558	35	53	44	0	132	2261
Percent	12.7	69.5	17.8	0.0		6.4	69.6	23.3	0.7		41.8	39.1	17.7	1.4		26.5	40.2	33.3	0.0		
4:30 PM Volume	17	92	25	0	134	18	166	57	2	243	66	66	36	0	168	12	17	10	0	39	584
Peak Factor																					
High Int.	3:00 PM					4:00 PM					4:30 PM					4:30 PM					
Volume	14	127	49	0	190	15	180	52	3	250	66	66	36	0	168	12	17	10	0	39	
PHF	0.68	0.92	0.91		0.95	0.86	0.94	0.95	0.58	0.97	0.88	0.83	0.69	0.50	0.83	0.73	0.74	0.73		0.85	0.97
Heavy Vehicles %	0%	2%	1%			0%	1%	1%			0%	0%	0%			0%	4%	0%			
Misc.	U-Turn		RTOR	Bikes		U-Turn		RTOR	Bikes		U-Turn		RTOR	Bikes		U-Turn		RTOR	Bikes		
	0		19	0		0		70	0		2		42	0		1		10	0		

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Greater Hershey Area Study
PM PEAK HOUR

Heavy Vehicles & Bicycles

	Governor Rd (SR 0322) Eastbound					Governor Rd (SR 0322) Westbound					University Dr Northbound					University Dr Southbound					
Start Time	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Int. Total
3:00 PM	0	2	1	0	3	0	4	1	0	5	0	0	0	0	0	0	0	0	0	0	8
3:15 PM	0	3	0	1	4	1	0	0	0	1	0	1	1	0	2	0	0	0	1	1	8
3:30 PM	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2
3:45 PM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	3
Total	0	6	1	1	8	1	8	1	0	10	0	1	1	0	2	0	0	0	1	1	21
4:00 PM	0	2	0	0	2	0	0	1	0	1	0	1	0	0	1	0	1	0	0	1	5
4:15 PM	0	4	0	0	4	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	7
4:30 PM	0	2	0	0	2	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	5
4:45 PM	0	1	1	0	2	0	1	1	0	2	0	0	0	0	0	0	0	0	0	0	4
Total	0	9	1	0	10	0	6	2	0	8	0	1	0	0	1	0	2	0	0	2	21
5:00 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	2
5:15 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	4
5:45 PM	0	1	0	0	1	0	3	4	0	7	0	0	0	0	0	0	1	0	0	1	9
Total	0	1	0	0	1	0	10	4	0	14	0	0	0	0	0	0	1	0	0	1	16
Grand Total	0	16	2	1	19	1	24	7	0	32	0	2	1	0	3	0	3	0	1	4	58
Apprch %	0.0	84.2	10.5	5.3		3.1	75.0	21.9	0.0		0.0	66.7	33.3	0.0		0.0	75.0	0.0	25.0		
Total %	0.0	27.6	3.4	1.7	32.8	1.7	41.4	12.1	0.0	55.2	0.0	3.4	1.7	0.0	5.2	0.0	5.2	0.0	1.7	6.9	
Overall Peak Hour Volume	0	9	1	0	10	0	6	2	0	8	0	1	0	0	1	0	2	0	0	2	21

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Greater Hershey Area Study
PM PEAK HOUR

U-Turn & RTOR

	Governor Rd (SR 0322) Eastbound					Governor Rd (SR 0322) Westbound					University Dr Northbound					University Dr Southbound					
Start Time	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	Int. Total
3:00 PM	0		11		11	0		8		8	0		11		11	0		4		4	34
3:15 PM	0		6		6	0		8		8	0		13		13	0		6		6	33
3:30 PM	0		4		4	0		18		18	1		10		11	0		2		2	35
3:45 PM	0		6		6	0		7		7	0		5		5	0		3		3	21
Total	0		27		27	0		41		41	1		39		40	0		15		15	123
4:00 PM	0		3		3	0		19		19	0		11		11	0		2		2	35
4:15 PM	0		6		6	0		15		15	2		6		8	0		2		2	31
4:30 PM	0		8		8	0		13		13	0		14		14	1		5		6	41
4:45 PM	0		2		2	0		23		23	0		11		11	0		1		1	37
Total	0		19		19	0		70		70	2		42		44	1		10		11	144
5:00 PM	0		5		5	0		22		22	0		7		7	0		0		0	34
5:15 PM	0		7		7	0		13		13	0		6		6	1		5		6	32
5:30 PM	0		4		4	0		15		15	0		14		14	0		3		3	36
5:45 PM	0		4		4	0		9		9	1		9		10	0		0		0	23
Total	0		20		20	0		59		59	1		36		37	1		8		9	125
Grand Total	0		66		66	0		0		0	4		117		121	2		33		35	222
Apprch %	0.0	0.0	100.0	0.0							3.3	0.0	96.7	0.0		5.7	0.0	94.3	0.0		
Total %	0.0		29.7		29.7	0.0		0.0		0.0	1.8		52.7		54.5	0.9		14.9		15.8	
Overall Peak Hour Volume	0		19		19	0		70		70	2		42		44	1		10		11	144

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Greater Hershey Area Study
PM PEAK HOUR

All Vehicles

	Governor Rd (SR 0322) Eastbound					Governor Rd (SR 0322) Westbound					Centerview Ln Northbound					Centerview Ln Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
3:00 PM	3	121	18	0	142	16	126	11	0	153	39	9	24	0	72	11	4	4	0	19	386
3:15 PM	4	140	10	0	154	12	122	15	1	150	40	7	27	2	76	12	3	7	0	22	402
3:30 PM	8	120	14	0	142	13	117	15	1	146	100	15	52	0	167	14	5	4	0	23	478
3:45 PM	4	94	9	0	107	11	151	23	1	186	59	19	32	1	111	6	4	8	0	18	422
Total	19	475	51	0	545	52	516	64	3	635	238	50	135	3	426	43	16	23	0	82	1688
4:00 PM	5	110	14	0	129	12	154	11	1	178	69	17	41	3	130	10	5	7	0	22	459
4:15 PM	3	121	6	0	130	10	130	18	1	159	85	12	47	3	147	12	1	3	0	16	452
4:30 PM	3	107	15	0	125	16	121	17	2	156	89	23	58	0	170	8	3	10	0	21	472
4:45 PM	3	101	9	2	115	10	134	23	4	171	81	25	37	1	144	6	8	10	3	27	457
Total	14	439	44	2	499	48	539	69	8	664	324	77	183	7	591	36	17	30	3	86	1840
5:00 PM	6	120	9	0	135	11	135	21	1	168	79	18	28	0	125	13	4	9	0	26	454
5:15 PM	6	103	5	0	114	17	110	22	1	150	61	21	22	0	104	8	5	6	0	19	387
5:30 PM	1	110	5	1	117	10	101	14	0	125	54	23	27	0	104	14	3	7	0	24	370
5:45 PM	6	110	10	0	126	11	120	19	0	150	42	6	26	1	75	8	6	9	0	23	374
Total	19	443	29	1	492	49	466	76	2	593	236	68	103	1	408	43	18	31	0	92	1585
Grand Total	52	1357	124	3	1536	149	1521	209	13	1892	798	195	421	11	1425	122	51	84	3	260	5113
Apprch %	3.4	88.3	8.1	0.2		7.9	80.4	11.0	0.7		56.0	13.7	29.5	0.8		46.9	19.6	32.3	1.2		
Total %	1.0	26.5	2.4	0.1	30.0	2.9	29.7	4.1	0.3	37.0	15.6	3.8	8.2	0.2	27.9	2.4	1.0	1.6	0.1	5.1	

	Governor Rd (SR 0322) Eastbound					Governor Rd (SR 0322) Westbound					Centerview Ln Northbound					Centerview Ln Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From	4:00 PM			to	5:00 PM																
Volume	14	439	44	2	499	48	539	69	8	664	324	77	183	11	595	36	17	30	3	86	1844
Percent	2.8	88.0	8.8	0.4		7.2	81.2	10.4	1.2		54.5	12.9	30.8	1.8		41.9	19.8	34.9	3.5		
3:30 PM Volume	8	120	14	0	142	13	117	15	1	146	100	15	52	3	170	14	5	4	0	23	481
Peak Factor																					
High Int.	3:15 PM					3:45 PM					4:30 PM					4:45 PM					
Volume	4	140	10	0	154	11	151	23	1	186	89	23	58	1	171	6	8	10	3	27	
PHF	0.70	0.91	0.73	0.25	0.96	0.75	0.88	0.75	0.50	0.93	0.91	0.77	0.79	0.55	0.87	0.75	0.53	0.75	0.25	0.80	0.97
Heavy Vehicles %	0%	4%	5%			2%	3%	0%			1%	1%	0%			3%	0%	0%			
Misc.	U-Turn		RTOR	Bikes		U-Turn		RTOR	Bikes		U-Turn		RTOR	Bikes		U-Turn		RTOR	Bikes		
	0		4	0		0		15	0		0		79	4		0		9	0		

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Greater Hershey Area Study
PM PEAK HOUR

Heavy Vehicles & Bicycles

	Governor Rd (SR 0322) Eastbound					Governor Rd (SR 0322) Westbound					Centerview Ln Northbound					Centerview Ln Southbound					
Start Time	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Int. Total
3:00 PM	0	3	0	0	3	1	7	0	0	8	1	1	1	4	7	0	0	0	0	0	18
3:15 PM	0	5	0	0	5	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	7
3:30 PM	0	2	0	0	2	1	4	0	0	5	1	1	0	3	5	1	0	0	0	1	13
3:45 PM	0	3	0	0	3	1	3	1	0	5	1	0	0	0	1	0	0	0	0	0	9
Total	0	13	0	0	13	3	16	1	0	20	3	2	1	7	13	1	0	0	0	1	47
4:00 PM	0	6	1	0	7	1	2	0	0	3	1	0	0	2	3	0	0	0	0	0	13
4:15 PM	0	6	0	0	6	0	3	0	0	3	0	0	0	0	0	1	0	0	0	1	10
4:30 PM	0	2	1	0	3	0	4	0	0	4	0	0	0	1	1	0	0	0	0	0	8
4:45 PM	0	2	0	0	2	0	6	0	0	6	2	1	0	1	4	0	0	0	0	0	12
Total	0	16	2	0	18	1	15	0	0	16	3	1	0	4	8	1	0	0	0	1	43
5:00 PM	0	2	0	0	2	0	2	0	0	2	0	0	2	1	3	0	0	0	0	0	7
5:15 PM	0	2	0	0	2	1	3	0	0	4	0	0	0	0	0	0	0	0	0	0	6
5:30 PM	0	0	0	0	0	1	7	0	0	8	0	1	0	1	2	0	0	0	0	0	10
5:45 PM	0	3	0	0	3	0	5	0	0	5	0	1	0	0	1	0	1	0	0	1	10
Total	0	7	0	0	7	2	17	0	0	19	0	2	2	2	6	0	1	0	0	1	33
Grand Total	0	36	2	0	38	6	48	1	0	55	6	5	3	13	27	2	1	0	0	3	123
Apprch %	0.0	94.7	5.3	0.0		10.9	87.3	1.8	0.0		22.2	18.5	11.1	48.1		66.7	33.3	0.0	0.0		
Total %	0.0	29.3	1.6	0.0	30.9	4.9	39.0	0.8	0.0	44.7	4.9	4.1	2.4	10.6	22.0	1.6	0.8	0.0	0.0	2.4	
Overall Peak Hour Volume	0	16	2	0	18	1	15	0	0	16	3	1	0	4	8	1	0	0	0	1	43

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PM PEAK HOUR

U-Turn & RTOR

	Governor Rd (SR 0322) Eastbound					Governor Rd (SR 0322) Westbound					Centerview Ln Northbound					Centerview Ln Southbound					
Start Time	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	Int. Total
3:00 PM	0		3		3	0		0		0	0		14		14	0		3		3	20
3:15 PM	0		0		0	0		1		1	0		19		19	0		1		1	21
3:30 PM	0		3		3	0		1		1	0		25		25	0		2		2	31
3:45 PM	0		0		0	0		3		3	0		21		21	0		4		4	28
Total	0		6		6	0		5		5	0		79		79	0		10		10	100
4:00 PM	0		1		1	0		4		4	0		16		16	0		3		3	24
4:15 PM	0		0		0	0		2		2	0		16		16	0		0		0	18
4:30 PM	0		1		1	0		5		5	0		24		24	0		3		3	33
4:45 PM	0		2		2	0		4		4	0		23		23	0		3		3	32
Total	0		4		4	0		15		15	0		79		79	0		9		9	107
5:00 PM	0		0		0	0		4		4	0		14		14	0		5		5	23
5:15 PM	0		2		2	0		2		2	0		12		12	0		4		4	20
5:30 PM	0		0		0	0		4		4	0		13		13	0		4		4	21
5:45 PM	0		0		0	0		3		3	0		16		16	0		2		2	21
Total	0		2		2	0		13		13	0		55		55	0		15		15	85
Grand Total	0		12		12	0		0		0	0		213		213	0		34		34	259
Apprch %	0.0	0.0	100.0	0.0							0.0	0.0	100.0	0.0		0.0	0.0	100.0	0.0		
Total %	0.0		4.6		4.6	0.0		0.0		0.0	0.0		82.2		82.2	0.0		13.1		13.1	
Overall Peak Hour Volume	0		4		4	0		15		15	0		79		79	0		9		9	107

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Greater Hershey Area Study
PM PEAK HOUR

All Vehicles

	Rt. 322 Eastbound					Rt. 322 Westbound					Cherry Dr Northbound					Cherry Dr Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
3:00 PM	0	122	33	0	155	24	117	9	1	151	27	6	51	1	85	8	9	0	0	17	408
3:15 PM	1	118	43	0	162	27	102	7	0	136	37	4	62	0	103	5	8	5	0	18	419
3:30 PM	5	127	36	0	168	28	99	3	0	130	37	15	77	0	129	4	9	2	0	15	442
3:45 PM	2	102	24	0	128	20	133	15	0	168	47	8	67	0	122	7	8	5	0	20	438
Total	8	469	136	0	613	99	451	34	1	585	148	33	257	1	439	24	34	12	0	70	1707
4:00 PM	3	121	25	0	149	16	127	11	0	154	41	16	75	0	132	8	13	1	0	22	457
4:15 PM	4	120	22	0	146	9	95	1	0	105	48	15	60	0	123	2	17	4	0	23	397
4:30 PM	4	102	24	0	130	19	115	4	0	138	50	23	90	0	163	7	12	3	0	22	453
4:45 PM	2	108	23	0	133	30	122	9	1	162	42	19	64	1	126	6	15	3	0	24	445
Total	13	451	94	0	558	74	459	25	1	559	181	73	289	1	544	23	57	11	0	91	1752
5:00 PM	4	114	26	0	144	14	123	7	0	144	36	17	74	1	128	7	10	3	0	20	436
5:15 PM	0	106	29	0	135	17	108	6	1	132	26	15	61	0	102	5	8	2	0	15	384
5:30 PM	4	114	30	0	148	13	93	5	0	111	39	18	62	0	119	7	7	0	0	14	392
5:45 PM	3	114	29	0	146	15	104	5	0	124	36	8	35	0	79	4	5	3	0	12	361
Total	11	448	114	0	573	59	428	23	1	511	137	58	232	1	428	23	30	8	0	61	1573
Grand Total	32	1368	344	0	1744	232	1338	82	3	1655	466	164	778	3	1411	70	121	31	0	222	5032
Apprch %	1.8	78.4	19.7	0.0		14.0	80.8	5.0	0.2		33.0	11.6	55.1	0.2		31.5	54.5	14.0	0.0		
Total %	0.6	27.2	6.8	0.0	34.7	4.6	26.6	1.6	0.1	32.9	9.3	3.3	15.5	0.1	28.0	1.4	2.4	0.6	0.0	4.4	

	Rt. 322 Eastbound					Rt. 322 Westbound					Cherry Dr Northbound					Cherry Dr Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From	3:15 PM			to	4:15 PM																
Volume	11	468	128	2	609	91	461	36	0	588	162	43	281	1	487	24	38	13	0	75	1759
Percent	1.8	76.8	21.0	0.3		15.5	78.4	6.1	0.0		33.3	8.8	57.7	0.2		32.0	50.7	17.3	0.0		
4:00 PM Volume	3	121	25	0	149	16	127	11	0	154	41	16	75	0	132	8	13	1	0	22	457
Peak Factor																					
High Int.	3:30 PM					3:45 PM					4:30 PM					4:45 PM					
Volume	5	127	36	1	169	20	133	15	0	168	50	23	90	0	163	6	15	3	0	24	
PHF	0.55	0.92	0.74	0.50	0.90	0.81	0.87	0.60		0.88	0.86	0.67	0.91	0.25	0.92	0.75	0.73	0.65		0.85	0.96
Heavy Vehicles %	0%	3%	1%			3%	3%	3%			1%	0%	0%			0%	3%	8%			
Misc.	U-Turn		RTOR	Bikes		U-Turn		RTOR	Bikes		U-Turn		RTOR	Bikes		U-Turn		RTOR	Bikes		
	0		49	2		0		6	0		0		80	1		0		5	0		

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Greater Hershey Area Study
PM PEAK HOUR

Heavy Vehicles & Bicycles

	Rt. 322 Eastbound					Rt. 322 Westbound					Cherry Dr Northbound					Cherry Dr Southbound					
Start Time	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Int. Total
3:00 PM	0	2	0	0	2	0	4	1	0	5	1	0	0	0	1	0	0	0	0	0	8
3:15 PM	0	4	1	0	5	0	2	1	0	3	0	0	1	1	2	0	0	1	0	1	11
3:30 PM	0	2	0	1	3	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	6
3:45 PM	0	1	0	1	2	3	5	0	0	8	1	0	0	0	1	0	1	0	0	1	12
Total	0	9	1	2	12	3	14	2	0	19	2	0	1	1	4	0	1	1	0	2	37
4:00 PM	0	6	0	0	6	0	2	0	0	2	1	0	0	0	1	0	0	0	0	0	9
4:15 PM	0	5	0	0	5	0	1	0	0	1	1	1	1	0	3	0	0	0	0	0	9
4:30 PM	0	2	0	0	2	0	6	0	0	6	0	0	0	0	0	0	0	0	0	0	8
4:45 PM	0	2	0	0	2	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	7
Total	0	15	0	0	15	0	14	0	0	14	2	1	1	0	4	0	0	0	0	0	33
5:00 PM	0	2	1	0	3	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	5
5:15 PM	0	3	0	0	3	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	6
5:30 PM	0	0	0	0	0	0	7	0	0	7	0	0	0	1	1	0	0	0	0	0	8
5:45 PM	0	4	0	0	4	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	9
Total	0	9	1	0	10	0	17	0	0	17	0	0	0	1	1	0	0	0	0	0	28
Grand Total	0	33	2	2	37	3	45	2	0	50	4	1	2	2	9	0	1	1	0	2	98
Apprch %	0.0	89.2	5.4	5.4		6.0	90.0	4.0	0.0		44.4	11.1	22.2	22.2		0.0	50.0	50.0	0.0		
Total %	0.0	33.7	2.0	2.0	37.8	3.1	45.9	2.0	0.0	51.0	4.1	1.0	2.0	2.0	9.2	0.0	1.0	1.0	0.0	2.0	
Overall Peak Hour Volume	0	13	1	2	16	3	12	1	0	16	2	0	1	1	4	0	1	1	0	2	38

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PM PEAK HOUR

U-Turn & RTOR

	Rt. 322 Eastbound					Rt. 322 Westbound					Cherry Dr Northbound					Cherry Dr Southbound					
Start Time	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	Int. Total
3:00 PM	0		10		10	0		0		0	0		28		28	0		0		0	38
3:15 PM	0		15		15	0		1		1	0		15		15	0		2		2	33
3:30 PM	0		14		14	0		1		1	0		9		9	0		1		1	25
3:45 PM	0		10		10	0		2		2	0		34		34	0		2		2	48
Total	0		49		49	0		4		4	0		86		86	0		5		5	144
4:00 PM	0		10		10	0		2		2	0		22		22	0		0		0	34
4:15 PM	0		5		5	0		0		0	0		3		3	0		1		1	9
4:30 PM	0		11		11	0		0		0	0		10		10	0		3		3	24
4:45 PM	0		7		7	0		0		0	0		9		9	0		2		2	18
Total	0		33		33	0		2		2	0		44		44	0		6		6	85
5:00 PM	0		11		11	0		0		0	0		13		13	0		1		1	25
5:15 PM	0		20		20	0		0		0	0		19		19	0		0		0	39
5:30 PM	0		10		10	0		0		0	0		36		36	0		0		0	46
5:45 PM	0		11		11	0		1		1	0		24		24	0		2		2	38
Total	0		52		52	0		1		1	0		92		92	0		3		3	148
Grand Total	0		134		134	0		0		0	0		222		222	0		14		14	370
Apprch %	0.0	0.0	100.0	0.0							0.0	0.0	100.0	0.0		0.0	0.0	100.0	0.0		
Total %	0.0		36.2		36.2	0.0		0.0		0.0	0.0		60.0		60.0	0.0		3.8		3.8	
Overall Peak Hour Volume	0		49		49	0		6		6	0		80		80	0		5		5	140

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Greater Hershey Area Study
PM PEAK HOUR

All Vehicles

	Governor Rd (SR 0322) Eastbound					Governor Rd (SR 0322) Westbound					Fishburn Rd (SR 2011) Northbound					Hockersville Rd (SR 2011) Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
3:00 PM	16	125	43	0	184	28	112	29	0	169	40	35	20	0	95	49	48	7	0	104	552
3:15 PM	12	130	40	0	182	18	90	23	0	131	37	32	29	0	98	66	56	11	0	133	544
3:30 PM	14	147	33	0	194	17	90	28	0	135	30	57	30	0	117	39	45	7	0	91	537
3:45 PM	19	124	39	0	182	31	125	31	0	187	32	41	30	0	103	51	62	12	0	125	597
Total	61	526	155	0	742	94	417	111	0	622	139	165	109	0	413	205	211	37	0	453	2230
4:00 PM	13	147	40	0	200	19	111	37	0	167	38	51	23	0	112	47	59	7	0	113	592
4:15 PM	13	125	36	0	174	24	68	24	0	116	28	55	21	0	104	39	57	7	0	103	497
4:30 PM	15	158	23	0	196	22	100	35	0	157	30	39	25	0	94	60	54	10	0	124	571
4:45 PM	10	134	40	0	184	24	113	31	0	168	34	44	30	0	108	49	64	9	0	122	582
Total	51	564	139	0	754	89	392	127	0	608	130	189	99	0	418	195	234	33	0	462	2242
5:00 PM	11	149	31	0	191	29	93	42	0	164	44	45	28	0	117	47	49	7	0	103	575
5:15 PM	13	140	25	0	178	16	90	34	0	140	33	53	26	0	112	49	67	3	0	119	549
5:30 PM	10	130	29	0	169	12	73	26	0	111	38	43	15	0	96	42	48	7	0	97	473
5:45 PM	13	120	35	0	168	17	74	26	0	117	37	38	14	0	89	36	38	8	0	82	456
Total	47	539	120	0	706	74	330	128	0	532	152	179	83	0	414	174	202	25	0	401	2053
Grand Total	159	1629	414	0	2202	257	1139	366	0	1762	421	533	291	0	1245	574	647	95	0	1316	6525
Apprch %	7.2	74.0	18.8	0.0		14.6	64.6	20.8	0.0		33.8	42.8	23.4	0.0		43.6	49.2	7.2	0.0		
Total %	2.4	25.0	6.3	0.0	33.7	3.9	17.5	5.6	0.0	27.0	6.5	8.2	4.5	0.0	19.1	8.8	9.9	1.5	0.0	20.2	

	Governor Rd (SR 0322) Eastbound					Governor Rd (SR 0322) Westbound					Fishburn Rd (SR 2011) Northbound					Hockersville Rd (SR 2011) Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From	4:30 PM			to	5:30 PM																
Volume	49	581	119	0	749	91	396	142	0	629	141	181	109	0	431	205	234	29	0	468	2277
Percent	6.5	77.6	15.9	0.0		14.5	63.0	22.6	0.0		32.7	42.0	25.3	0.0		43.8	50.0	6.2	0.0		
3:45 PM Volume	19	124	39	0	182	31	125	31	0	187	32	41	30	0	103	51	62	12	0	125	597
Peak Factor																					
High Int.	4:00 PM					3:45 PM					3:30 PM					3:15 PM					
Volume	13	147	40	0	200	31	125	31	0	187	30	57	30	0	117	66	56	11	0	133	
PHF	0.82	0.92	0.74		0.96	0.78	0.88	0.85		0.94	0.80	0.85	0.91		0.92	0.85	0.87	0.73		0.94	0.98
Heavy Vehicles %	0%	1%	1%			0%	4%	1%			1%	1%	0%			0%	2%	0%			
Misc.	U-Turn		RTOR	Bikes		U-Turn		RTOR	Bikes		U-Turn		RTOR	Bikes		U-Turn		RTOR	Bikes		
	0		7	0		0		13	0		0		66	0		0		7	0		

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PM PEAK HOUR

Heavy Vehicles & Bicycles

	Governor Rd (SR 0322) Eastbound					Governor Rd (SR 0322) Westbound					Fishburn Rd (SR 2011) Northbound					Hockersville Rd (SR 2011) Southbound					
Start Time	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Int. Total
3:00 PM	0	4	0	0	4	0	6	2	0	8	1	2	2	0	5	0	4	0	0	4	21
3:15 PM	0	4	2	0	6	5	1	1	0	7	1	0	2	0	3	0	6	1	0	7	23
3:30 PM	0	3	1	0	4	0	1	0	0	1	2	1	1	0	4	0	1	0	0	1	10
3:45 PM	0	2	1	0	3	2	7	0	0	9	1	3	0	0	4	0	1	0	0	1	17
Total	0	13	4	0	17	7	15	3	0	25	5	6	5	0	16	0	12	1	0	13	71
4:00 PM	0	4	0	0	4	0	1	1	0	2	1	2	0	0	3	2	0	0	0	2	11
4:15 PM	0	6	0	0	6	0	1	0	0	1	0	3	0	0	3	0	0	0	0	0	10
4:30 PM	0	1	1	0	2	0	6	0	0	6	1	0	0	0	1	0	3	0	0	3	12
4:45 PM	0	2	0	0	2	0	6	1	0	7	0	1	0	0	1	0	1	0	0	1	11
Total	0	13	1	0	14	0	14	2	0	16	2	6	0	0	8	2	4	0	0	6	44
5:00 PM	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2
5:15 PM	0	4	0	0	4	0	2	0	0	2	1	0	0	0	1	0	0	0	0	0	7
5:30 PM	0	0	0	0	0	0	6	1	0	7	1	0	0	1	2	0	0	0	0	0	9
5:45 PM	0	2	1	0	3	0	3	0	0	3	2	0	0	0	2	1	0	0	0	1	9
Total	0	7	1	0	8	0	12	1	0	13	4	0	0	1	5	1	0	0	0	1	27
Grand Total	0	33	6	0	39	7	41	6	0	54	11	12	5	1	29	3	16	1	0	20	142
Apprch %	0.0	84.6	15.4	0.0		13.0	75.9	11.1	0.0		37.9	41.4	17.2	3.4		15.0	80.0	5.0	0.0		
Total %	0.0	23.2	4.2	0.0	27.5	4.9	28.9	4.2	0.0	38.0	7.7	8.5	3.5	0.7	20.4	2.1	11.3	0.7	0.0	14.1	
Overall Peak Hour Volume	0	8	1	0	9	0	15	1	0	16	2	1	0	0	3	0	4	0	0	4	32

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PM PEAK HOUR

U-Turn & RTOR

	Governor Rd (SR 0322) Eastbound					Governor Rd (SR 0322) Westbound					Fishburn Rd (SR 2011) Northbound					Hockersville Rd (SR 2011) Southbound					
Start Time	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	Int. Total
3:00 PM	0		3		3	0		1		1	0		8		8	0		2		2	14
3:15 PM	0		1		1	0		0		0	0		8		8	0		1		1	10
3:30 PM	0		1		1	0		1		1	0		7		7	0		0		0	9
3:45 PM	0		0		0	0		2		2	0		14		14	0		1		1	17
Total	0		5		5	0		4		4	0		37		37	0		4		4	50
4:00 PM	0		9		9	0		0		0	0		11		11	0		1		1	21
4:15 PM	0		0		0	0		1		1	0		8		8	0		0		0	9
4:30 PM	0		0		0	0		5		5	0		20		20	0		3		3	28
4:45 PM	0		4		4	0		3		3	0		15		15	0		2		2	24
Total	0		13		13	0		9		9	0		54		54	0		6		6	82
5:00 PM	0		0		0	0		4		4	0		17		17	0		1		1	22
5:15 PM	0		3		3	0		1		1	0		14		14	0		1		1	19
5:30 PM	0		2		2	0		0		0	0		7		7	0		1		1	10
5:45 PM	0		1		1	0		3		3	0		11		11	0		2		2	17
Total	0		6		6	0		8		8	0		49		49	0		5		5	68
Grand Total	0		24		24	0		0		0	0		140		140	0		15		15	179
Apprch %	0.0	0.0	100.0	0.0							0.0	0.0	100.0	0.0		0.0	0.0	100.0	0.0		
Total %	0.0		13.4		13.4	0.0		0.0		0.0	0.0		78.2		78.2	0.0		8.4		8.4	
Overall Peak Hour Volume	0		7		7	0		13		13	0		66		66	0		7		7	93

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Greater Hershey Area Study
PM PEAK HOUR

All Vehicles

	Cherry Dr Eastbound					Private Drive Westbound					Sand Hill Rd Northbound					Sand Hill Rd Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
3:00 PM	34	0	35	0	69	0	0	0	0	0	18	24	0	0	42	2	31	13	0	46	157
3:15 PM	44	1	38	0	83	0	0	0	0	0	21	32	1	0	54	1	30	8	0	39	176
3:30 PM	64	1	38	0	103	0	1	0	0	1	14	24	0	0	38	2	27	12	0	41	183
3:45 PM	41	0	33	0	74	0	0	0	0	0	29	23	1	0	53	0	38	15	0	53	180
Total	183	2	144	0	329	0	1	0	0	1	82	103	2	0	187	5	126	48	0	179	696
4:00 PM	70	1	39	1	111	0	0	0	0	0	24	30	0	2	56	2	35	8	0	45	212
4:15 PM	50	2	34	0	86	0	1	1	0	2	22	28	0	0	50	0	39	10	0	49	187
4:30 PM	93	3	41	0	137	0	0	0	0	0	15	18	0	2	35	2	37	11	0	50	222
4:45 PM	74	0	54	0	128	0	0	1	0	1	20	25	0	0	45	0	30	10	0	40	214
Total	287	6	168	1	462	0	1	2	0	3	81	101	0	4	186	4	141	39	0	184	835
5:00 PM	48	1	46	0	95	0	2	3	0	5	16	28	0	0	44	0	48	7	0	55	199
5:15 PM	62	0	43	0	105	0	3	2	0	5	21	22	0	0	43	2	23	10	0	35	188
5:30 PM	51	1	27	0	79	0	1	0	0	1	15	22	0	0	37	0	23	13	0	36	153
5:45 PM	25	1	41	0	67	0	0	0	0	0	25	20	0	0	45	0	33	6	0	39	151
Total	186	3	157	0	346	0	6	5	0	11	77	92	0	0	169	2	127	36	0	165	691
Grand Total	656	11	469	1	1137	0	8	7	0	15	240	296	2	4	542	11	394	123	0	528	2222
Apprch %	57.7	1.0	41.2	0.1		0.0	53.3	46.7	0.0		44.3	54.6	0.4	0.7		2.1	74.6	23.3	0.0		
Total %	29.5	0.5	21.1	0.0	51.2	0.0	0.4	0.3	0.0	0.7	10.8	13.3	0.1	0.2	24.4	0.5	17.7	5.5	0.0	23.8	

	Cherry Dr Eastbound					Private Drive Westbound					Sand Hill Rd Northbound					Sand Hill Rd Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From	4:00 PM			to	5:00 PM																
Volume	287	6	168	1	462	0	1	2	0	3	81	101	0	4	186	4	141	39	0	184	835
Percent	62.1	1.3	36.4	0.2		0.0	33.3	66.7	0.0		43.5	54.3	0.0	2.2		2.2	76.6	21.2	0.0		
4:30 PM Volume	93	3	41	0	137	0	0	0	0	0	15	18	0	2	35	2	37	11	0	50	222
Peak Factor																					
High Int.	4:30 PM					5:00 PM					4:00 PM					5:00 PM					
Volume	93	3	41	0	137	0	2	3	0	5	24	30	0	2	56	0	48	7	0	55	
PHF	0.77	0.50	0.78	0.25	0.84		0.25	0.50		0.38	0.84	0.84		0.50	0.83	0.50	0.90	0.89		0.92	0.94
Heavy Vehicles %	0%	0%	0%			0%	0%	0%			2%	1%	0%			0%	0%	0%			
Misc.	U-Turn		RTOR	Bikes		U-Turn		RTOR	Bikes		U-Turn		RTOR	Bikes		U-Turn		RTOR	Bikes		
	0		0	0		0		0	0		0		0	0		0		0	0		

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Greater Hershey Area Study
PM PEAK HOUR

Heavy Vehicles & Bicycles

	Cherry Dr Eastbound					Private Drive Westbound					Sand Hill Rd Northbound					Sand Hill Rd Southbound					
Start Time	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Int. Total
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	2
3:15 PM	1	0	0	0	1	0	0	0	0	0	1	1	0	0	2	0	3	0	0	3	6
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	3
Total	1	0	2	0	3	0	0	0	0	0	1	2	0	0	3	0	4	1	0	5	11
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	2	1	0	0	3	0	0	0	0	0	3
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	2	1	0	0	3	0	0	0	0	0	3
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	1	0	2	0	3	0	0	0	0	0	3	3	0	0	6	0	4	1	0	5	14
Apprch %	33.3	0.0	66.7	0.0							50.0	50.0	0.0	0.0		0.0	80.0	20.0	0.0		
Total %	7.1	0.0	14.3	0.0	21.4	0.0	0.0	0.0	0.0	0.0	21.4	21.4	0.0	0.0	42.9	0.0	28.6	7.1	0.0	35.7	
Overall Peak Hour Volume	0	0	0	0	0	0	0	0	0	0	2	1	0	0	3	0	0	0	0	0	3

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Greater Hershey Area Study
PM PEAK HOUR

All Vehicles

	Sand Hill Rd Eastbound					Westbound					Fishburn Rd (SR 2011) Northbound					Fishburn Rd (SR 2011) Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
3:00 PM	18	0	45	0	63	0	0	0	0	0	13	82	0	0	95	0	82	35	0	117	275
3:15 PM	32	0	53	0	85	0	0	0	0	0	13	64	0	0	77	0	86	26	0	112	274
3:30 PM	26	0	61	0	87	0	0	0	0	0	15	94	0	0	109	0	66	29	0	95	291
3:45 PM	21	0	45	0	66	0	0	0	0	0	20	79	0	0	99	0	104	31	0	135	300
Total	97	0	204	0	301	0	0	0	0	0	61	319	0	0	380	0	338	121	0	459	1140
4:00 PM	23	0	63	0	86	0	0	0	0	0	20	92	0	0	112	0	89	27	0	116	314
4:15 PM	29	0	64	0	93	0	0	0	0	0	26	84	0	0	110	0	85	24	0	109	312
4:30 PM	19	0	89	0	108	0	0	0	0	0	22	75	0	0	97	0	76	27	0	103	308
4:45 PM	24	0	78	0	102	0	0	0	0	0	16	78	0	0	94	0	98	21	0	119	315
Total	95	0	294	0	389	0	0	0	0	0	84	329	0	0	413	0	348	99	0	447	1249
5:00 PM	25	0	56	0	81	0	0	0	0	0	21	98	0	0	119	0	81	36	0	117	317
5:15 PM	24	0	62	0	86	0	0	0	0	0	11	85	0	0	96	0	83	22	0	105	287
5:30 PM	17	0	54	0	71	0	0	0	0	0	22	74	0	0	96	0	73	14	2	89	256
5:45 PM	17	0	25	2	44	0	0	0	0	0	18	70	0	0	88	0	74	19	0	93	225
Total	83	0	197	2	282	0	0	0	0	0	72	327	0	0	399	0	311	91	2	404	1085
Grand Total	275	0	695	2	972	0	0	0	0	0	217	975	0	0	1192	0	997	311	2	1310	3474
Apprch %	28.3	0.0	71.5	0.2							18.2	81.8	0.0	0.0		0.0	76.1	23.7	0.2		
Total %	7.9	0.0	20.0	0.1	28.0	0.0	0.0	0.0	0.0	0.0	6.2	28.1	0.0	0.0	34.3	0.0	28.7	9.0	0.1	37.7	

	Sand Hill Rd Eastbound					Westbound					Fishburn Rd (SR 2011) Northbound					Fishburn Rd (SR 2011) Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From	4:15 PM			to	5:15 PM																
Volume	97	0	287	0	384	0	0	0	0	0	85	335	0	0	420	0	340	108	0	448	1252
Percent	25.3	0.0	74.7	0.0							20.2	79.8	0.0	0.0		0.0	75.9	24.1	0.0		
5:00 PM Volume	25	0	56	0	81	0	0	0	0	0	21	98	0	0	119	0	81	36	0	117	317
Peak Factor																					
High Int.	4:30 PM					3:00 PM					5:00 PM					3:45 PM					
Volume	19	0	89	0	108	0	0	0	0	0	21	98	0	0	119	0	104	31	0	135	
PHF	0.84		0.81		0.89						0.82	0.85			0.88		0.87	0.75		0.94	0.99
Heavy Vehicles %	2%	0%	0%			0%	0%	0%			0%	1%	0%			0%	2%	0%			
Misc.	U-Turn		RTOR	Bikes		U-Turn		RTOR	Bikes		U-Turn		RTOR	Bikes		U-Turn		RTOR	Bikes		
	0		0	0		0		0	0		0		0	0		0		0	0		

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PM PEAK HOUR

Heavy Vehicles & Bicycles

	Sand Hill Rd Eastbound					Westbound					Fishburn Rd (SR 2011) Northbound					Fishburn Rd (SR 2011) Southbound					
Start Time	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Int. Total
3:00 PM	2	0	0	0	2	0	0	0	0	0	1	3	0	0	4	0	3	2	0	5	11
3:15 PM	3	0	1	0	4	0	0	0	0	0	0	0	0	0	0	0	5	6	0	11	15
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	0	2	0	0	2	5
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	4	0	0	4	0	3	1	0	4	8
Total	5	0	1	0	6	0	0	0	0	0	1	10	0	0	11	0	13	9	0	22	39
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	0	1	0	0	1	4
4:15 PM	1	0	0	0	1	0	0	0	0	0	0	1	0	0	1	0	2	0	0	2	4
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	3	0	0	3	5
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
Total	1	0	0	0	1	0	0	0	0	0	0	6	0	0	6	0	7	0	0	7	14
5:00 PM	1	0	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	2
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	0	1	0	0	1	4
Total	1	0	0	0	1	0	0	0	0	0	0	7	0	0	7	0	1	0	0	1	9
Grand Total	7	0	1	0	8	0	0	0	0	0	1	23	0	0	24	0	21	9	0	30	62
Apprch %	87.5	0.0	12.5	0.0							4.2	95.8	0.0	0.0		0.0	70.0	30.0	0.0		
Total %	11.3	0.0	1.6	0.0	12.9	0.0	0.0	0.0	0.0	0.0	1.6	37.1	0.0	0.0	38.7	0.0	33.9	14.5	0.0	48.4	
Overall Peak Hour Volume	2	0	0	0	2	0	0	0	0	0	0	4	0	0	4	0	6	0	0	6	12

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Greater Hershey Area Study
PM PEAK HOUR

All Vehicles

	W. Governor Road (SR 322) Eastbound					E. Governor Road (SR 322) Westbound					Cocoa Ave Northbound					Cocoa Ave Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
3:00 PM	9	157	7	0	173	15	131	11	0	157	12	45	21	0	78	16	60	10	0	86	494
3:15 PM	8	165	9	0	182	10	102	17	0	129	7	48	16	0	71	13	85	16	0	114	496
3:30 PM	9	147	9	0	165	6	116	17	0	139	10	60	16	0	86	20	84	18	0	122	512
3:45 PM	16	121	14	0	151	8	79	12	0	99	5	66	18	0	89	22	85	12	0	119	458
Total	42	590	39	0	671	39	428	57	0	524	34	219	71	0	324	71	314	56	0	441	1960
4:00 PM	15	153	12	0	180	16	119	10	0	145	9	62	18	0	89	15	73	12	0	100	514
4:15 PM	12	158	10	0	180	13	88	18	0	119	10	51	21	0	82	18	88	13	0	119	500
4:30 PM	8	191	6	0	205	13	105	8	0	126	12	70	22	0	104	18	89	11	0	118	553
4:45 PM	13	177	11	0	201	18	128	18	0	164	4	76	20	0	100	13	76	13	0	102	567
Total	48	679	39	0	766	60	440	54	0	554	35	259	81	0	375	64	326	49	0	439	2134
5:00 PM	14	173	8	0	195	3	126	16	0	145	7	69	26	0	102	13	86	21	0	120	562
5:15 PM	8	155	4	0	167	11	96	13	0	120	5	72	22	0	99	14	85	10	0	109	495
5:30 PM	9	156	5	0	170	10	127	15	0	152	6	64	14	0	84	8	75	11	0	94	500
5:45 PM	11	160	11	0	182	11	85	17	0	113	7	52	16	0	75	22	66	5	0	93	463
Total	42	644	28	0	714	35	434	61	0	530	25	257	78	0	360	57	312	47	0	416	2020
Grand Total	132	1913	106	0	2151	134	1302	172	0	1608	94	735	230	0	1059	192	952	152	0	1296	6114
Apprch %	6.1	88.9	4.9	0.0		8.3	81.0	10.7	0.0		8.9	69.4	21.7	0.0		14.8	73.5	11.7	0.0		
Total %	2.2	31.3	1.7	0.0	35.2	2.2	21.3	2.8	0.0	26.3	1.5	12.0	3.8	0.0	17.3	3.1	15.6	2.5	0.0	21.2	

	W. Governor Road (SR 322) Eastbound					E. Governor Road (SR 322) Westbound					Cocoa Ave Northbound					Cocoa Ave Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From	4:15 PM			to	5:15 PM																
Volume	47	699	35	0	781	47	447	60	0	554	33	266	89	0	388	62	339	58	0	459	2182
Percent	6.0	89.5	4.5	0.0		8.5	80.7	10.8	0.0		8.5	68.6	22.9	0.0		13.5	73.9	12.6	0.0		
4:45 PM Volume	13	177	11	0	201	18	128	18	0	164	4	76	20	0	100	13	76	13	0	102	567
Peak Factor																					
High Int.	4:30 PM					4:45 PM					4:30 PM					3:30 PM					
Volume	8	191	6	0	205	18	128	18	0	164	12	70	22	0	104	20	84	18	0	122	
PHF	0.84	0.91	0.80		0.95	0.65	0.87	0.83		0.84	0.69	0.88	0.86		0.93	0.86	0.95	0.69		0.96	0.96
Heavy Vehicles %	2%	2%	0%			0%	1%	2%			6%	3%	0%			2%	4%	3%			
Misc.	U-Turn		RTOR	Bikes		U-Turn		RTOR	Bikes		U-Turn		RTOR	Bikes		U-Turn		RTOR	Bikes		
	0		0	0		0		1	0		0		5	0		0		29	0		

Traffic Count conducted by Tri-State Traffic Data, Inc.

Herbert, Rowland & Grubic, Inc.
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(717) 564-1121

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Greater Hershey Area Study
PM PEAK HOUR

Heavy Vehicles & Bicycles

	W. Governor Road (SR 322) Eastbound					E. Governor Road (SR 322) Westbound					Cocoa Ave Northbound					Cocoa Ave Southbound					
Start Time	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Int. Total
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch % Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Overall Peak Hour Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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PM PEAK HOUR

U-Turn & RTOR

	W. Governor Road (SR 322) Eastbound					E. Governor Road (SR 322) Westbound					Cocoa Ave Northbound					Cocoa Ave Southbound					
Start Time	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	Int. Total
3:00 PM	0		0		0	0		1		1	0		0		0	0		4		4	5
3:15 PM	0		1		1	0		1		1	0		0		0	0		11		11	13
3:30 PM	0		0		0	0		0		0	0		0		0	0		9		9	9
3:45 PM	0		0		0	0		1		1	0		0		0	0		8		8	9
Total	0		1		1	0		3		3	0		0		0	0		32		32	36
4:00 PM	0		0		0	0		3		3	0		1		1	0		9		9	13
4:15 PM	0		0		0	0		0		0	0		2		2	0		4		4	6
4:30 PM	0		0		0	0		0		0	0		1		1	0		5		5	6
4:45 PM	0		0		0	0		1		1	0		2		2	0		9		9	12
Total	0		0		0	0		4		4	0		6		6	0		27		27	37
5:00 PM	0		0		0	0		0		0	0		0		0	0		11		11	11
5:15 PM	0		0		0	0		0		0	0		0		0	0		4		4	4
5:30 PM	0		0		0	0		2		2	0		0		0	0		7		7	9
5:45 PM	0		0		0	0		1		1	0		0		0	0		3		3	4
Total	0		0		0	0		3		3	0		0		0	0		25		25	28
Grand Total	0		1		1	0		0		0	0		6		6	0		84		84	91
Apprch %	0.0	0.0	100.0	0.0							0.0	0.0	100.0	0.0		0.0	0.0	100.0	0.0		
Total %	0.0		1.1		1.1	0.0		0.0		0.0	0.0		6.6		6.6	0.0		92.3		92.3	
Overall Peak Hour Volume	0		0		0	0		1		1	0		5		5	0		29		29	35

Traffic Count conducted by Tri-State Traffic Data, Inc.

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Greater Hershey Area Study
PM PEAK HOUR

All Vehicles

	E Governor Road Eastbound					E Governor Road Westbound					Homestead Road Northbound					Homestead Road Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
4:00 PM	21	166	0	0	187	13	111	1	0	125	0	27	7	0	34	7	62	37	0	106	452
4:15 PM	21	191	2	0	214	6	101	7	0	114	1	33	4	0	38	9	61	27	0	97	463
4:30 PM	23	188	6	0	217	14	91	10	0	115	0	33	8	0	41	7	67	29	0	103	476
4:45 PM	27	168	2	0	197	17	124	8	0	149	2	48	6	0	56	14	75	40	0	129	531
Total	92	713	10	0	815	50	427	26	0	503	3	141	25	0	169	37	265	133	0	435	1922
5:00 PM	31	195	0	0	226	9	102	2	0	113	1	39	13	0	53	21	69	70	0	160	552
5:15 PM	12	174	4	0	190	9	96	6	0	111	1	29	8	0	38	15	78	43	0	136	475
5:30 PM	30	205	2	0	237	10	93	8	0	111	3	43	12	0	58	5	59	22	0	86	492
5:45 PM	33	127	5	0	165	8	112	9	0	129	0	57	7	0	64	5	42	29	0	76	434
Total	106	701	11	0	818	36	403	25	0	464	5	168	40	0	213	46	248	164	0	458	1953
Grand Total	198	1414	21	0	1633	86	830	51	0	967	8	309	65	0	382	83	513	297	0	893	3875
Apprch %	12.1	86.6	1.3	0.0		8.9	85.8	5.3	0.0		2.1	80.9	17.0	0.0		9.3	57.4	33.3	0.0		
Total %	5.1	36.5	0.5	0.0	42.1	2.2	21.4	1.3	0.0	25.0	0.2	8.0	1.7	0.0	9.9	2.1	13.2	7.7	0.0	23.0	

	E Governor Road Eastbound					E Governor Road Westbound					Homestead Road Northbound					Homestead Road Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From	4:45 PM			to	5:45 PM																
Volume	100	742	8	0	850	45	415	24	0	484	7	159	39	0	205	55	281	175	0	511	2050
Percent	11.8	87.3	0.9	0.0		9.3	85.7	5.0	0.0		3.4	77.6	19.0	0.0		10.8	55.0	34.2	0.0		
5:00 PM Volume	31	195	0	0	226	9	102	2	0	113	1	39	13	0	53	21	69	70	0	160	552
Peak Factor																					
High Int.	5:30 PM					4:45 PM					5:45 PM					5:00 PM					
Volume	30	205	2	0	237	17	124	8	0	149	0	57	7	0	64	21	69	70	0	160	
PHF	0.81	0.90	0.50		0.90	0.66	0.84	0.75		0.81	0.58	0.83	0.75		0.88	0.65	0.90	0.63		0.80	0.93
Heavy Vehicles %	0%	1%	0%			2%	1%	0%			0%	2%	0%			4%	2%	0%			
Misc.	U-Turn 0		RTOR 2	Bikes 0		U-Turn 0		RTOR 2	Bikes 0		U-Turn 0		RTOR 23	Bikes 0		U-Turn 0		RTOR 100	Bikes 0		

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Greater Hershey Area Study
PM PEAK HOUR

Heavy Vehicles & Bicycles

	E Governor Road Eastbound					E Governor Road Westbound					Homestead Road Northbound					Homestead Road Southbound					
Start Time	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Int. Total
4:00 PM	0	4	0	0	4	1	4	0	0	5	0	1	0	0	1	0	0	0	0	0	10
4:15 PM	0	3	0	0	3	0	6	1	0	7	0	0	0	0	0	0	2	0	0	2	12
4:30 PM	0	5	0	0	5	0	2	0	0	2	0	1	0	0	1	0	1	1	0	2	10
4:45 PM	0	3	0	0	3	0	1	0	0	1	0	3	0	0	3	0	1	0	0	1	8
Total	0	15	0	0	15	1	13	1	0	15	0	5	0	0	5	0	4	1	0	5	40
5:00 PM	0	4	0	0	4	0	3	0	0	3	0	0	0	0	0	1	0	0	0	1	8
5:15 PM	0	1	0	0	1	1	0	0	0	1	0	0	0	0	0	1	1	0	0	2	4
5:30 PM	0	1	0	0	1	0	2	0	0	2	0	0	0	0	0	0	5	0	0	5	8
5:45 PM	0	1	1	0	2	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	4
Total	0	7	1	0	8	1	7	0	0	8	0	0	0	0	0	2	6	0	0	8	24
Grand Total	0	22	1	0	23	2	20	1	0	23	0	5	0	0	5	2	10	1	0	13	64
Apprch %	0.0	95.7	4.3	0.0		8.7	87.0	4.3	0.0		0.0	100.0	0.0	0.0		15.4	76.9	7.7	0.0		
Total %	0.0	34.4	1.6	0.0	35.9	3.1	31.3	1.6	0.0	35.9	0.0	7.8	0.0	0.0	7.8	3.1	15.6	1.6	0.0	20.3	
Overall Peak Hour Volume	0	9	0	0	9	1	6	0	0	7	0	3	0	0	3	2	7	0	0	9	28

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PM PEAK HOUR

U-Turn & RTOR

	E Governor Road Eastbound					E Governor Road Westbound					Homestead Road Northbound					Homestead Road Southbound					
Start Time	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	Int. Total
4:00 PM	0		0		0	0		0		0	0		3		3	0		25		25	28
4:15 PM	0		1		1	0		1		1	0		4		4	0		17		17	23
4:30 PM	0		2		2	0		3		3	0		5		5	0		17		17	27
4:45 PM	0		2		2	0		2		2	0		4		4	0		22		22	30
Total	0		5		5	0		6		6	0		16		16	0		81		81	108
5:00 PM	0		0		0	0		0		0	0		7		7	0		38		38	45
5:15 PM	0		0		0	0		0		0	0		5		5	0		28		28	33
5:30 PM	0		0		0	0		0		0	0		7		7	0		12		12	19
5:45 PM	0		2		2	0		3		3	0		6		6	0		13		13	24
Total	0		2		2	0		3		3	0		25		25	0		91		91	121
Grand Total	0		7		7	0		0		0	0		41		41	0		172		172	220
Apprch %	0.0	0.0	100.0	0.0							0.0	0.0	100.0	0.0		0.0	0.0	100.0	0.0		
Total %	0.0		3.2		3.2	0.0		0.0		0.0	0.0		18.6		18.6	0.0		78.2		78.2	
Overall Peak Hour Volume	0		2		2	0		2		2	0		23		23	0		100		100	127

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Greater Hershey Area Study
PM PEAK HOUR

All Vehicles

	Eastbound					Cocoa Ave Westbound					SR 743 (Fishburn Rd) Northbound					SR 743 (Fishburn Rd) Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
4:00 PM	0	0	0	0	0	90	0	17	0	107	0	71	54	0	125	29	153	0	0	182	414
4:15 PM	0	0	0	0	0	106	0	21	0	127	0	66	42	0	108	26	127	0	0	153	388
4:30 PM	0	0	0	0	0	92	0	11	0	103	0	75	46	0	121	31	140	0	0	171	395
4:45 PM	0	0	0	0	0	95	0	16	0	111	0	77	49	0	126	31	145	0	0	176	413
Total	0	0	0	0	0	383	0	65	0	448	0	289	191	0	480	117	565	0	0	682	1610
5:00 PM	0	0	0	0	0	103	0	15	0	118	0	72	55	0	127	26	135	0	0	161	406
5:15 PM	0	0	0	0	0	94	0	14	0	108	0	79	45	0	124	28	133	0	0	161	393
5:30 PM	0	0	0	0	0	76	0	8	0	84	0	67	44	0	111	24	95	0	0	119	314
5:45 PM	0	0	0	0	0	57	0	11	0	68	0	64	53	0	117	19	107	0	0	126	311
Total	0	0	0	0	0	330	0	48	0	378	0	282	197	0	479	97	470	0	0	567	1424
Grand Total	0	0	0	0	0	713	0	113	0	826	0	571	388	0	959	214	1035	0	0	1249	3034
Apprch %						86.3	0.0	13.7	0.0		0.0	59.5	40.5	0.0		17.1	82.9	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	23.5	0.0	3.7	0.0	27.2	0.0	18.8	12.8	0.0	31.6	7.1	34.1	0.0	0.0	41.2	

	Eastbound					Westbound					Northbound					Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From	4:00 PM			to	5:00 PM																
Volume	0	0	0	0	0	383	0	65	0	448	0	289	191	0	480	117	565	0	0	682	1610
Percent						85.5	0.0	14.5	0.0		0.0	60.2	39.8	0.0		17.2	82.8	0.0	0.0		
4:00 PM Volume	0	0	0	0	0	90	0	17	0	107	0	71	54	0	125	29	153	0	0	182	414
Peak Factor																					
High Int.	4:00 PM					4:15 PM					5:00 PM					4:00 PM					
Volume	0	0	0	0	0	106	0	21	0	127	0	72	55	0	127	29	153	0	0	182	
PHF						0.90		0.77		0.88		0.94	0.88		0.95	0.94	0.92			0.94	0.97
Heavy Vehicles %	0%	0%	0%			4%	0%	5%			0%	2%	4%			3%	1%	0%			
Misc.	U-Turn 0		RTOR 0	Bikes 0		U-Turn 0		RTOR 1	Bikes 0		U-Turn 0		RTOR 1	Bikes 0		U-Turn 0		RTOR 0	Bikes 0		

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PM PEAK HOUR

Heavy Vehicles & Bicycles

	Eastbound					Cocoa Ave Westbound					SR 743 (Fishburn Rd) Northbound					SR 743 (Fishburn Rd) Southbound					
Start Time	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Int. Total
4:00 PM	0	0	0	0	0	2	0	1	0	3	0	2	1	0	3	1	3	0	0	4	10
4:15 PM	0	0	0	0	0	3	0	1	0	4	0	1	1	0	2	0	1	0	0	1	7
4:30 PM	0	0	0	0	0	4	0	0	0	4	0	2	4	0	6	1	1	0	0	2	12
4:45 PM	0	0	0	0	0	6	0	1	0	7	0	0	1	0	1	1	3	0	0	4	12
Total	0	0	0	0	0	15	0	3	0	18	0	5	7	0	12	3	8	0	0	11	41
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	1	0	0	0	1	3
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	2
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
Total	0	0	0	0	0	0	0	0	0	0	0	1	3	0	4	1	3	0	0	4	8
Grand Total	0	0	0	0	0	15	0	3	0	18	0	6	10	0	16	4	11	0	0	15	49
Apprch %						83.3	0.0	16.7	0.0		0.0	37.5	62.5	0.0		26.7	73.3	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	30.6	0.0	6.1	0.0	36.7	0.0	12.2	20.4	0.0	32.7	8.2	22.4	0.0	0.0	30.6	
Overall Peak Hour Volume	0	0	0	0	0	15	0	3	0	18	0	5	7	0	12	3	8	0	0	11	41

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PM PEAK HOUR

U-Turn & RTOR

	Eastbound					Cocoa Ave Westbound					SR 743 (Fishburn Rd) Northbound					SR 743 (Fishburn Rd) Southbound					
Start Time	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	Int. Total
4:00 PM	0		0		0	0		0		0	0		0		0	0		0		0	0
4:15 PM	0		0		0	0		1		1	0		0		0	0		0		0	1
4:30 PM	0		0		0	0		0		0	0		0		0	0		0		0	0
4:45 PM	0		0		0	0		0		0	0		1		1	0		0		0	1
Total	0		0		0	0		1		1	0		1		1	0		0		0	2
5:00 PM	0		0		0	0		0		0	0		0		0	0		0		0	0
5:15 PM	0		0		0	0		1		1	0		0		0	0		0		0	1
5:30 PM	0		0		0	0		2		2	0		0		0	0		0		0	2
5:45 PM	0		0		0	0		0		0	0		0		0	0		0		0	0
Total	0		0		0	0		3		3	0		0		0	0		0		0	3
Grand Total	0		0		0	0		0		0	0		1		1	0		0		0	1
Apprch %											0.0	0.0	100.0	0.0							
Total %	0.0		0.0		0.0	0.0		0.0		0.0	0.0		100.0		100.0	0.0		0.0		0.0	
Overall Peak Hour Volume	0		0		0	0		1		1	0		1		1	0		0		0	2

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Greater Hershey Area Study
PM PEAK HOUR

All Vehicles

	Church Rd Eastbound					Westbound					Fishburn Rd Northbound					Fishburn Rd Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
4:00 PM	9	0	5	0	14	0	0	0	0	0	10	115	0	0	125	0	216	21	0	237	376
4:15 PM	9	0	11	0	20	0	0	0	0	0	12	84	0	0	96	0	207	25	0	232	348
4:30 PM	11	0	9	0	20	0	0	0	0	0	8	118	0	0	126	0	216	13	0	229	375
4:45 PM	13	0	21	0	34	0	0	0	0	0	13	112	0	0	125	0	223	23	0	246	405
Total	42	0	46	0	88	0	0	0	0	0	43	429	0	0	472	0	862	82	0	944	1504
5:00 PM	6	0	15	0	21	0	0	0	0	0	12	113	0	0	125	0	216	28	0	244	390
5:15 PM	12	0	13	0	25	0	0	0	0	0	11	100	0	0	111	0	195	15	0	210	346
5:30 PM	7	0	19	0	26	0	0	0	0	0	8	116	0	0	124	0	151	15	0	166	316
5:45 PM	13	0	22	0	35	0	0	0	0	0	6	88	0	0	94	0	123	31	0	154	283
Total	38	0	69	0	107	0	0	0	0	0	37	417	0	0	454	0	685	89	0	774	1335
Grand Total	80	0	115	0	195	0	0	0	0	0	80	846	0	0	926	0	1547	171	0	1718	2839
Apprch %	41.0	0.0	59.0	0.0							8.6	91.4	0.0	0.0		0.0	90.0	10.0	0.0		
Total %	2.8	0.0	4.1	0.0	6.9	0.0	0.0	0.0	0.0	0.0	2.8	29.8	0.0	0.0	32.6	0.0	54.5	6.0	0.0	60.5	

	Church Rd Eastbound					Westbound					Fishburn Rd Northbound					Fishburn Rd Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From	4:15 PM			to	5:15 PM																
Volume	39	0	56	0	95	0	0	0	0	0	45	427	0	0	472	0	862	89	0	951	1518
Percent	41.1	0.0	58.9	0.0							9.5	90.5	0.0	0.0		0.0	90.6	9.4	0.0		
4:45 PM Volume	13	0	21	0	34	0	0	0	0	0	13	112	0	0	125	0	223	23	0	246	405
Peak Factor																					
High Int.	5:45 PM					4:00 PM					4:30 PM					4:45 PM					
Volume	13	0	22	0	35	0	0	0	0	0	8	118	0	0	126	0	223	23	0	246	
PHF	0.75		0.67		0.70						0.87	0.90			0.94		0.97	0.79		0.97	0.94
Heavy Vehicles %	0%	0%	0%			0%	0%	0%			0%	3%	0%			0%	2%	1%			
Misc.	U-Turn 0		RTOR 0	Bikes 0		U-Turn 0		RTOR 0	Bikes 0		U-Turn 0		RTOR 0	Bikes 0		U-Turn 0		RTOR 0	Bikes 0		

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Greater Hershey Area Study
PM PEAK HOUR

Heavy Vehicles & Bicycles

	Church Rd Eastbound					Westbound					Fishburn Rd Northbound					Fishburn Rd Southbound					
Start Time	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Int. Total
4:00 PM	1	0	0	0	1	0	0	0	0	0	0	3	0	0	3	0	4	0	0	4	8
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	4	0	0	4	6
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	6	0	0	6	0	4	1	0	5	11
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0	0	9	9
Total	1	0	0	0	1	0	0	0	0	0	0	11	0	0	11	0	21	1	0	22	34
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	3
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	2
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	2	0	0	2	3
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
Total	0	0	0	0	0	0	0	0	0	0	0	5	0	0	5	0	3	1	0	4	9
Grand Total	1	0	0	0	1	0	0	0	0	0	0	16	0	0	16	0	24	2	0	26	43
Apprch %	100.0	0.0	0.0	0.0							0.0	100.0	0.0	0.0		0.0	92.3	7.7	0.0		
Total %	2.3	0.0	0.0	0.0	2.3	0.0	0.0	0.0	0.0	0.0	0.0	37.2	0.0	0.0	37.2	0.0	55.8	4.7	0.0	60.5	
Overall Peak Hour Volume	0	0	0	0	0	0	0	0	0	0	0	11	0	0	11	0	17	1	0	18	29

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Greater Hershey Area Study
PM PEAK HOUR

All Vehicles

	Main St Eastbound					Main St Westbound					Hanover St Northbound					Hanover St Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
4:00 PM	2	51	21	1	75	35	49	21	3	108	13	48	25	1	87	21	24	8	1	54	324
4:15 PM	4	79	10	0	93	26	78	26	2	132	13	44	32	7	96	21	33	7	0	61	382
4:30 PM	4	62	16	0	82	34	68	34	2	138	12	42	23	3	80	20	38	8	4	70	370
4:45 PM	10	78	19	0	107	32	67	40	1	140	17	45	26	0	88	28	58	6	0	92	427
Total	20	270	66	1	357	127	262	121	8	518	55	179	106	11	351	90	153	29	5	277	1503
5:00 PM	8	80	16	1	105	38	72	33	1	144	14	55	29	0	98	28	59	5	0	92	439
5:15 PM	6	75	12	0	93	46	67	32	1	146	16	32	30	0	78	23	51	9	0	83	400
5:30 PM	5	92	11	0	108	47	70	23	1	141	14	52	24	0	90	33	35	13	0	81	420
5:45 PM	7	65	13	3	88	39	46	32	0	117	12	41	20	0	73	34	36	7	2	79	357
Total	26	312	52	4	394	170	255	120	3	548	56	180	103	0	339	118	181	34	2	335	1616
Grand Total	46	582	118	5	751	297	517	241	11	1066	111	359	209	11	690	208	334	63	7	612	3119
Apprch %	6.1	77.5	15.7	0.7		27.9	48.5	22.6	1.0		16.1	52.0	30.3	1.6		34.0	54.6	10.3	1.1		
Total %	1.5	18.7	3.8	0.2	24.1	9.5	16.6	7.7	0.4	34.2	3.6	11.5	6.7	0.4	22.1	6.7	10.7	2.0	0.2	19.6	

	Main St Eastbound					Main St Westbound					Hanover St Northbound					Hanover St Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From	4:45 PM			to	5:45 PM																
Volume	29	325	58	1	413	163	276	128	4	571	61	184	109	0	354	112	203	33	0	348	1686
Percent	7.0	78.7	14.0	0.2		28.5	48.3	22.4	0.7		17.2	52.0	30.8	0.0		32.2	58.3	9.5	0.0		
5:00 PM Volume	8	80	16	1	105	38	72	33	1	144	14	55	29	0	98	28	59	5	0	92	439
Peak Factor																					
High Int.	5:30 PM					5:15 PM					5:00 PM					4:45 PM					
Volume	5	92	11	0	108	46	67	32	1	146	14	55	29	0	98	28	58	6	0	92	
PHF	0.73	0.88	0.76	0.25	0.96	0.87	0.96	0.80	1.00	0.98	0.90	0.84	0.91		0.90	0.85	0.86	0.63		0.95	0.96
Heavy Vehicles %	7%	0%	0%			1%	0%	0%			3%	2%	2%			3%	0%	0%			
Misc.	U-Turn 0		RTOR 0	Bikes 1		U-Turn 0		RTOR 1	Bikes 0		U-Turn 0		RTOR 2	Bikes 0		U-Turn 0		RTOR 2	Bikes 0		

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PM PEAK HOUR

Heavy Vehicles & Bicycles

	Main St Eastbound					Main St Westbound					Hanover St Northbound					Hanover St Southbound					
Start Time	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Int. Total
4:00 PM	0	1	2	0	3	0	1	0	0	1	1	3	0	0	4	0	0	2	0	2	10
4:15 PM	0	3	0	0	3	0	2	1	0	3	0	0	1	0	1	0	3	0	0	3	10
4:30 PM	0	0	0	0	0	1	0	0	0	1	1	1	0	0	2	0	1	0	0	1	4
4:45 PM	1	0	0	0	1	0	0	0	0	0	1	1	0	0	2	1	0	0	0	1	4
Total	1	4	2	0	7	1	3	1	0	5	3	5	1	0	9	1	4	2	0	7	28
5:00 PM	0	0	0	0	0	1	0	0	0	1	1	1	0	0	2	0	1	0	0	1	4
5:15 PM	0	0	0	0	0	0	1	0	0	1	0	0	1	0	1	1	0	0	0	1	3
5:30 PM	1	1	0	0	2	0	0	0	0	0	0	1	1	0	2	1	0	0	0	1	5
5:45 PM	0	0	0	0	0	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0	2
Total	1	1	0	0	2	2	1	0	0	3	2	2	2	0	6	2	1	0	0	3	14
Grand Total	2	5	2	0	9	3	4	1	0	8	5	7	3	0	15	3	5	2	0	10	42
Apprch %	22.2	55.6	22.2	0.0		37.5	50.0	12.5	0.0		33.3	46.7	20.0	0.0		30.0	50.0	20.0	0.0		
Total %	4.8	11.9	4.8	0.0	21.4	7.1	9.5	2.4	0.0	19.0	11.9	16.7	7.1	0.0	35.7	7.1	11.9	4.8	0.0	23.8	
Overall Peak Hour Volume	2	1	0	0	3	1	1	0	0	2	2	3	2	0	7	3	1	0	0	4	16

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PM PEAK HOUR

U-Turn & RTOR

	Main St Eastbound					Main St Westbound					Hanover St Northbound					Hanover St Southbound					
Start Time	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	Int. Total
4:00 PM	0		0		0	0		0		0	0		2		2	0		0		0	2
4:15 PM	0		1		1	0		0		0	0		4		4	0		0		0	5
4:30 PM	0		0		0	0		0		0	0		1		1	0		0		0	1
4:45 PM	0		0		0	0		0		0	0		1		1	0		0		0	1
Total	0		1		1	0		0		0	0		8		8	0		0		0	9
5:00 PM	0		0		0	0		0		0	0		0		0	0		0		0	0
5:15 PM	0		0		0	0		0		0	0		1		1	0		2		2	3
5:30 PM	0		0		0	0		1		1	0		0		0	0		0		0	1
5:45 PM	0		0		0	0		0		0	0		0		0	0		1		1	1
Total	0		0		0	0		1		1	0		1		1	0		3		3	5
Grand Total	0		1		1	0		0		0	0		9		9	0		3		3	13
Apprch %	0.0	0.0	100.0	0.0							0.0	0.0	100.0	0.0		0.0	0.0	100.0	0.0		
Total %	0.0		7.7		7.7	0.0		0.0		0.0	0.0		69.2		69.2	0.0		23.1		23.1	
Overall Peak Hour Volume	0		0		0	0		1		1	0		2		2	0		2		2	5

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Greater Hershey Area Study
PM PEAK HOUR

All Vehicles

	Main St Eastbound					Main St Westbound					Quarry Rd Northbound					Quarry Rd Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
4:00 PM	1	76	16	0	93	14	101	3	0	118	11	0	21	0	32	0	0	0	0	0	243
4:15 PM	1	101	23	0	125	18	114	0	0	132	6	0	23	0	29	0	0	0	0	0	286
4:30 PM	0	115	21	0	136	14	111	2	0	127	9	1	20	0	30	0	0	0	0	0	293
4:45 PM	0	109	16	0	125	6	122	1	0	129	6	1	28	0	35	0	0	0	0	0	289
Total	2	401	76	0	479	52	448	6	0	506	32	2	92	0	126	0	0	0	0	0	1111
5:00 PM	0	82	16	2	100	18	112	1	0	131	11	1	9	0	21	0	0	0	0	0	252
5:15 PM	0	100	19	0	119	28	115	1	0	144	6	1	25	0	32	0	0	0	0	0	295
5:30 PM	0	89	22	0	111	33	141	0	0	174	5	2	28	0	35	0	0	0	0	0	320
5:45 PM	1	113	28	0	142	26	123	1	0	150	20	2	16	0	38	0	0	0	0	0	330
Total	1	384	85	2	472	105	491	3	0	599	42	6	78	0	126	0	0	0	0	0	1197
Grand Total	3	785	161	2	951	157	939	9	0	1105	74	8	170	0	252	0	0	0	0	0	2308
Apprch %	0.3	82.5	16.9	0.2		14.2	85.0	0.8	0.0		29.4	3.2	67.5	0.0							
Total %	0.1	34.0	7.0	0.1	41.2	6.8	40.7	0.4	0.0	47.9	3.2	0.3	7.4	0.0	10.9	0.0	0.0	0.0	0.0	0.0	

	Main St Eastbound					Main St Westbound					Quarry Rd Northbound					Quarry Rd Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From	5:00 PM		to		6:00 PM																
Volume	1	384	85	2	472	105	491	3	0	599	42	6	78	0	126	0	0	0	0	0	1197
Percent	0.2	81.4	18.0	0.4		17.5	82.0	0.5	0.0		33.3	4.8	61.9	0.0							
5:45 PM Volume	1	113	28	0	142	26	123	1	0	150	20	2	16	0	38	0	0	0	0	0	330
Peak Factor																					
High Int.	5:45 PM					5:30 PM					5:45 PM					4:00 PM					
Volume	1	113	28	0	142	33	141	0	0	174	20	2	16	0	38	0	0	0	0	0	
PHF	0.25	0.85	0.76	0.25	0.83	0.80	0.87	0.75		0.86	0.53	0.75	0.70		0.83						0.91
Heavy Vehicles %	0%	1%	1%			2%	1%	0%			0%	0%	1%			0%	0%	0%			
Misc.	U-Turn 0		RTOR 0	Bikes 0		U-Turn 0		RTOR 0	Bikes 0		U-Turn 0		RTOR 0	Bikes 0		U-Turn 0		RTOR 0	Bikes 0		

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PM PEAK HOUR

Heavy Vehicles & Bicycles

	Main St Eastbound					Main St Westbound					Quarry Rd Northbound					Quarry Rd Southbound					
Start Time	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Int. Total
4:00 PM	0	0	1	0	1	0	1	0	0	1	0	0	1	0	1	0	0	0	0	0	3
4:15 PM	0	3	2	0	5	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	6
4:30 PM	0	2	1	0	3	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	5
4:45 PM	0	3	2	0	5	0	3	0	0	3	1	0	0	0	1	0	0	0	0	0	9
Total	0	8	6	0	14	0	7	0	0	7	1	0	1	0	2	0	0	0	0	0	23
5:00 PM	0	1	0	0	1	2	1	0	0	3	0	0	0	0	0	0	0	0	0	0	4
5:15 PM	0	2	1	0	3	0	3	0	0	3	0	0	1	0	1	0	0	0	0	0	7
5:30 PM	0	1	0	0	1	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	3
5:45 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	5	1	0	6	2	6	0	0	8	0	0	1	0	1	0	0	0	0	0	15
Grand Total	0	13	7	0	20	2	13	0	0	15	1	0	2	0	3	0	0	0	0	0	38
Apprch %	0.0	65.0	35.0	0.0		13.3	86.7	0.0	0.0		33.3	0.0	66.7	0.0							
Total %	0.0	34.2	18.4	0.0	52.6	5.3	34.2	0.0	0.0	39.5	2.6	0.0	5.3	0.0	7.9	0.0	0.0	0.0	0.0	0.0	
Overall Peak Hour Volume	0	5	1	0	6	2	6	0	0	8	0	0	1	0	1	0	0	0	0	0	15

Herbert, Rowland & Grubic, Inc.
369 East Park Drive
Harrisburg, PA 17111
(717) 564-1121

Intersection #: 35
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Greater Hershey Area Study
PM PEAK HOUR

All Vehicles

	Old West Chocolate Avenue Eastbound					Old West Chocolate Avenue Westbound					Northbound					Hockersville Road Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
4:00 PM	4	28	0	0	32	0	18	44	0	62	0	0	0	0	0	29	0	5	0	34	128
4:15 PM	4	14	0	0	18	0	15	39	0	54	0	0	0	0	0	31	0	4	0	35	107
4:30 PM	4	17	0	0	21	0	17	47	0	64	0	0	0	0	0	36	0	5	0	41	126
4:45 PM	2	19	0	0	21	0	11	41	0	52	0	0	0	0	0	41	0	1	0	42	115
Total	14	78	0	0	92	0	61	171	0	232	0	0	0	0	0	137	0	15	0	152	476
5:00 PM	7	20	0	0	27	0	18	35	0	53	0	0	0	0	0	29	0	2	0	31	111
5:15 PM	1	25	0	1	27	0	21	23	0	44	0	0	0	0	0	30	0	1	0	31	102
5:30 PM	3	21	0	0	24	0	15	26	0	41	0	0	0	0	0	19	0	3	0	22	87
5:45 PM	7	13	0	0	20	0	32	36	0	68	0	0	0	0	0	35	0	2	0	37	125
Total	18	79	0	1	98	0	86	120	0	206	0	0	0	0	0	113	0	8	0	121	425
Grand Total	32	157	0	1	190	0	147	291	0	438	0	0	0	0	0	250	0	23	0	273	901
Apprch %	16.8	82.6	0.0	0.5		0.0	33.6	66.4	0.0							91.6	0.0	8.4	0.0		
Total %	3.6	17.4	0.0	0.1	21.1	0.0	16.3	32.3	0.0	48.6	0.0	0.0	0.0	0.0	0.0	27.7	0.0	2.6	0.0	30.3	

	Old West Chocolate Avenue Eastbound					Old West Chocolate Avenue Westbound					Northbound					Hockersville Road Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From	4:00 PM			to	5:00 PM																
Volume	14	78	0	0	92	0	61	171	0	232	0	0	0	0	0	137	0	15	0	152	476
Percent	15.2	84.8	0.0	0.0		0.0	26.3	73.7	0.0							90.1	0.0	9.9	0.0		
4:00 PM Volume	4	28	0	0	32	0	18	44	0	62	0	0	0	0	0	29	0	5	0	34	128
Peak Factor																					
High Int.	4:00 PM					5:45 PM					4:00 PM					4:45 PM					
Volume	4	28	0	0	32	0	32	36	0	68	0	0	0	0	0	41	0	1	0	42	
PHF	0.88	0.70			0.72		0.85	0.91		0.91						0.84		0.75		0.90	0.93
Heavy Vehicles %	7%	4%	0%			0%	2%	6%			0%	0%	0%			0%	0%	0%			
Misc.	U-Turn 0		RTOR 0	Bikes 0		U-Turn 0		RTOR 0	Bikes 0		U-Turn 0		RTOR 0	Bikes 0		U-Turn 0		RTOR 0	Bikes 0		

Herbert, Rowland & Grubic, Inc.
369 East Park Drive
Harrisburg, PA 17111
(717) 564-1121

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Greater Hershey Area Study
PM PEAK HOUR

Heavy Vehicles & Bicycles

	Old West Chocolate Avenue Eastbound					Old West Chocolate Avenue Westbound					Northbound					Hockersville Road Southbound					
Start Time	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Left	Thru	Right	Bikes	App. Total	Int. Total
4:00 PM	0	1	0	0	1	0	0	5	0	5	0	0	0	0	0	0	0	0	0	0	6
4:15 PM	1	0	0	0	1	0	1	5	0	6	0	0	0	0	0	0	0	0	0	0	7
4:30 PM	0	1	0	0	1	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	2
4:45 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	1	3	0	0	4	0	1	11	0	12	0	0	0	0	0	0	0	0	0	0	16
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Grand Total	1	4	0	0	5	0	1	11	0	12	0	0	0	0	0	0	0	0	0	0	17
Apprch %	20.0	80.0	0.0	0.0		0.0	8.3	91.7	0.0												
Total %	5.9	23.5	0.0	0.0	29.4	0.0	5.9	64.7	0.0	70.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Overall Peak Hour Volume	1	3	0	0	4	0	1	11	0	12	0	0	0	0	0	0	0	0	0	0	16

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Greater Hershey Area Study
PM PEAK HOUR

U-Turn & RTOR

	Old West Chocolate Avenue Eastbound					Old West Chocolate Avenue Westbound					Northbound					Hockersville Road Southbound					
Start Time	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	U-Turn		RTOR		App. Total	Int. Total
4:00 PM	0		0		0	0		0		0	0		0		0	0		0		0	0
4:15 PM	0		0		0	0		0		0	0		0		0	0		0		0	0
4:30 PM	0		0		0	0		0		0	0		0		0	0		0		0	0
4:45 PM	0		0		0	0		0		0	0		0		0	0		0		0	0
Total	0		0		0	0		0		0	0		0		0	0		0		0	0
5:00 PM	0		0		0	0		0		0	0		0		0	0		0		0	0
5:15 PM	0		0		0	0		0		0	0		0		0	0		0		0	0
5:30 PM	0		0		0	0		0		0	0		0		0	0		0		0	0
5:45 PM	1		0		1	0		0		0	0		0		0	0		0		0	1
Total	1		0		1	0		0		0	0		0		0	0		0		0	1
Grand Total	1		0		1	0		0		0	0		0		0	0		0		0	1
Apprch %	100.0	0.0	0.0	0.0																	
Total %	100.0		0.0		100.0	0.0		0.0		0.0	0.0		0.0		0.0	0.0		0.0		0.0	
Overall Peak Hour Volume	0		0		0	0		0		0	0		0		0	0		0		0	0

APPENDIX B
LAND USE ASSUMPTIONS

Greater Hershey Regional Transportation Evaluation

Anticipated Future Development

9/11/2019

Herbert, Rowland & Grubic, Inc.
Engineering & Related Services

Pending Developments

Map ID	Development Name	Type	Review Status
E-2	Woodland Hills	Residential - 5 Single Family Dwellings	Approved - 4 dwellings remain
E-20	Oak Springs - Phase III	Residential - 6-unit Townhouse	Unrecorded - Conditional Approval extended through January 2020
E-8	The Point	Residential - 22 Single Family Detached and 55 Townhouse Dwellings	Approved - 11 SFD's and 38 Townhouse Units Remain
E-9	Muscalus Property	Residential - 32 Multi-family Apartments	Approved - 16 units (2 buildings) remain.
E-4	Hershey Developers	Residential - 3-lot Subdivision	Pending - 2 new single-family dwellings, 1 existing
E-5	Rosemont	Residential - 90 Multi-family Apartments	Approved - 2 multi-family buildings remain (40 units total); fit-out of remaining units on-going
E-19	East Caracas Apartment Complex	Residential - 24 Multi-family Apartments	Approved - 12 units remain.
E-6	Fox Glen Subdivision	Residential - 5-lot Subdivision	Unrecorded - Conditional approval for 4 new single-family dwellings, 1 exsiting to
E-12	Hersheypark - 2020 Attraction	Commercial Recreation	Pending - Alterations to park entry, including 118,000 sq. ft. in building additions and improvements
E-7	Stoverdale Commons	Commercial - Retail/Bank	Approved - 3 retail/office spaces (4,800 sq. ft.) & 2,880 sq. ft. Bank pad site remain
E-14	Chafia Capital Partners	Commercial - Retail/Office	Approved - 20,250 sq. ft. of retail or office space remain
E-10	Hershey Towne Square	Commercial - Retail/Restaurant	Approved - Building shell approved for all 3 buildings; 32,950 sq. ft. of commercial space with tenant approvals pending
E-11	Chocolate World Expansion	Commercial - Retail/Office	Unrecorded - Conditional approval for 13,600 sq. ft. office/retail expansion
E-13	Tanger Outlets - Starbucks	Commercial - Restaurant	Pending - 2,196 sq. ft. restaurant
E-15	Miller Oral Surgery	Commercial - Healthcare Office	Pending - 3,281 sq. ft. healthcare practitioner’s office
E-17	Red Roof Inn	Commercial - Hotel	Pending - Construction of a 3-story, 60-room hotel building
E-1	The Crossings (Sheetz & Hershey Pharmacy)	Commercial - Retail/Office	Pending - 41,482 sq. ft of retail and 7,282 sq. ft. of office.
E-18	East Point Building C	Industrial - Manufacturing	Unrecorded - Conditional approval for 366,850 sq. ft. manufacturing (105 employees)
E-3	Hershey Medical Children's Hospital Expansion	Institutional - Hospital	Pending - Additional 3-floors onto existing building, 116,000 sq. ft.

Residential Developments

Map ID	Type/Size	Municipality	Projected to be Built By
R-9	76 Apartments	Derry Township	2028
R-4	27 Single Family Dwelling Units	Derry Township	2038
R-3	16 Single Family Dwelling Units	Derry Township	2038
R-5	48 Single Family Dwelling Units	Derry Township	2038
R-2	48 Single Family Dwelling Units	Derry Township	2038
R-1	58 Single Family Dwelling Units	Derry Township	2038
R-10	54 Senior Housing Units	Derry Township	2028
R-15	30 Senior Housing Units	Derry Township	2028
R-16	12 Townhomes/Apartments	Derry Township	2028
R-12	200 Single Family Dwelling Units; 100 Townhomes/Apartments; 200 Senior Housing Units	Derry Township	2038
R-14	26 Single Family Dwelling Units	Derry Township	2038
MU-3	36 Single Family Dwelling Units; 124 Townhomes/Apartments	Derry Township	37.8% in 2028 and 62.2% in 2038
MU-2	123 Single Family Dwelling Units; 614 Townhomes/Apartments; 88 Senior Housing Units; 100 Assisted Living Units	Derry Township	61.8% in 2028 and 38.2% in 2038
R-17	45 Apartments	Hummelstown Borough	2028
R-18	75 Single Family Homes	Hummelstown Borough	2028

Non-Residential Developments

Map ID	Type/Size	Municipality	Projected to be Built By	
E-12	Hersheypark Expansion	Derry Township	2028	
E-15	75,000 SF Retail	Derry Township	2028	
MU-1	20,000 SF Retail 5,400 SF Restaurant	Derry Township	2028	
MU-5	75,000 SF Office Complex Renovations to provide increase from 1,100 to 1,500 employees	Derry Township	2028	
C-9	76-Room Hotel	Derry Township	2038	
C-10	120,000 SF Retail	Derry Township	50% in 2028 and 50% in 2038	
C-5	10,000 SF Office Building; 90-Room Hotel; Two 5,000 SF Restaurants	Derry Township	2028	
C-4	75,000 SF Retail; 90-Room Hotel	Derry Township	2038	
C-6	75,000 SF Retail; 140-Room Hotel; Four 5,000 SF Restaurants	Derry Township	2028	
C-3	400,000 SF Hospital Expansion; 90,000 SF University Expansion; 350,000 SF Research / Development Center; 140-Room Hotel	Derry Township	50% in 2028 and 50% in 2038	
MU-3	157,500 SF Office Complex	Derry Township	37.8% in 2028 and 62.2% in 2038	
MU-2	9,025 SF Quality Restaurant; 166,355 SF Retail; 48,410 SF Office Building; 150,000 SF Hospital; Two 12,500 SF Restaurants; 140-Room Hotel	Derry Township	61.8% in 2028 and 38.2% in 2038	
C-1	Two 6,150 SF Restaurants	Derry Township	2028	
C-2	300,000 SF Retail	Derry Township	50% in 2028 and 50% in 2038	
C-7	1,500,000 SF High-Cube Warehousing	Londonderry Township	2028	
C-8	550,000 SF Retail	Londonderry Township	2038	
C-11	850,000 SF High-Cube Warehousing	Londonderry Township	2028	
MU-6	34,000 SF Retail 85,000 SF Office 267 Single-Family Homes 304 Apartments 99 Townhomes 300 Condominiums 103 Senior Housing 400-Unit Continuing Care Retirement Community	Londonderry Township	30% in 2028 and 70% in 2038	
C-12	60-Unit Motel	Hummelstown Borough	2028	
C-13	70-Seat Restaurant / Microbrew	Hummelstown Borough	2028	
C-14	80-Seat Restaurant	Hummelstown Borough	2028	
C-15	Expanded parking for additional 400 parking spaces	Derry Township	2028	Assume 350 office employee
C-16	Redevelopment of shopping center; Addition of right-in access from Rt 322	Derry Township	2028	Assume 10% increase in shopping center volumes

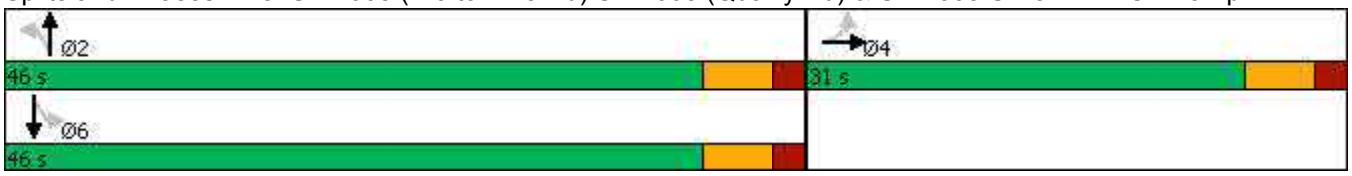
APPENDIX C
2018 AM EXISTING CAPACITY ANALYSIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	346	25	0	0	0	107	121	186	112	84	294
Future Volume (vph)	36	346	25	0	0	0	107	121	186	112	84	294
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	12	12	12	10	10	10	14	14	14
Grade (%)		3%			1%			-2%			2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.992						0.939			0.919	
Flt Protected		0.996						0.987			0.989	
Satd. Flow (prot)	0	1589	0	0	0	0	0	1529	0	0	1598	0
Flt Permitted		0.996						0.766			0.813	
Satd. Flow (perm)	0	1589	0	0	0	0	0	1187	0	0	1313	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5						82			152	
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		1362			918			1016			346	
Travel Time (s)		26.5			17.9			19.8			6.7	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	7%	10%	0%	0%	0%	4%	0%	4%	3%	5%	11%
Adj. Flow (vph)	40	380	27	0	0	0	118	133	204	123	92	323
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	447	0	0	0	0	0	455	0	0	538	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.14	1.08	1.08	1.08	1.16	1.16	1.16	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1					1	2		1	2	
Detector Template	Left	Thru					Left			Left	Main20	
Leading Detector (ft)	48	48					48	210		48	200	
Trailing Detector (ft)	-2	-2					-2	0		-2	0	
Detector 1 Position(ft)	-2	-2					-2	0		-2	0	
Detector 1 Size(ft)	50	50					50	0		50	0	
Detector 1 Type	Cl+Ex	Cl+Ex					Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0					0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0					0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0					0.0	0.0		0.0	0.0	
Detector 2 Position(ft)								204			194	
Detector 2 Size(ft)								6			6	
Detector 2 Type								Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)								0.0			0.0	
Turn Type	Perm	NA					Perm	NA		Perm	NA	
Protected Phases		4						2			6	
Permitted Phases	4						2			6		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4					2	2		6	6	
Switch Phase												
Minimum Initial (s)	3.0	3.0					10.0	10.0		10.0	10.0	
Minimum Split (s)	24.0	24.0					23.0	23.0		23.0	23.0	
Total Split (s)	31.0	31.0					46.0	46.0		46.0	46.0	
Total Split (%)	40.3%	40.3%					59.7%	59.7%		59.7%	59.7%	
Maximum Green (s)	25.0	25.0					40.0	40.0		40.0	40.0	
Yellow Time (s)	4.0	4.0					4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0					2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-1.5						-1.5			-1.5	
Total Lost Time (s)		4.5						4.5			4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0					6.0	6.0		6.0	6.0	
Minimum Gap (s)	3.0	3.0					3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0					23.0	23.0		23.0	23.0	
Time To Reduce (s)	0.0	0.0					12.0	12.0		12.0	12.0	
Recall Mode	None	None					Min	Min		Min	Min	
Act Effct Green (s)		22.9						31.5			31.5	
Actuated g/C Ratio		0.36						0.49			0.49	
v/c Ratio		0.78						0.73			0.74	
Control Delay		31.7						18.3			16.5	
Queue Delay		0.0						0.0			0.0	
Total Delay		31.7						18.3			16.5	
LOS		C						B			B	
Approach Delay		31.7						18.3			16.5	
Approach LOS		C						B			B	

Intersection Summary	
Area Type: Other	
Cycle Length: 77	
Actuated Cycle Length: 63.9	
Natural Cycle: 55	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.78	
Intersection Signal Delay: 21.8	Intersection LOS: C
Intersection Capacity Utilization 69.2%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 5: SR 2005 (Waltonville Rd)/SR 2005 (Quarry Rd) & SR 2003/SR 322 EB On Ramp



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	346	25	0	0	0	107	121	186	112	84	294
Future Volume (veh/h)	36	346	25	0	0	0	107	121	186	112	84	294
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1750	1652	1750				1875	1875	1875	1776	1776	1776
Adj Flow Rate, veh/h	40	380	27				118	133	204	123	92	323
Peak Hour Factor	0.91	0.91	0.91				0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	7	0				0	0	0	5	5	5
Cap, veh/h	48	460	33				234	268	345	214	164	456
Arrive On Green	0.33	0.33	0.33				0.51	0.51	0.51	0.51	0.51	0.51
Sat Flow, veh/h	146	1383	98				304	522	672	270	320	886
Grp Volume(v), veh/h	447	0	0				455	0	0	538	0	0
Grp Sat Flow(s),veh/h/ln	1627	0	0				1498	0	0	1475	0	0
Q Serve(g_s), s	14.9	0.0	0.0				0.0	0.0	0.0	3.7	0.0	0.0
Cycle Q Clear(g_c), s	14.9	0.0	0.0				11.5	0.0	0.0	15.2	0.0	0.0
Prop In Lane	0.09		0.06				0.26		0.45	0.23		0.60
Lane Grp Cap(c), veh/h	541	0	0				848	0	0	834	0	0
V/C Ratio(X)	0.83	0.00	0.00				0.54	0.00	0.00	0.65	0.00	0.00
Avail Cap(c_a), veh/h	734	0	0				1126	0	0	1103	0	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00				1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	18.0	0.0	0.0				9.5	0.0	0.0	10.5	0.0	0.0
Incr Delay (d2), s/veh	5.7	0.0	0.0				1.9	0.0	0.0	3.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	0.0	0.0				3.4	0.0	0.0	4.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.8	0.0	0.0				11.5	0.0	0.0	13.5	0.0	0.0
LnGrp LOS	C	A	A				B	A	A	B	A	A
Approach Vol, veh/h		447						455			538	
Approach Delay, s/veh		23.8						11.5			13.5	
Approach LOS		C						B			B	

Timer - Assigned Phs	2	4	6
Phs Duration (G+Y+Rc), s	34.7	24.0	34.7
Change Period (Y+Rc), s	6.0	6.0	6.0
Max Green Setting (Gmax), s	40.0	25.0	40.0
Max Q Clear Time (g_c+I1), s	13.5	16.9	17.2
Green Ext Time (p_c), s	10.9	1.2	11.5

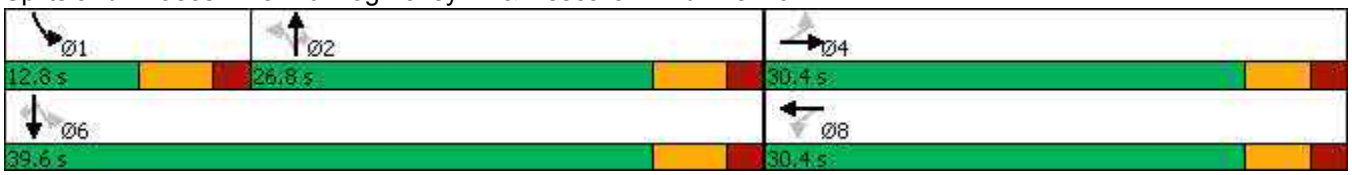
Intersection Summary	
HCM 6th Ctrl Delay	16.0
HCM 6th LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	22	21	57	2	132	51	266	490	248	106	108
Future Volume (vph)	35	22	21	57	2	132	51	266	490	248	106	108
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Grade (%)		6%			-7%			-2%			2%	
Storage Length (ft)	100		0	250		0	190		270	185		175
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.927			0.852				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1626	1586	0	1686	1480	0	1693	1765	1545	1676	1497	1485
Flt Permitted	0.662			0.725			0.681			0.451		
Satd. Flow (perm)	1133	1586	0	1286	1480	0	1214	1765	1545	796	1497	1485
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		24			148				551			121
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		395			391			967			1702	
Travel Time (s)		10.8			10.7			18.8			33.2	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	2%	4%	0%	5%	100%	6%	2%	3%	0%	1%	19%	2%
Adj. Flow (vph)	39	25	24	64	2	148	57	299	551	279	119	121
Shared Lane Traffic (%)												
Lane Group Flow (vph)	39	49	0	64	150	0	57	299	551	279	119	121
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.11	1.11	1.11	1.03	1.03	1.03	1.06	1.06	1.06	1.09	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	2	2	1	2	2
Detector Template	Left	Thru		Left	Thru		Left	Main25	Main25	Left	Main25	Main25
Leading Detector (ft)	48	48		48	48		48	250	250	48	250	250
Trailing Detector (ft)	-2	-2		-2	-2		-2	0	0	-2	0	0
Detector 1 Position(ft)	-2	-2		-2	-2		-2	0	0	-2	0	0
Detector 1 Size(ft)	50	50		50	50		50	0	0	50	0	0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)								244	244		244	244
Detector 2 Size(ft)								6	6		6	6
Detector 2 Type								Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)								0.0	0.0		0.0	0.0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	pm+pt	NA	Perm

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		2	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0		10.0	10.0	10.0	3.0	10.0	10.0
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0	20.0	8.8	20.0	20.0
Total Split (s)	30.4	30.4		30.4	30.4		26.8	26.8	26.8	12.8	39.6	39.6
Total Split (%)	43.4%	43.4%		43.4%	43.4%		38.3%	38.3%	38.3%	18.3%	56.6%	56.6%
Maximum Green (s)	25.0	25.0		25.0	25.0		21.0	21.0	21.0	7.0	33.8	33.8
Yellow Time (s)	3.4	3.4		3.4	3.4		3.8	3.8	3.8	3.8	3.8	3.8
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.5	-1.5		-1.5	-1.5		-1.5	-1.5	-1.5	-1.5	-1.5	-1.5
Total Lost Time (s)	3.9	3.9		3.9	3.9		4.3	4.3	4.3	4.3	4.3	4.3
Lead/Lag							Lag	Lag	Lag	Lead		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		6.0	6.0	6.0	3.0	6.0	6.0
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0		25.0	25.0	25.0	0.0	25.0	25.0
Time To Reduce (s)	0.0	0.0		0.0	0.0		13.0	13.0	13.0	0.0	13.0	13.0
Recall Mode	None	None		None	None		Min	Min	Min	None	Min	Min
Act Effct Green (s)	9.8	9.8		9.8	9.8		21.7	21.7	21.7	34.6	36.0	36.0
Actuated g/C Ratio	0.20	0.20		0.20	0.20		0.44	0.44	0.44	0.70	0.73	0.73
v/c Ratio	0.17	0.15		0.25	0.37		0.11	0.39	0.56	0.40	0.11	0.11
Control Delay	20.2	12.8		21.2	7.2		10.7	12.9	3.9	5.7	4.1	1.3
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.2	12.8		21.2	7.2		10.7	12.9	3.9	5.7	4.1	1.3
LOS	C	B		C	A		B	B	A	A	A	A
Approach Delay		16.1			11.4			7.3			4.3	
Approach LOS		B			B			A			A	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 49.6	
Natural Cycle: 55	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.56	
Intersection Signal Delay: 7.3	Intersection LOS: A
Intersection Capacity Utilization 60.4%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 8: Bullfrog Valley Dr & Research Blvd/Life Lion Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	22	21	57	2	132	51	266	490	248	106	108
Future Volume (veh/h)	35	22	21	57	2	132	51	266	490	248	106	108
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1571	1543	1543	1990	639	639	1846	1832	1875	1764	1511	1750
Adj Flow Rate, veh/h	39	25	24	64	2	148	57	299	551	279	119	121
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	4	4	5	100	100	2	3	0	1	19	2
Cap, veh/h	205	246	236	590	2	182	515	626	543	464	810	795
Arrive On Green	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.13	0.54	0.54
Sat Flow, veh/h	1097	723	695	1523	7	535	1188	1832	1589	1680	1511	1483
Grp Volume(v), veh/h	39	0	49	64	0	150	57	299	551	279	119	121
Grp Sat Flow(s),veh/h/ln	1097	0	1418	1523	0	542	1188	1832	1589	1680	1511	1483
Q Serve(g_s), s	2.2	0.0	1.6	2.0	0.0	16.6	2.2	8.5	22.5	6.5	2.6	2.7
Cycle Q Clear(g_c), s	18.8	0.0	1.6	3.5	0.0	16.6	2.2	8.5	22.5	6.5	2.6	2.7
Prop In Lane	1.00		0.49	1.00		0.99	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	205	0	481	590	0	184	515	626	543	464	810	795
V/C Ratio(X)	0.19	0.00	0.10	0.11	0.00	0.81	0.11	0.48	1.02	0.60	0.15	0.15
Avail Cap(c_a), veh/h	274	0	571	686	0	218	515	626	543	464	810	795
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.5	0.0	14.9	16.1	0.0	19.9	15.0	17.1	21.7	11.3	7.7	7.7
Incr Delay (d2), s/veh	0.4	0.0	0.1	0.1	0.0	18.0	0.3	2.1	42.5	2.2	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	0.5	0.7	0.0	2.9	0.6	3.5	13.8	2.3	0.8	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.9	0.0	15.0	16.2	0.0	37.9	15.3	19.1	64.1	13.5	8.0	8.0
LnGrp LOS	C	A	B	B	A	D	B	B	F	B	A	A
Approach Vol, veh/h		88			214			907			519	
Approach Delay, s/veh		21.1			31.4			46.2			10.9	
Approach LOS		C			C			D			B	

Timer - Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	12.8	26.8		26.2		39.6		26.2
Change Period (Y+Rc), s	* 5.8	* 5.8		5.4		* 5.8		5.4
Max Green Setting (Gmax), s	* 7	* 21		25.0		* 34		25.0
Max Q Clear Time (g_c+I1), s	8.5	24.5		20.8		4.7		18.6
Green Ext Time (p_c), s	0.0	0.0		0.1		5.7		0.5

Intersection Summary	
HCM 6th Ctrl Delay	32.5
HCM 6th LOS	C

Notes

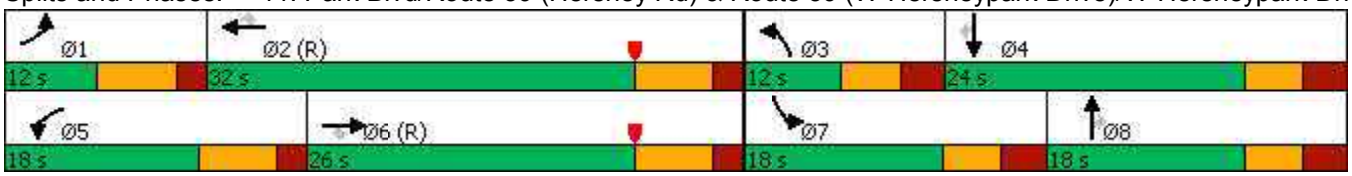
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	145	379	760	502	355	159	56	68	68	169	339	222
Future Volume (vph)	145	379	760	502	355	159	56	68	68	169	339	222
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Grade (%)		3%			-3%			1%			4%	
Storage Length (ft)	350		1000	575		400	0		350	400		450
Storage Lanes	2		1	2		1	2		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	1.00	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3172	3303	1477	3301	3370	1538	3301	1773	1522	1659	3352	1456
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3172	3303	1477	3301	3370	1538	3301	1773	1522	1659	3352	1456
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			362			217			221			227
Link Speed (mph)		45			45			35			35	
Link Distance (ft)		1096			1663			1072			729	
Travel Time (s)		16.6			25.2			20.9			14.2	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	3%	2%	2%	2%	3%	1%	0%	1%	0%	1%	0%	3%
Adj. Flow (vph)	148	387	776	512	362	162	57	69	69	172	346	227
Shared Lane Traffic (%)												
Lane Group Flow (vph)	148	387	776	512	362	162	57	69	69	172	346	227
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.05	1.05	1.05	1.08	1.08	1.08	1.10	1.10	1.10
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	1	1	1	1	1
Detector Template	Left	Main30	Right	Left	Main30	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	48	300	48	48	300	48	48	48	48	48	48	48
Trailing Detector (ft)	-2	0	-2	-2	0	-2	-2	-2	-2	-2	-2	-2
Detector 1 Position(ft)	-2	0	-2	-2	0	-2	-2	-2	-2	-2	-2	-2
Detector 1 Size(ft)	50	0	50	50	0	50	50	50	50	50	50	50
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		294			294							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases			6			2			8			4
Detector Phase	1	6	6	5	2	2	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	3.0	12.0	12.0	3.0	12.0	12.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Split (s)	9.7	18.5	18.5	9.7	18.5	18.5	10.0	10.0	10.0	9.2	10.0	10.0
Total Split (s)	12.0	26.0	26.0	18.0	32.0	32.0	12.0	18.0	18.0	18.0	24.0	24.0
Total Split (%)	15.0%	32.5%	32.5%	22.5%	40.0%	40.0%	15.0%	22.5%	22.5%	22.5%	30.0%	30.0%
Maximum Green (s)	5.5	19.5	19.5	11.5	25.5	25.5	5.8	11.8	11.8	11.8	17.8	17.8
Yellow Time (s)	4.7	4.7	4.7	4.7	4.7	4.7	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.8	1.8	1.8	1.8	1.8	1.8	2.7	2.7	2.7	2.7	2.7	2.7
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.7	4.7	4.7	4.7	4.7	4.7
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0	6.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.5	3.5	3.0	3.5	3.5	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	30.0	30.0	0.0	30.0	30.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	15.0	15.0	0.0	15.0	15.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	None
Act Effct Green (s)	7.0	27.0	27.0	13.0	33.0	33.0	7.3	10.1	10.1	12.8	18.1	18.1
Actuated g/C Ratio	0.09	0.34	0.34	0.16	0.41	0.41	0.09	0.13	0.13	0.16	0.23	0.23
v/c Ratio	0.53	0.35	1.05	0.96	0.26	0.21	0.19	0.31	0.18	0.65	0.46	0.45
Control Delay	42.5	22.8	66.1	61.1	28.7	12.3	35.3	34.5	1.0	43.8	28.7	7.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.5	22.8	66.1	61.1	28.7	12.3	35.3	34.5	1.0	43.8	28.7	7.0
LOS	D	C	E	E	C	B	D	C	A	D	C	A
Approach Delay		50.6			42.2			22.9			25.6	
Approach LOS		D			D			C			C	

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 67 (84%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.05	
Intersection Signal Delay: 40.6	Intersection LOS: D
Intersection Capacity Utilization 86.9%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 11: Park Blvd/Route 39 (Hershey Rd) & Route 39 (W Hersheypark Drive)/W Hersheypark Drive



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	145	379	760	502	355	159	56	68	68	169	339	222
Future Volume (veh/h)	145	379	760	502	355	159	56	68	68	169	339	222
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1708	1722	1722	1883	1869	1898	1794	1780	1794	1697	1711	1669
Adj Flow Rate, veh/h	148	387	0	512	362	0	57	69	0	172	346	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	2	2	2	3	1	0	1	0	1	0	3
Cap, veh/h	272	1208		565	1583		200	145		233	537	
Arrive On Green	0.09	0.37	0.00	0.16	0.45	0.00	0.06	0.08	0.00	0.14	0.17	0.00
Sat Flow, veh/h	3155	3271	1459	3480	3551	1608	3315	1780	1521	1616	3250	1414
Grp Volume(v), veh/h	148	387	0	512	362	0	57	69	0	172	346	0
Grp Sat Flow(s),veh/h/ln	1578	1636	1459	1740	1776	1608	1658	1780	1521	1616	1625	1414
Q Serve(g_s), s	3.6	6.8	0.0	11.6	5.0	0.0	1.3	3.0	0.0	8.2	8.0	0.0
Cycle Q Clear(g_c), s	3.6	6.8	0.0	11.6	5.0	0.0	1.3	3.0	0.0	8.2	8.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	272	1208		565	1583		200	145		233	537	
V/C Ratio(X)	0.54	0.32		0.91	0.23		0.28	0.47		0.74	0.64	
Avail Cap(c_a), veh/h	276	1208		565	1583		303	296		269	784	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	35.1	18.0	0.0	32.9	13.7	0.0	35.9	35.1	0.0	32.8	31.2	0.0
Incr Delay (d2), s/veh	2.1	0.7	0.0	18.2	0.3	0.0	0.8	2.4	0.0	8.9	1.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	2.4	0.0	5.9	1.8	0.0	0.5	1.3	0.0	3.6	3.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.2	18.7	0.0	51.1	14.0	0.0	36.7	37.5	0.0	41.7	32.5	0.0
LnGrp LOS	D	B		D	B		D	D		D	C	
Approach Vol, veh/h		535	A		874	A		126	A		518	A
Approach Delay, s/veh		23.9			35.7			37.1			35.5	
Approach LOS		C			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.9	40.7	9.5	17.9	18.0	34.5	16.2	11.2
Change Period (Y+Rc), s	* 6.5	* 6.5	* 6.2	* 6.2	* 6.5	* 6.5	* 6.2	* 6.2
Max Green Setting (Gmax), s	* 5.5	* 26	* 5.8	* 18	* 12	* 20	* 12	* 12
Max Q Clear Time (g_c+I1), s	5.6	7.0	3.3	10.0	13.6	8.8	10.2	5.0
Green Ext Time (p_c), s	0.0	7.2	0.0	0.9	0.0	5.1	0.1	0.1

Intersection Summary	
HCM 6th Ctrl Delay	32.7
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

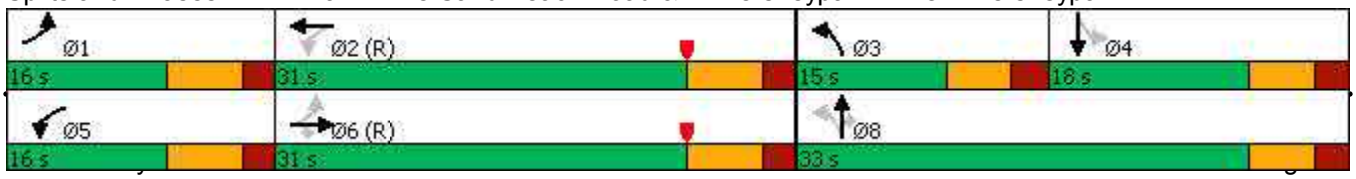
Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	43	262	175	196	727	20	174	73	72	15	105	24
Future Volume (vph)	43	262	175	196	727	20	174	73	72	15	105	24
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	11	11	11	12	12	12
Grade (%)		2%			-2%			3%			-3%	
Storage Length (ft)	75		0	190		0	125		185	0		0
Storage Lanes	1		1	1		0	1		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.98						0.99		1.00	
Frt			0.850		0.996				0.850		0.977	
Flt Protected	0.950			0.950			0.950				0.995	
Satd. Flow (prot)	1582	3194	1429	1629	3370	0	1581	1664	1349	0	1669	0
Flt Permitted	0.269			0.492			0.381				0.959	
Satd. Flow (perm)	448	3194	1399	844	3370	0	634	1664	1332	0	1608	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			214		4				136		11	
Link Speed (mph)		45			45			35			35	
Link Distance (ft)		789			2028			659			1125	
Travel Time (s)		12.0			30.7			12.8			21.9	
Confl. Peds. (#/hr)									1	1		
Confl. Bikes (#/hr)			1	1								
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	7%	6%	6%	6%	2%	5%	3%	3%	8%	7%	6%	8%
Adj. Flow (vph)	48	291	194	218	808	22	193	81	80	17	117	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	48	291	194	218	830	0	193	81	80	0	161	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.06	1.06	1.06	1.14	1.14	1.14	1.05	1.05	1.05
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	1	1	1	1	
Detector Template		Main30	Right		Main30					Left		
Leading Detector (ft)	35	300	48	35	300		30	30	30	48	35	
Trailing Detector (ft)	-5	0	-2	-5	0		-10	-10	-10	-2	-5	
Detector 1 Position(ft)	-5	0	-2	-5	0		-10	-10	-10	-2	-5	
Detector 1 Size(ft)	40	0	50	40	0		40	40	40	50	40	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		294			294							
Detector 2 Size(ft)		6			6							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	Perm	NA	
Protected Phases	1	6		5	2		3	8			4	
Permitted Phases	6		6	2			8		8	4		
Detector Phase	1	6	6	5	2		3	8	8	4	4	
Switch Phase												
Minimum Initial (s)	3.0	10.0	10.0	3.0	10.0		3.0	3.0	3.0	3.0	3.0	
Minimum Split (s)	9.5	16.5	16.5	9.5	16.5		9.1	10.0	10.0	10.0	10.0	
Total Split (s)	16.0	31.0	31.0	16.0	31.0		15.0	33.0	33.0	18.0	18.0	
Total Split (%)	20.0%	38.8%	38.8%	20.0%	38.8%		18.8%	41.3%	41.3%	22.5%	22.5%	
Maximum Green (s)	9.5	24.5	24.5	9.5	24.5		8.9	26.9	26.9	11.9	11.9	
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5		3.9	3.9	3.9	3.9	3.9	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.2	2.2	2.2	2.2	2.2	
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	-1.5		-1.5	-1.5	-1.5		-1.5	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		4.6	4.6	4.6		4.6	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes			Yes	Yes	
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0		3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	15.0	15.0	0.0	15.0		0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	30.0	30.0	0.0	30.0		0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	C-Max	C-Max	None	C-Max		None	None	None	None	None	
Act Effct Green (s)	36.0	27.6	27.6	41.5	34.9		27.2	27.2	27.2		12.3	
Actuated g/C Ratio	0.45	0.34	0.34	0.52	0.44		0.34	0.34	0.34		0.15	
v/c Ratio	0.15	0.26	0.31	0.40	0.56		0.57	0.14	0.15		0.63	
Control Delay	9.8	15.5	3.6	12.7	20.7		26.9	18.5	1.5		40.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	
Total Delay	9.8	15.5	3.6	12.7	20.7		26.9	18.5	1.5		40.9	
LOS	A	B	A	B	C		C	B	A		D	
Approach Delay		10.7			19.1			19.3			40.9	
Approach LOS		B			B			B			D	

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow, Master Intersection	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.63	
Intersection Signal Delay: 18.6	Intersection LOS: B
Intersection Capacity Utilization 59.6%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 12: Park Drive/Sand Beach Road & W Hersheypark Drive/E Hersheypark Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	43	262	175	196	727	20	174	73	72	15	105	24
Future Volume (veh/h)	43	262	175	196	727	20	174	73	72	15	105	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1679	1693	1693	1789	1846	1846	1708	1708	1637	1826	1826	1826
Adj Flow Rate, veh/h	48	291	194	218	808	22	193	81	80	17	117	27
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	7	6	6	6	2	2	3	3	8	6	6	6
Cap, veh/h	346	1211	529	583	1552	42	446	549	445	65	176	39
Arrive On Green	0.05	0.38	0.38	0.12	0.45	0.45	0.13	0.32	0.32	0.13	0.13	0.13
Sat Flow, veh/h	1599	3218	1405	1704	3486	95	1626	1708	1386	116	1317	289
Grp Volume(v), veh/h	48	291	194	218	407	423	193	81	80	161	0	0
Grp Sat Flow(s),veh/h/ln	1599	1609	1405	1704	1754	1827	1626	1708	1386	1722	0	0
Q Serve(g_s), s	1.4	5.0	8.0	5.5	13.4	13.4	7.6	2.7	3.3	3.3	0.0	0.0
Cycle Q Clear(g_c), s	1.4	5.0	8.0	5.5	13.4	13.4	7.6	2.7	3.3	7.1	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.05	1.00		1.00	0.11		0.17
Lane Grp Cap(c), veh/h	346	1211	529	583	781	813	446	549	445	280	0	0
V/C Ratio(X)	0.14	0.24	0.37	0.37	0.52	0.52	0.43	0.15	0.18	0.57	0.00	0.00
Avail Cap(c_a), veh/h	484	1211	529	613	781	813	446	606	492	337	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	13.9	17.1	18.0	10.7	16.0	16.0	22.6	19.3	19.6	33.0	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.5	2.0	0.4	2.5	2.4	0.7	0.1	0.2	1.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	1.7	2.6	1.8	5.2	5.4	2.8	1.0	1.0	3.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.1	17.6	20.0	11.1	18.5	18.4	23.2	19.5	19.7	34.9	0.0	0.0
LnGrp LOS	B	B	B	B	B	B	C	B	B	C	A	A
Approach Vol, veh/h		533			1048			354			161	
Approach Delay, s/veh		18.1			16.9			21.6			34.9	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	9.1	40.6	15.0	15.3	14.6	35.1		30.3
Change Period (Y+Rc), s	6.5	6.5	* 6.1	* 6.1	6.5	6.5		* 6.1
Max Green Setting (Gmax), s	9.5	24.5	* 8.9	* 12	9.5	24.5		* 27
Max Q Clear Time (g_c+I1), s	3.9	15.9	10.1	9.1	8.0	10.0		5.8
Green Ext Time (p_c), s	0.0	7.2	0.0	0.1	0.1	6.6		0.5

Intersection Summary	
HCM 6th Ctrl Delay	19.4
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

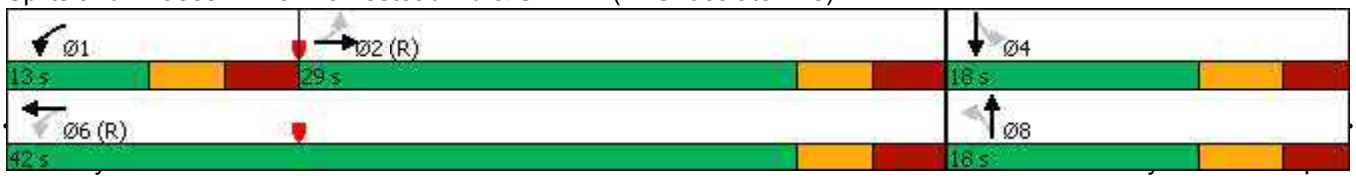
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	479	231	289	846	93	47	74	153	6	2	5
Future Volume (vph)	36	479	231	289	846	93	47	74	153	6	2	5
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	12	12	10	13	13	13	13	13	13	13	13
Grade (%)		-3%			3%			-1%			-2%	
Storage Length (ft)	200		0	575		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99		1.00								
Frt		0.951			0.985			0.925			0.952	
Flt Protected	0.950			0.950				0.991			0.976	
Satd. Flow (prot)	1620	3095	0	1526	1789	0	0	1650	0	0	1746	0
Flt Permitted	0.163			0.235				0.936			0.748	
Satd. Flow (perm)	278	3095	0	377	1789	0	0	1559	0	0	1338	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)		161			17			96				
Link Speed (mph)		25			35			25			25	
Link Distance (ft)		592			1437			1120			398	
Travel Time (s)		16.1			28.0			30.5			10.9	
Confl. Peds. (#/hr)			1	1								
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	3%	12%	3%	1%	0%	6%	0%	5%	0%	0%	0%
Adj. Flow (vph)	39	521	251	314	920	101	51	80	166	7	2	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	39	772	0	314	1021	0	0	297	0	0	14	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.15	1.05	1.05	1.19	1.05	1.05	1.02	1.02	1.02	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	1		1	1	
Detector Template							Left	Thru		Left	Thru	
Leading Detector (ft)	0	150		38	150		48	48		48	48	
Trailing Detector (ft)	0	0		-2	0		-2	-2		-2	-2	
Detector 1 Position(ft)	0	0		-2	0		-2	-2		-2	-2	
Detector 1 Size(ft)	0	0		40	0		50	50		50	50	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		144			144							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	15.0	15.0		3.0	15.0		3.0	3.0		3.0	3.0	
Minimum Split (s)	26.0	26.0		9.7	26.0		18.0	18.0		18.0	18.0	
Total Split (s)	29.0	29.0		13.0	42.0		18.0	18.0		18.0	18.0	
Total Split (%)	48.3%	48.3%		21.7%	70.0%		30.0%	30.0%		30.0%	30.0%	
Maximum Green (s)	22.3	22.3		6.3	35.3		11.2	11.2		11.2	11.2	
Yellow Time (s)	3.4	3.4		3.4	3.4		3.8	3.8		3.8	3.8	
All-Red Time (s)	3.3	3.3		3.3	3.3		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	-1.5	-1.5		-1.5	-1.5			-1.5			-1.5	
Total Lost Time (s)	5.2	5.2		5.2	5.2			5.3			5.3	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	6.0	6.0		3.0	6.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	4.0	4.0		3.0	4.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	25.0	25.0		0.0	25.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	13.0	13.0		0.0	13.0		0.0	0.0		0.0	0.0	
Recall Mode	C-Max	C-Max		None	C-Max		None	None		None	None	
Act Effct Green (s)	24.6	24.6		37.6	37.6			11.9			11.9	
Actuated g/C Ratio	0.41	0.41		0.63	0.63			0.20			0.20	
v/c Ratio	0.35	0.57		0.82	0.91			0.77			0.05	
Control Delay	23.2	12.8		26.8	24.6			30.5			19.5	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	23.2	12.8		26.8	24.6			30.5			19.5	
LOS	C	B		C	C			C			B	
Approach Delay		13.3			25.1			30.5			19.5	
Approach LOS		B			C			C			B	

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 13 (22%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.91
Intersection Signal Delay: 21.8 Intersection LOS: C
Intersection Capacity Utilization 96.0% ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 19: Homestead Rd & SR 422 (E. Chocolate Ave)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	479	231	289	846	93	47	74	153	6	2	5
Future Volume (veh/h)	36	479	231	289	846	93	47	74	153	6	2	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1912	1869	1869	1708	1805	1805	1911	1911	1911	1950	1950	1950
Adj Flow Rate, veh/h	39	521	251	314	920	101	51	80	166	7	2	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	3	3	3	1	1	0	0	0	0	0	0
Cap, veh/h	173	923	443	480	980	108	116	112	199	209	73	107
Arrive On Green	0.40	0.40	0.40	0.13	0.61	0.61	0.21	0.21	0.21	0.21	0.21	0.21
Sat Flow, veh/h	596	2326	1116	1626	1598	175	215	528	942	562	344	503
Grp Volume(v), veh/h	39	397	375	314	0	1021	297	0	0	14	0	0
Grp Sat Flow(s),veh/h/ln	596	1776	1666	1626	0	1773	1686	0	0	1409	0	0
Q Serve(g_s), s	3.8	10.4	10.5	6.3	0.0	31.5	6.9	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	22.3	10.4	10.5	6.3	0.0	31.5	10.1	0.0	0.0	0.4	0.0	0.0
Prop In Lane	1.00		0.67	1.00		0.10	0.17		0.56	0.50		0.36
Lane Grp Cap(c), veh/h	173	704	661	480	0	1088	427	0	0	388	0	0
V/C Ratio(X)	0.23	0.56	0.57	0.65	0.00	0.94	0.70	0.00	0.00	0.04	0.00	0.00
Avail Cap(c_a), veh/h	173	704	661	480	0	1088	427	0	0	388	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	26.7	14.1	14.1	9.6	0.0	10.6	22.6	0.0	0.0	18.8	0.0	0.0
Incr Delay (d2), s/veh	3.0	3.3	3.5	3.2	0.0	16.0	4.9	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	4.4	4.2	2.1	0.0	12.8	4.3	0.0	0.0	0.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.7	17.3	17.6	12.8	0.0	26.6	27.4	0.0	0.0	18.8	0.0	0.0
LnGrp LOS	C	B	B	B	A	C	C	A	A	B	A	A
Approach Vol, veh/h		811			1335			297			14	
Approach Delay, s/veh		18.0			23.4			27.4			18.8	
Approach LOS		B			C			C			B	

Timer - Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	13.0	29.0		18.0		42.0		18.0
Change Period (Y+Rc), s	* 6.7	* 6.7		* 6.8		* 6.7		* 6.8
Max Green Setting (Gmax), s	* 6.3	* 22		* 11		* 35		* 11
Max Q Clear Time (g_c+I1), s	8.3	12.5		2.4		33.5		12.1
Green Ext Time (p_c), s	0.0	6.9		0.0		1.7		0.0

Intersection Summary	
HCM 6th Ctrl Delay	22.1
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

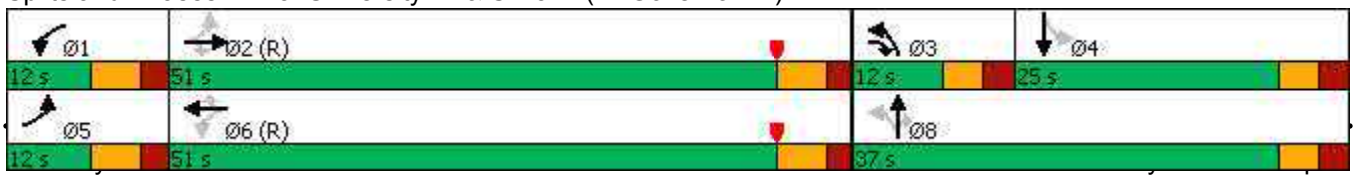
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	694	305	206	330	80	69	81	84	51	126	16
Future Volume (vph)	24	694	305	206	330	80	69	81	84	51	126	16
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	13	11	14	12	14	12	12	12
Grade (%)		1%			-1%			-1%			-3%	
Storage Length (ft)	150		0	175		125	0		165	0		0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00		0.98	1.00		0.98	1.00		0.97	0.98	1.00	
Frt			0.850			0.850			0.850		0.983	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1701	1756	1522	1719	1815	1429	1833	1791	1624	1702	1760	0
Flt Permitted	0.517			0.153			0.387			0.700		
Satd. Flow (perm)	925	1756	1489	277	1815	1399	745	1791	1572	1233	1760	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			332			147			92		6	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		1532			974			928			672	
Travel Time (s)		29.8			19.0			25.3			18.3	
Confl. Peds. (#/hr)	1		2	2		1	2		8	8		2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	2%	0%	0%	3%	4%	0%	1%	1%	2%	2%	0%
Adj. Flow (vph)	26	754	332	224	359	87	75	88	91	55	137	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	26	754	332	224	359	87	75	88	91	55	154	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			14			14	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.08	1.08	1.08	1.07	1.02	1.11	0.98	1.07	0.98	1.05	1.05	1.05
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	1	1	1	1	
Detector Template		Main25	Right		Main25							
Leading Detector (ft)	38	250	48	38	250	0	38	38	38	38	38	
Trailing Detector (ft)	-2	0	-2	-2	0	0	-2	-2	-2	-2	-2	
Detector 1 Position(ft)	-2	0	-2	-2	0	0	-2	-2	-2	-2	-2	
Detector 1 Size(ft)	40	0	50	40	0	0	40	40	40	40	40	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		244			244							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	
Protected Phases	5	2	3	1	6		3	8			4	
Permitted Phases	2		2	6		6	8		8	4		
Detector Phase	5	2	3	1	6	6	3	8	8	4	4	
Switch Phase												
Minimum Initial (s)	3.0	10.0	3.0	3.0	10.0	10.0	3.0	3.0	3.0	3.0	3.0	
Minimum Split (s)	10.0	25.0	9.5	10.4	15.7	15.7	9.5	25.0	25.0	10.0	10.0	
Total Split (s)	12.0	51.0	12.0	12.0	51.0	51.0	12.0	37.0	37.0	25.0	25.0	
Total Split (%)	12.0%	51.0%	12.0%	12.0%	51.0%	51.0%	12.0%	37.0%	37.0%	25.0%	25.0%	
Maximum Green (s)	6.3	45.3	6.6	6.3	45.3	45.3	6.6	31.6	31.6	19.6	19.6	
Yellow Time (s)	3.7	3.7	3.0	3.7	3.7	3.7	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.4	2.0	2.0	2.0	2.4	2.4	2.4	2.4	2.4	
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	
Total Lost Time (s)	4.2	4.2	3.9	4.2	4.2	4.2	3.9	3.9	3.9	3.9	3.9	
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes			Yes	Yes	
Vehicle Extension (s)	3.0	6.0	3.0	3.0	6.0	6.0	3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	25.0	0.0	0.0	25.0	25.0	0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	13.0	0.0	0.0	13.0	13.0	0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	C-Max	None	None	C-Max	C-Max	None	None	None	None	None	
Act Effct Green (s)	60.3	52.8	61.0	63.1	60.0	60.0	27.1	27.1	27.1	15.3	15.3	
Actuated g/C Ratio	0.60	0.53	0.61	0.63	0.60	0.60	0.27	0.27	0.27	0.15	0.15	
v/c Ratio	0.04	0.81	0.32	0.78	0.33	0.10	0.26	0.18	0.18	0.29	0.56	
Control Delay	7.8	29.6	1.8	30.1	15.2	3.9	28.6	27.6	6.2	40.2	45.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	7.8	29.6	1.8	30.1	15.2	3.9	28.6	27.6	6.2	40.2	45.1	
LOS	A	C	A	C	B	A	C	C	A	D	D	
Approach Delay		20.8			18.7			20.2			43.8	
Approach LOS		C			B			C			D	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 36.4 (36%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.81
Intersection Signal Delay: 22.2 Intersection LOS: C
Intersection Capacity Utilization 76.4% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 23: University Dr & SR 322 (W Governor Dr)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	24	694	305	206	330	80	69	81	84	51	126	16
Future Volume (veh/h)	24	694	305	206	330	80	69	81	84	51	126	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.99		0.98	0.97		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1794	1766	1794	1837	1866	1780	1911	1823	1896	1883	1883	1883
Adj Flow Rate, veh/h	26	754	332	224	359	87	75	88	91	55	137	17
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	0	0	3	4	0	1	1	2	2	2
Cap, veh/h	635	1019	971	350	1166	941	238	405	350	222	197	24
Arrive On Green	0.03	0.58	0.58	0.08	0.62	0.62	0.06	0.22	0.22	0.12	0.12	0.12
Sat Flow, veh/h	1709	1766	1518	1750	1866	1506	1820	1823	1578	1248	1636	203
Grp Volume(v), veh/h	26	754	332	224	359	87	75	88	91	55	0	154
Grp Sat Flow(s),veh/h/ln	1709	1766	1518	1750	1866	1506	1820	1823	1578	1248	0	1839
Q Serve(g_s), s	0.6	31.5	10.1	4.8	8.9	2.3	3.4	3.9	4.8	4.1	0.0	8.0
Cycle Q Clear(g_c), s	0.6	31.5	10.1	4.8	8.9	2.3	3.4	3.9	4.8	4.1	0.0	8.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.11
Lane Grp Cap(c), veh/h	635	1019	971	350	1166	941	238	405	350	222	0	221
V/C Ratio(X)	0.04	0.74	0.34	0.64	0.31	0.09	0.31	0.22	0.26	0.25	0.00	0.70
Avail Cap(c_a), veh/h	717	1019	971	350	1166	941	272	603	522	335	0	388
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.81	0.81	0.81	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	7.9	15.6	8.3	15.7	8.7	7.5	33.7	31.8	32.1	40.5	0.0	42.2
Incr Delay (d2), s/veh	0.0	4.8	1.0	3.2	0.6	0.2	0.7	0.3	0.4	0.6	0.0	3.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	12.7	3.4	2.7	3.4	0.7	1.6	1.8	1.9	1.3	0.0	3.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.9	20.4	9.3	18.8	9.3	7.6	34.4	32.1	32.5	41.1	0.0	46.2
LnGrp LOS	A	C	A	B	A	A	C	C	C	D	A	D
Approach Vol, veh/h		1112			670			254			209	
Approach Delay, s/veh		16.8			12.3			32.9			44.8	
Approach LOS		B			B			C			D	

Timer - Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	12.0	61.9	10.2	15.9	7.2	66.7		26.1
Change Period (Y+Rc), s	* 5.7	* 5.7	5.4	5.4	* 5.7	* 5.7		5.4
Max Green Setting (Gmax), s	* 6.3	* 45	6.6	19.6	* 6.3	* 45		31.6
Max Q Clear Time (g_c+I1), s	6.8	33.5	5.4	10.0	2.6	10.9		6.8
Green Ext Time (p_c), s	0.0	10.3	0.0	0.5	0.0	8.5		0.6

Intersection Summary	
HCM 6th Ctrl Delay	19.9
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

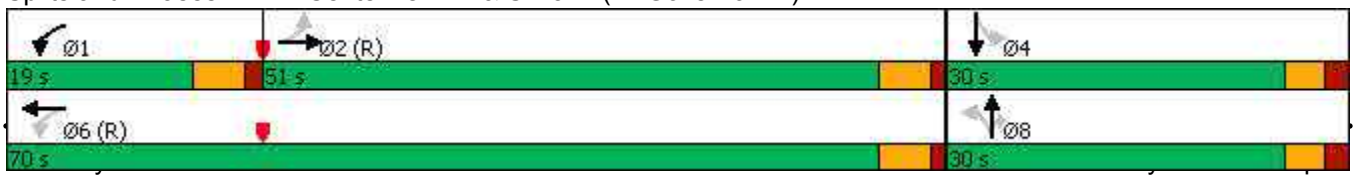
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	445	329	228	573	43	57	16	73	33	168	9
Future Volume (vph)	5	445	329	228	573	43	57	16	73	33	168	9
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	14	12	12	12	12	12	12	14	16	16	16
Grade (%)		1%			-2%			1%			-1%	
Storage Length (ft)	130		0	165		0	0		350	0		0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	0.99		1.00	1.00				0.96		1.00	
Frt		0.936			0.990				0.850		0.994	
Flt Protected	0.950			0.950				0.963			0.992	
Satd. Flow (prot)	1701	1694	0	1727	1743	0	0	1651	1624	0	2022	0
Flt Permitted	0.393			0.086				0.439			0.940	
Satd. Flow (perm)	704	1694	0	156	1743	0	0	753	1567	0	1912	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		51			8				85		2	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		974			4390			941			923	
Travel Time (s)		19.0			85.5			25.7			25.2	
Confl. Peds. (#/hr)	1		1	1		1			8	8		
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	0%	8%	0%	0%	3%	5%	4%	6%	0%	0%	0%	0%
Adj. Flow (vph)	6	517	383	265	666	50	66	19	85	38	195	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	6	900	0	265	716	0	0	85	85	0	243	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.08	0.99	1.08	1.06	1.06	1.06	1.08	1.08	0.99	0.90	0.90	0.90
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	1	1	1	1	
Detector Template		Main25		Left	Main25		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	0	250		48	250		48	48	48	48	48	
Trailing Detector (ft)	0	0		-2	0		-2	-2	-2	-2	-2	
Detector 1 Position(ft)	0	0		-2	0		-2	-2	-2	-2	-2	
Detector 1 Size(ft)	0	0		50	0		50	50	50	50	50	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		244			244							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8		8	4		
Detector Phase	2	2		1	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		3.0	10.0		3.0	3.0	3.0	3.0	3.0	
Minimum Split (s)	25.0	25.0		8.8	25.0		25.0	25.0	25.0	25.0	25.0	
Total Split (s)	51.0	51.0		19.0	70.0		30.0	30.0	30.0	30.0	30.0	
Total Split (%)	51.0%	51.0%		19.0%	70.0%		30.0%	30.0%	30.0%	30.0%	30.0%	
Maximum Green (s)	45.9	45.9		13.9	64.9		25.1	25.1	25.1	25.1	25.1	
Yellow Time (s)	3.8	3.8		3.8	3.8		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.3	1.3		1.3	1.3		1.9	1.9	1.9	1.9	1.9	
Lost Time Adjust (s)	-1.5	-1.5		-1.5	-1.5			-1.0	-1.0		-1.0	
Total Lost Time (s)	3.6	3.6		3.6	3.6			3.9	3.9		3.9	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	6.0	6.0		3.0	6.0		3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	25.0	25.0		0.0	25.0		0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	13.0	13.0		0.0	13.0		0.0	0.0	0.0	0.0	0.0	
Recall Mode	C-Max	C-Max		None	C-Max		None	None	None	None	None	
Act Effct Green (s)	55.9	55.9		73.7	73.7			18.8	18.8		18.8	
Actuated g/C Ratio	0.56	0.56		0.74	0.74			0.19	0.19		0.19	
v/c Ratio	0.02	0.93		0.79	0.56			0.60	0.23		0.67	
Control Delay	19.2	49.9		25.9	11.2			54.0	8.6		46.3	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Delay	19.2	49.9		25.9	11.2			54.0	8.6		46.3	
LOS	B	D		C	B			D	A		D	
Approach Delay		49.7			15.2			31.3			46.3	
Approach LOS		D			B			C			D	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 54.4 (54%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.93
Intersection Signal Delay: 33.3 Intersection LOS: C
Intersection Capacity Utilization 87.8% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 24: Centerview Dr & SR 322 (W Governor Dr)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	445	329	228	573	43	57	16	73	33	168	9
Future Volume (veh/h)	5	445	329	228	573	43	57	16	73	33	168	9
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.99		0.98	0.99		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1794	1749	1682	1875	1832	1832	1710	1710	1866	1911	1911	1911
Adj Flow Rate, veh/h	6	517	383	265	666	50	66	19	85	38	195	10
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	0	8	8	0	3	3	6	6	0	0	0	0
Cap, veh/h	452	493	366	321	1185	89	176	42	343	69	257	12
Arrive On Green	0.35	0.35	0.35	0.14	0.70	0.70	0.23	0.22	0.22	0.23	0.22	0.23
Sat Flow, veh/h	744	933	691	1785	1683	126	506	189	1553	122	1164	55
Grp Volume(v), veh/h	6	0	900	265	0	716	85	0	85	243	0	0
Grp Sat Flow(s),veh/h/ln	744	0	1624	1785	0	1809	695	0	1553	1341	0	0
Q Serve(g_s), s	0.5	0.0	52.9	10.3	0.0	19.4	0.0	0.0	4.5	6.0	0.0	0.0
Cycle Q Clear(g_c), s	2.4	0.0	52.9	10.3	0.0	19.4	12.7	0.0	4.5	18.7	0.0	0.0
Prop In Lane	1.00		0.43	1.00		0.07	0.78		1.00	0.16		0.04
Lane Grp Cap(c), veh/h	452	0	859	321	0	1274	221	0	343	344	0	0
V/C Ratio(X)	0.01	0.00	1.05	0.83	0.00	0.56	0.38	0.00	0.25	0.71	0.00	0.00
Avail Cap(c_a), veh/h	452	0	859	347	0	1274	270	0	405	416	0	0
HCM Platoon Ratio	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.62	0.00	0.62	0.15	0.00	0.15	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	16.6	0.0	32.3	31.6	0.0	7.2	34.7	0.0	32.1	37.3	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	37.7	2.4	0.0	0.3	1.1	0.0	0.4	4.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	30.1	6.3	0.0	6.1	1.9	0.0	1.7	6.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.6	0.0	70.0	34.0	0.0	7.5	35.7	0.0	32.5	41.5	0.0	0.0
LnGrp LOS	B	A	F	C	A	A	D	A	C	D	A	A
Approach Vol, veh/h		906			981			170			243	
Approach Delay, s/veh		69.6			14.7			34.1			41.5	
Approach LOS		E			B			C			D	

Timer - Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	17.5	56.5		26.0		74.0		26.0
Change Period (Y+Rc), s	5.1	5.1		* 4.9		5.1		* 4.9
Max Green Setting (Gmax), s	13.9	45.9		* 25		64.9		* 25
Max Q Clear Time (g_c+I1), s	12.3	54.9		20.7		21.4		14.7
Green Ext Time (p_c), s	0.2	0.0		0.4		25.6		0.5

Intersection Summary	
HCM 6th Ctrl Delay	40.6
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

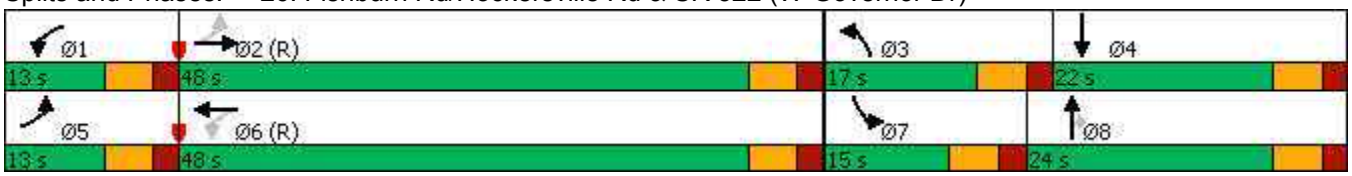
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	331	110	44	695	140	216	178	89	130	112	38
Future Volume (vph)	16	331	110	44	695	140	216	178	89	130	112	38
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	12	14	11	12	14	11	11	13	11	12	12
Grade (%)		1%			0%			-1%			2%	
Storage Length (ft)	140		445	125		75	135		85	100		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.963			0.975				0.850		0.962	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1552	1646	0	1545	1718	0	1629	1650	1513	1620	1652	0
Flt Permitted	0.080			0.347			0.950			0.950		
Satd. Flow (perm)	131	1646	0	564	1718	0	1629	1650	1513	1620	1652	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		21			13				152		15	
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		4390			252			343			1393	
Travel Time (s)		85.5			4.9			6.7			27.1	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	6%	6%	1%	7%	2%	3%	2%	6%	5%	1%	4%	3%
Adj. Flow (vph)	17	352	117	47	739	149	230	189	95	138	119	40
Shared Lane Traffic (%)												
Lane Group Flow (vph)	17	469	0	47	888	0	230	189	95	138	159	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.13	1.08	0.99	1.12	1.07	0.99	1.11	1.11	1.02	1.13	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	1	1	1	1	
Detector Template		Main25		Left	Main25							
Leading Detector (ft)	38	250		48	250		38	38	38	38	38	
Trailing Detector (ft)	-2	0		-2	0		-2	-2	-2	-2	-2	
Detector 1 Position(ft)	-2	0		-2	0		-2	-2	-2	-2	-2	
Detector 1 Size(ft)	40	0		50	0		40	40	40	40	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		244			244							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6					8			
Detector Phase	5	2		1	6		3	8	8	7	4	
Switch Phase												
Minimum Initial (s)	3.0	10.0		3.0	10.0		3.0	3.0	3.0	3.0	3.0	
Minimum Split (s)	8.6	25.0		8.6	25.0		8.7	12.0	12.0	8.7	12.0	
Total Split (s)	13.0	48.0		13.0	48.0		17.0	24.0	24.0	15.0	22.0	
Total Split (%)	13.0%	48.0%		13.0%	48.0%		17.0%	24.0%	24.0%	15.0%	22.0%	
Maximum Green (s)	7.4	42.4		7.4	42.4		11.3	18.3	18.3	9.3	16.3	
Yellow Time (s)	3.6	3.6		3.6	3.6		3.7	3.7	3.7	3.7	3.7	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-1.5	-1.5		-1.5	-1.5		-1.5	-1.5	-1.5	-1.5	-1.5	
Total Lost Time (s)	4.1	4.1		4.1	4.1		4.2	4.2	4.2	4.2	4.2	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	6.5		3.0	6.5		3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	25.0		0.0	25.0		0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	12.5		0.0	12.5		0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	C-Max		None	C-Max		None	None	None	None	None	
Act Effct Green (s)	56.7	51.9		58.3	54.7		12.8	17.1	17.1	10.8	15.1	
Actuated g/C Ratio	0.57	0.52		0.58	0.55		0.13	0.17	0.17	0.11	0.15	
v/c Ratio	0.09	0.54		0.11	0.94		1.11	0.67	0.25	0.79	0.61	
Control Delay	16.8	30.0		2.6	31.1		135.6	50.7	2.8	75.0	45.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	16.8	30.0		2.6	31.1		135.6	50.7	2.8	75.0	45.5	
LOS	B	C		A	C		F	D	A	E	D	
Approach Delay		29.5			29.7			79.8			59.2	
Approach LOS		C			C			E			E	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green, Master Intersection
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.11
Intersection Signal Delay: 45.1 Intersection LOS: D
Intersection Capacity Utilization 79.3% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 26: Fishburn Rd/Hockersville Rd & SR 322 (W Governor Dr)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	331	110	44	695	140	216	178	89	130	112	38
Future Volume (veh/h)	16	331	110	44	695	140	216	178	89	130	112	38
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1710	1710	1779	1702	1772	1843	1809	1752	1837	1764	1722	1722
Adj Flow Rate, veh/h	17	352	117	47	739	149	230	189	95	138	119	40
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	6	6	6	7	2	2	2	6	5	1	4	4
Cap, veh/h	157	660	219	447	787	159	221	263	233	181	160	54
Arrive On Green	0.03	0.54	0.54	0.04	0.55	0.55	0.13	0.15	0.15	0.11	0.13	0.13
Sat Flow, veh/h	1629	1228	408	1621	1431	289	1723	1752	1557	1680	1233	414
Grp Volume(v), veh/h	17	0	469	47	0	888	230	189	95	138	0	159
Grp Sat Flow(s),veh/h/ln	1629	0	1637	1621	0	1720	1723	1752	1557	1680	0	1647
Q Serve(g_s), s	0.5	0.0	18.6	1.3	0.0	48.1	12.8	10.3	5.5	8.0	0.0	9.3
Cycle Q Clear(g_c), s	0.5	0.0	18.6	1.3	0.0	48.1	12.8	10.3	5.5	8.0	0.0	9.3
Prop In Lane	1.00		0.25	1.00		0.17	1.00		1.00	1.00		0.25
Lane Grp Cap(c), veh/h	157	0	879	447	0	946	221	263	233	181	0	214
V/C Ratio(X)	0.11	0.00	0.53	0.11	0.00	0.94	1.04	0.72	0.41	0.76	0.00	0.74
Avail Cap(c_a), veh/h	259	0	879	528	0	946	221	347	308	181	0	293
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.38	0.00	0.38	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	20.9	0.0	15.0	11.1	0.0	21.0	43.6	40.5	38.5	43.3	0.0	41.9
Incr Delay (d2), s/veh	0.1	0.0	0.9	0.1	0.0	17.8	72.3	4.8	1.1	17.0	0.0	6.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	6.6	0.4	0.0	21.9	9.8	4.7	2.1	4.1	0.0	4.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.0	0.0	15.9	11.2	0.0	38.7	115.9	45.3	39.6	60.4	0.0	48.4
LnGrp LOS	C	A	B	B	A	D	F	D	D	E	A	D
Approach Vol, veh/h		486			935			514			297	
Approach Delay, s/veh		16.1			37.4			75.9			54.0	
Approach LOS		B			D			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	57.8	17.0	17.2	6.7	59.1	15.0	19.2
Change Period (Y+Rc), s	5.6	5.6	* 5.7	* 5.7	5.6	5.6	* 5.7	* 5.7
Max Green Setting (Gmax), s	7.4	42.4	* 11	* 16	7.4	42.4	* 9.3	* 18
Max Q Clear Time (g_c+I1), s	3.3	20.6	14.8	11.3	2.5	50.1	10.0	12.3
Green Ext Time (p_c), s	0.0	11.0	0.0	0.2	0.0	0.0	0.0	0.5

Intersection Summary	
HCM 6th Ctrl Delay	43.8
HCM 6th LOS	D

Notes

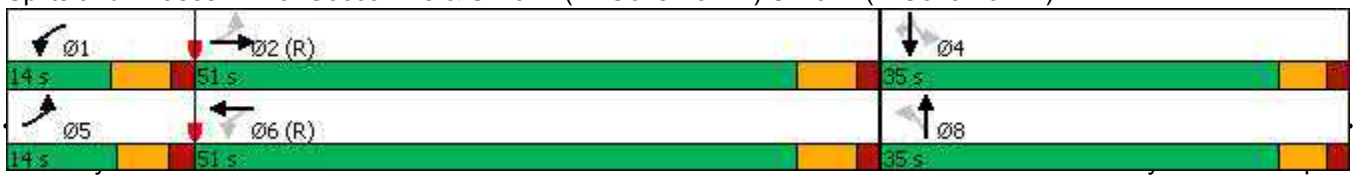
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	399	31	52	737	28	9	217	24	22	144	29
Future Volume (vph)	24	399	31	52	737	28	9	217	24	22	144	29
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	15	15	11	13	13	11	13	13	11	12	15
Grade (%)		-2%			-3%			0%			0%	
Storage Length (ft)	175		0	80		0	75		0	75		150
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00				1.00			1.00		1.00		
Frt		0.989			0.995			0.985				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1612	1890	0	1629	1822	0	1243	1721	0	1517	1622	1683
Flt Permitted	0.217			0.399			0.558			0.352		
Satd. Flow (perm)	368	1890	0	684	1822	0	730	1721	0	561	1622	1683
Right Turn on Red			No			Yes			No			Yes
Satd. Flow (RTOR)					3							103
Link Speed (mph)		35			40			35			35	
Link Distance (ft)		1911			1234			997			1054	
Travel Time (s)		37.2			21.0			19.4			20.5	
Confl. Peds. (#/hr)	1					1			2	2		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	5%	0%	3%	3%	3%	33%	6%	8%	9%	11%	0%
Adj. Flow (vph)	25	420	33	55	776	29	9	228	25	23	152	31
Shared Lane Traffic (%)												
Lane Group Flow (vph)	25	453	0	55	805	0	9	253	0	23	152	31
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.16	0.94	0.94	1.10	1.01	1.01	1.12	1.03	1.03	1.12	1.07	0.95
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	1		1	1	1
Detector Template		Main25			Main25							
Leading Detector (ft)	38	250		38	250		38	38		38	38	0
Trailing Detector (ft)	-2	0		-2	0		-2	-2		-2	-2	0
Detector 1 Position(ft)	-2	0		-2	0		-2	-2		-2	-2	0
Detector 1 Size(ft)	40	0		40	0		40	40		40	40	0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		244			244							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6			8			4		4
Detector Phase	5	2		1	6		8	8		4	4	4
Switch Phase												
Minimum Initial (s)	3.0	10.0		3.0	10.0		3.0	3.0		3.0	3.0	3.0
Minimum Split (s)	9.4	25.0		9.4	25.0		20.0	20.0		20.0	20.0	20.0
Total Split (s)	14.0	51.0		14.0	51.0		35.0	35.0		35.0	35.0	35.0
Total Split (%)	14.0%	51.0%		14.0%	51.0%		35.0%	35.0%		35.0%	35.0%	35.0%
Maximum Green (s)	8.2	44.8		7.8	44.8		29.6	29.6		29.6	29.6	29.6
Yellow Time (s)	3.8	4.4		4.4	4.4		3.6	3.6		3.6	3.6	3.6
All-Red Time (s)	2.0	1.8		1.8	1.8		1.8	1.8		1.8	1.8	1.8
Lost Time Adjust (s)	-1.5	-1.5		-1.5	-1.5		-1.5	-1.5		-1.5	-1.5	-1.5
Total Lost Time (s)	4.3	4.7		4.7	4.7		3.9	3.9		3.9	3.9	3.9
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	5.5		3.0	5.5		3.0	3.0		3.0	3.0	3.0
Minimum Gap (s)	3.0	2.0		3.0	2.0		3.0	3.0		3.0	3.0	3.0
Time Before Reduce (s)	0.0	25.0		0.0	25.0		0.0	0.0		0.0	0.0	0.0
Time To Reduce (s)	0.0	12.5		0.0	12.5		0.0	0.0		0.0	0.0	0.0
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	None
Act Effct Green (s)	66.0	59.4		68.5	64.9		21.5	21.5		21.5	21.5	21.5
Actuated g/C Ratio	0.66	0.59		0.68	0.65		0.22	0.22		0.22	0.22	0.22
v/c Ratio	0.07	0.40		0.10	0.68		0.06	0.68		0.19	0.44	0.07
Control Delay	2.0	5.2		6.4	18.1		28.9	45.2		33.6	36.8	0.3
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	2.0	5.2		6.4	18.1		28.9	45.2		33.6	36.8	0.3
LOS	A	A		A	B		C	D		C	D	A
Approach Delay		5.1			17.4			44.6			30.9	
Approach LOS		A			B			D			C	

Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 55 (55%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.68	
Intersection Signal Delay: 19.6	Intersection LOS: B
Intersection Capacity Utilization 72.2%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 29: Cocoa Ave & SR 322 (W Governor Dr)/SR 322 (E Governor Dr)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	24	399	31	52	737	28	9	217	24	22	144	29
Future Volume (veh/h)	24	399	31	52	737	28	9	217	24	22	144	29
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1875	1876	1876	1869	1944	1944	1337	1784	1784	1674	1646	1872
Adj Flow Rate, veh/h	25	420	33	55	776	29	9	228	25	23	152	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	5	5	3	3	3	33	6	6	9	11	0
Cap, veh/h	406	1085	85	649	1201	45	178	309	34	136	322	
Arrive On Green	0.03	0.63	0.63	0.04	0.65	0.65	0.20	0.20	0.20	0.20	0.20	0.00
Sat Flow, veh/h	1785	1716	135	1780	1862	70	929	1579	173	1062	1646	1586
Grp Volume(v), veh/h	25	0	453	55	0	805	9	0	253	23	152	0
Grp Sat Flow(s),veh/h/ln	1785	0	1851	1780	0	1931	929	0	1752	1062	1646	1586
Q Serve(g_s), s	0.5	0.0	11.9	1.0	0.0	25.4	0.9	0.0	13.6	2.1	8.2	0.0
Cycle Q Clear(g_c), s	0.5	0.0	11.9	1.0	0.0	25.4	9.1	0.0	13.6	15.7	8.2	0.0
Prop In Lane	1.00		0.07	1.00		0.04	1.00		0.10	1.00		1.00
Lane Grp Cap(c), veh/h	406	0	1170	649	0	1246	178	0	343	136	322	
V/C Ratio(X)	0.06	0.00	0.39	0.08	0.00	0.65	0.05	0.00	0.74	0.17	0.47	
Avail Cap(c_a), veh/h	525	0	1170	745	0	1246	285	0	545	258	512	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	8.8	0.0	9.0	6.3	0.0	10.8	39.6	0.0	37.8	45.2	35.6	0.0
Incr Delay (d2), s/veh	0.1	0.0	1.0	0.1	0.0	2.6	0.1	0.0	3.1	0.6	1.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	4.6	0.3	0.0	9.9	0.2	0.0	6.0	0.6	3.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.8	0.0	9.9	6.4	0.0	13.4	39.8	0.0	40.9	45.7	36.7	0.0
LnGrp LOS	A	A	A	A	A	B	D	A	D	D	D	
Approach Vol, veh/h		478			860			262			175	A
Approach Delay, s/veh		9.9			12.9			40.9			37.9	
Approach LOS		A			B			D			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.6	67.9		23.5	7.3	69.2		23.5
Change Period (Y+Rc), s	* 6.2	* 6.2		* 5.4	* 5.8	* 6.2		* 5.4
Max Green Setting (Gmax), s	* 7.8	* 45		* 30	* 8.2	* 45		* 30
Max Q Clear Time (g_c+I1), s	3.0	13.9		17.7	2.5	27.4		15.6
Green Ext Time (p_c), s	0.0	11.4		0.4	0.0	13.3		0.7

Intersection Summary	
HCM 6th Ctrl Delay	18.7
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	152	393	11	20	707	72	9	372	40	17	107	166
Future Volume (vph)	152	393	11	20	707	72	9	372	40	17	107	166
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Grade (%)		2%			2%			2%			2%	
Storage Length (ft)	125		100	100		100	100		100	110		200
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1628	1713	1515	1472	1730	1500	1693	1713	1377	1512	1563	1377
Flt Permitted	0.117			0.476			0.643			0.150		
Satd. Flow (perm)	200	1713	1515	738	1730	1500	1146	1713	1377	239	1563	1347
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			72			72			72			193
Link Speed (mph)		40			40			35			35	
Link Distance (ft)		1219			3941			1026			2312	
Travel Time (s)		20.8			67.2			20.0			45.0	
Confl. Bikes (#/hr)							1					1
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	4%	4%	0%	15%	3%	1%	0%	4%	10%	12%	14%	10%
Adj. Flow (vph)	177	457	13	23	822	84	10	433	47	20	124	193
Shared Lane Traffic (%)												
Lane Group Flow (vph)	177	457	13	23	822	84	10	433	47	20	124	193
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	1	1	1	1	1
Detector Template		Main25			Main25							
Leading Detector (ft)	38	250	38	38	250	38	38	38	38	38	38	38
Trailing Detector (ft)	-2	0	-2	-2	0	-2	-2	-2	-2	-2	-2	-2
Detector 1 Position(ft)	-2	0	-2	-2	0	-2	-2	-2	-2	-2	-2	-2
Detector 1 Size(ft)	40	0	40	40	0	40	40	40	40	40	40	40
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		244			244							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0							
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6		6	8		8	4		4
Detector Phase	5	2	2	1	6	6	8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	3.0	12.0	12.0	3.0	12.0	12.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Split (s)	8.5	29.0	29.0	8.5	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0
Total Split (s)	14.0	61.0	61.0	14.0	61.0	61.0	31.0	31.0	31.0	31.0	31.0	31.0
Total Split (%)	13.2%	57.5%	57.5%	13.2%	57.5%	57.5%	29.2%	29.2%	29.2%	29.2%	29.2%	29.2%
Maximum Green (s)	10.0	55.0	55.0	10.0	55.0	55.0	25.0	25.0	25.0	25.0	25.0	25.0
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5
Total Lost Time (s)	2.5	4.5	4.5	2.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0	6.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	28.0	28.0	0.0	28.0	28.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	14.0	14.0	0.0	14.0	14.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	Min	Min	None	Min	Min	None	None	None	None	None	None
Act Effct Green (s)	69.6	63.5	63.5	63.4	53.8	53.8	26.6	26.6	26.6	26.6	26.6	26.6
Actuated g/C Ratio	0.67	0.62	0.62	0.61	0.52	0.52	0.26	0.26	0.26	0.26	0.26	0.26
v/c Ratio	0.61	0.43	0.01	0.05	0.91	0.10	0.03	0.98	0.12	0.33	0.31	0.39
Control Delay	19.7	12.9	0.0	5.8	38.5	4.1	30.7	78.8	3.9	49.6	34.6	7.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.7	12.9	0.0	5.8	38.5	4.1	30.7	78.8	3.9	49.6	34.6	7.3
LOS	B	B	A	A	D	A	C	E	A	D	C	A
Approach Delay		14.5			34.6			70.7			19.9	
Approach LOS		B			C			E			B	

Intersection Summary	
Area Type:	Other
Cycle Length: 106	
Actuated Cycle Length: 103.2	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.98	
Intersection Signal Delay: 34.5	Intersection LOS: C
Intersection Capacity Utilization 79.7%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 30: Homestead Rd & SR 322 (E Governor Dr)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	152	393	11	20	707	72	9	372	40	17	107	166
Future Volume (veh/h)	152	393	11	20	707	72	9	372	40	17	107	166
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1722	1722	1778	1567	1736	1764	1778	1722	1637	1609	1581	1637
Adj Flow Rate, veh/h	177	457	13	23	822	84	10	433	47	20	124	193
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	4	4	0	15	3	1	0	4	10	12	14	10
Cap, veh/h	281	1022	895	480	943	812	285	453	357	84	416	357
Arrive On Green	0.08	0.59	0.59	0.03	0.54	0.54	0.26	0.26	0.26	0.26	0.26	0.26
Sat Flow, veh/h	1640	1722	1507	1492	1736	1495	1066	1722	1358	831	1581	1358
Grp Volume(v), veh/h	177	457	13	23	822	84	10	433	47	20	124	193
Grp Sat Flow(s),veh/h/ln	1640	1722	1507	1492	1736	1495	1066	1722	1358	831	1581	1358
Q Serve(g_s), s	4.4	14.8	0.4	0.7	41.4	2.7	0.8	24.9	2.7	1.6	6.3	12.3
Cycle Q Clear(g_c), s	4.4	14.8	0.4	0.7	41.4	2.7	7.1	24.9	2.7	26.5	6.3	12.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	281	1022	895	480	943	812	285	453	357	84	416	357
V/C Ratio(X)	0.63	0.45	0.01	0.05	0.87	0.10	0.04	0.96	0.13	0.24	0.30	0.54
Avail Cap(c_a), veh/h	338	1022	895	607	973	838	285	453	357	84	416	357
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.2	11.3	8.4	9.8	19.9	11.1	32.5	36.6	28.3	49.9	29.7	31.9
Incr Delay (d2), s/veh	2.7	1.1	0.0	0.0	10.2	0.2	0.0	31.3	0.2	1.4	0.4	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	5.3	0.1	0.2	17.4	0.9	0.2	14.1	0.9	0.5	2.4	4.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.9	12.4	8.4	9.9	30.2	11.3	32.6	67.8	28.5	51.3	30.1	33.5
LnGrp LOS	C	B	A	A	C	B	C	E	C	D	C	C
Approach Vol, veh/h		647			929			490			337	
Approach Delay, s/veh		15.2			28.0			63.3			33.3	
Approach LOS		B			C			E			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.4	64.3		31.0	10.5	59.3		31.0
Change Period (Y+Rc), s	4.0	6.0		6.0	4.0	6.0		6.0
Max Green Setting (Gmax), s	10.0	55.0		25.0	10.0	55.0		25.0
Max Q Clear Time (g_c+I1), s	2.7	16.8		28.5	6.4	43.4		26.9
Green Ext Time (p_c), s	0.0	13.4		0.0	0.2	9.9		0.0

Intersection Summary	
HCM 6th Ctrl Delay	32.5
HCM 6th LOS	C

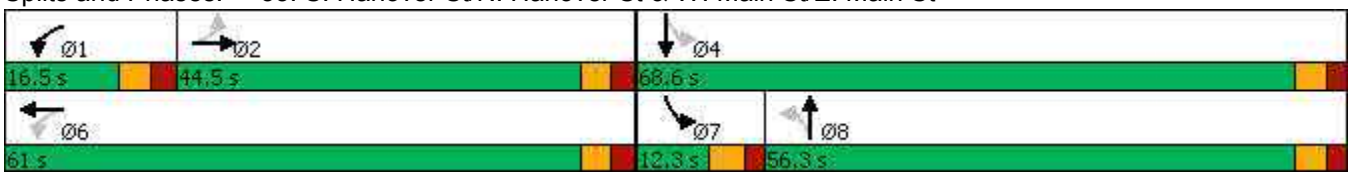
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	325	58	163	276	128	61	184	109	112	203	33
Future Volume (vph)	29	325	58	163	276	128	61	184	109	112	203	33
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	12	12	10	12	12	13	13	13	10	13	13
Grade (%)		-1%			1%			-4%			3%	
Storage Length (ft)	60		0	140		0	0		0	175		0
Storage Lanes	1		0	1		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								0.99		1.00	1.00	
Frt		0.977			0.953			0.958			0.979	
Flt Protected	0.950			0.950				0.991		0.950		
Satd. Flow (prot)	1499	1767	0	1572	1707	0	0	1749	0	1526	1788	0
Flt Permitted	0.516			0.216				0.897		0.346		
Satd. Flow (perm)	814	1767	0	357	1707	0	0	1583	0	555	1788	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			23			21			9	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		552			1053			474			481	
Travel Time (s)		15.1			28.7			12.9			13.1	
Confl. Peds. (#/hr)							1		4	4		1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	7%	0%	0%	1%	0%	0%	3%	2%	2%	3%	0%	0%
Adj. Flow (vph)	30	339	60	170	288	133	64	192	114	117	211	34
Shared Lane Traffic (%)												
Lane Group Flow (vph)	30	399	0	170	421	0	0	370	0	117	245	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.16	1.07	1.07	1.18	1.08	1.08	1.00	1.00	1.00	1.19	1.05	1.05
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template							Left					
Leading Detector (ft)	35	35		35	35		48	35		35	35	
Trailing Detector (ft)	-5	-5		-5	-5		-2	-5		-5	-5	
Detector 1 Position(ft)	-5	-5		-5	-5		-2	-5		-5	-5	
Detector 1 Size(ft)	40	40		40	40		50	40		40	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		pm+pt	NA	
Protected Phases		2		1	6			8		7	4	
Permitted Phases	2			6			8			4		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	2	2		1	6		8	8		7	4	
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Split (s)	10.0	10.0		8.5	10.0		10.0	10.0		8.5	10.0	
Total Split (s)	44.5	44.5		16.5	61.0		56.3	56.3		12.3	68.6	
Total Split (%)	34.3%	34.3%		12.7%	47.1%		43.4%	43.4%		9.5%	52.9%	
Maximum Green (s)	39.0	39.0		11.0	55.5		51.0	51.0		6.8	63.3	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.1	3.1		3.5	3.1	
All-Red Time (s)	2.5	2.5		2.5	2.5		2.2	2.2		2.0	2.2	
Lost Time Adjust (s)	-0.5	-0.5		-0.5	-0.5			-0.5		-0.5	-0.5	
Total Lost Time (s)	5.0	5.0		5.0	5.0			4.8		5.0	4.8	
Lead/Lag	Lag	Lag		Lead			Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		None	Min		None	None		None	None	
Act Effct Green (s)	26.6	26.6		42.6	42.6			27.6		40.1	40.3	
Actuated g/C Ratio	0.29	0.29		0.46	0.46			0.30		0.43	0.43	
v/c Ratio	0.13	0.78		0.56	0.53			0.77		0.37	0.31	
Control Delay	28.3	42.9		24.2	20.8			40.2		21.4	18.9	
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Delay	28.3	42.9		24.2	20.8			40.2		21.4	18.9	
LOS	C	D		C	C			D		C	B	
Approach Delay		41.9			21.8			40.2			19.7	
Approach LOS		D			C			D			B	

Intersection Summary

Area Type: Other
Cycle Length: 129.6
Actuated Cycle Length: 93.1
Natural Cycle: 70
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.78
Intersection Signal Delay: 30.2 Intersection LOS: C
Intersection Capacity Utilization 82.0% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 33: S. Hanover St/N. Hanover St & W. Main St/E. Main St



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	325	58	163	276	128	61	184	109	112	203	33
Future Volume (veh/h)	29	325	58	163	276	128	61	184	109	112	203	33
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.99		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1738	1837	1837	1780	1794	1794	1997	1997	1997	1708	1820	1820
Adj Flow Rate, veh/h	30	339	60	170	288	133	64	192	114	117	211	34
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	7	0	0	1	0	0	2	2	2	3	0	0
Cap, veh/h	360	410	73	353	522	241	119	250	137	427	624	100
Arrive On Green	0.27	0.27	0.28	0.11	0.45	0.46	0.27	0.25	0.27	0.08	0.41	0.42
Sat Flow, veh/h	947	1520	269	1696	1161	536	228	993	544	1626	1528	246
Grp Volume(v), veh/h	30	0	399	170	0	421	370	0	0	117	0	245
Grp Sat Flow(s),veh/h/ln	947	0	1789	1696	0	1698	1765	0	0	1626	0	1774
Q Serve(g_s), s	1.6	0.0	14.4	4.5	0.0	12.4	9.0	0.0	0.0	3.4	0.0	6.5
Cycle Q Clear(g_c), s	1.6	0.0	14.4	4.5	0.0	12.4	13.3	0.0	0.0	3.4	0.0	6.5
Prop In Lane	1.00		0.15	1.00		0.32	0.17		0.31	1.00		0.14
Lane Grp Cap(c), veh/h	360	0	482	353	0	764	532	0	0	427	0	724
V/C Ratio(X)	0.08	0.00	0.83	0.48	0.00	0.55	0.70	0.00	0.00	0.27	0.00	0.34
Avail Cap(c_a), veh/h	647	0	1025	454	0	1379	1387	0	0	463	0	1642
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.0	0.0	23.6	15.5	0.0	13.7	23.9	0.0	0.0	14.7	0.0	14.0
Incr Delay (d2), s/veh	0.1	0.0	3.7	1.0	0.0	0.6	1.7	0.0	0.0	0.3	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	6.3	1.7	0.0	4.5	5.5	0.0	0.0	1.2	0.0	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.1	0.0	27.3	16.6	0.0	14.4	25.6	0.0	0.0	15.0	0.0	14.2
LnGrp LOS	B	A	C	B	A	B	C	A	A	B	A	B
Approach Vol, veh/h		429			591			370			362	
Approach Delay, s/veh		26.7			15.0			25.6			14.5	
Approach LOS		C			B			C			B	

Timer - Assigned Phs	1	2		4		6	7	8
Phs Duration (G+Y+Rc), s	12.4	23.6		32.9		36.0	10.8	22.2
Change Period (Y+Rc), s	5.5	5.5		* 5.3		5.5	5.5	* 5.3
Max Green Setting (Gmax), s	11.0	39.0		* 63		55.5	6.8	* 51
Max Q Clear Time (g_c+I1), s	7.0	16.4		8.5		14.4	5.9	15.3
Green Ext Time (p_c), s	0.2	1.6		0.9		1.7	0.0	1.6

Intersection Summary	
HCM 6th Ctrl Delay	20.0
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	384	85	105	491	3	42	6	78	0	0	0
Future Volume (vph)	1	384	85	105	491	3	42	6	78	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	11	11	14	14	14	11	11	11
Grade (%)		1%			-1%			0%			-5%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.976			0.999			0.916				
Flt Protected					0.991			0.984				
Satd. Flow (prot)	0	1673	0	0	1711	0	0	1720	0	0	0	0
Flt Permitted					0.991			0.984				
Satd. Flow (perm)	0	1673	0	0	1711	0	0	1720	0	0	0	0
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		1053			1492			867			476	
Travel Time (s)		28.7			40.7			23.6			13.0	
Confl. Peds. (#/hr)							2					2
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	1%	1%	2%	1%	0%	0%	0%	1%	0%	0%	0%
Adj. Flow (vph)	1	422	93	115	540	3	46	7	86	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	516	0	0	658	0	0	139	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.13	1.13	1.13	1.11	1.11	1.11	0.99	0.99	0.99	1.08	1.08	1.08
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 85.0%	ICU Level of Service E
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	384	85	105	491	3	42	6	78	0	0	0
Future Vol, veh/h	1	384	85	105	491	3	42	6	78	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	2	0	0	0	0	2
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	1	-	-	-1	-	-	0	-	-	-5	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	0	1	1	2	1	0	0	0	1	0	0	0
Mvmt Flow	1	422	93	115	540	3	46	7	86	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	543	0	0	515	0	0	1245	1244	469
Stage 1	-	-	-	-	-	-	471	471	-
Stage 2	-	-	-	-	-	-	774	773	-
Critical Hdwy	4.1	-	-	4.12	-	-	6.4	6.5	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-	5.4	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.4	5.5	-
Follow-up Hdwy	2.2	-	-	2.218	-	-	3.5	4	3.309
Pot Cap-1 Maneuver	1036	-	-	1051	-	-	194	176	596
Stage 1	-	-	-	-	-	-	632	563	-
Stage 2	-	-	-	-	-	-	458	412	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1036	-	-	1051	-	-	163	0	596
Mov Cap-2 Maneuver	-	-	-	-	-	-	163	0	-
Stage 1	-	-	-	-	-	-	532	0	-
Stage 2	-	-	-	-	-	-	457	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.6	25.8
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	309	1036	-	-	1051	-	-
HCM Lane V/C Ratio	0.448	0.001	-	-	0.11	-	-
HCM Control Delay (s)	25.8	8.5	0	-	8.8	0	-
HCM Lane LOS	D	A	A	-	A	A	-
HCM 95th %tile Q(veh)	2.2	0	-	-	0.4	-	-

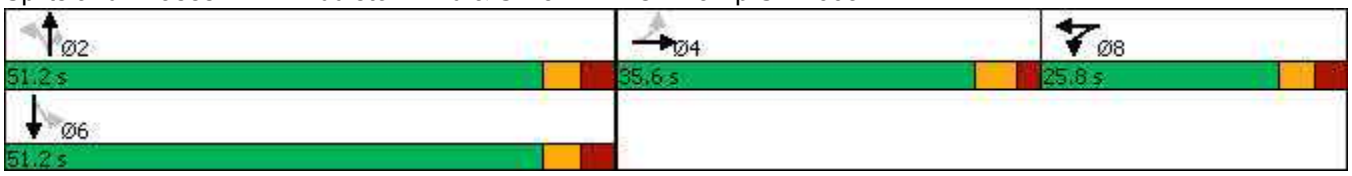
APPENDIX D
2018 PM EXISTING CAPACITY ANALYSIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	170	93	248	353	0	51	0	352	331	13	364	0
Future Volume (vph)	170	93	248	353	0	51	0	352	331	13	364	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	11	12	12	12
Grade (%)		0%			3%			4%			-1%	
Storage Length (ft)	230		0	0		0	0		200	0		0
Storage Lanes	1		0	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.891			0.983				0.850			
Flt Protected	0.950				0.958						0.998	
Satd. Flow (prot)	1693	1604	0	0	1641	0	0	1747	1421	0	1805	0
Flt Permitted	0.873				0.958						0.983	
Satd. Flow (perm)	1556	1604	0	0	1641	0	0	1747	1421	0	1778	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		118			85				341			
Link Speed (mph)		35			45			35			25	
Link Distance (ft)		830			1331			2061			1362	
Travel Time (s)		16.2			20.2			40.1			37.1	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	0%	0%	2%	0%	0%	0%	1%	2%	0%	0%	0%
Adj. Flow (vph)	175	96	256	364	0	53	0	363	341	13	375	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	175	352	0	0	417	0	0	363	341	0	388	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.09	1.09	1.09	1.10	1.10	1.15	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Main30	Right	Left	Main30	
Leading Detector (ft)	48	48		48	48		48	300	48	48	300	
Trailing Detector (ft)	-2	-2		-2	-2		-2	0	-2	-2	0	
Detector 1 Position(ft)	-2	-2		-2	-2		-2	0	-2	-2	0	
Detector 1 Size(ft)	50	50		50	50		50	0	50	50	0	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)								294			294	
Detector 2 Size(ft)								6			6	
Detector 2 Type								Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)								0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Split	NA			NA	Perm	Perm	NA	
Protected Phases		4		8	8			2			6	
Permitted Phases	4						2		2	6		
Detector Phase	4	4		8	8		2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		3.0	3.0	3.0	3.0	3.0	
Minimum Split (s)	15.8	15.8		15.8	15.8		30.2	30.2	30.2	30.2	30.2	
Total Split (s)	35.6	35.6		25.8	25.8		51.2	51.2	51.2	51.2	51.2	
Total Split (%)	31.6%	31.6%		22.9%	22.9%		45.5%	45.5%	45.5%	45.5%	45.5%	
Maximum Green (s)	30.0	30.0		20.0	20.0		45.0	45.0	45.0	45.0	45.0	
Yellow Time (s)	3.6	3.6		3.0	3.0		3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	2.0	2.0		2.8	2.8		2.9	2.9	2.9	2.9	2.9	
Lost Time Adjust (s)	-1.5	-1.5			-1.5			-1.5	-1.5		-1.5	
Total Lost Time (s)	4.1	4.1			4.3			4.7	4.7		4.7	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None		Min	Min	Min	Min	Min	
Act Effct Green (s)	20.6	20.6			22.4			30.2	30.2		30.2	
Actuated g/C Ratio	0.24	0.24			0.26			0.35	0.35		0.35	
v/c Ratio	0.47	0.75			0.86			0.60	0.48		0.63	
Control Delay	34.6	31.8			46.7			28.0	4.8		28.8	
Queue Delay	0.0	0.0			0.0			0.0	0.0		0.0	
Total Delay	34.6	31.8			46.7			28.0	4.8		28.8	
LOS	C	C			D			C	A		C	
Approach Delay		32.7			46.7			16.8			28.8	
Approach LOS		C			D			B			C	

Intersection Summary	
Area Type:	Other
Cycle Length: 112.6	
Actuated Cycle Length: 87	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay: 29.3	Intersection LOS: C
Intersection Capacity Utilization 87.4%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 1: Middletown Rd & SR 322 EB Off Ramp/SR 2003



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	170	93	248	353	0	51	0	352	331	13	364	0
Future Volume (veh/h)	170	93	248	353	0	51	0	352	331	13	364	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1786	1800	1800	1750	1750	1750	1697	1697	1683	1837	1837	1837
Adj Flow Rate, veh/h	175	96	256	364	0	53	0	363	341	13	375	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	0	0	0	0	0	1	1	2	0	0	0
Cap, veh/h	454	116	309	354	0	52	0	569	478	51	595	0
Arrive On Green	0.27	0.27	0.27	0.25	0.00	0.25	0.00	0.34	0.34	0.34	0.34	0.00
Sat Flow, veh/h	1701	434	1158	1432	0	209	0	1697	1426	26	1775	0
Grp Volume(v), veh/h	175	0	352	417	0	0	0	363	341	388	0	0
Grp Sat Flow(s),veh/h/ln	1701	0	1592	1641	0	0	0	1697	1426	1801	0	0
Q Serve(g_s), s	7.3	0.0	18.1	21.5	0.0	0.0	0.0	15.7	18.2	0.0	0.0	0.0
Cycle Q Clear(g_c), s	7.3	0.0	18.1	21.5	0.0	0.0	0.0	15.7	18.2	15.5	0.0	0.0
Prop In Lane	1.00		0.73	0.87		0.13	0.00		1.00	0.03		0.00
Lane Grp Cap(c), veh/h	454	0	425	405	0	0	0	569	478	647	0	0
V/C Ratio(X)	0.39	0.00	0.83	1.03	0.00	0.00	0.00	0.64	0.71	0.60	0.00	0.00
Avail Cap(c_a), veh/h	616	0	576	405	0	0	0	907	762	996	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	26.0	0.0	30.0	32.8	0.0	0.0	0.0	24.5	25.3	24.4	0.0	0.0
Incr Delay (d2), s/veh	0.5	0.0	7.3	52.2	0.0	0.0	0.0	1.2	2.0	0.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.2	0.0	11.9	20.2	0.0	0.0	0.0	10.3	10.1	11.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.6	0.0	37.3	85.0	0.0	0.0	0.0	25.7	27.3	25.3	0.0	0.0
LnGrp LOS	C	A	D	F	A	A	A	C	C	C	A	A
Approach Vol, veh/h		527			417			704			388	
Approach Delay, s/veh		33.7			85.0			26.4			25.3	
Approach LOS		C			F			C			C	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	33.9	27.3	33.9	25.8
Change Period (Y+Rc), s	* 6.2	5.6	* 6.2	5.8
Max Green Setting (Gmax), s	* 45	30.0	* 45	20.0
Max Q Clear Time (g_c+I1), s	20.2	20.1	17.5	23.5
Green Ext Time (p_c), s	7.5	1.6	7.9	0.0

Intersection Summary	
HCM 6th Ctrl Delay	40.1
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	147	14	702	174	14	842
Future Volume (vph)	147	14	702	174	14	842
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	10	12	12	12	12
Grade (%)	1%		-3%			3%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.988		0.973			
Flt Protected	0.956					0.999
Satd. Flow (prot)	1565	0	1750	0	0	1754
Flt Permitted	0.956					0.999
Satd. Flow (perm)	1565	0	1750	0	0	1754
Link Speed (mph)	35		35			35
Link Distance (ft)	609		1026			1510
Travel Time (s)	11.9		20.0			29.4
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	1%	0%	2%	0%	0%	1%
Adj. Flow (vph)	153	15	731	181	15	877
Shared Lane Traffic (%)						
Lane Group Flow (vph)	168	0	912	0	0	892
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	10		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.18	1.18	1.05	1.05	1.09	1.09
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 74.8%	ICU Level of Service D
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	41.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	147	14	702	174	14	842
Future Vol, veh/h	147	14	702	174	14	842
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	1	-	-3	-	-	3
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	1	0	2	0	0	1
Mvmt Flow	153	15	731	181	15	877

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1729	822	0	0	912	0
Stage 1	822	-	-	-	-	-
Stage 2	907	-	-	-	-	-
Critical Hdwy	6.61	6.3	-	-	4.1	-
Critical Hdwy Stg 1	5.61	-	-	-	-	-
Critical Hdwy Stg 2	5.61	-	-	-	-	-
Follow-up Hdwy	3.509	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	~ 89	369	-	-	755	-
Stage 1	414	-	-	-	-	-
Stage 2	376	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 86	369	-	-	755	-
Mov Cap-2 Maneuver	~ 86	-	-	-	-	-
Stage 1	398	-	-	-	-	-
Stage 2	376	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	$ 486.9	0	0.2
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	92	755	-
HCM Lane V/C Ratio	-	-	1.823	0.019	-
HCM Control Delay (s)	-	-	$ 486.9	9.9	0
HCM Lane LOS	-	-	F	A	A
HCM 95th %tile Q(veh)	-	-	14	0.1	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

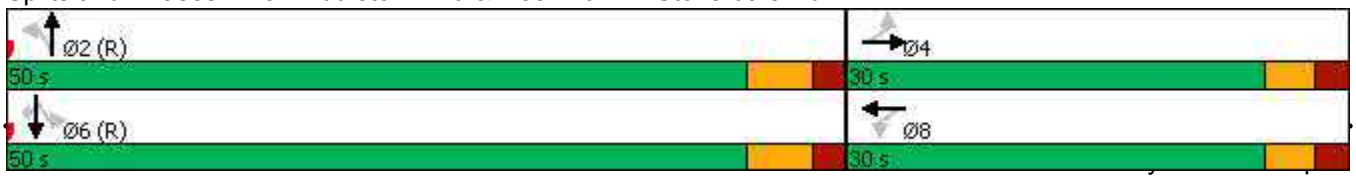
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	10	22	206	56	18	34	830	11	19	822	126
Future Volume (vph)	90	10	22	206	56	18	34	830	11	19	822	126
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	11	12	12	11	14	13
Grade (%)		3%			4%			-1%			-2%	
Storage Length (ft)	125		0	125		0	135		140	100		200
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00				0.99							
Frt		0.899			0.964			0.998				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1684	1502	0	1676	1692	0	1661	1788	0	1670	1920	1597
Flt Permitted	0.706			0.735			0.195			0.183		
Satd. Flow (perm)	1250	1502	0	1297	1692	0	341	1788	0	322	1920	1597
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		23			19			1				134
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		1291			1010			1123			1026	
Travel Time (s)		35.2			27.5			21.9			20.0	
Confl. Peds. (#/hr)	1					1						
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	9%	0%	0%	0%	0%	1%	0%	0%	1%	0%
Adj. Flow (vph)	96	11	23	219	60	19	36	883	12	20	874	134
Shared Lane Traffic (%)												
Lane Group Flow (vph)	96	34	0	219	79	0	36	895	0	20	874	134
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.10	1.10	1.10	1.11	1.07	1.07	1.11	0.97	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	2		1	2	1
Detector Template												
Leading Detector (ft)	38	38		38	38		0	230		0	230	0
Trailing Detector (ft)	-2	-2		-2	-2		0	0		0	0	0
Detector 1 Position(ft)	-2	-2		-2	-2		0	0		0	0	0
Detector 1 Size(ft)	40	40		40	40		0	0		0	0	0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)								224			224	
Detector 2 Size(ft)								6			6	
Detector 2 Type								Cl+Ex			Cl+Ex	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)								0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0		16.0	16.0		16.0	16.0	16.0
Minimum Split (s)	24.0	24.0		24.0	24.0		24.0	24.0		24.0	24.0	24.0
Total Split (s)	30.0	30.0		30.0	30.0		50.0	50.0		50.0	50.0	50.0
Total Split (%)	37.5%	37.5%		37.5%	37.5%		62.5%	62.5%		62.5%	62.5%	62.5%
Maximum Green (s)	24.9	24.9		24.9	24.9		44.0	44.0		44.0	44.0	44.0
Yellow Time (s)	3.0	3.0		3.0	3.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.1	2.1		2.1	2.1		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-1.5	-1.5		-1.5	-1.5		-1.5	-1.5		-1.5	-1.5	-1.5
Total Lost Time (s)	3.6	3.6		3.6	3.6		4.5	4.5		4.5	4.5	4.5
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		6.0	6.0		6.0	6.0	6.0
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0		25.0	25.0		25.0	25.0	25.0
Time To Reduce (s)	0.0	0.0		0.0	0.0		15.0	15.0		15.0	15.0	15.0
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	C-Max
Act Effct Green (s)	20.0	20.0		20.0	20.0		51.9	51.9		51.9	51.9	51.9
Actuated g/C Ratio	0.25	0.25		0.25	0.25		0.65	0.65		0.65	0.65	0.65
v/c Ratio	0.31	0.09		0.68	0.18		0.16	0.77		0.10	0.70	0.12
Control Delay	25.4	11.4		37.1	17.9		3.8	10.8		8.5	14.5	1.8
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	25.4	11.4		37.1	17.9		3.8	10.8		8.5	14.5	1.8
LOS	C	B		D	B		A	B		A	B	A
Approach Delay		21.7			32.0			10.5			12.7	
Approach LOS		C			C			B			B	

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 33 (41%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.77
Intersection Signal Delay: 14.8 Intersection LOS: B
Intersection Capacity Utilization 72.6% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 3: Middletown Rd & Deer Run Dr/Stoverdale Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	10	22	206	56	18	34	830	11	19	822	126
Future Volume (veh/h)	90	10	22	206	56	18	34	830	11	19	822	126
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1750	1750	1750	1711	1711	1711	1837	1823	1823	1875	1935	1950
Adj Flow Rate, veh/h	96	11	23	219	60	19	36	883	12	20	874	134
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	1	1	0	1	0
Cap, veh/h	334	114	239	368	282	89	323	1205	16	323	1300	1110
Arrive On Green	0.23	0.23	0.23	0.23	0.23	0.23	0.67	0.67	0.67	0.67	0.67	0.67
Sat Flow, veh/h	1301	504	1054	1324	1245	394	580	1794	24	658	1935	1652
Grp Volume(v), veh/h	96	0	34	219	0	79	36	0	895	20	874	134
Grp Sat Flow(s),veh/h/ln	1301	0	1557	1324	0	1639	580	0	1819	658	1935	1652
Q Serve(g_s), s	5.2	0.0	1.4	12.5	0.0	3.1	3.2	0.0	25.4	1.6	21.6	2.3
Cycle Q Clear(g_c), s	8.3	0.0	1.4	13.9	0.0	3.1	24.8	0.0	25.4	27.1	21.6	2.3
Prop In Lane	1.00		0.68	1.00		0.24	1.00		0.01	1.00		1.00
Lane Grp Cap(c), veh/h	334	0	353	368	0	372	323	0	1222	323	1300	1110
V/C Ratio(X)	0.29	0.00	0.10	0.60	0.00	0.21	0.11	0.00	0.73	0.06	0.67	0.12
Avail Cap(c_a), veh/h	468	0	514	504	0	541	323	0	1222	323	1300	1110
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.5	0.0	24.4	29.9	0.0	25.1	15.3	0.0	8.5	17.2	7.9	4.7
Incr Delay (d2), s/veh	0.5	0.0	0.1	1.5	0.0	0.3	0.7	0.0	3.9	0.4	2.8	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.9	0.0	0.9	7.3	0.0	2.2	0.8	0.0	13.6	0.5	12.2	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.0	0.0	24.6	31.5	0.0	25.4	16.0	0.0	12.4	17.6	10.6	4.9
LnGrp LOS	C	A	C	C	A	C	B	A	B	B	B	A
Approach Vol, veh/h		130			298			931			1028	
Approach Delay, s/veh		27.8			29.9			12.5			10.0	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	58.2	21.8	58.2	21.8
Change Period (Y+Rc), s	6.0	5.1	6.0	5.1
Max Green Setting (Gmax), s	44.0	24.9	44.0	24.9
Max Q Clear Time (g_c+I1), s	27.4	10.3	23.6	15.9
Green Ext Time (p_c), s	13.9	0.3	16.1	0.7

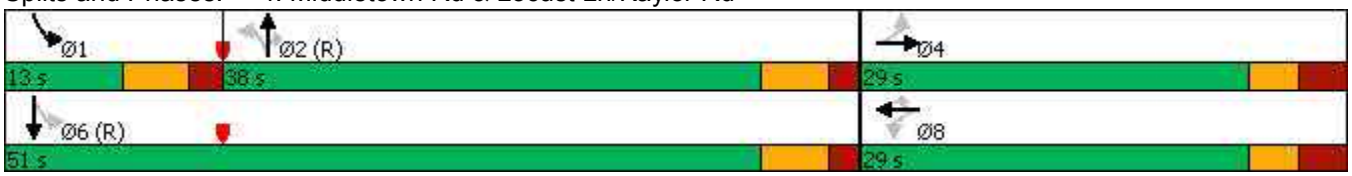
Intersection Summary	
HCM 6th Ctrl Delay	14.5
HCM 6th LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	78	12	16	53	12	56	21	776	23	68	885	10
Future Volume (vph)	78	12	16	53	12	56	21	776	23	68	885	10
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	14	14	14	12	12	14	10	12	14	10	12	12
Grade (%)		0%			-3%			3%			-3%	
Storage Length (ft)	0		0	125		50	135		320	75		0
Storage Lanes	0		0	1		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.979				0.850			0.850		0.998	
Flt Protected		0.965		0.950			0.950			0.950		
Satd. Flow (prot)	0	1814	0	1736	1827	1656	1572	1755	1608	1620	1805	0
Flt Permitted		0.777		0.723			0.283			0.187		
Satd. Flow (perm)	0	1461	0	1321	1827	1656	468	1755	1608	319	1805	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12				123			123		1	
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		1378			1146			1358			921	
Travel Time (s)		37.6			31.3			26.5			17.9	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	1%	0%
Adj. Flow (vph)	81	13	17	55	13	58	22	808	24	71	922	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	111	0	55	13	58	22	808	24	71	932	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	1.05	1.05	0.97	1.19	1.09	1.01	1.15	1.05	1.05
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1	1	1	2	1	1	2	
Detector Template	Left							Main25	Right		Main25	
Leading Detector (ft)	48	38		38	38	38	38	250	48	38	250	
Trailing Detector (ft)	-2	-2		-2	-2	-2	-2	0	-2	-2	0	
Detector 1 Position(ft)	-2	-2		-2	-2	-2	-2	0	-2	-2	0	
Detector 1 Size(ft)	50	40		40	40	40	40	0	50	40	0	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)								244			244	
Detector 2 Size(ft)								6			6	
Detector 2 Type								Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)								0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8		8	2		2	6		
Detector Phase	4	4		8	8	8	2	2	2	1	6	
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0	3.0	15.0	15.0	15.0	3.0	15.0	
Minimum Split (s)	18.0	18.0		18.0	18.0	18.0	21.0	21.0	21.0	9.0	21.0	
Total Split (s)	29.0	29.0		29.0	29.0	29.0	38.0	38.0	38.0	13.0	51.0	
Total Split (%)	36.3%	36.3%		36.3%	36.3%	36.3%	47.5%	47.5%	47.5%	16.3%	63.8%	
Maximum Green (s)	23.0	23.0		23.0	23.0	23.0	32.0	32.0	32.0	7.0	45.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-1.5		-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	
Total Lost Time (s)		4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
Lead/Lag							Lag	Lag	Lag	Lead		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	6.0	6.0	6.0	3.0	6.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	4.0	4.0	4.0	3.0	4.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	30.0	30.0	30.0	0.0	30.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0	15.0	15.0	15.0	0.0	15.0	
Recall Mode	None	None		None	None	None	C-Max	C-Max	C-Max	None	C-Max	
Act Effct Green (s)		12.3		12.2	12.2	12.2	51.9	51.9	51.9	61.1	62.0	
Actuated g/C Ratio		0.15		0.15	0.15	0.15	0.65	0.65	0.65	0.76	0.78	
v/c Ratio		0.48		0.27	0.05	0.16	0.07	0.71	0.02	0.19	0.67	
Control Delay		33.4		31.9	26.8	1.0	10.0	18.6	0.0	3.7	5.5	
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay		33.4		31.9	26.8	1.0	10.0	18.6	0.0	3.7	5.5	
LOS		C		C	C	A	B	B	A	A	A	
Approach Delay		33.4			17.1			17.9			5.4	
Approach LOS		C			B			B			A	

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green, Master Intersection	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.71	
Intersection Signal Delay: 12.7	Intersection LOS: B
Intersection Capacity Utilization 80.1%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 4: Middletown Rd & Locust Ln/Kaylor Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	78	12	16	53	12	56	21	776	23	68	885	10
Future Volume (veh/h)	78	12	16	53	12	56	21	776	23	68	885	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1872	1872	1872	1912	1912	1988	1750	1736	1820	1912	1898	1898
Adj Flow Rate, veh/h	81	12	17	55	12	58	22	808	24	71	922	10
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	1	0	0	1	1
Cap, veh/h	201	24	27	275	227	200	413	1152	1024	443	1440	16
Arrive On Green	0.12	0.12	0.12	0.12	0.12	0.12	0.66	0.66	0.66	0.05	0.77	0.77
Sat Flow, veh/h	1033	202	226	1490	1912	1685	593	1736	1542	1821	1874	20
Grp Volume(v), veh/h	110	0	0	55	12	58	22	808	24	71	0	932
Grp Sat Flow(s),veh/h/ln	1461	0	0	1490	1912	1685	593	1736	1542	1821	0	1894
Q Serve(g_s), s	5.3	0.0	0.0	0.0	0.4	2.5	1.4	23.4	0.4	0.9	0.0	17.9
Cycle Q Clear(g_c), s	5.8	0.0	0.0	2.5	0.4	2.5	10.9	23.4	0.4	0.9	0.0	17.9
Prop In Lane	0.74		0.15	1.00		1.00	1.00		1.00	1.00		0.01
Lane Grp Cap(c), veh/h	252	0	0	275	227	200	413	1152	1024	443	0	1456
V/C Ratio(X)	0.44	0.00	0.00	0.20	0.05	0.29	0.05	0.70	0.02	0.16	0.00	0.64
Avail Cap(c_a), veh/h	528	0	0	554	585	516	413	1152	1024	548	0	1456
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	33.6	0.0	0.0	32.2	31.3	32.2	8.6	8.5	4.6	7.4	0.0	4.2
Incr Delay (d2), s/veh	1.2	0.0	0.0	0.4	0.1	0.8	0.2	3.6	0.0	0.2	0.0	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.8	0.0	0.0	1.8	0.4	1.9	0.3	12.3	0.2	0.6	0.0	8.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.8	0.0	0.0	32.5	31.4	33.0	8.9	12.0	4.6	7.5	0.0	6.4
LnGrp LOS	C	A	A	C	C	C	A	B	A	A	A	A
Approach Vol, veh/h		110			125			854			1003	
Approach Delay, s/veh		34.8			32.6			11.7			6.5	
Approach LOS		C			C			B			A	

Timer - Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	8.4	57.6		14.0		66.0		14.0
Change Period (Y+Rc), s	6.0	6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s	7.0	32.0		23.0		45.0		23.0
Max Q Clear Time (g_c+I1), s	2.9	25.4		7.8		19.9		4.5
Green Ext Time (p_c), s	0.0	5.8		0.3		21.2		0.4

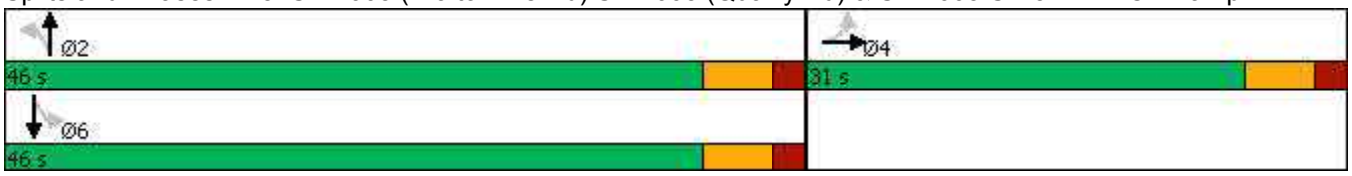
Intersection Summary	
HCM 6th Ctrl Delay	11.7
HCM 6th LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	52	293	91	0	0	0	52	123	137	87	178	383
Future Volume (vph)	52	293	91	0	0	0	52	123	137	87	178	383
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	12	12	12	10	10	10	14	14	14
Grade (%)		3%			1%			-2%			2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.972						0.941			0.920	
Flt Protected		0.994						0.992			0.993	
Satd. Flow (prot)	0	1652	0	0	0	0	0	1584	0	0	1714	0
Flt Permitted		0.994						0.841			0.903	
Satd. Flow (perm)	0	1652	0	0	0	0	0	1343	0	0	1559	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		19						79			146	
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		1362			918			1016			346	
Travel Time (s)		26.5			17.9			19.8			6.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	2%
Adj. Flow (vph)	57	318	99	0	0	0	57	134	149	95	193	416
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	474	0	0	0	0	0	340	0	0	704	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.14	1.08	1.08	1.08	1.16	1.16	1.16	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1					1	2		1	2	
Detector Template	Left	Thru					Left			Left	Main20	
Leading Detector (ft)	48	48					48	210		48	200	
Trailing Detector (ft)	-2	-2					-2	0		-2	0	
Detector 1 Position(ft)	-2	-2					-2	0		-2	0	
Detector 1 Size(ft)	50	50					50	0		50	0	
Detector 1 Type	Cl+Ex	Cl+Ex					Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0					0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0					0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0					0.0	0.0		0.0	0.0	
Detector 2 Position(ft)								204			194	
Detector 2 Size(ft)								6			6	
Detector 2 Type								Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)								0.0			0.0	
Turn Type	Perm	NA					Perm	NA		Perm	NA	
Protected Phases		4						2			6	
Permitted Phases	4						2			6		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4					2	2		6	6	
Switch Phase												
Minimum Initial (s)	3.0	3.0					10.0	10.0		10.0	10.0	
Minimum Split (s)	24.0	24.0					23.0	23.0		23.0	23.0	
Total Split (s)	31.0	31.0					46.0	46.0		46.0	46.0	
Total Split (%)	40.3%	40.3%					59.7%	59.7%		59.7%	59.7%	
Maximum Green (s)	25.0	25.0					40.0	40.0		40.0	40.0	
Yellow Time (s)	4.0	4.0					4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0					2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-1.5						-1.5			-1.5	
Total Lost Time (s)		4.5						4.5			4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0					6.0	6.0		6.0	6.0	
Minimum Gap (s)	3.0	3.0					3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0					23.0	23.0		23.0	23.0	
Time To Reduce (s)	0.0	0.0					12.0	12.0		12.0	12.0	
Recall Mode	None	None					Min	Min		Min	Min	
Act Effct Green (s)		23.6						36.5			36.5	
Actuated g/C Ratio		0.34						0.53			0.53	
v/c Ratio		0.83						0.46			0.79	
Control Delay		35.5						10.2			18.7	
Queue Delay		0.0						0.0			0.0	
Total Delay		35.5						10.2			18.7	
LOS		D						B			B	
Approach Delay		35.5						10.2			18.7	
Approach LOS		D						B			B	

Intersection Summary	
Area Type: Other	
Cycle Length: 77	
Actuated Cycle Length: 69.4	
Natural Cycle: 55	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.83	
Intersection Signal Delay: 22.0	Intersection LOS: C
Intersection Capacity Utilization 82.8%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 5: SR 2005 (Waltonville Rd)/SR 2005 (Quarry Rd) & SR 2003/SR 322 EB On Ramp



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	52	293	91	0	0	0	52	123	137	87	178	383
Future Volume (veh/h)	52	293	91	0	0	0	52	123	137	87	178	383
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1750	1750	1750				1875	1875	1875	1849	1849	1849
Adj Flow Rate, veh/h	57	318	99				57	134	149	95	193	416
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	66	368	115				155	357	352	148	262	508
Arrive On Green	0.33	0.33	0.33				0.54	0.54	0.54	0.54	0.54	0.54
Sat Flow, veh/h	202	1125	350				174	656	648	164	482	933
Grp Volume(v), veh/h	474	0	0				340	0	0	704	0	0
Grp Sat Flow(s),veh/h/ln	1677	0	0				1478	0	0	1580	0	0
Q Serve(g_s), s	18.5	0.0	0.0				0.0	0.0	0.0	17.0	0.0	0.0
Cycle Q Clear(g_c), s	18.5	0.0	0.0				7.8	0.0	0.0	25.3	0.0	0.0
Prop In Lane	0.12		0.21				0.17		0.44	0.13		0.59
Lane Grp Cap(c), veh/h	549	0	0				864	0	0	917	0	0
V/C Ratio(X)	0.86	0.00	0.00				0.39	0.00	0.00	0.77	0.00	0.00
Avail Cap(c_a), veh/h	636	0	0				937	0	0	995	0	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00				1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	22.0	0.0	0.0				9.0	0.0	0.0	12.9	0.0	0.0
Incr Delay (d2), s/veh	10.6	0.0	0.0				1.1	0.0	0.0	5.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	12.9	0.0	0.0				4.8	0.0	0.0	13.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.7	0.0	0.0				10.1	0.0	0.0	18.3	0.0	0.0
LnGrp LOS	C	A	A				B	A	A	B	A	A
Approach Vol, veh/h		474						340			704	
Approach Delay, s/veh		32.7						10.1			18.3	
Approach LOS		C						B			B	

Timer - Assigned Phs	2	4	6
Phs Duration (G+Y+Rc), s	42.5	27.4	42.5
Change Period (Y+Rc), s	6.0	6.0	6.0
Max Green Setting (Gmax), s	40.0	25.0	40.0
Max Q Clear Time (g_c+I1), s	9.8	20.5	27.3
Green Ext Time (p_c), s	8.4	0.9	9.3

Intersection Summary	
HCM 6th Ctrl Delay	20.9
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	52	112	29	41	270	44	16	163	14	39	194	19
Future Volume (vph)	52	112	29	41	270	44	16	163	14	39	194	19
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	10	10	10	10	10	10	10	10	10	10	10
Grade (%)		-1%			1%			-8%			11%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.980			0.983			0.990			0.990	
Flt Protected		0.987			0.994			0.996			0.992	
Satd. Flow (prot)	0	1624	0	0	1633	0	0	1700	0	0	1554	0
Flt Permitted		0.987			0.994			0.996			0.992	
Satd. Flow (perm)	0	1624	0	0	1633	0	0	1700	0	0	1554	0
Link Speed (mph)		35			30			35			35	
Link Distance (ft)		2048			1531			1852			1300	
Travel Time (s)		39.9			34.8			36.1			25.3	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	1%	0%	0%	0%	0%	6%	1%	0%	2%	0%	0%
Adj. Flow (vph)	57	123	32	45	297	48	18	179	15	43	213	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	212	0	0	390	0	0	212	0	0	277	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.16	1.16	1.16	1.18	1.18	1.18	1.11	1.11	1.11	1.26	1.26	1.26
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 52.3%	ICU Level of Service A
Analysis Period (min) 15	

Intersection	
Intersection Delay, s/veh	15.6
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	52	112	29	41	270	44	16	163	14	39	194	19
Future Vol, veh/h	52	112	29	41	270	44	16	163	14	39	194	19
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	0	1	0	0	0	0	6	1	0	2	0	0
Mvmt Flow	57	123	32	45	297	48	18	179	15	43	213	21
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	12.9	18.7	13.4	15
HCM LOS	B	C	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	8%	27%	12%	15%
Vol Thru, %	84%	58%	76%	77%
Vol Right, %	7%	15%	12%	8%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	193	193	355	252
LT Vol	16	52	41	39
Through Vol	163	112	270	194
RT Vol	14	29	44	19
Lane Flow Rate	212	212	390	277
Geometry Grp	1	1	1	1
Degree of Util (X)	0.38	0.369	0.637	0.481
Departure Headway (Hd)	6.454	6.255	5.877	6.251
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	556	575	612	576
Service Time	4.506	4.306	3.92	4.299
HCM Lane V/C Ratio	0.381	0.369	0.637	0.481
HCM Control Delay	13.4	12.9	18.7	15
HCM Lane LOS	B	B	C	B
HCM 95th-tile Q	1.8	1.7	4.5	2.6

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	106	45	35	119	312	323
Future Volume (vph)	106	45	35	119	312	323
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	10	11	11	11	11
Grade (%)	1%			-1%	1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.960				0.931	
Flt Protected	0.966			0.989		
Satd. Flow (prot)	1530	0	0	1703	1604	0
Flt Permitted	0.966			0.989		
Satd. Flow (perm)	1530	0	0	1703	1604	0
Link Speed (mph)	30			35	35	
Link Distance (ft)	796			2135	675	
Travel Time (s)	18.1			41.6	13.1	
Confl. Peds. (#/hr)			12			12
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	2%	0%	2%	1%	0%
Adj. Flow (vph)	109	46	36	123	322	333
Shared Lane Traffic (%)						
Lane Group Flow (vph)	155	0	0	159	655	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	10			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.18	1.18	1.11	1.11	1.13	1.13
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Stop	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 54.6%	ICU Level of Service A
Analysis Period (min) 15	

Intersection	
Intersection Delay, s/veh	17
Intersection LOS	C

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	106	45	35	119	312	323
Future Vol, veh/h	106	45	35	119	312	323
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles, %	1	2	0	2	1	0
Mvmt Flow	109	46	36	123	322	333
Number of Lanes	1	0	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	10.6	9.6	20.3
HCM LOS	B	A	C

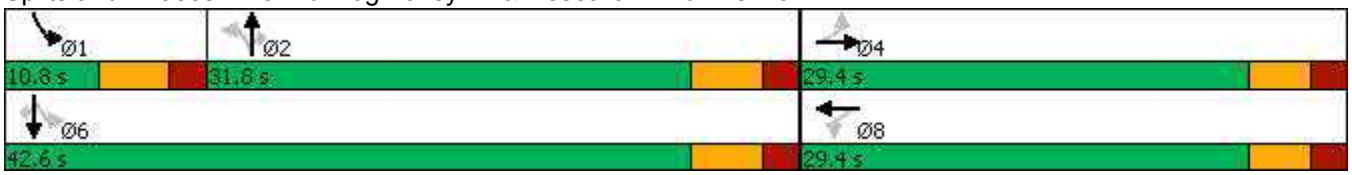
Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	23%	70%	0%
Vol Thru, %	77%	0%	49%
Vol Right, %	0%	30%	51%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	154	151	635
LT Vol	35	106	0
Through Vol	119	0	312
RT Vol	0	45	323
Lane Flow Rate	159	156	655
Geometry Grp	1	1	1
Degree of Util (X)	0.224	0.247	0.773
Departure Headway (Hd)	5.069	5.707	4.25
Convergence, Y/N	Yes	Yes	Yes
Cap	700	634	844
Service Time	3.158	3.707	2.307
HCM Lane V/C Ratio	0.227	0.246	0.776
HCM Control Delay	9.6	10.6	20.3
HCM Lane LOS	A	B	C
HCM 95th-tile Q	0.9	1	7.7

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	81	8	70	259	26	273	12	187	67	47	287	62
Future Volume (vph)	81	8	70	259	26	273	12	187	67	47	287	62
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Grade (%)		6%			-7%			-2%			2%	
Storage Length (ft)	100		0	250		0	190		270	185		175
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.865			0.863				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1642	1510	0	1770	1608	0	1727	1782	1545	1660	1782	1485
Flt Permitted	0.465			0.705			0.579			0.515		
Satd. Flow (perm)	804	1510	0	1313	1608	0	1053	1782	1545	900	1782	1485
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		72			281				124			64
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		395			391			967			1702	
Travel Time (s)		10.8			10.7			18.8			33.2	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	0%	0%	0%	0%	0%	0%	2%	0%	2%	0%	2%
Adj. Flow (vph)	84	8	72	267	27	281	12	193	69	48	296	64
Shared Lane Traffic (%)												
Lane Group Flow (vph)	84	80	0	267	308	0	12	193	69	48	296	64
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.11	1.11	1.11	1.03	1.03	1.03	1.06	1.06	1.06	1.09	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	2	2	1	2	2
Detector Template	Left	Thru		Left	Thru		Left	Main25	Main25	Left	Main25	Main25
Leading Detector (ft)	48	48		48	48		48	250	250	48	250	250
Trailing Detector (ft)	-2	-2		-2	-2		-2	0	0	-2	0	0
Detector 1 Position(ft)	-2	-2		-2	-2		-2	0	0	-2	0	0
Detector 1 Size(ft)	50	50		50	50		50	0	0	50	0	0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)								244	244		244	244
Detector 2 Size(ft)								6	6		6	6
Detector 2 Type								Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)								0.0	0.0		0.0	0.0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	pm+pt	NA	Perm

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		2	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0		10.0	10.0	10.0	3.0	10.0	10.0
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0	20.0	8.8	20.0	20.0
Total Split (s)	29.4	29.4		29.4	29.4		31.8	31.8	31.8	10.8	42.6	42.6
Total Split (%)	40.8%	40.8%		40.8%	40.8%		44.2%	44.2%	44.2%	15.0%	59.2%	59.2%
Maximum Green (s)	24.0	24.0		24.0	24.0		26.0	26.0	26.0	5.0	36.8	36.8
Yellow Time (s)	3.4	3.4		3.4	3.4		3.8	3.8	3.8	3.8	3.8	3.8
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.5	-1.5		-1.5	-1.5		-1.5	-1.5	-1.5	-1.5	-1.5	-1.5
Total Lost Time (s)	3.9	3.9		3.9	3.9		4.3	4.3	4.3	4.3	4.3	4.3
Lead/Lag							Lag	Lag	Lag	Lead		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		6.0	6.0	6.0	3.0	6.0	6.0
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0		25.0	25.0	25.0	0.0	25.0	25.0
Time To Reduce (s)	0.0	0.0		0.0	0.0		13.0	13.0	13.0	0.0	13.0	13.0
Recall Mode	None	None		None	None		Min	Min	Min	None	Min	Min
Act Effct Green (s)	17.5	17.5		17.5	17.5		18.4	18.4	18.4	23.7	23.7	23.7
Actuated g/C Ratio	0.35	0.35		0.35	0.35		0.37	0.37	0.37	0.47	0.47	0.47
v/c Ratio	0.30	0.14		0.59	0.42		0.03	0.30	0.11	0.09	0.35	0.09
Control Delay	17.8	5.7		21.4	4.9		14.5	15.7	1.2	8.3	10.1	3.0
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.8	5.7		21.4	4.9		14.5	15.7	1.2	8.3	10.1	3.0
LOS	B	A		C	A		B	B	A	A	B	A
Approach Delay		11.9			12.6			12.0			8.8	
Approach LOS		B			B			B			A	

Intersection Summary	
Area Type:	Other
Cycle Length: 72	
Actuated Cycle Length: 50.3	
Natural Cycle: 50	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.59	
Intersection Signal Delay: 11.3	Intersection LOS: B
Intersection Capacity Utilization 62.1%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 8: Bullfrog Valley Dr & Research Blvd/Life Lion Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	81	8	70	259	26	273	12	187	67	47	287	62
Future Volume (veh/h)	81	8	70	259	26	273	12	187	67	47	287	62
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1585	1599	1599	2061	2061	2061	1875	1846	1875	1750	1778	1750
Adj Flow Rate, veh/h	84	8	72	267	27	281	12	193	69	48	296	64
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	0	0	0	0	0	0	2	0	2	0	2
Cap, veh/h	357	45	409	619	51	534	497	549	473	526	835	696
Arrive On Green	0.33	0.33	0.33	0.33	0.33	0.33	0.30	0.30	0.30	0.07	0.47	0.47
Sat Flow, veh/h	958	138	1239	1534	155	1615	1081	1846	1589	1666	1778	1483
Grp Volume(v), veh/h	84	0	80	267	0	308	12	193	69	48	296	64
Grp Sat Flow(s),veh/h/ln	958	0	1376	1534	0	1770	1081	1846	1589	1666	1778	1483
Q Serve(g_s), s	3.2	0.0	1.7	6.1	0.0	5.8	0.3	3.4	1.3	0.7	4.3	1.0
Cycle Q Clear(g_c), s	9.0	0.0	1.7	7.8	0.0	5.8	0.3	3.4	1.3	0.7	4.3	1.0
Prop In Lane	1.00		0.90	1.00		0.91	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	357	0	455	619	0	585	497	549	473	526	835	696
V/C Ratio(X)	0.24	0.00	0.18	0.43	0.00	0.53	0.02	0.35	0.15	0.09	0.35	0.09
Avail Cap(c_a), veh/h	636	0	855	1065	0	1100	900	1237	1064	677	1659	1384
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.8	0.0	9.8	12.6	0.0	11.1	10.2	11.3	10.6	7.6	6.9	6.0
Incr Delay (d2), s/veh	0.3	0.0	0.2	0.5	0.0	0.7	0.1	1.4	0.5	0.1	0.9	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.1	0.0	0.8	3.3	0.0	3.5	0.1	2.3	0.8	0.3	2.3	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.1	0.0	9.9	13.0	0.0	11.9	10.3	12.7	11.1	7.7	7.9	6.2
LnGrp LOS	B	A	A	B	A	B	B	B	B	A	A	A
Approach Vol, veh/h		164			575			274			408	
Approach Delay, s/veh		12.6			12.4			12.2			7.6	
Approach LOS		B			B			B			A	

Timer - Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	7.1	16.5		17.5		23.6		17.5
Change Period (Y+Rc), s	* 5.8	* 5.8		5.4		* 5.8		5.4
Max Green Setting (Gmax), s	* 5	* 26		24.0		* 37		24.0
Max Q Clear Time (g_c+I1), s	2.7	5.4		11.0		6.3		9.8
Green Ext Time (p_c), s	0.0	5.3		0.6		9.1		2.2

Intersection Summary	
HCM 6th Ctrl Delay	11.0
HCM 6th LOS	B

Notes

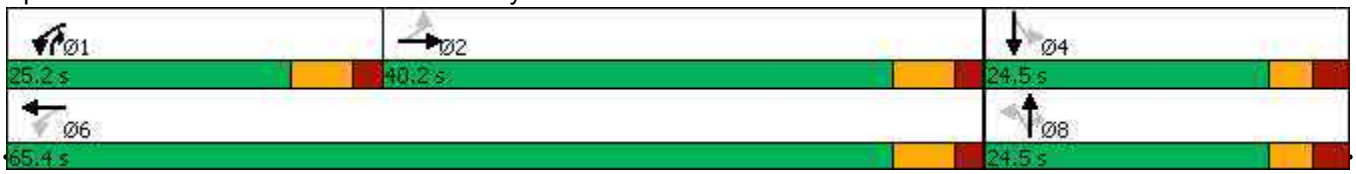
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	297	22	269	378	26	93	3	183	13	5	2
Future Volume (vph)	12	297	22	269	378	26	93	3	183	13	5	2
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	12	12	12	12	12	12	12	13	15	15	15
Grade (%)		-6%			0%			-2%			0%	
Storage Length (ft)	50		300	150		0	0		115	0		0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00				1.00							
Frt		0.990			0.990				0.850		0.987	
Flt Protected	0.950			0.950				0.954			0.968	
Satd. Flow (prot)	1644	3487	0	1693	1763	0	0	1734	1535	0	1892	0
Flt Permitted	0.516			0.428				0.717			0.786	
Satd. Flow (perm)	892	3487	0	763	1763	0	0	1304	1535	0	1536	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10			8				191		2	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		689			599			643			403	
Travel Time (s)		13.4			11.7			17.5			11.0	
Confl. Peds. (#/hr)	1					1						
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	0%	1%	1%	0%	0%	0%	4%	0%	0%	0%
Adj. Flow (vph)	13	309	23	280	394	27	97	3	191	14	5	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	13	332	0	280	421	0	0	100	191	0	21	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.13	1.03	1.03	1.07	1.07	1.07	1.06	1.06	1.01	0.95	0.95	0.95
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	1	1	1	1	
Detector Template							Left			Left	Thru	
Leading Detector (ft)	0	220		38	220		48	38	38	48	48	
Trailing Detector (ft)	0	0		-2	0		-2	-2	-2	-2	-2	
Detector 1 Position(ft)	0	0		-2	0		-2	-2	-2	-2	-2	
Detector 1 Size(ft)	0	0		40	0		50	40	40	50	50	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		214			214							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	pm+ov	Perm	NA	
Protected Phases		2		1	6			8	1		4	
Permitted Phases	2			6			8		8	4		
Detector Phase	2	2		1	6		8	8	1	4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		3.0	10.0		3.0	3.0	3.0	3.0	3.0	
Minimum Split (s)	25.0	25.0		9.2	25.0		15.5	15.5	9.2	15.5	15.5	
Total Split (s)	40.2	40.2		25.2	65.4		24.5	24.5	25.2	24.5	24.5	
Total Split (%)	44.7%	44.7%		28.0%	72.7%		27.3%	27.3%	28.0%	27.3%	27.3%	
Maximum Green (s)	34.0	34.0		19.0	59.2		19.0	19.0	19.0	19.0	19.0	
Yellow Time (s)	4.2	4.2		4.2	4.2		3.0	3.0	4.2	3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.5	2.5	2.0	2.5	2.5	
Lost Time Adjust (s)	-1.5	-1.5		-1.5	-1.5			-1.5	-1.5		-1.5	
Total Lost Time (s)	4.7	4.7		4.7	4.7			4.0	4.7		4.0	
Lead/Lag	Lag	Lag		Lead					Lead			
Lead-Lag Optimize?	Yes	Yes		Yes					Yes			
Vehicle Extension (s)	5.0	5.0		3.0	5.0		3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)	2.0	2.0		3.0	2.0		3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	22.0	22.0		0.0	22.0		0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	10.0	10.0		0.0	10.0		0.0	0.0	0.0	0.0	0.0	
Recall Mode	Min	Min		None	Min		None	None	None	None	None	
Act Effct Green (s)	15.9	15.9		32.7	34.4			11.4	23.5		11.3	
Actuated g/C Ratio	0.32	0.32		0.66	0.69			0.23	0.47		0.23	
v/c Ratio	0.05	0.30		0.39	0.34			0.33	0.23		0.06	
Control Delay	15.7	15.2		6.5	5.9			22.6	2.2		18.1	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Delay	15.7	15.2		6.5	5.9			22.6	2.2		18.1	
LOS	B	B		A	A			C	A		B	
Approach Delay		15.2			6.1			9.2			18.1	
Approach LOS		B			A			A			B	

Intersection Summary	
Area Type:	Other
Cycle Length: 89.9	
Actuated Cycle Length: 49.6	
Natural Cycle: 55	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.39	
Intersection Signal Delay: 9.3	Intersection LOS: A
Intersection Capacity Utilization 50.0%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 9: E Main St/Driveway & Walton Ave



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	297	22	269	378	26	93	3	183	13	5	2
Future Volume (veh/h)	12	297	22	269	378	26	93	3	183	13	5	2
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	2024	2024	2024	1786	1786	1786	1875	1875	1890	1872	1872	1872
Adj Flow Rate, veh/h	12	309	23	280	394	27	97	3	191	14	5	2
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	1	1	1	0	0	4	0	0	0
Cap, veh/h	502	1077	80	741	993	68	456	12	604	275	86	23
Arrive On Green	0.30	0.30	0.30	0.19	0.60	0.60	0.19	0.19	0.19	0.19	0.19	0.19
Sat Flow, veh/h	1102	3628	269	1701	1652	113	1513	62	1602	691	460	121
Grp Volume(v), veh/h	12	163	169	280	0	421	100	0	191	21	0	0
Grp Sat Flow(s),veh/h/ln	1102	1922	1975	1701	0	1765	1575	0	1602	1271	0	0
Q Serve(g_s), s	0.3	2.7	2.7	3.8	0.0	5.1	0.0	0.0	3.5	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.3	2.7	2.7	3.8	0.0	5.1	2.0	0.0	3.5	2.0	0.0	0.0
Prop In Lane	1.00		0.14	1.00		0.06	0.97		1.00	0.67		0.10
Lane Grp Cap(c), veh/h	502	571	586	741	0	1061	468	0	604	384	0	0
V/C Ratio(X)	0.02	0.29	0.29	0.38	0.00	0.40	0.21	0.00	0.32	0.05	0.00	0.00
Avail Cap(c_a), veh/h	1127	1660	1706	1267	0	2607	934	0	1103	818	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	10.3	11.1	11.1	5.7	0.0	4.3	14.4	0.0	9.1	13.7	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.6	0.6	0.3	0.0	0.5	0.2	0.0	0.3	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.1	1.7	1.8	1.4	0.0	1.7	1.3	0.0	1.8	0.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.3	11.7	11.7	6.0	0.0	4.8	14.6	0.0	9.4	13.8	0.0	0.0
LnGrp LOS	B	B	B	A	A	A	B	A	A	B	A	A
Approach Vol, veh/h		344			701			291			21	
Approach Delay, s/veh		11.6			5.3			11.2			13.8	
Approach LOS		B			A			B			B	

Timer - Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	12.5	16.9		11.7		29.4		11.7
Change Period (Y+Rc), s	6.2	6.2		5.5		6.2		5.5
Max Green Setting (Gmax), s	19.0	34.0		19.0		59.2		19.0
Max Q Clear Time (g_c+I1), s	5.8	4.7		4.0		7.1		5.5
Green Ext Time (p_c), s	0.8	6.0		0.0		10.5		0.9

Intersection Summary	
HCM 6th Ctrl Delay	8.3
HCM 6th LOS	A

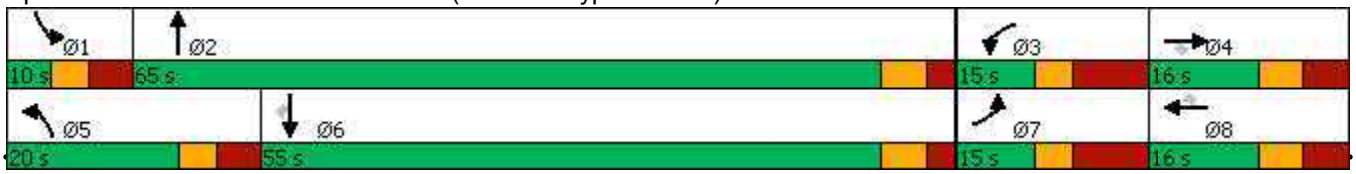
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	397	135	268	143	194	120	292	919	133	88	621	430
Future Volume (vph)	397	135	268	143	194	120	292	919	133	88	621	430
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		1%			2%			-1%			1%	
Storage Length (ft)	150		150	180		250	750		0	130		320
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	0.98		0.98	1.00		0.98		1.00		1.00		
Frt			0.850			0.850		0.981				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3159	1791	1522	1693	1782	1500	1702	3214	0	1701	3304	1507
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3092	1791	1499	1687	1782	1463	1702	3214	0	1697	3304	1507
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			276			257		25				346
Link Speed (mph)		35			25			45			45	
Link Distance (ft)		599			1652			760			1056	
Travel Time (s)		11.7			45.1			11.5			16.0	
Confl. Peds. (#/hr)	4		1	1		4			1	1		
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	0%	0%	0%	0%	1%	1%	5%	2%	0%	3%	1%
Adj. Flow (vph)	409	139	276	147	200	124	301	947	137	91	640	443
Shared Lane Traffic (%)												
Lane Group Flow (vph)	409	139	276	147	200	124	301	1084	0	91	640	443
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		23			23			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.13	1.08	1.08	1.09	1.09	1.09	1.07	1.07	1.07	1.08	1.08	1.08
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	1	1	1	1	1	2		1	2	1
Detector Template							Left	Main25		Left	Main25	Right
Leading Detector (ft)	38	38	0	38	38	0	48	250		48	250	48
Trailing Detector (ft)	-2	-2	0	-2	-2	0	-2	0		-2	0	-2
Detector 1 Position(ft)	-2	-2	0	-2	-2	0	-2	0		-2	0	-2
Detector 1 Size(ft)	40	40	0	40	40	0	50	0		50	0	50
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)								244			244	
Detector 2 Size(ft)								6			6	
Detector 2 Type								Cl+Ex			Cl+Ex	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)								0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Detector Phase	7	4	4	3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	12.0		3.0	12.0	12.0
Minimum Split (s)	12.0	10.3	10.3	12.0	10.3	10.3	10.0	18.0		10.0	18.0	18.0
Total Split (s)	15.0	16.0	16.0	15.0	16.0	16.0	20.0	65.0		10.0	55.0	55.0
Total Split (%)	14.2%	15.1%	15.1%	14.2%	15.1%	15.1%	18.9%	61.3%		9.4%	51.9%	51.9%
Maximum Green (s)	6.0	8.7	8.7	6.0	8.7	8.7	13.5	59.0		3.5	49.0	49.0
Yellow Time (s)	3.0	3.5	3.5	3.0	3.5	3.5	3.0	3.5		3.0	3.5	3.5
All-Red Time (s)	6.0	3.8	3.8	6.0	3.8	3.8	3.5	2.5		3.5	2.5	2.5
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5		-1.5	-1.5	-1.5
Total Lost Time (s)	7.5	5.8	5.8	7.5	5.8	5.8	5.0	4.5		5.0	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	5.0	5.0		2.0	2.0	2.0
Minimum Gap (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.0		0.0	20.0	20.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	25.0		0.0	25.0	25.0
Recall Mode	None	None	None	None	None	None	None	Min		None	Min	Min
Act Effct Green (s)	7.5	10.3	10.3	7.5	10.3	10.3	15.1	41.9		5.0	31.9	31.9
Actuated g/C Ratio	0.09	0.12	0.12	0.09	0.12	0.12	0.17	0.48		0.06	0.36	0.36
v/c Ratio	1.51	0.67	0.66	1.01	0.96	0.31	1.03	0.70		0.94	0.53	0.58
Control Delay	277.6	55.7	13.7	122.5	95.3	2.0	99.4	20.0		122.1	23.4	8.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	277.6	55.7	13.7	122.5	95.3	2.0	99.4	20.0		122.1	23.4	8.1
LOS	F	E	B	F	F	A	F	C		F	C	A
Approach Delay		151.8			79.2			37.3			25.3	
Approach LOS		F			E			D			C	

Intersection Summary

Area Type: Other
Cycle Length: 106
Actuated Cycle Length: 87.7
Natural Cycle: 80
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.51
Intersection Signal Delay: 63.2 — Intersection LOS: E
Intersection Capacity Utilization 76.8% — ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 10: Route 0039 (W Hersheypark Drive) & Walton Ave/Mae St



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	397	135	268	143	194	120	292	919	133	88	621	430
Future Volume (veh/h)	397	135	268	143	194	120	292	919	133	88	621	430
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1780	1794	1794	1778	1778	1764	1823	1766	1766	1794	1752	1780
Adj Flow Rate, veh/h	409	139	0	147	200	0	301	947	137	91	640	443
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	0	0	0	0	1	1	5	5	0	3	1
Cap, veh/h	258	192		133	190		273	1540	223	90	1394	631
Arrive On Green	0.08	0.11	0.00	0.08	0.11	0.00	0.16	0.52	0.52	0.05	0.42	0.42
Sat Flow, veh/h	3289	1794	1521	1693	1778	1495	1736	2942	425	1709	3329	1507
Grp Volume(v), veh/h	409	139	0	147	200	0	301	540	544	91	640	443
Grp Sat Flow(s),veh/h/ln	1645	1794	1521	1693	1778	1495	1736	1678	1689	1709	1665	1507
Q Serve(g_s), s	7.5	7.2	0.0	7.5	10.2	0.0	15.0	21.6	21.6	5.0	13.2	23.1
Cycle Q Clear(g_c), s	7.5	7.2	0.0	7.5	10.2	0.0	15.0	21.6	21.6	5.0	13.2	23.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.25	1.00		1.00
Lane Grp Cap(c), veh/h	258	192		133	190		273	878	884	90	1394	631
V/C Ratio(X)	1.58	0.73		1.11	1.05		1.10	0.61	0.62	1.02	0.46	0.70
Avail Cap(c_a), veh/h	258	192		133	190		273	1063	1070	90	1761	797
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.0	41.3	0.0	44.0	42.6	0.0	40.2	16.0	16.0	45.2	20.0	22.8
Incr Delay (d2), s/veh	279.9	11.2	0.0	109.1	80.0	0.0	85.0	1.5	1.5	99.7	0.1	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	21.6	6.7	0.0	12.0	13.8	0.0	19.2	12.1	12.2	8.0	8.3	12.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	323.9	52.5	0.0	153.0	122.6	0.0	125.3	17.5	17.5	145.0	20.1	24.1
LnGrp LOS	F	D		F	F		F	B	B	F	C	C
Approach Vol, veh/h		548	A		347	A		1385			1174	
Approach Delay, s/veh		255.1			135.5			40.9			31.3	
Approach LOS		F			F			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	54.5	15.0	16.0	20.0	44.5	15.0	16.0
Change Period (Y+Rc), s	6.5	6.0	9.0	* 7.3	6.5	6.0	9.0	* 7.3
Max Green Setting (Gmax), s	3.5	59.0	6.0	* 8.7	13.5	49.0	6.0	* 8.7
Max Q Clear Time (g_c+I1), s	7.0	23.6	9.5	9.2	17.0	25.1	9.5	12.2
Green Ext Time (p_c), s	0.0	24.9	0.0	0.0	0.0	7.6	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	81.1
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

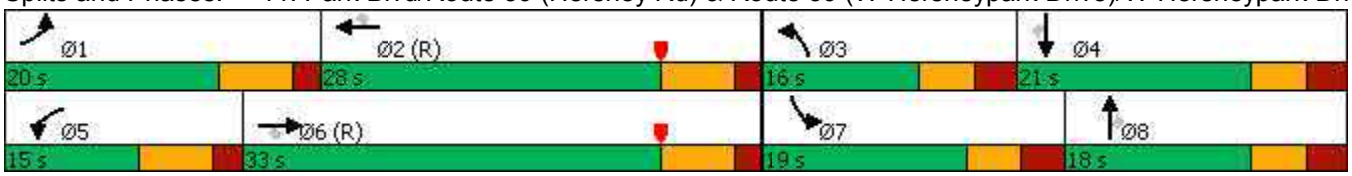
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	335	716	169	127	664	362	209	197	157	207	173	239
Future Volume (vph)	335	716	169	127	664	362	209	197	157	207	173	239
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Grade (%)		3%			-3%			1%			4%	
Storage Length (ft)	350		1000	575		400	0		350	400		450
Storage Lanes	2		1	2		1	2		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	1.00	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3204	3239	1449	3207	3338	1522	3301	1194	1522	1627	3352	1428
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3204	3239	1449	3207	3338	1522	3301	1194	1522	1627	3352	1428
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			204			377			208			249
Link Speed (mph)		45			45			35			35	
Link Distance (ft)		1096			1663			1072			729	
Travel Time (s)		16.6			25.2			20.9			14.2	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	4%	4%	5%	4%	2%	0%	50%	0%	3%	0%	5%
Adj. Flow (vph)	349	746	176	132	692	377	218	205	164	216	180	249
Shared Lane Traffic (%)												
Lane Group Flow (vph)	349	746	176	132	692	377	218	205	164	216	180	249
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.05	1.05	1.05	1.08	1.08	1.08	1.10	1.10	1.10
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	1	1	1	1	1
Detector Template	Left	Main30	Right	Left	Main30	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	48	300	48	48	300	48	48	48	48	48	48	48
Trailing Detector (ft)	-2	0	-2	-2	0	-2	-2	-2	-2	-2	-2	-2
Detector 1 Position(ft)	-2	0	-2	-2	0	-2	-2	-2	-2	-2	-2	-2
Detector 1 Size(ft)	50	0	50	50	0	50	50	50	50	50	50	50
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		294			294							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases			6			2			8			4
Detector Phase	1	6	6	5	2	2	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	3.0	12.0	12.0	3.0	12.0	12.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Split (s)	9.7	18.5	18.5	9.7	18.5	18.5	10.0	10.0	10.0	9.2	10.0	10.0
Total Split (s)	20.0	33.0	33.0	15.0	28.0	28.0	16.0	18.0	18.0	19.0	21.0	21.0
Total Split (%)	23.5%	38.8%	38.8%	17.6%	32.9%	32.9%	18.8%	21.2%	21.2%	22.4%	24.7%	24.7%
Maximum Green (s)	13.5	26.5	26.5	8.5	21.5	21.5	9.8	11.8	11.8	12.8	14.8	14.8
Yellow Time (s)	4.7	4.7	4.7	4.7	4.7	4.7	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.8	1.8	1.8	1.8	1.8	1.8	2.7	2.7	2.7	2.7	2.7	2.7
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.7	4.7	4.7	4.7	4.7	4.7
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0	6.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.5	3.5	3.0	3.5	3.5	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	30.0	30.0	0.0	30.0	30.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	15.0	15.0	0.0	15.0	15.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	None
Act Effct Green (s)	14.3	28.8	28.8	9.5	24.0	24.0	10.9	13.3	13.3	14.0	16.4	16.4
Actuated g/C Ratio	0.17	0.34	0.34	0.11	0.28	0.28	0.13	0.16	0.16	0.16	0.19	0.19
v/c Ratio	0.65	0.68	0.28	0.37	0.73	0.54	0.52	1.10	0.40	0.81	0.28	0.52
Control Delay	39.1	28.2	3.4	39.6	30.8	7.1	39.2	132.9	5.3	58.3	30.7	8.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.1	28.2	3.4	39.6	30.8	7.1	39.2	132.9	5.3	58.3	30.7	8.6
LOS	D	C	A	D	C	A	D	F	A	E	C	A
Approach Delay		27.8			24.3			62.4			31.4	
Approach LOS		C			C			E			C	

Intersection Summary	
Area Type:	Other
Cycle Length: 85	
Actuated Cycle Length: 85	
Offset: 22 (26%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.10	
Intersection Signal Delay: 32.8	Intersection LOS: C
Intersection Capacity Utilization 68.7%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 11: Park Blvd/Route 39 (Hershey Rd) & Route 39 (W Hersheypark Drive)/W Hersheypark Drive



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	335	716	169	127	664	362	209	197	157	207	173	239
Future Volume (veh/h)	335	716	169	127	664	362	209	197	157	207	173	239
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1722	1694	1694	1841	1855	1883	1794	1092	1794	1669	1711	1641
Adj Flow Rate, veh/h	349	746	0	132	692	0	218	205	0	216	180	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	4	4	5	4	2	0	50	0	3	0	5
Cap, veh/h	479	1190		262	1045		353	171		267	709	
Arrive On Green	0.15	0.37	0.00	0.08	0.30	0.00	0.11	0.16	0.00	0.17	0.22	0.00
Sat Flow, veh/h	3181	3218	1435	3401	3524	1596	3315	1092	1521	1589	3250	1390
Grp Volume(v), veh/h	349	746	0	132	692	0	218	205	0	216	180	0
Grp Sat Flow(s),veh/h/ln	1591	1609	1435	1700	1762	1596	1658	1092	1521	1589	1625	1390
Q Serve(g_s), s	8.9	16.2	0.0	3.2	14.6	0.0	5.3	13.3	0.0	11.1	3.9	0.0
Cycle Q Clear(g_c), s	8.9	16.2	0.0	3.2	14.6	0.0	5.3	13.3	0.0	11.1	3.9	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	479	1190		262	1045		353	171		267	709	
V/C Ratio(X)	0.73	0.63		0.50	0.66		0.62	1.20		0.81	0.25	
Avail Cap(c_a), veh/h	561	1190		400	1045		441	171		267	709	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	34.5	22.0	0.0	37.7	26.2	0.0	36.3	35.8	0.0	34.0	27.5	0.0
Incr Delay (d2), s/veh	4.0	2.5	0.0	1.5	3.3	0.0	1.8	132.6	0.0	16.6	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	6.3	9.9	0.0	2.3	10.1	0.0	3.9	16.0	0.0	9.2	2.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.4	24.5	0.0	39.1	29.5	0.0	38.1	168.4	0.0	50.6	27.7	0.0
LnGrp LOS	D	C		D	C		D	F		D	C	
Approach Vol, veh/h		1095	A		824	A		423	A		396	A
Approach Delay, s/veh		28.9			31.0			101.2			40.2	
Approach LOS		C			C			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.8	30.2	13.8	23.2	11.6	36.4	19.0	18.0
Change Period (Y+Rc), s	* 6.5	* 6.5	* 6.2	* 6.2	* 6.5	* 6.5	* 6.2	* 6.2
Max Green Setting (Gmax), s	* 14	* 22	* 9.8	* 15	* 8.5	* 27	* 13	* 12
Max Q Clear Time (g_c+I1), s	10.9	16.6	7.3	5.9	5.2	18.2	13.1	15.3
Green Ext Time (p_c), s	0.4	3.9	0.2	0.4	0.1	6.6	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	42.4
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

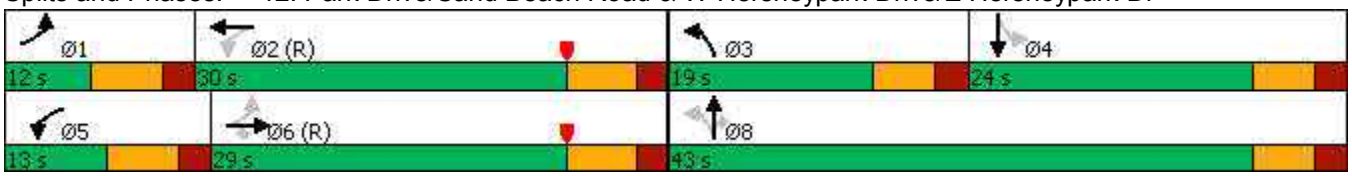
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	1046	212	121	583	18	352	104	172	36	95	56
Future Volume (vph)	26	1046	212	121	583	18	352	104	172	36	95	56
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	11	11	11	12	12	12
Grade (%)		2%			-2%			3%			-3%	
Storage Length (ft)	75		0	190		0	125		185	0		0
Storage Lanes	1		1	1		0	1		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.995				0.850		0.960	
Flt Protected	0.950			0.950			0.950				0.990	
Satd. Flow (prot)	1693	3319	1485	1661	3309	0	1596	1697	1401	0	1728	0
Flt Permitted	0.377			0.124			0.397				0.915	
Satd. Flow (perm)	672	3319	1485	217	3309	0	667	1697	1401	0	1597	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			221		4				179		23	
Link Speed (mph)		45			45			35			35	
Link Distance (ft)		789			2028			659			1125	
Travel Time (s)		12.0			30.7			12.8			21.9	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	2%	2%	4%	4%	0%	2%	1%	4%	0%	1%	0%
Adj. Flow (vph)	27	1090	221	126	607	19	367	108	179	38	99	58
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	1090	221	126	626	0	367	108	179	0	195	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.06	1.06	1.06	1.14	1.14	1.14	1.05	1.05	1.05
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	1	1	1	1	
Detector Template		Main30	Right		Main30					Left		
Leading Detector (ft)	35	300	48	35	300		30	30	30	48	35	
Trailing Detector (ft)	-5	0	-2	-5	0		-10	-10	-10	-2	-5	
Detector 1 Position(ft)	-5	0	-2	-5	0		-10	-10	-10	-2	-5	
Detector 1 Size(ft)	40	0	50	40	0		40	40	40	50	40	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		294			294							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	Perm	NA	
Protected Phases	1	6		5	2		3	8			4	
Permitted Phases	6		6	2			8		8	4		
Detector Phase	1	6	6	5	2		3	8	8	4	4	
Switch Phase												
Minimum Initial (s)	3.0	10.0	10.0	3.0	10.0		3.0	3.0	3.0	3.0	3.0	
Minimum Split (s)	9.5	16.5	16.5	9.5	16.5		9.1	10.0	10.0	10.0	10.0	
Total Split (s)	12.0	29.0	29.0	13.0	30.0		19.0	43.0	43.0	24.0	24.0	
Total Split (%)	14.1%	34.1%	34.1%	15.3%	35.3%		22.4%	50.6%	50.6%	28.2%	28.2%	
Maximum Green (s)	5.5	22.5	22.5	6.5	23.5		12.9	36.9	36.9	17.9	17.9	
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5		3.9	3.9	3.9	3.9	3.9	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.2	2.2	2.2	2.2	2.2	
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	-1.5		-1.5	-1.5	-1.5		-1.5	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		4.6	4.6	4.6		4.6	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes			Yes	Yes	
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0		3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	15.0	15.0	0.0	15.0		0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	30.0	30.0	0.0	30.0		0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	C-Max	C-Max	None	C-Max		None	None	None	None	None	
Act Effct Green (s)	35.0	28.0	28.0	39.3	36.1		34.5	34.5	34.5		15.5	
Actuated g/C Ratio	0.41	0.33	0.33	0.46	0.42		0.41	0.41	0.41		0.18	
v/c Ratio	0.07	1.00	0.35	0.54	0.44		0.86	0.16	0.27		0.63	
Control Delay	22.1	68.8	17.3	23.7	20.7		40.5	15.7	3.4		37.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	
Total Delay	22.1	68.8	17.3	23.7	20.7		40.5	15.7	3.4		37.1	
LOS	C	E	B	C	C		D	B	A		D	
Approach Delay		59.3			21.2			26.3			37.1	
Approach LOS		E			C			C			D	

Intersection Summary

Area Type: Other
Cycle Length: 85
Actuated Cycle Length: 85
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow, Master Intersection
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.00
Intersection Signal Delay: 40.7 Intersection LOS: D
Intersection Capacity Utilization 85.2% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 12: Park Drive/Sand Beach Road & W Hersheypark Drive/E Hersheypark Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	26	1046	212	121	583	18	352	104	172	36	95	56
Future Volume (veh/h)	26	1046	212	121	583	18	352	104	172	36	95	56
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1778	1750	1750	1818	1818	1818	1722	1736	1694	1898	1898	1898
Adj Flow Rate, veh/h	27	1090	221	126	607	19	367	108	179	38	99	58
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	2	2	4	4	4	2	1	4	1	1	1
Cap, veh/h	375	1208	539	255	1410	44	514	659	545	88	145	77
Arrive On Green	0.04	0.36	0.36	0.09	0.41	0.41	0.17	0.38	0.38	0.16	0.16	0.16
Sat Flow, veh/h	1693	3324	1483	1731	3418	107	1640	1736	1435	237	930	494
Grp Volume(v), veh/h	27	1090	221	126	306	320	367	108	179	195	0	0
Grp Sat Flow(s),veh/h/ln	1693	1662	1483	1731	1727	1798	1640	1736	1435	1661	0	0
Q Serve(g_s), s	0.8	26.4	9.5	3.5	10.8	10.8	14.4	3.5	7.5	6.2	0.0	0.0
Cycle Q Clear(g_c), s	0.8	26.4	9.5	3.5	10.8	10.8	14.4	3.5	7.5	9.4	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.06	1.00		1.00	0.19		0.30
Lane Grp Cap(c), veh/h	375	1208	539	255	712	742	514	659	545	310	0	0
V/C Ratio(X)	0.07	0.90	0.41	0.49	0.43	0.43	0.71	0.16	0.33	0.63	0.00	0.00
Avail Cap(c_a), veh/h	453	1208	539	270	712	742	514	784	648	426	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	15.8	25.6	20.2	18.8	17.8	17.8	22.9	17.4	18.7	34.1	0.0	0.0
Incr Delay (d2), s/veh	0.1	11.0	2.3	1.5	1.9	1.8	4.7	0.1	0.3	2.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.5	16.6	6.0	2.4	7.6	7.8	10.5	2.4	4.3	7.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.9	36.6	22.5	20.3	19.7	19.7	27.6	17.6	19.0	36.3	0.0	0.0
LnGrp LOS	B	D	C	C	B	B	C	B	B	D	A	A
Approach Vol, veh/h		1338			752			654			195	
Approach Delay, s/veh		33.9			19.8			23.6			36.3	
Approach LOS		C			B			C			D	

Timer - Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	8.1	40.1	19.0	17.9	12.3	35.9		36.9
Change Period (Y+Rc), s	6.5	6.5	* 6.1	* 6.1	6.5	6.5		* 6.1
Max Green Setting (Gmax), s	5.5	23.5	* 13	* 18	6.5	22.5		* 37
Max Q Clear Time (g_c+I1), s	3.3	13.3	16.9	11.4	6.0	28.9		10.0
Green Ext Time (p_c), s	0.0	7.1	0.0	0.3	0.0	0.0		1.0

Intersection Summary	
HCM 6th Ctrl Delay	28.1
HCM 6th LOS	C

Notes

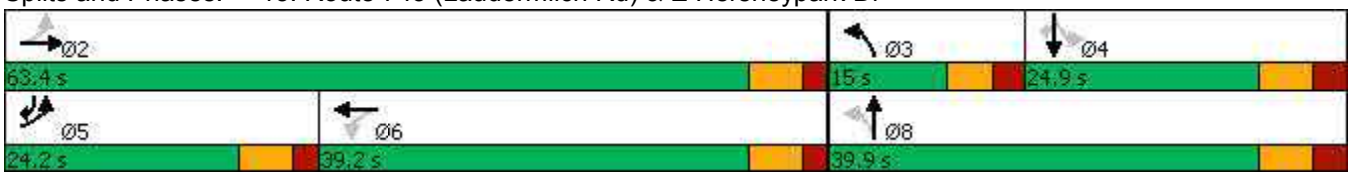
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	596	638	117	3	306	4	75	176	2	7	89	270
Future Volume (vph)	596	638	117	3	306	4	75	176	2	7	89	270
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	11	11	11	11	11	11
Grade (%)		2%			3%			6%			-6%	
Storage Length (ft)	265		0	150		0	250		0	150		230
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.977			0.998			0.998				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1660	3253	0	1684	3204	0	1603	1684	0	1703	1774	1493
Flt Permitted	0.415			0.351			0.504			0.640		
Satd. Flow (perm)	725	3253	0	622	3204	0	851	1684	0	1147	1774	1493
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		34			1			1				284
Link Speed (mph)		45			45			35			35	
Link Distance (ft)		2621			1081			1569			722	
Travel Time (s)		39.7			16.4			30.6			14.1	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	2%	0%	0%	5%	0%	0%	0%	0%	0%	1%	2%
Adj. Flow (vph)	627	672	123	3	322	4	79	185	2	7	94	284
Shared Lane Traffic (%)												
Lane Group Flow (vph)	627	795	0	3	326	0	79	187	0	7	94	284
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.16	1.16	1.16	1.08	1.08	1.08
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	1		1	1	1
Detector Template	Left	Main30		Left	Main30		Left	Thru		Left	Thru	Right
Leading Detector (ft)	48	300		48	300		48	48		48	48	48
Trailing Detector (ft)	-2	0		-2	0		-2	-2		-2	-2	-2
Detector 1 Position(ft)	-2	0		-2	0		-2	-2		-2	-2	-2
Detector 1 Size(ft)	50	0		50	0		50	50		50	50	50
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		294			294							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA		Perm	NA	pm+ov
Protected Phases	5	2			6		3	8			4	5
Permitted Phases	2			6			8			4		4
Detector Phase	5	2		6	6		3	8		4	4	5
Switch Phase												
Minimum Initial (s)	3.0	10.0		10.0	10.0		3.0	3.0		3.0	3.0	3.0
Minimum Split (s)	9.2	16.2		16.2	16.2		9.7	10.0		10.0	10.0	9.2
Total Split (s)	24.2	63.4		39.2	39.2		15.0	39.9		24.9	24.9	24.2
Total Split (%)	23.4%	61.4%		37.9%	37.9%		14.5%	38.6%		24.1%	24.1%	23.4%
Maximum Green (s)	18.0	57.2		33.0	33.0		9.0	33.0		18.0	18.0	18.0
Yellow Time (s)	4.2	4.2		4.2	4.2		3.5	4.2		4.2	4.2	4.2
All-Red Time (s)	2.0	2.0		2.0	2.0		2.5	2.7		2.7	2.7	2.0
Lost Time Adjust (s)	-1.5	-1.5		-1.5	-1.5		-1.5	-1.5		-1.5	-1.5	-1.5
Total Lost Time (s)	4.7	4.7		4.7	4.7		4.5	5.4		5.4	5.4	4.7
Lead/Lag	Lead			Lag	Lag		Lead			Lag	Lag	Lead
Lead-Lag Optimize?	Yes			Yes	Yes		Yes			Yes	Yes	Yes
Vehicle Extension (s)	3.0	5.7		5.7	5.7		3.0	3.0		3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Time Before Reduce (s)	0.0	30.0		30.0	30.0		0.0	0.0		0.0	0.0	0.0
Time To Reduce (s)	0.0	15.0		15.0	15.0		0.0	0.0		0.0	0.0	0.0
Recall Mode	None	Min		Min	Min		None	None		None	None	None
Act Effct Green (s)	44.9	44.9		19.9	19.9		23.6	22.7		11.9	11.9	37.6
Actuated g/C Ratio	0.58	0.58		0.26	0.26		0.30	0.29		0.15	0.15	0.48
v/c Ratio	0.95	0.42		0.02	0.40		0.23	0.38		0.04	0.35	0.33
Control Delay	42.5	10.5		23.0	26.1		22.3	24.9		33.1	37.0	3.3
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	42.5	10.5		23.0	26.1		22.3	24.9		33.1	37.0	3.3
LOS	D	B		C	C		C	C		C	D	A
Approach Delay		24.6			26.1			24.1			12.1	
Approach LOS		C			C			C			B	

Intersection Summary	
Area Type:	Other
Cycle Length: 103.3	
Actuated Cycle Length: 78	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.95	
Intersection Signal Delay: 22.7	Intersection LOS: C
Intersection Capacity Utilization 67.3%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 13: Route 743 (Laudermilch Rd) & E Hersheypark Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	596	638	117	3	306	4	75	176	2	7	89	270
Future Volume (veh/h)	596	638	117	3	306	4	75	176	2	7	89	270
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1750	1750	1750	1750	1680	1680	1599	1599	1599	2024	2009	1995
Adj Flow Rate, veh/h	627	672	0	3	322	0	79	185	2	7	94	284
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	0	5	5	0	0	0	0	1	2
Cap, veh/h	675	1833		272	748		339	499	5	339	359	734
Arrive On Green	0.26	0.55	0.00	0.23	0.23	0.00	0.08	0.32	0.32	0.18	0.18	0.18
Sat Flow, veh/h	1666	3412	0	756	3275	0	1523	1579	17	1366	2009	1691
Grp Volume(v), veh/h	627	672	0	3	322	0	79	0	187	7	94	284
Grp Sat Flow(s),veh/h/ln	1666	1662	0	756	1596	0	1523	0	1596	1366	2009	1691
Q Serve(g_s), s	19.5	8.7	0.0	0.2	6.6	0.0	3.0	0.0	6.9	0.3	3.1	8.7
Cycle Q Clear(g_c), s	19.5	8.7	0.0	0.2	6.6	0.0	3.0	0.0	6.9	0.3	3.1	8.7
Prop In Lane	1.00		0.00	1.00		0.00	1.00		0.01	1.00		1.00
Lane Grp Cap(c), veh/h	675	1833		272	748		339	0	505	339	359	734
V/C Ratio(X)	0.93	0.37		0.01	0.43		0.23	0.00	0.37	0.02	0.26	0.39
Avail Cap(c_a), veh/h	675	2557		436	1443		429	0	722	444	514	864
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.3	9.6	0.0	22.5	24.9	0.0	20.5	0.0	20.2	25.9	27.0	14.7
Incr Delay (d2), s/veh	19.3	0.4	0.0	0.0	1.2	0.0	0.3	0.0	0.5	0.0	0.4	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	15.4	4.7	0.0	0.1	4.3	0.0	1.8	0.0	4.5	0.2	2.6	5.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.5	10.0	0.0	22.5	26.1	0.0	20.9	0.0	20.7	25.9	27.4	15.0
LnGrp LOS	D	A		C	C		C	A	C	C	C	B
Approach Vol, veh/h		1299	A		325	A		266			385	
Approach Delay, s/veh		22.3			26.0			20.7			18.2	
Approach LOS		C			C			C			B	

Timer - Assigned Phs	2	3	4	5	6	8
Phs Duration (G+Y+Rc), s	46.8	10.5	19.0	24.2	22.6	29.5
Change Period (Y+Rc), s	6.2	6.0	* 6.9	6.2	6.2	* 6.9
Max Green Setting (Gmax), s	57.2	9.0	* 18	18.0	33.0	* 33
Max Q Clear Time (g_c+I1), s	11.2	5.5	11.2	22.0	9.1	8.9
Green Ext Time (p_c), s	22.4	0.1	0.9	0.0	7.3	0.6

Intersection Summary	
HCM 6th Ctrl Delay	22.0
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

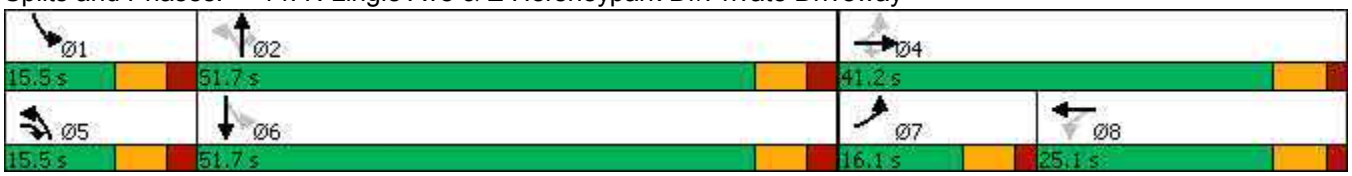
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	52	16	581	19	25	18	276	69	10	11	155	7
Future Volume (vph)	52	16	581	19	25	18	276	69	10	11	155	7
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	16	16	12	12	12	12	12	12
Grade (%)		1%			-3%			-6%			1%	
Storage Length (ft)	200		0	75		0	175		100	125		0
Storage Lanes	1		1	1		0	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.939				0.850		0.994	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1668	1060	1522	1653	1467	0	1727	1520	1126	851	1747	0
Flt Permitted	0.408			0.769			0.530			0.711		
Satd. Flow (perm)	716	1060	1522	1338	1467	0	963	1520	1126	637	1747	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			593		18				160		3	
Link Speed (mph)		45			25			35			35	
Link Distance (ft)		1844			617			1844			713	
Travel Time (s)		27.9			16.8			35.9			13.9	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	2%	69%	0%	5%	28%	39%	2%	22%	40%	100%	2%	0%
Adj. Flow (vph)	53	16	593	19	26	18	282	70	10	11	158	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	53	16	593	19	44	0	282	70	10	11	165	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.08	1.08	1.08	1.05	0.89	0.89	1.03	1.03	1.03	1.08	1.08	1.08
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	1	1	1		1	2	1	1	2	
Detector Template	Left		Right	Left			Left	Main20	Right	Left	Main20	
Leading Detector (ft)	48	48	48	48	48		48	200	48	48	200	
Trailing Detector (ft)	-2	-2	-2	-2	-2		-2	0	-2	-2	0	
Detector 1 Position(ft)	-2	-2	-2	-2	-2		-2	0	-2	-2	0	
Detector 1 Size(ft)	50	50	50	50	50		50	0	50	50	0	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)								194			194	
Detector 2 Size(ft)								6			6	
Detector 2 Type								Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)								0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	pm+ov	Perm	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	7	4	5		8		5	2		1	6	
Permitted Phases	4		4	8			2		2	6		
Detector Phase	7	4	5	8	8		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0	3.0	4.0	4.0		3.0	10.0	10.0	3.0	10.0	
Minimum Split (s)	10.1	10.1	10.7	10.1	10.1		10.7	16.7	16.7	10.7	16.7	
Total Split (s)	16.1	41.2	15.5	25.1	25.1		15.5	51.7	51.7	15.5	51.7	
Total Split (%)	14.9%	38.0%	14.3%	23.2%	23.2%		14.3%	47.7%	47.7%	14.3%	47.7%	
Maximum Green (s)	10.0	35.1	8.8	19.0	19.0		8.8	45.0	45.0	8.8	45.0	
Yellow Time (s)	4.3	4.3	4.2	4.3	4.3		4.2	4.2	4.2	4.2	4.2	
All-Red Time (s)	1.8	1.8	2.5	1.8	1.8		2.5	2.5	2.5	2.5	2.5	
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	-1.5		-1.5	-1.5	-1.5	-1.5	-1.5	
Total Lost Time (s)	4.6	4.6	5.2	4.6	4.6		5.2	5.2	5.2	5.2	5.2	
Lead/Lag	Lead		Lead	Lag	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes			Yes	Yes			Yes	Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	5.6	5.6	3.0	5.6	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	24.0	24.0	0.0	24.0	
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	12.0	12.0	0.0	12.0	
Recall Mode	None	None	None	None	None		None	Min	Min	None	Min	
Act Effct Green (s)	16.4	16.1	24.9	9.1	9.1		32.6	34.5	34.5	24.5	16.1	
Actuated g/C Ratio	0.31	0.31	0.47	0.17	0.17		0.62	0.65	0.65	0.46	0.31	
v/c Ratio	0.13	0.05	0.57	0.08	0.16		0.37	0.07	0.01	0.03	0.31	
Control Delay	14.8	14.4	3.2	26.5	20.0		10.6	12.8	0.0	9.8	20.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	14.8	14.4	3.2	26.5	20.0		10.6	12.8	0.0	9.8	20.4	
LOS	B	B	A	C	C		B	B	A	A	C	
Approach Delay		4.4			22.0			10.7			19.7	
Approach LOS		A			C			B			B	

Intersection Summary

Area Type: Other
Cycle Length: 108.4
Actuated Cycle Length: 52.7
Natural Cycle: 55
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.57
Intersection Signal Delay: 9.2 Intersection LOS: A
Intersection Capacity Utilization 62.9% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 14: N Lingle Ave & E Hersheypark Dr/Private Driveway



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	52	16	581	19	25	18	276	69	10	11	155	7
Future Volume (veh/h)	52	16	581	19	25	18	276	69	10	11	155	7
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1766	826	1794	1841	1574	1574	1995	1711	1455	390	1766	1766
Adj Flow Rate, veh/h	53	16	593	19	26	18	282	70	10	11	158	7
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	69	0	5	28	28	2	22	40	100	2	2
Cap, veh/h	546	322	849	330	218	151	602	561	404	188	328	15
Arrive On Green	0.06	0.39	0.39	0.25	0.25	0.25	0.17	0.33	0.33	0.04	0.20	0.20
Sat Flow, veh/h	1682	826	1521	843	866	600	1900	1711	1233	372	1679	74
Grp Volume(v), veh/h	53	16	593	19	0	44	282	70	10	11	0	165
Grp Sat Flow(s),veh/h/ln	1682	826	1521	843	0	1466	1900	1711	1233	372	0	1753
Q Serve(g_s), s	1.3	0.7	17.2	1.1	0.0	1.4	6.3	1.7	0.3	1.4	0.0	5.1
Cycle Q Clear(g_c), s	1.3	0.7	17.2	1.1	0.0	1.4	6.3	1.7	0.3	1.4	0.0	5.1
Prop In Lane	1.00		1.00	1.00		0.41	1.00		1.00	1.00		0.04
Lane Grp Cap(c), veh/h	546	322	849	330	0	369	602	561	404	188	0	342
V/C Ratio(X)	0.10	0.05	0.70	0.06	0.00	0.12	0.47	0.12	0.02	0.06	0.00	0.48
Avail Cap(c_a), veh/h	757	496	1169	402	0	493	604	1305	941	238	0	1337
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.2	11.5	9.7	17.5	0.0	17.6	13.2	14.4	13.9	18.6	0.0	21.8
Incr Delay (d2), s/veh	0.1	0.1	1.1	0.1	0.0	0.1	0.6	0.3	0.1	0.1	0.0	3.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.7	0.2	8.6	0.4	0.0	0.8	4.3	1.2	0.2	0.2	0.0	4.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.2	11.6	10.8	17.5	0.0	17.7	13.8	14.6	13.9	18.7	0.0	24.8
LnGrp LOS	B	B	B	B	A	B	B	B	B	B	A	C
Approach Vol, veh/h		662			63			362			176	
Approach Delay, s/veh		11.0			17.7			13.9			24.4	
Approach LOS		B			B			B			C	

Timer - Assigned Phs	1	2		4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.4	25.2		28.4	15.5	17.1	8.5	19.9
Change Period (Y+Rc), s	6.7	6.7		* 6.1	6.7	6.7	* 6.1	* 6.1
Max Green Setting (Gmax), s	8.8	45.0		* 35	8.8	45.0	* 10	* 19
Max Q Clear Time (g_c+I1), s	3.9	4.2		19.7	8.8	7.1	3.8	3.6
Green Ext Time (p_c), s	0.0	1.4		2.6	0.0	3.3	0.0	0.2

Intersection Summary	
HCM 6th Ctrl Delay	14.1
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	24	60	499	20	30	455
Future Volume (vph)	24	60	499	20	30	455
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	15	15	14	14	14	14
Grade (%)	1%		2%			-1%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.904		0.995			
Flt Protected	0.986					0.997
Satd. Flow (prot)	1736	0	1835	0	0	1854
Flt Permitted	0.986					0.997
Satd. Flow (perm)	1736	0	1835	0	0	1854
Link Speed (mph)	25		35			35
Link Distance (ft)	2491		680			1197
Travel Time (s)	67.9		13.2			23.3
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	4%	0%	3%	5%	0%	4%
Adj. Flow (vph)	25	62	514	21	31	469
Shared Lane Traffic (%)						
Lane Group Flow (vph)	87	0	535	0	0	500
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	15		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	0.95	0.95	1.00	1.00	0.98	0.98
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Stop			Stop

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 63.2%		ICU Level of Service B	
Analysis Period (min) 15			

Intersection	
Intersection Delay, s/veh	16.9
Intersection LOS	C

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	24	60	499	20	30	455
Future Vol, veh/h	24	60	499	20	30	455
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles, %	4	0	3	5	0	4
Mvmt Flow	25	62	514	21	31	469
Number of Lanes	1	0	1	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	9.9	18.3	16.6
HCM LOS	A	C	C

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	29%	6%
Vol Thru, %	96%	0%	94%
Vol Right, %	4%	71%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	519	84	485
LT Vol	0	24	30
Through Vol	499	0	455
RT Vol	20	60	0
Lane Flow Rate	535	87	500
Geometry Grp	1	1	1
Degree of Util (X)	0.703	0.143	0.659
Departure Headway (Hd)	4.728	5.933	4.748
Convergence, Y/N	Yes	Yes	Yes
Cap	760	608	755
Service Time	2.799	3.933	2.823
HCM Lane V/C Ratio	0.704	0.143	0.662
HCM Control Delay	18.3	9.9	16.6
HCM Lane LOS	C	A	C
HCM 95th-tile Q	5.9	0.5	5

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	216	0	0	0	162	10
Future Volume (vph)	216	0	0	0	162	10
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	13	13	12	12	12	12
Grade (%)	1%			0%	11%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.992	
Flt Protected					0.955	
Satd. Flow (prot)	1814	0	0	0	1587	0
Flt Permitted					0.955	
Satd. Flow (perm)	1814	0	0	0	1587	0
Link Speed (mph)	30			25	25	
Link Distance (ft)	1120			1174	602	
Travel Time (s)	25.5			32.0	16.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	0%	0%	0%	1%	10%
Adj. Flow (vph)	235	0	0	0	176	11
Shared Lane Traffic (%)						
Lane Group Flow (vph)	235	0	0	0	187	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.03	1.03	1.07	1.07	1.15	1.15
Turning Speed (mph)		9	15		15	9
Sign Control	Stop			Stop	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 28.8%	ICU Level of Service A
Analysis Period (min) 15	

Intersection	
Intersection Delay, s/veh	9.2
Intersection LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	216	0	0	0	162	10
Future Vol, veh/h	216	0	0	0	162	10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	0	0	0	1	10
Mvmt Flow	235	0	0	0	176	11
Number of Lanes	1	0	0	0	1	0

Approach	EB	NB
Opposing Approach		
Opposing Lanes	0	0
Conflicting Approach Left		EB
Conflicting Lanes Left	0	1
Conflicting Approach Right	NB	
Conflicting Lanes Right	1	0
HCM Control Delay	9.2	9.1
HCM LOS	A	A

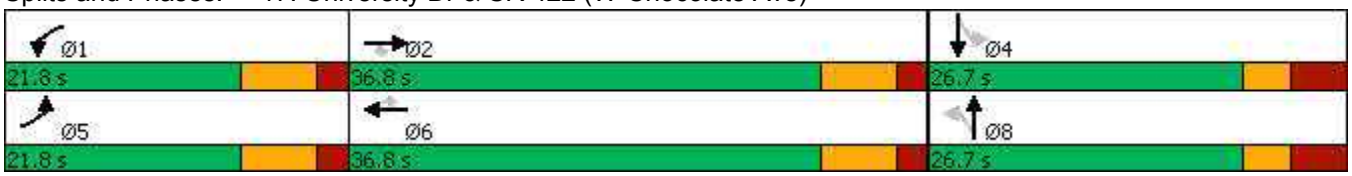
Lane	NBLn1	EBLn1
Vol Left, %	94%	0%
Vol Thru, %	0%	100%
Vol Right, %	6%	0%
Sign Control	Stop	Stop
Traffic Vol by Lane	172	216
LT Vol	162	0
Through Vol	0	216
RT Vol	10	0
Lane Flow Rate	187	235
Geometry Grp	1	1
Degree of Util (X)	0.24	0.286
Departure Headway (Hd)	4.618	4.392
Convergence, Y/N	Yes	Yes
Cap	780	822
Service Time	2.634	2.406
HCM Lane V/C Ratio	0.24	0.286
HCM Control Delay	9.1	9.2
HCM Lane LOS	A	A
HCM 95th-tile Q	0.9	1.2

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	1123	113	76	897	17	373	24	250	36	18	45
Future Volume (vph)	11	1123	113	76	897	17	373	24	250	36	18	45
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	12	14	11	12	12	12	12	12	11	12	12
Grade (%)		1%			-1%			0%			1%	
Storage Length (ft)	210		225	240		225	0		0	0		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.863			0.893	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1645	3369	1608	1661	3403	1451	1693	1539	0	1645	1551	0
Flt Permitted	0.950			0.950			0.713			0.405		
Satd. Flow (perm)	1645	3369	1608	1661	3403	1451	1271	1539	0	701	1551	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			134			134		266			48	
Link Speed (mph)		50			50			25			25	
Link Distance (ft)		1997			877			940			239	
Travel Time (s)		27.2			12.0			25.6			6.5	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	1%	1%	0%	1%	6%	1%	0%	1%	0%	6%	2%
Adj. Flow (vph)	12	1195	120	81	954	18	397	26	266	38	19	48
Shared Lane Traffic (%)												
Lane Group Flow (vph)	12	1195	120	81	954	18	397	292	0	38	67	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.13	1.08	0.99	1.11	1.07	1.07	1.07	1.07	1.07	1.13	1.08	1.08
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	1		1	1	
Detector Template		Main35			Main35							
Leading Detector (ft)	38	350	0	38	350	0	38	38		38	38	
Trailing Detector (ft)	-2	0	0	-2	0	0	-2	-2		-2	-2	
Detector 1 Position(ft)	-2	0	0	-2	0	0	-2	-2		-2	-2	
Detector 1 Size(ft)	40	0	0	40	0	0	40	40		40	40	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		344			344							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2			6	8			4		
Detector Phase	5	2	2	1	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)	3.0	15.0	15.0	3.0	15.0	15.0	3.0	3.0		3.0	3.0	
Minimum Split (s)	9.8	21.8	21.8	9.8	21.8	21.8	15.0	15.0		15.0	15.0	
Total Split (s)	21.8	36.8	36.8	21.8	36.8	36.8	26.7	26.7		26.7	26.7	
Total Split (%)	25.6%	43.1%	43.1%	25.6%	43.1%	43.1%	31.3%	31.3%		31.3%	31.3%	
Maximum Green (s)	15.0	30.0	30.0	15.0	30.0	30.0	20.0	20.0		20.0	20.0	
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	4.8	3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	3.7	3.7		3.7	3.7	
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5		-1.5	-1.5	
Total Lost Time (s)	5.3	5.3	5.3	5.3	5.3	5.3	5.2	5.2		5.2	5.2	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0	6.0	3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.5	3.5	3.0	3.5	3.5	3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	35.0	35.0	0.0	35.0	35.0	0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	18.0	18.0	0.0	18.0	18.0	0.0	0.0		0.0	0.0	
Recall Mode	None	Min	Min	None	Min	Min	None	None		None	None	
Act Effct Green (s)	7.7	31.8	31.8	10.6	42.1	42.1	21.7	21.7		21.7	21.7	
Actuated g/C Ratio	0.10	0.41	0.41	0.14	0.55	0.55	0.28	0.28		0.28	0.28	
v/c Ratio	0.07	0.86	0.16	0.35	0.51	0.02	1.11	0.47		0.19	0.14	
Control Delay	34.4	30.1	3.4	35.5	12.9	0.1	111.8	7.4		26.6	11.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	34.4	30.1	3.4	35.5	12.9	0.1	111.8	7.4		26.6	11.4	
LOS	C	C	A	D	B	A	F	A		C	B	
Approach Delay		27.8			14.5			67.6			16.9	
Approach LOS		C			B			E			B	

Intersection Summary	
Area Type:	Other
Cycle Length: 85.3	
Actuated Cycle Length: 77.1	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.11	
Intersection Signal Delay: 31.6	Intersection LOS: C
Intersection Capacity Utilization 80.4%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 17: University Dr & SR 422 (W Chocolate Ave)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	1123	113	76	897	17	373	24	250	36	18	45
Future Volume (veh/h)	11	1123	113	76	897	17	373	24	250	36	18	45
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1794	1780	1852	1837	1823	1752	1786	1800	1800	1794	1710	1710
Adj Flow Rate, veh/h	12	1195	120	81	954	18	397	26	266	38	19	48
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	1	1	0	1	6	1	0	0	0	6	6
Cap, veh/h	50	1422	660	139	1631	699	440	40	406	232	124	313
Arrive On Green	0.03	0.42	0.42	0.08	0.47	0.47	0.29	0.29	0.29	0.29	0.29	0.29
Sat Flow, veh/h	1709	3383	1569	1750	3464	1485	1345	138	1409	1101	430	1085
Grp Volume(v), veh/h	12	1195	120	81	954	18	397	0	292	38	0	67
Grp Sat Flow(s),veh/h/ln	1709	1691	1569	1750	1732	1485	1345	0	1546	1101	0	1515
Q Serve(g_s), s	0.5	23.6	3.6	3.3	15.0	0.5	19.0	0.0	12.4	2.3	0.0	2.5
Cycle Q Clear(g_c), s	0.5	23.6	3.6	3.3	15.0	0.5	21.5	0.0	12.4	14.7	0.0	2.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.91	1.00		0.72
Lane Grp Cap(c), veh/h	50	1422	660	139	1631	699	440	0	446	232	0	437
V/C Ratio(X)	0.24	0.84	0.18	0.58	0.58	0.03	0.90	0.00	0.65	0.16	0.00	0.15
Avail Cap(c_a), veh/h	378	1429	663	387	1631	699	440	0	446	232	0	437
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	35.4	19.4	13.6	33.1	14.4	10.6	29.0	0.0	23.3	29.7	0.0	19.8
Incr Delay (d2), s/veh	2.5	5.7	0.5	3.8	1.3	0.1	21.5	0.0	3.4	0.3	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.4	13.6	2.1	2.6	8.7	0.3	14.9	0.0	8.4	1.1	0.0	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.9	25.1	14.0	36.9	15.7	10.6	50.5	0.0	26.7	30.1	0.0	19.9
LnGrp LOS	D	C	B	D	B	B	D	A	C	C	A	B
Approach Vol, veh/h		1327			1053			689			105	
Approach Delay, s/veh		24.2			17.2			40.4			23.6	
Approach LOS		C			B			D			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.2	36.6		26.7	7.5	40.4		26.7
Change Period (Y+Rc), s	6.8	6.8		* 6.7	6.8	6.8		* 6.7
Max Green Setting (Gmax), s	15.0	30.0		* 20	15.0	30.0		* 20
Max Q Clear Time (g_c+I1), s	5.3	25.6		16.7	2.5	17.0		23.5
Green Ext Time (p_c), s	0.1	4.2		0.1	0.0	11.4		0.0

Intersection Summary	
HCM 6th Ctrl Delay	25.4
HCM 6th LOS	C

Notes

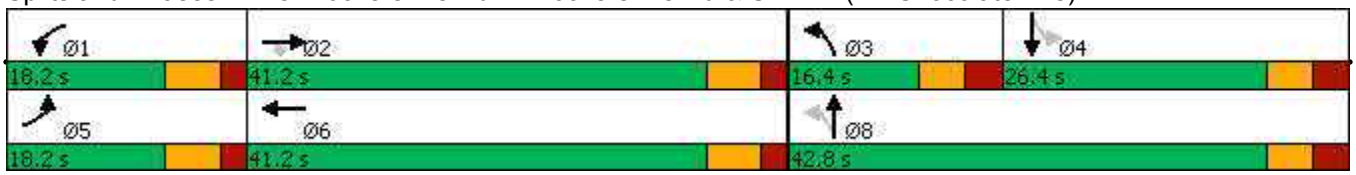
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	969	376	106	706	11	285	106	82	31	116	8
Future Volume (vph)	45	969	376	106	706	11	285	106	82	31	116	8
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	12	14	11	12	12	11	11	13	12	12	12
Grade (%)		-2%			2%			1%			-2%	
Storage Length (ft)	125		200	125		0	0		100	0		0
Storage Lanes	1		1	1		0	1		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor											1.00	
Frt			0.850		0.998			0.934			0.993	
Flt Protected	0.950			0.950			0.950				0.990	
Satd. Flow (prot)	1670	3386	1632	1604	3314	0	1628	1601	0	0	1773	0
Flt Permitted	0.950			0.950			0.428				0.892	
Satd. Flow (perm)	1670	3386	1632	1604	3314	0	734	1601	0	0	1597	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			364		2			44			2	
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		2885			1404			806			192	
Travel Time (s)		56.2			27.4			15.7			3.7	
Confl. Peds. (#/hr)							1					1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	2%	1%	2%	2%	0%	1%	1%	1%	0%	1%	0%
Adj. Flow (vph)	46	999	388	109	728	11	294	109	85	32	120	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	46	999	388	109	739	0	294	194	0	0	160	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.11	1.06	0.97	1.13	1.09	1.09	1.13	1.13	1.03	1.06	1.06	1.06
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	2	1	2		1	1		1	1	
Detector Template		Main25			Main25					Left		
Leading Detector (ft)	38	250	106	38	250		38	38		48	38	
Trailing Detector (ft)	-2	0	0	-2	0		-2	-2		-2	-2	
Detector 1 Position(ft)	-2	0	0	-2	0		-2	-2		-2	-2	
Detector 1 Size(ft)	40	0	0	40	0		40	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		244	100		244							
Detector 2 Size(ft)		6	6		6							
Detector 2 Type		Cl+Ex	Cl+Ex		Cl+Ex							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0	0.0		0.0							
Turn Type	Prot	NA	Perm	Prot	NA		pm+pt	NA		Perm	NA	
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases			2				8			4		
Detector Phase	5	2	2	1	6		3	8		4	4	
Switch Phase												
Minimum Initial (s)	3.0	15.0	15.0	3.0	15.0		3.0	3.0		3.0	3.0	
Minimum Split (s)	9.4	21.2	21.2	9.2	25.0		10.0	25.0		10.0	10.0	
Total Split (s)	18.2	41.2	41.2	18.2	41.2		16.4	42.8		26.4	26.4	
Total Split (%)	17.8%	40.3%	40.3%	17.8%	40.3%		16.0%	41.9%		25.8%	25.8%	
Maximum Green (s)	12.0	35.0	35.0	12.0	35.0		10.0	36.4		20.0	20.0	
Yellow Time (s)	4.2	4.2	4.2	4.2	4.2		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.9	2.9		2.9	2.9	
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	-1.5		-1.5	-1.5			-1.5	
Total Lost Time (s)	4.7	4.7	4.7	4.7	4.7		4.9	4.9			4.9	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes			Yes	Yes	
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.5	3.5	3.0	3.5		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	25.0	25.0	0.0	25.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	12.5	12.5	0.0	12.5		0.0	0.0		0.0	0.0	
Recall Mode	None	Min	Min	None	Min		None	None		None	None	
Walk Time (s)							2.0					
Flash Dont Walk (s)							1.0					
Pedestrian Calls (#/hr)							0					
Act Effct Green (s)	9.7	37.1	37.1	12.0	41.6		32.5	32.5			15.9	
Actuated g/C Ratio	0.10	0.40	0.40	0.13	0.45		0.35	0.35			0.17	
v/c Ratio	0.26	0.74	0.45	0.53	0.50		0.80	0.33			0.58	
Control Delay	44.5	29.7	5.1	49.7	21.7		43.4	19.4			45.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	
Total Delay	44.5	29.7	5.1	49.7	21.7		43.4	19.4			45.0	
LOS	D	C	A	D	C		D	B			D	
Approach Delay		23.5			25.3			33.8			45.0	
Approach LOS		C			C			C			D	

Intersection Summary	
Area Type: Other	
Cycle Length: 102.2	
Actuated Cycle Length: 92.7	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.80	
Intersection Signal Delay: 27.0	Intersection LOS: C
Intersection Capacity Utilization 75.9%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 18: Hockersville Rd/N. Hockersville Rd & SR 422 (W. Chocolate Ave)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	969	376	106	706	11	285	106	82	31	116	8
Future Volume (veh/h)	45	969	376	106	706	11	285	106	82	31	116	8
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1875	1846	1935	1750	1750	1750	1780	1780	1852	1860	1860	1860
Adj Flow Rate, veh/h	46	999	388	109	728	11	294	109	85	32	120	8
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	2	1	2	2	2	1	1	1	1	1	1
Cap, veh/h	89	1450	678	164	1548	23	454	299	233	84	183	11
Arrive On Green	0.05	0.41	0.41	0.10	0.46	0.46	0.13	0.32	0.32	0.13	0.13	0.13
Sat Flow, veh/h	1785	3508	1640	1666	3352	51	1696	927	723	254	1380	86
Grp Volume(v), veh/h	46	999	388	109	361	378	294	0	194	160	0	0
Grp Sat Flow(s),veh/h/ln	1785	1754	1640	1666	1662	1740	1696	0	1649	1719	0	0
Q Serve(g_s), s	2.2	20.2	15.7	5.4	12.9	12.9	11.5	0.0	7.8	4.8	0.0	0.0
Cycle Q Clear(g_c), s	2.2	20.2	15.7	5.4	12.9	12.9	11.5	0.0	7.8	7.6	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.03	1.00		0.44	0.20		0.05
Lane Grp Cap(c), veh/h	89	1450	678	164	768	804	454	0	532	278	0	0
V/C Ratio(X)	0.52	0.69	0.57	0.66	0.47	0.47	0.65	0.00	0.36	0.58	0.00	0.00
Avail Cap(c_a), veh/h	279	1484	694	261	768	804	454	0	725	474	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	40.0	20.8	19.4	37.5	16.0	16.0	26.5	0.0	22.4	35.7	0.0	0.0
Incr Delay (d2), s/veh	4.5	2.3	2.8	4.6	1.6	1.6	3.2	0.0	0.4	1.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.9	12.8	10.1	4.3	8.5	8.8	9.1	0.0	5.3	5.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.5	23.1	22.3	42.1	17.6	17.5	29.7	0.0	22.9	37.6	0.0	0.0
LnGrp LOS	D	C	C	D	B	B	C	A	C	D	A	A
Approach Vol, veh/h		1433			848			488			160	
Approach Delay, s/veh		23.6			20.7			27.0			37.6	
Approach LOS		C			C			C			D	

Timer - Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	13.2	40.4	16.4	16.3	9.0	44.6		32.7
Change Period (Y+Rc), s	6.2	6.2	6.4	6.4	6.2	6.2		6.4
Max Green Setting (Gmax), s	12.0	35.0	10.0	20.0	12.0	35.0		36.4
Max Q Clear Time (g_c+I1), s	7.4	22.2	13.5	9.6	4.2	14.9		9.8
Green Ext Time (p_c), s	0.1	12.0	0.0	0.3	0.0	13.6		0.7

Intersection Summary	
HCM 6th Ctrl Delay	24.1
HCM 6th LOS	C

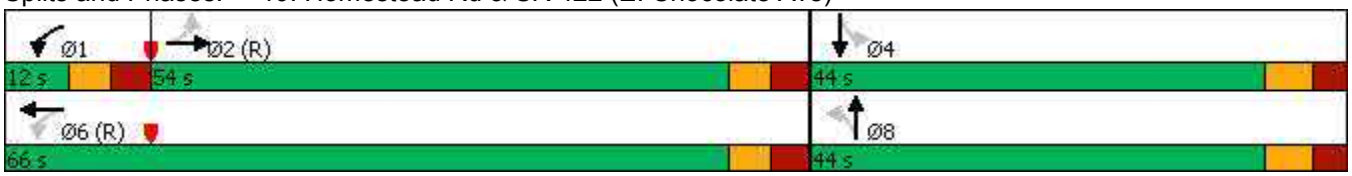
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	1045	89	339	756	6	44	12	209	84	78	39
Future Volume (vph)	11	1045	89	339	756	6	44	12	209	84	78	39
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	12	12	10	13	13	13	13	13	13	13	13
Grade (%)		-3%			3%			-1%			-2%	
Storage Length (ft)	200		0	575		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.988			0.999			0.894			0.974	
Flt Protected	0.950			0.950				0.992			0.979	
Satd. Flow (prot)	1620	3390	0	1556	1812	0	0	1645	0	0	1791	0
Flt Permitted	0.303			0.151				0.892			0.561	
Satd. Flow (perm)	517	3390	0	247	1812	0	0	1479	0	0	1026	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)		10			1			146				
Link Speed (mph)		25			35			25			25	
Link Distance (ft)		592			1437			1120			398	
Travel Time (s)		16.1			28.0			30.5			10.9	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	1%	3%	1%	1%	0%	0%	0%	1%	0%	0%	0%
Adj. Flow (vph)	11	1089	93	353	788	6	46	13	218	88	81	41
Shared Lane Traffic (%)												
Lane Group Flow (vph)	11	1182	0	353	794	0	0	277	0	0	210	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.15	1.05	1.05	1.19	1.05	1.05	1.02	1.02	1.02	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	1		1	1	
Detector Template							Left	Thru		Left	Thru	
Leading Detector (ft)	0	150		38	150		48	48		48	48	
Trailing Detector (ft)	0	0		-2	0		-2	-2		-2	-2	
Detector 1 Position(ft)	0	0		-2	0		-2	-2		-2	-2	
Detector 1 Size(ft)	0	0		40	0		50	50		50	50	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		144			144							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	15.0	15.0		3.0	15.0		3.0	3.0		3.0	3.0	
Minimum Split (s)	26.0	26.0		9.7	26.0		26.0	26.0		26.0	26.0	
Total Split (s)	54.0	54.0		12.0	66.0		44.0	44.0		44.0	44.0	
Total Split (%)	49.1%	49.1%		10.9%	60.0%		40.0%	40.0%		40.0%	40.0%	
Maximum Green (s)	47.3	47.3		5.3	59.3		37.2	37.2		37.2	37.2	
Yellow Time (s)	3.4	3.4		3.4	3.4		3.8	3.8		3.8	3.8	
All-Red Time (s)	3.3	3.3		3.3	3.3		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	-1.5	-1.5		-1.5	-1.5			-1.5			-1.5	
Total Lost Time (s)	5.2	5.2		5.2	5.2			5.3			5.3	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	6.0	6.0		3.0	6.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	4.0	4.0		3.0	4.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	25.0	25.0		0.0	25.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	13.0	13.0		0.0	13.0		0.0	0.0		0.0	0.0	
Recall Mode	C-Max	C-Max		None	C-Max		None	None		None	None	
Act Effct Green (s)	62.6	62.6		74.6	74.6			24.9			24.9	
Actuated g/C Ratio	0.57	0.57		0.68	0.68			0.23			0.23	
v/c Ratio	0.04	0.61		1.42	0.65			0.62			0.91	
Control Delay	13.8	18.4		230.3	14.7			22.8			79.7	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	13.8	18.4		230.3	14.7			22.8			79.7	
LOS	B	B		F	B			C			E	
Approach Delay		18.3			81.0			22.8			79.7	
Approach LOS		B			F			C			E	

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 48 (44%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.42
Intersection Signal Delay: 48.8 Intersection LOS: D
Intersection Capacity Utilization 92.8% ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 19: Homestead Rd & SR 422 (E. Chocolate Ave)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	1045	89	339	756	6	44	12	209	84	78	39
Future Volume (veh/h)	11	1045	89	339	756	6	44	12	209	84	78	39
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1912	1898	1898	1736	1805	1805	1911	1911	1911	1950	1950	1950
Adj Flow Rate, veh/h	11	1089	93	353	788	6	46	12	218	88	81	41
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	1	1	1	1	1	0	0	0	0	0	0
Cap, veh/h	397	1960	167	346	1238	9	82	29	273	139	118	51
Arrive On Green	0.58	0.58	0.58	0.06	0.69	0.69	0.21	0.21	0.21	0.21	0.21	0.21
Sat Flow, veh/h	737	3362	287	1653	1789	14	205	137	1284	435	557	241
Grp Volume(v), veh/h	11	584	598	353	0	794	276	0	0	210	0	0
Grp Sat Flow(s),veh/h/ln	737	1803	1846	1653	0	1803	1625	0	0	1233	0	0
Q Serve(g_s), s	0.9	22.0	22.0	6.8	0.0	26.7	0.0	0.0	0.0	1.5	0.0	0.0
Cycle Q Clear(g_c), s	15.6	22.0	22.0	6.8	0.0	26.7	17.6	0.0	0.0	19.1	0.0	0.0
Prop In Lane	1.00		0.16	1.00		0.01	0.17		0.79	0.42		0.20
Lane Grp Cap(c), veh/h	397	1051	1076	346	0	1248	383	0	0	308	0	0
V/C Ratio(X)	0.03	0.56	0.56	1.02	0.00	0.64	0.72	0.00	0.00	0.68	0.00	0.00
Avail Cap(c_a), veh/h	397	1051	1076	346	0	1248	604	0	0	524	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	16.9	14.1	14.1	23.6	0.0	9.3	41.0	0.0	0.0	41.2	0.0	0.0
Incr Delay (d2), s/veh	0.1	2.1	2.1	54.0	0.0	2.5	2.6	0.0	0.0	2.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.3	14.3	14.6	17.3	0.0	14.9	11.8	0.0	0.0	9.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.0	16.3	16.2	77.6	0.0	11.8	43.5	0.0	0.0	43.8	0.0	0.0
LnGrp LOS	B	B	B	F	A	B	D	A	A	D	A	A
Approach Vol, veh/h		1193			1147			276			210	
Approach Delay, s/veh		16.2			32.0			43.5			43.8	
Approach LOS		B			C			D			D	

Timer - Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	12.0	69.3		28.7		81.3		28.7
Change Period (Y+Rc), s	* 6.7	* 6.7		* 6.8		* 6.7		* 6.8
Max Green Setting (Gmax), s	* 5.3	* 47		* 37		* 59		* 37
Max Q Clear Time (g_c+I1), s	8.8	24.0		21.1		28.7		19.6
Green Ext Time (p_c), s	0.0	19.0		0.8		18.0		1.1

Intersection Summary	
HCM 6th Ctrl Delay	27.4
HCM 6th LOS	C

Notes

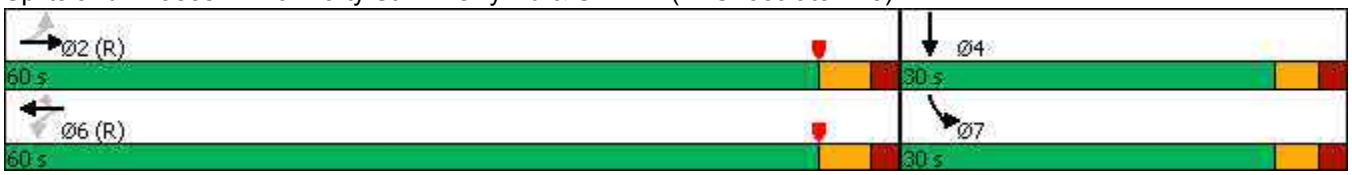
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	926	2	2	469	55	0	0	0	97	0	34
Future Volume (vph)	0	926	2	2	469	55	0	0	0	97	0	34
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	11	11	13	12	12	12	10	10	10
Grade (%)		2%			3%			2%			2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850					0.965	
Flt Protected											0.964	
Satd. Flow (prot)	0	1747	0	0	1664	1557	0	0	0	0	1254	0
Flt Permitted					0.998						0.964	
Satd. Flow (perm)	0	1747	0	0	1661	1557	0	0	0	0	1254	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						57					30	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		4173			285			432			3474	
Travel Time (s)		81.3			5.6			11.8			94.7	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	2%	0%	0%	3%	0%	0%	0%	0%	1%	0%	88%
Adj. Flow (vph)	0	965	2	2	489	57	0	0	0	101	0	35
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	967	0	0	491	57	0	0	0	0	136	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.14	1.14	1.05	1.09	1.09	1.09	1.19	1.19	1.19
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1				1	1	
Detector Template	Left	Main25		Left	Main25	Right				Left		
Leading Detector (ft)	48	250		48	250	48				48	45	
Trailing Detector (ft)	-2	0		-2	0	-2				-2	-5	
Detector 1 Position(ft)	-2	0		-2	0	-2				-2	-5	
Detector 1 Size(ft)	50	0		50	0	50				50	50	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex				Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0				0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0				0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0				0.0	0.0	
Detector 2 Position(ft)		244			244							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							
Turn Type		NA		Perm	NA	Perm				Prot	NA	
Protected Phases		2			6					7	4	
Permitted Phases	2			6		6						

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	2	2		6	6	6				7	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0				3.0	3.0	
Minimum Split (s)	15.5	15.5		15.5	15.5	15.5				8.0	10.0	
Total Split (s)	60.0	60.0		60.0	60.0	60.0				30.0	30.0	
Total Split (%)	66.7%	66.7%		66.7%	66.7%	66.7%				33.3%	33.3%	
Maximum Green (s)	54.5	54.5		54.5	54.5	54.5				25.0	25.0	
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5				3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0				2.0	2.0	
Lost Time Adjust (s)		-1.5			-1.5	-1.5					-1.5	
Total Lost Time (s)		4.0			4.0	4.0					3.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	6.0	6.0		6.0	6.0	6.0				3.0	3.0	
Minimum Gap (s)	5.0	5.0		5.0	5.0	5.0				3.0	3.0	
Time Before Reduce (s)	13.0	13.0		13.0	13.0	13.0				0.0	0.0	
Time To Reduce (s)	25.0	25.0		25.0	25.0	25.0				0.0	0.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max	C-Max				None	None	
Act Effct Green (s)		56.0			56.0	56.0					26.5	
Actuated g/C Ratio		0.62			0.62	0.62					0.29	
v/c Ratio		0.89			0.48	0.06					0.35	
Control Delay		26.8			14.0	3.5					22.3	
Queue Delay		0.0			0.0	0.0					0.0	
Total Delay		26.8			14.0	3.5					22.3	
LOS		C			B	A					C	
Approach Delay		26.8			12.9						22.3	
Approach LOS		C			B						C	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 2 (2%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay: 21.8	Intersection LOS: C
Intersection Capacity Utilization 66.6%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 20: Yorty St/E. Derry Rd & SR 422 (E. Chocolate Ave)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	926	2	2	469	55	0	0	0	97	0	34
Future Volume (veh/h)	0	926	2	2	469	55	0	0	0	97	0	34
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	1750	1750	1750	1708	1708	1820				1778	1778	1778
Adj Flow Rate, veh/h	0	965	2	2	489	57				101	0	35
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96				0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	3	3	0				0	0	0
Cap, veh/h	0	1392	3	41	1359	1230				145	0	50
Arrive On Green	0.00	0.80	0.80	0.80	0.80	0.80				0.12	0.00	0.12
Sat Flow, veh/h	0	1745	4	1	1705	1542				1218	0	422
Grp Volume(v), veh/h	0	0	967	491	0	57				136	0	0
Grp Sat Flow(s),veh/h/ln	0	0	1749	1706	0	1542				1641	0	0
Q Serve(g_s), s	0.0	0.0	22.6	0.0	0.0	0.7				7.2	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	22.6	7.4	0.0	0.7				7.2	0.0	0.0
Prop In Lane	0.00		0.00	0.00		1.00				0.74		0.26
Lane Grp Cap(c), veh/h	0	0	1394	1400	0	1230				196	0	0
V/C Ratio(X)	0.00	0.00	0.69	0.35	0.00	0.05				0.69	0.00	0.00
Avail Cap(c_a), veh/h	0	0	1394	1400	0	1230				483	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	1.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	4.1	2.6	0.0	1.9				38.1	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	2.9	0.7	0.0	0.1				4.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	0.0	9.1	2.9	0.0	3.1				5.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	7.0	3.3	0.0	2.0				42.4	0.0	0.0
LnGrp LOS	A	A	A	A	A	A				D	A	A
Approach Vol, veh/h		967			548						136	
Approach Delay, s/veh		7.0			3.2						42.4	
Approach LOS		A			A						D	

Timer - Assigned Phs	2	4	6
Phs Duration (G+Y+Rc), s	75.8	14.2	75.8
Change Period (Y+Rc), s	5.5	5.0	5.5
Max Green Setting (Gmax), s	54.5	25.0	54.5
Max Q Clear Time (g_c+I1), s	24.6	9.2	9.4
Green Ext Time (p_c), s	25.5	0.4	17.2

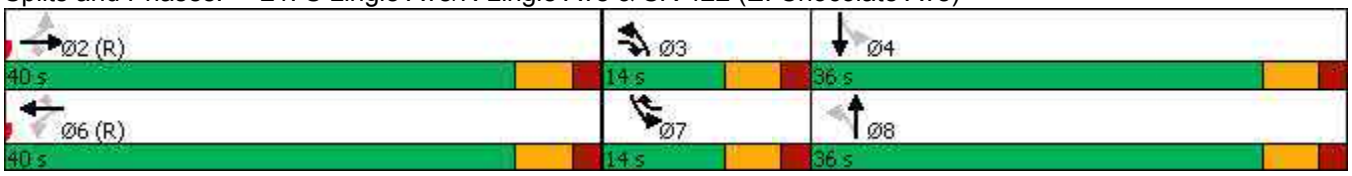
Intersection Summary	
HCM 6th Ctrl Delay	8.6
HCM 6th LOS	A

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	480	384	21	320	80	156	199	23	167	448	24
Future Volume (vph)	17	480	384	21	320	80	156	199	23	167	448	24
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	13	11	11	13	12	14	14	12	14	14
Grade (%)		1%			-2%			-2%			-3%	
Storage Length (ft)	100		525	100		150	500		0	200		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00					0.95		1.00		1.00		
Frt			0.850			0.850		0.985			0.992	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1482	1714	1573	1670	1706	1521	1727	1906	0	1736	1929	0
Flt Permitted	0.454			0.290			0.152			0.507		
Satd. Flow (perm)	706	1714	1573	510	1706	1448	276	1906	0	924	1929	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			188			84		7			3	
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		768			1230			1254			1637	
Travel Time (s)		15.0			24.0			24.4			31.9	
Confl. Peds. (#/hr)	5					5			1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	11%	1%	0%	0%	3%	5%	0%	0%	0%	0%	0%	4%
Adj. Flow (vph)	18	505	404	22	337	84	164	209	24	176	472	25
Shared Lane Traffic (%)												
Lane Group Flow (vph)	18	505	404	22	337	84	164	233	0	176	497	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.13	1.13	1.03	1.11	1.11	1.01	1.06	0.97	0.97	1.05	0.97	0.97
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	1		1	1	
Detector Template	Left	Main25	Right	Left	Main25	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	48	250	48	48	250	48	48	48		48	48	
Trailing Detector (ft)	-2	0	-2	-2	0	-2	-2	-2		-2	-2	
Detector 1 Position(ft)	-2	0	-2	-2	0	-2	-2	-2		-2	-2	
Detector 1 Size(ft)	50	0	50	50	0	50	50	50		50	50	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		244			244							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	pm+pt	NA		pm+pt	NA	
Protected Phases		2	3		6	7	3	8		7	4	
Permitted Phases	2		2	6		6	8			4		
Detector Phase	2	2	3	6	6	7	3	8		7	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0	3.0	10.0	10.0	3.0	3.0	3.0		3.0	3.0	
Minimum Split (s)	15.9	15.9	14.0	15.9	15.9	14.0	14.0	10.0		14.0	10.0	
Total Split (s)	40.0	40.0	14.0	40.0	40.0	14.0	14.0	36.0		14.0	36.0	
Total Split (%)	44.4%	44.4%	15.6%	44.4%	44.4%	15.6%	15.6%	40.0%		15.6%	40.0%	
Maximum Green (s)	34.1	34.1	8.2	34.1	34.1	8.2	8.2	30.2		8.2	30.2	
Yellow Time (s)	3.9	3.9	3.8	3.9	3.9	3.8	3.8	3.8		3.8	3.8	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5		-1.5	-1.5	
Total Lost Time (s)	4.4	4.4	4.3	4.4	4.4	4.3	4.3	4.3		4.3	4.3	
Lead/Lag			Lead			Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?			Yes			Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	6.3	6.3	3.0	6.3	6.3	3.0	3.0	3.0		3.0	3.0	
Minimum Gap (s)	5.0	5.0	3.0	5.0	5.0	3.0	3.0	3.0		3.0	3.0	
Time Before Reduce (s)	13.0	13.0	0.0	13.0	13.0	0.0	0.0	0.0		0.0	0.0	
Time To Reduce (s)	25.0	25.0	0.0	25.0	25.0	0.0	0.0	0.0		0.0	0.0	
Recall Mode	C-Max	C-Max	None	C-Max	C-Max	None	None	None		None	None	
Walk Time (s)			5.0			5.0	5.0			5.0		
Flash Dont Walk (s)			3.0			3.0	3.0			3.0		
Pedestrian Calls (#/hr)			0			0	0			0		
Act Effct Green (s)	39.2	39.2	53.2	39.2	39.2	48.9	37.8	28.2		37.8	28.2	
Actuated g/C Ratio	0.44	0.44	0.59	0.44	0.44	0.54	0.42	0.31		0.42	0.31	
v/c Ratio	0.06	0.68	0.40	0.10	0.45	0.10	0.61	0.39		0.37	0.82	
Control Delay	11.1	20.0	9.9	18.5	21.4	2.6	24.5	24.7		15.9	39.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	11.1	20.0	9.9	18.5	21.4	2.6	24.5	24.7		15.9	39.9	
LOS	B	C	A	B	C	A	C	C		B	D	
Approach Delay		15.5			17.7			24.6			33.6	
Approach LOS		B			B			C			C	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green, Master Intersection	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.82	
Intersection Signal Delay: 22.4	Intersection LOS: C
Intersection Capacity Utilization 73.0%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 21: S Lingle Ave/N Lingle Ave & SR 422 (E. Chocolate Ave)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	480	384	21	320	80	156	199	23	167	448	24
Future Volume (veh/h)	17	480	384	21	320	80	156	199	23	167	448	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1640	1780	1866	1875	1832	1876	1875	1950	1950	1912	1988	1988
Adj Flow Rate, veh/h	18	505	404	22	337	84	164	209	24	176	472	25
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	11	1	0	0	3	5	0	0	0	0	0	0
Cap, veh/h	385	825	889	243	849	898	310	495	57	504	545	29
Arrive On Green	0.46	0.46	0.46	0.46	0.46	0.46	0.10	0.29	0.29	0.10	0.29	0.29
Sat Flow, veh/h	892	1780	1573	648	1832	1581	1785	1717	197	1821	1871	99
Grp Volume(v), veh/h	18	505	404	22	337	84	164	0	233	176	0	497
Grp Sat Flow(s),veh/h/ln	892	1780	1573	648	1832	1581	1785	0	1914	1821	0	1970
Q Serve(g_s), s	1.2	19.1	13.6	2.4	10.9	2.2	5.6	0.0	8.9	5.9	0.0	21.5
Cycle Q Clear(g_c), s	12.1	19.1	13.6	21.5	10.9	2.2	5.6	0.0	8.9	5.9	0.0	21.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.10	1.00		0.05
Lane Grp Cap(c), veh/h	385	825	889	243	849	898	310	0	551	504	0	574
V/C Ratio(X)	0.05	0.61	0.45	0.09	0.40	0.09	0.53	0.00	0.42	0.35	0.00	0.87
Avail Cap(c_a), veh/h	385	825	889	243	849	898	322	0	674	510	0	694
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.9	18.1	11.5	26.1	15.9	8.9	21.5	0.0	26.0	18.9	0.0	30.2
Incr Delay (d2), s/veh	0.2	3.4	1.7	0.7	1.4	0.2	1.5	0.0	0.5	0.4	0.0	9.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.5	12.7	8.2	0.7	8.1	1.3	4.2	0.0	7.2	4.3	0.0	16.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.1	21.5	13.2	26.9	17.3	9.1	23.0	0.0	26.5	19.3	0.0	39.9
LnGrp LOS	C	C	B	C	B	A	C	A	C	B	A	D
Approach Vol, veh/h		927			443			397			673	
Approach Delay, s/veh		17.8			16.2			25.0			34.5	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	2	3	4		6	7	8
Phs Duration (G+Y+Rc), s	46.1	13.4	30.5		46.1	13.7	30.2
Change Period (Y+Rc), s	5.9	* 5.8	* 5.8		5.9	* 5.8	* 5.8
Max Green Setting (Gmax), s	34.1	* 8.2	* 30		34.1	* 8.2	* 30
Max Q Clear Time (g_c+I1), s	21.1	7.6	23.5		23.5	7.9	10.9
Green Ext Time (p_c), s	10.1	0.0	1.2		5.3	0.0	0.8

Intersection Summary	
HCM 6th Ctrl Delay	23.3
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	76	95	35	3	21	65	23	354	15	58	439	79
Future Volume (vph)	76	95	35	3	21	65	23	354	15	58	439	79
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	15	15	15	15	15	15	11	11	11	11	11	11
Grade (%)		-5%			9%			-1%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.977			0.901			0.995			0.981	
Flt Protected		0.982			0.998			0.997			0.995	
Satd. Flow (prot)	0	1909	0	0	1676	0	0	1704	0	0	1679	0
Flt Permitted		0.982			0.998			0.997			0.995	
Satd. Flow (perm)	0	1909	0	0	1676	0	0	1704	0	0	1679	0
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		525			421			813			806	
Travel Time (s)		14.3			11.5			15.8			15.7	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	4%	0%	3%	0%	0%	2%	0%	2%	0%	0%	2%	1%
Adj. Flow (vph)	84	104	38	3	23	71	25	389	16	64	482	87
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	226	0	0	97	0	0	430	0	0	633	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.92	0.92	0.92	1.01	1.01	1.01	1.11	1.11	1.11	1.11	1.11	1.11
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 74.9%	ICU Level of Service D
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	19.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	76	95	35	3	21	65	23	354	15	58	439	79
Future Vol, veh/h	76	95	35	3	21	65	23	354	15	58	439	79
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-5	-	-	9	-	-	-1	-	-	-1	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	4	0	3	0	0	2	0	2	0	0	2	1
Mvmt Flow	84	104	38	3	23	71	25	389	16	64	482	87

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1148	1109	526	1172	1144	397	569	0	0	405	0	0
Stage 1	654	654	-	447	447	-	-	-	-	-	-	-
Stage 2	494	455	-	725	697	-	-	-	-	-	-	-
Critical Hdwy	6.14	5.5	5.73	8.9	8.3	7.12	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	5.14	4.5	-	7.9	7.3	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.14	4.5	-	7.9	7.3	-	-	-	-	-	-	-
Follow-up Hdwy	3.536	4	3.327	3.5	4	3.318	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	240	288	591	95	114	591	1013	-	-	1165	-	-
Stage 1	542	559	-	476	461	-	-	-	-	-	-	-
Stage 2	635	649	-	292	315	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	160	256	591	56	101	591	1013	-	-	1165	-	-
Mov Cap-2 Maneuver	160	256	-	56	101	-	-	-	-	-	-	-
Stage 1	525	514	-	461	446	-	-	-	-	-	-	-
Stage 2	512	628	-	200	289	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	103.2	29.9	0.5	0.8
HCM LOS	F	D		

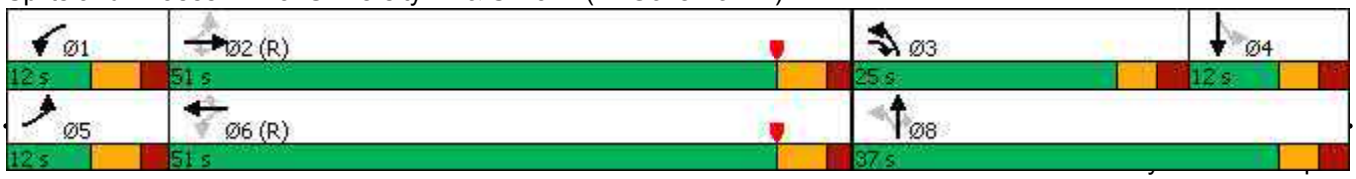
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1013	-	-	228	240	1165	-	-
HCM Lane V/C Ratio	0.025	-	-	0.993	0.408	0.055	-	-
HCM Control Delay (s)	8.6	0	-	103.2	29.9	8.3	0	-
HCM Lane LOS	A	A	-	F	D	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	9.1	1.9	0.2	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	76	423	106	62	691	227	233	218	99	35	53	44
Future Volume (vph)	76	423	106	62	691	227	233	218	99	35	53	44
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	13	11	14	12	14	12	12	12
Grade (%)		1%			-1%			-1%			-3%	
Storage Length (ft)	150		0	175		125	0		165	0		0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.97	1.00					0.97	0.97		
Frt			0.850			0.850			0.850		0.932	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1701	1756	1507	1719	1851	1472	1833	1809	1640	1736	1666	0
Flt Permitted	0.188			0.400			0.374			0.618		
Satd. Flow (perm)	337	1756	1468	721	1851	1472	722	1809	1590	1093	1666	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			109			147			102		32	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		1532			974			928			672	
Travel Time (s)		29.8			19.0			25.3			18.3	
Confl. Peds. (#/hr)			8	8					7	7		
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	2%	1%	0%	1%	1%	0%	0%	0%	0%	4%	0%
Adj. Flow (vph)	78	436	109	64	712	234	240	225	102	36	55	45
Shared Lane Traffic (%)												
Lane Group Flow (vph)	78	436	109	64	712	234	240	225	102	36	100	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			14			14	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.08	1.08	1.08	1.07	1.02	1.11	0.98	1.07	0.98	1.05	1.05	1.05
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	1	1	1	1	
Detector Template		Main25	Right		Main25							
Leading Detector (ft)	38	250	48	38	250	0	38	38	38	38	38	
Trailing Detector (ft)	-2	0	-2	-2	0	0	-2	-2	-2	-2	-2	
Detector 1 Position(ft)	-2	0	-2	-2	0	0	-2	-2	-2	-2	-2	
Detector 1 Size(ft)	40	0	50	40	0	0	40	40	40	40	40	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		244			244							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	
Protected Phases	5	2	3	1	6		3	8			4	
Permitted Phases	2		2	6		6	8		8	4		
Detector Phase	5	2	3	1	6	6	3	8	8	4	4	
Switch Phase												
Minimum Initial (s)	3.0	10.0	3.0	3.0	10.0	10.0	3.0	3.0	3.0	3.0	3.0	
Minimum Split (s)	10.0	25.0	9.5	10.4	15.7	15.7	9.5	25.0	25.0	10.0	10.0	
Total Split (s)	12.0	51.0	25.0	12.0	51.0	51.0	25.0	37.0	37.0	12.0	12.0	
Total Split (%)	12.0%	51.0%	25.0%	12.0%	51.0%	51.0%	25.0%	37.0%	37.0%	12.0%	12.0%	
Maximum Green (s)	6.3	45.3	19.6	6.3	45.3	45.3	19.6	31.6	31.6	6.6	6.6	
Yellow Time (s)	3.7	3.7	3.0	3.7	3.7	3.7	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.4	2.0	2.0	2.0	2.4	2.4	2.4	2.4	2.4	
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	
Total Lost Time (s)	4.2	4.2	3.9	4.2	4.2	4.2	3.9	3.9	3.9	3.9	3.9	
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes			Yes	Yes	
Vehicle Extension (s)	3.0	6.0	3.0	3.0	6.0	6.0	3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	25.0	0.0	0.0	25.0	25.0	0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	13.0	0.0	0.0	13.0	13.0	0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	C-Max	None	None	C-Max	C-Max	None	None	None	None	None	
Act Effct Green (s)	59.4	53.1	70.8	59.4	53.1	53.1	29.2	29.2	29.2	7.9	7.9	
Actuated g/C Ratio	0.59	0.53	0.71	0.59	0.53	0.53	0.29	0.29	0.29	0.08	0.08	
v/c Ratio	0.26	0.47	0.10	0.13	0.72	0.28	0.60	0.43	0.19	0.42	0.62	
Control Delay	10.4	18.4	1.1	8.0	25.5	7.5	34.8	30.7	5.9	58.9	48.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	10.4	18.4	1.1	8.0	25.5	7.5	34.8	30.7	5.9	58.9	48.5	
LOS	B	B	A	A	C	A	C	C	A	E	D	
Approach Delay		14.4			20.2			28.0			51.2	
Approach LOS		B			C			C			D	

Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 60 (60%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.72	
Intersection Signal Delay: 22.4	Intersection LOS: C
Intersection Capacity Utilization 75.9%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 23: University Dr & SR 322 (W Governor Dr)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	76	423	106	62	691	227	233	218	99	35	53	44
Future Volume (veh/h)	76	423	106	62	691	227	233	218	99	35	53	44
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	0.98		0.99	0.97		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1794	1766	1780	1837	1896	1823	1911	1837	1911	1912	1855	1855
Adj Flow Rate, veh/h	78	436	109	64	712	234	240	225	102	36	55	45
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	2	1	0	1	1	0	0	0	0	4	4
Cap, veh/h	490	989	1069	520	1052	853	381	501	436	161	75	61
Arrive On Green	0.05	0.56	0.56	0.09	1.00	1.00	0.15	0.27	0.27	0.08	0.08	0.08
Sat Flow, veh/h	1709	1766	1498	1750	1896	1538	1820	1837	1598	1105	923	755
Grp Volume(v), veh/h	78	436	109	64	712	234	240	225	102	36	0	100
Grp Sat Flow(s),veh/h/ln	1709	1766	1498	1750	1896	1538	1820	1837	1598	1105	0	1679
Q Serve(g_s), s	1.9	14.4	2.3	1.5	0.0	0.0	11.3	10.2	5.0	3.1	0.0	5.8
Cycle Q Clear(g_c), s	1.9	14.4	2.3	1.5	0.0	0.0	11.3	10.2	5.0	3.1	0.0	5.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.45
Lane Grp Cap(c), veh/h	490	989	1069	520	1052	853	381	501	436	161	0	136
V/C Ratio(X)	0.16	0.44	0.10	0.12	0.68	0.27	0.63	0.45	0.23	0.22	0.00	0.74
Avail Cap(c_a), veh/h	538	989	1069	579	1052	853	487	608	529	161	0	136
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.78	0.78	0.78	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	8.2	12.9	4.5	8.9	0.0	0.0	32.5	30.1	28.3	43.7	0.0	44.9
Incr Delay (d2), s/veh	0.2	1.4	0.2	0.1	2.7	0.6	1.7	0.6	0.3	0.7	0.0	18.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.2	9.6	1.2	0.9	1.4	0.3	8.9	8.1	3.5	1.6	0.0	5.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.3	14.3	4.6	9.0	2.7	0.6	34.2	30.8	28.5	44.3	0.0	63.5
LnGrp LOS	A	B	A	A	A	A	C	C	C	D	A	E
Approach Vol, veh/h		623			1010			567			136	
Approach Delay, s/veh		11.9			2.7			31.8			58.4	
Approach LOS		B			A			C			E	

Timer - Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	8.6	60.2	19.2	12.0	9.2	59.7		31.2
Change Period (Y+Rc), s	* 5.7	* 5.7	5.4	5.4	* 5.7	* 5.7		5.4
Max Green Setting (Gmax), s	* 6.3	* 45	19.6	6.6	* 6.3	* 45		31.6
Max Q Clear Time (g_c+I1), s	3.5	16.4	13.3	7.8	3.9	2.0		12.2
Green Ext Time (p_c), s	0.0	12.6	0.4	0.0	0.0	21.9		1.1

Intersection Summary	
HCM 6th Ctrl Delay	15.4
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

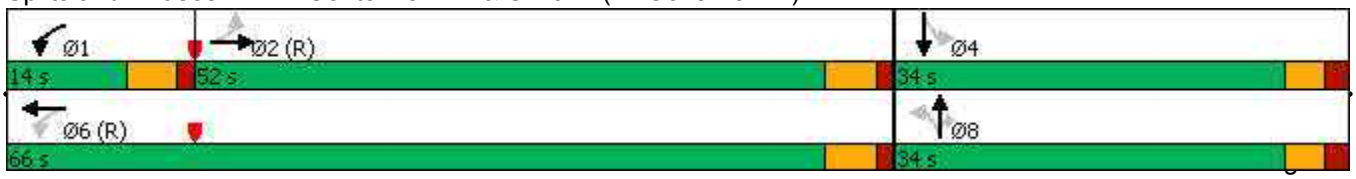
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	447	44	48	549	69	324	77	183	36	17	30
Future Volume (vph)	14	447	44	48	549	69	324	77	183	36	17	30
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	14	12	12	12	12	12	12	14	16	16	16
Grade (%)		1%			-2%			1%			-1%	
Storage Length (ft)	130		0	165		0	0		350	0		0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		1.00	1.00			1.00	0.97		0.99	
Frt		0.987			0.983				0.850		0.951	
Flt Protected	0.950			0.950				0.961			0.979	
Satd. Flow (prot)	1701	1806	0	1693	1736	0	0	1704	1624	0	1869	0
Flt Permitted	0.371			0.314				0.721			0.570	
Satd. Flow (perm)	664	1806	0	558	1736	0	0	1276	1570	0	1085	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			12				189		29	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		974			3440			941			923	
Travel Time (s)		19.0			67.0			25.7			25.2	
Confl. Peds. (#/hr)	3		11	11		3	2		8	8		2
Confl. Bikes (#/hr)			4	4								
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	4%	5%	2%	3%	0%	1%	1%	0%	3%	0%	0%
Adj. Flow (vph)	14	461	45	49	566	71	334	79	189	37	18	31
Shared Lane Traffic (%)												
Lane Group Flow (vph)	14	506	0	49	637	0	0	413	189	0	86	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.08	0.99	1.08	1.06	1.06	1.06	1.08	1.08	0.99	0.90	0.90	0.90
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	1	1	1	1	
Detector Template		Main25		Left	Main25		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	0	250		48	250		48	48	48	48	48	
Trailing Detector (ft)	0	0		-2	0		-2	-2	-2	-2	-2	
Detector 1 Position(ft)	0	0		-2	0		-2	-2	-2	-2	-2	
Detector 1 Size(ft)	0	0		50	0		50	50	50	50	50	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		244			244							
Detector 2 Size(ft)		6			6							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8		8	4		
Detector Phase	2	2		1	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		3.0	10.0		3.0	3.0	3.0	3.0	3.0	
Minimum Split (s)	25.0	25.0		8.8	25.0		25.0	25.0	25.0	25.0	25.0	
Total Split (s)	52.0	52.0		14.0	66.0		34.0	34.0	34.0	34.0	34.0	
Total Split (%)	52.0%	52.0%		14.0%	66.0%		34.0%	34.0%	34.0%	34.0%	34.0%	
Maximum Green (s)	46.9	46.9		8.9	60.9		29.1	29.1	29.1	29.1	29.1	
Yellow Time (s)	3.8	3.8		3.8	3.8		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.3	1.3		1.3	1.3		1.9	1.9	1.9	1.9	1.9	
Lost Time Adjust (s)	-1.5	-1.5		-1.5	-1.5			-1.0	-1.0		-1.0	
Total Lost Time (s)	3.6	3.6		3.6	3.6			3.9	3.9		3.9	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	6.0	6.0		3.0	6.0		3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	25.0	25.0		0.0	25.0		0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	13.0	13.0		0.0	13.0		0.0	0.0	0.0	0.0	0.0	
Recall Mode	C-Max	C-Max		None	C-Max		None	None	None	None	None	
Act Effct Green (s)	52.7	52.7		62.4	62.4			30.1	30.1		30.1	
Actuated g/C Ratio	0.53	0.53		0.62	0.62			0.30	0.30		0.30	
v/c Ratio	0.04	0.53		0.11	0.59			1.08	0.31		0.25	
Control Delay	18.1	18.8		6.3	14.9			102.8	5.5		20.3	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Delay	18.1	18.8		6.3	14.9			102.8	5.5		20.3	
LOS	B	B		A	B			F	A		C	
Approach Delay		18.8			14.3			72.2			20.3	
Approach LOS		B			B			E			C	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 99 (99%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.08
Intersection Signal Delay: 34.2 Intersection LOS: C
Intersection Capacity Utilization 78.7% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 24: Centerview Dr & SR 322 (W Governor Dr)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	447	44	48	549	69	324	77	183	36	17	30
Future Volume (veh/h)	14	447	44	48	549	69	324	77	183	36	17	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	0.99		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1794	1808	1738	1846	1832	1832	1780	1780	1866	1911	1911	1911
Adj Flow Rate, veh/h	14	461	45	49	566	71	334	79	189	37	18	31
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	4	4	2	3	3	1	1	0	0	0	0
Cap, veh/h	404	888	87	482	992	124	275	50	470	51	30	17
Arrive On Green	0.55	0.55	0.55	0.04	0.62	0.62	0.31	0.30	0.30	0.31	0.30	0.31
Sat Flow, veh/h	798	1615	158	1758	1589	199	697	165	1561	0	99	56
Grp Volume(v), veh/h	14	0	506	49	0	637	413	0	189	86	0	0
Grp Sat Flow(s),veh/h/ln	798	0	1773	1758	0	1788	861	0	1561	154	0	0
Q Serve(g_s), s	1.0	0.0	18.0	1.1	0.0	20.8	0.0	0.0	9.6	0.0	0.0	0.0
Cycle Q Clear(g_c), s	14.4	0.0	18.0	1.1	0.0	20.8	30.6	0.0	9.6	30.6	0.0	0.0
Prop In Lane	1.00		0.09	1.00		0.11	0.81		1.00	0.43		0.36
Lane Grp Cap(c), veh/h	404	0	974	482	0	1116	329	0	470	99	0	0
V/C Ratio(X)	0.03	0.00	0.52	0.10	0.00	0.57	1.26	0.00	0.40	0.87	0.00	0.00
Avail Cap(c_a), veh/h	404	0	974	597	0	1116	329	0	470	99	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.91	0.00	0.91	0.88	0.00	0.88	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	17.4	0.0	14.2	10.0	0.0	11.0	38.0	0.0	27.8	34.1	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.0	1.8	0.1	0.0	1.9	137.8	0.0	0.6	51.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.4	0.0	11.3	0.7	0.0	12.1	32.1	0.0	6.6	6.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.5	0.0	16.0	10.1	0.0	12.8	175.8	0.0	28.4	85.9	0.0	0.0
LnGrp LOS	B	A	B	B	A	B	F	A	C	F	A	A
Approach Vol, veh/h		520			686			602			86	
Approach Delay, s/veh		16.0			12.7			129.5			85.9	
Approach LOS		B			B			F			F	

Timer - Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	7.5	58.5		34.0		66.0		34.0
Change Period (Y+Rc), s	5.1	5.1		* 4.9		5.1		* 4.9
Max Green Setting (Gmax), s	8.9	46.9		* 29		60.9		* 29
Max Q Clear Time (g_c+I1), s	3.1	20.0		32.6		22.8		32.6
Green Ext Time (p_c), s	0.0	12.7		0.0		20.6		0.0

Intersection Summary	
HCM 6th Ctrl Delay	54.1
HCM 6th LOS	D

Notes

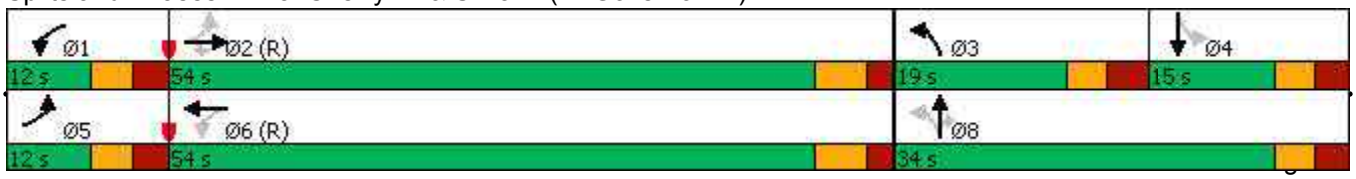
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	477	128	91	470	36	162	43	281	24	38	13
Future Volume (vph)	11	477	128	91	470	36	162	43	281	24	38	13
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	12	14	10	14	14	10	11	12	10	12	12
Grade (%)		-3%			-2%			0%			1%	
Storage Length (ft)	100		200	205		0	100		75	75		0
Storage Lanes	1		1	1		0	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.98	1.00			1.00				0.99	
Frt			0.850		0.989				0.850		0.961	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1620	1774	1640	1565	1862	0	1580	1740	1530	1588	1635	0
Flt Permitted	0.388			0.343			0.460			0.728		
Satd. Flow (perm)	662	1774	1604	565	1862	0	763	1740	1530	1217	1635	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			158		6				293		14	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		3440			974			770			537	
Travel Time (s)		67.0			19.0			21.0			14.6	
Confl. Peds. (#/hr)			1	1			2					2
Confl. Bikes (#/hr)			1	1			2					2
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	3%	1%	3%	3%	3%	1%	0%	0%	0%	3%	8%
Adj. Flow (vph)	11	497	133	95	490	38	169	45	293	25	40	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	11	497	133	95	528	0	169	45	293	25	54	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.15	1.05	0.97	1.16	0.97	0.97	1.17	1.12	1.07	1.18	1.08	1.08
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	1	1	1	1	
Detector Template		Main25			Main25							
Leading Detector (ft)	38	250	38	38	250		38	38	38	38	38	
Trailing Detector (ft)	-2	0	-2	-2	0		-2	-2	-2	-2	-2	
Detector 1 Position(ft)	-2	0	-2	-2	0		-2	-2	-2	-2	-2	
Detector 1 Size(ft)	40	0	40	40	0		40	40	40	40	40	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		244			244							
Detector 2 Size(ft)		6			6							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases	2		2	6			8		8	4		
Detector Phase	5	2	2	1	6		3	8	8	4	4	
Switch Phase												
Minimum Initial (s)	3.0	10.0	10.0	3.0	10.0		3.0	3.0	3.0	3.0	3.0	
Minimum Split (s)	8.7	25.0	25.0	8.7	25.0		9.1	25.0	25.0	10.0	10.0	
Total Split (s)	12.0	54.0	54.0	12.0	54.0		19.0	34.0	34.0	15.0	15.0	
Total Split (%)	12.0%	54.0%	54.0%	12.0%	54.0%		19.0%	34.0%	34.0%	15.0%	15.0%	
Maximum Green (s)	6.3	48.1	48.1	6.3	48.1		12.9	28.3	28.3	9.3	9.3	
Yellow Time (s)	3.1	3.9	3.9	3.1	3.9		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.6	2.0	2.0	2.6	2.0		3.1	2.7	2.7	2.7	2.7	
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	-1.5		-1.5	-1.5	-1.5	-1.5	-1.5	
Total Lost Time (s)	4.2	4.4	4.4	4.2	4.4		4.6	4.2	4.2	4.2	4.2	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)	3.0	6.0	6.0	3.0	6.0		3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	12.5	12.5	0.0	12.5		0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	25.0	25.0	0.0	25.0		0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	C-Max	C-Max	None	C-Max		None	None	None	None	None	
Act Effct Green (s)	62.8	56.6	56.6	65.6	63.8		24.8	25.2	25.2	9.2	9.2	
Actuated g/C Ratio	0.63	0.57	0.57	0.66	0.64		0.25	0.25	0.25	0.09	0.09	
v/c Ratio	0.02	0.50	0.14	0.21	0.44		0.57	0.10	0.49	0.22	0.33	
Control Delay	10.6	25.5	6.7	4.6	9.7		37.9	26.6	6.2	46.3	38.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	10.6	25.5	6.7	4.6	9.7		37.9	26.6	6.2	46.3	38.7	
LOS	B	C	A	A	A		D	C	A	D	D	
Approach Delay		21.3			9.0			18.6			41.1	
Approach LOS		C			A			B			D	

Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 8 (8%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.57	
Intersection Signal Delay: 17.3	Intersection LOS: B
Intersection Capacity Utilization 58.9%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 25: Cherry Dr & SR 322 (W Governor Dr)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	477	128	91	470	36	162	43	281	24	38	13
Future Volume (veh/h)	11	477	128	91	470	36	162	43	281	24	38	13
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	0.99		0.97	0.99		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1912	1869	1973	1832	1905	1905	1786	1800	1800	1794	1752	1752
Adj Flow Rate, veh/h	11	497	133	95	490	38	169	45	293	25	40	14
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	3	1	3	3	3	1	0	0	0	3	3
Cap, veh/h	459	1091	955	520	1069	83	328	424	349	142	82	29
Arrive On Green	0.02	0.58	0.58	0.02	0.20	0.20	0.12	0.24	0.24	0.07	0.07	0.07
Sat Flow, veh/h	1821	1869	1637	1745	1742	135	1701	1800	1484	1046	1223	428
Grp Volume(v), veh/h	11	497	133	95	0	528	169	45	293	25	0	54
Grp Sat Flow(s),veh/h/ln	1821	1869	1637	1745	0	1877	1701	1800	1484	1046	0	1651
Q Serve(g_s), s	0.2	15.1	3.7	2.0	0.0	24.7	8.7	2.0	18.8	2.3	0.0	3.2
Cycle Q Clear(g_c), s	0.2	15.1	3.7	2.0	0.0	24.7	8.7	2.0	18.8	2.3	0.0	3.2
Prop In Lane	1.00		1.00	1.00		0.07	1.00		1.00	1.00		0.26
Lane Grp Cap(c), veh/h	459	1091	955	520	0	1152	328	424	349	142	0	111
V/C Ratio(X)	0.02	0.46	0.14	0.18	0.00	0.46	0.51	0.11	0.84	0.18	0.00	0.49
Avail Cap(c_a), veh/h	560	1091	955	564	0	1152	365	536	442	185	0	178
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.88	0.88	0.88	0.54	0.00	0.54	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	10.2	11.8	9.4	8.4	0.0	25.3	34.8	30.0	36.4	44.6	0.0	45.0
Incr Delay (d2), s/veh	0.0	1.2	0.3	0.1	0.0	0.7	1.3	0.1	10.9	0.6	0.0	3.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.2	9.9	2.4	1.3	0.0	16.8	6.7	1.6	12.4	1.1	0.0	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.2	13.0	9.7	8.5	0.0	26.0	36.1	30.1	47.3	45.2	0.0	48.2
LnGrp LOS	B	B	A	A	A	C	D	C	D	D	A	D
Approach Vol, veh/h		641			623			507			79	
Approach Delay, s/veh		12.3			23.3			42.1			47.3	
Approach LOS		B			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	9.5	62.7	16.8	10.9	6.5	65.8		27.8
Change Period (Y+Rc), s	5.7	5.9	6.1	* 5.7	5.7	5.9		* 5.7
Max Green Setting (Gmax), s	6.3	48.1	12.9	* 9.3	6.3	48.1		* 28
Max Q Clear Time (g_c+I1), s	4.0	17.1	10.7	5.2	2.2	26.7		20.8
Green Ext Time (p_c), s	0.0	8.4	0.1	0.1	0.0	7.3		0.9

Intersection Summary	
HCM 6th Ctrl Delay	25.7
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

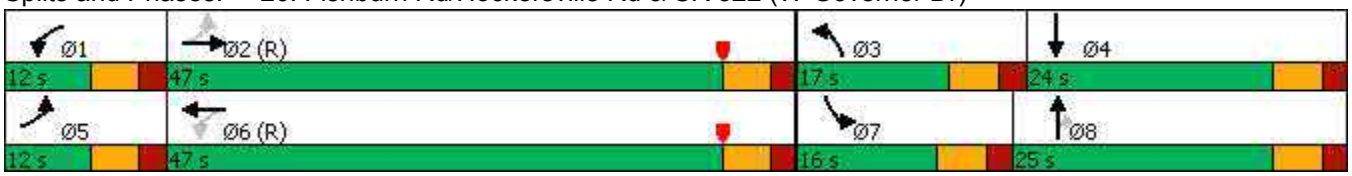
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	592	121	93	403	145	144	184	111	209	238	30
Future Volume (vph)	50	592	121	93	403	145	144	184	111	209	238	30
Ideal Flow (vphpl)	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Lane Width (ft)	11	12	14	11	12	14	11	11	13	11	12	12
Grade (%)		1%			0%			-1%			2%	
Storage Length (ft)	140		445	125		75	135		85	100		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.975			0.960				0.850		0.983	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1508	1585	0	1515	1535	0	1508	1587	1456	1500	1578	0
Flt Permitted	0.245			0.101			0.950			0.950		
Satd. Flow (perm)	389	1585	0	161	1535	0	1508	1587	1456	1500	1578	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		13			23				152		6	
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		974			252			343			1393	
Travel Time (s)		19.0			4.9			6.7			27.1	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	1%	1%	0%	4%	1%	1%	1%	0%	0%	2%	0%
Adj. Flow (vph)	51	604	123	95	411	148	147	188	113	213	243	31
Shared Lane Traffic (%)												
Lane Group Flow (vph)	51	727	0	95	559	0	147	188	113	213	274	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.26	1.20	1.11	1.25	1.20	1.10	1.24	1.24	1.14	1.26	1.21	1.21
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	1	1	1	1	
Detector Template		Main25		Left	Main25							
Leading Detector (ft)	38	250		48	250		38	38	38	38	38	
Trailing Detector (ft)	-2	0		-2	0		-2	-2	-2	-2	-2	
Detector 1 Position(ft)	-2	0		-2	0		-2	-2	-2	-2	-2	
Detector 1 Size(ft)	40	0		50	0		40	40	40	40	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		244			244							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6					8			
Detector Phase	5	2		1	6		3	8	8	7	4	
Switch Phase												
Minimum Initial (s)	3.0	10.0		3.0	10.0		3.0	3.0	3.0	3.0	3.0	
Minimum Split (s)	8.6	25.0		8.6	25.0		8.7	12.0	12.0	8.7	12.0	
Total Split (s)	12.0	47.0		12.0	47.0		17.0	25.0	25.0	16.0	24.0	
Total Split (%)	12.0%	47.0%		12.0%	47.0%		17.0%	25.0%	25.0%	16.0%	24.0%	
Maximum Green (s)	6.4	41.4		6.4	41.4		11.3	19.3	19.3	10.3	18.3	
Yellow Time (s)	3.6	3.6		3.6	3.6		3.7	3.7	3.7	3.7	3.7	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-1.5	-1.5		-1.5	-1.5		-1.5	-1.5	-1.5	-1.5	-1.5	
Total Lost Time (s)	4.1	4.1		4.1	4.1		4.2	4.2	4.2	4.2	4.2	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	6.5		3.0	6.5		3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	25.0		0.0	25.0		0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	12.5		0.0	12.5		0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	C-Max		None	C-Max		None	None	None	None	None	
Act Effct Green (s)	52.3	46.0		52.3	46.0		12.5	20.1	20.1	11.8	19.4	
Actuated g/C Ratio	0.52	0.46		0.52	0.46		0.12	0.20	0.20	0.12	0.19	
v/c Ratio	0.18	0.99		0.50	0.78		0.78	0.59	0.27	1.20	0.88	
Control Delay	10.2	61.6		32.5	40.4		70.2	44.4	4.1	172.7	67.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	10.2	61.6		32.5	40.4		70.2	44.4	4.1	172.7	67.9	
LOS	B	E		C	D		E	D	A	F	E	
Approach Delay		58.2			39.3			42.7			113.7	
Approach LOS		E			D			D			F	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow, Master Intersection
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.20
Intersection Signal Delay: 61.5 Intersection LOS: E
Intersection Capacity Utilization 89.8% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 26: Fishburn Rd/Hockersville Rd & SR 322 (W Governor Dr)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	592	121	93	403	145	144	184	111	209	238	30
Future Volume (veh/h)	50	592	121	93	403	145	144	184	111	209	238	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1645	1632	1697	1650	1599	1662	1671	1671	1752	1630	1604	1604
Adj Flow Rate, veh/h	51	604	123	95	411	148	147	188	113	213	243	31
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	1	1	0	4	4	1	1	0	0	2	2
Cap, veh/h	269	593	121	171	527	190	195	339	301	183	276	35
Arrive On Green	0.03	0.30	0.30	0.06	0.47	0.47	0.12	0.20	0.20	0.12	0.20	0.20
Sat Flow, veh/h	1567	1316	268	1571	1122	404	1592	1671	1484	1552	1394	178
Grp Volume(v), veh/h	51	0	727	95	0	559	147	188	113	213	0	274
Grp Sat Flow(s),veh/h/ln	1567	0	1584	1571	0	1526	1592	1671	1484	1552	0	1572
Q Serve(g_s), s	1.7	0.0	45.0	3.1	0.0	30.6	8.9	10.1	6.6	11.8	0.0	16.9
Cycle Q Clear(g_c), s	1.7	0.0	45.0	3.1	0.0	30.6	8.9	10.1	6.6	11.8	0.0	16.9
Prop In Lane	1.00		0.17	1.00		0.26	1.00		1.00	1.00		0.11
Lane Grp Cap(c), veh/h	269	0	713	171	0	717	195	339	301	183	0	311
V/C Ratio(X)	0.19	0.00	1.02	0.56	0.00	0.78	0.75	0.56	0.38	1.16	0.00	0.88
Avail Cap(c_a), veh/h	325	0	713	196	0	717	204	348	309	183	0	311
HCM Platoon Ratio	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.87	0.00	0.87	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.9	0.0	34.9	22.7	0.0	22.2	42.4	35.8	34.4	44.1	0.0	39.0
Incr Delay (d2), s/veh	0.3	0.0	36.3	2.8	0.0	8.2	14.1	1.8	0.8	117.3	0.0	23.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.1	0.0	33.0	2.1	0.0	17.5	7.6	7.6	0.1	16.7	0.0	13.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.2	0.0	71.2	25.6	0.0	30.3	56.5	37.7	35.2	161.4	0.0	62.9
LnGrp LOS	B	A	F	C	A	C	E	D	D	F	A	E
Approach Vol, veh/h		778			654			448			487	
Approach Delay, s/veh		67.7			29.6			43.2			106.0	
Approach LOS		E			C			D			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.4	49.1	16.5	24.0	8.4	51.1	16.0	24.5
Change Period (Y+Rc), s	5.6	5.6	* 5.7	* 5.7	5.6	5.6	* 5.7	* 5.7
Max Green Setting (Gmax), s	6.4	41.4	* 11	* 18	6.4	41.4	* 10	* 19
Max Q Clear Time (g_c+I1), s	5.1	47.0	10.9	18.9	3.7	32.6	13.8	12.1
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	6.1	0.0	0.6

Intersection Summary	
HCM 6th Ctrl Delay	60.4
HCM 6th LOS	E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	287	6	168	0	1	2	81	101	0	4	141	39
Future Volume (vph)	287	6	168	0	1	2	81	101	0	4	141	39
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	13	13	13	15	15	15	11	11	11	11	11	11
Grade (%)		2%			-1%			-2%			1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.951			0.910						0.972	
Flt Protected		0.970						0.978			0.999	
Satd. Flow (prot)	0	1699	0	0	1811	0	0	1694	0	0	1681	0
Flt Permitted		0.970						0.978			0.999	
Satd. Flow (perm)	0	1699	0	0	1811	0	0	1694	0	0	1681	0
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		199			375			774			566	
Travel Time (s)		5.4			10.2			15.1			11.0	
Confl. Peds. (#/hr)			4	4			1					1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	2%	1%	0%	0%	0%	0%
Adj. Flow (vph)	305	6	179	0	1	2	86	107	0	4	150	41
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	490	0	0	3	0	0	193	0	0	195	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	0.94	0.94	0.94	1.11	1.11	1.11	1.13	1.13	1.13
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 65.8%	ICU Level of Service C
Analysis Period (min) 15	

Intersection	
Intersection Delay, s/veh	14.4
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	287	6	168	0	1	2	81	101	0	4	141	39
Future Vol, veh/h	287	6	168	0	1	2	81	101	0	4	141	39
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	0	0	0	0	0	0	2	1	0	0	0	0
Mvmt Flow	305	6	179	0	1	2	86	107	0	4	150	41
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	17.3	8.4	11.1	10.7
HCM LOS	C	A	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	45%	62%	0%	2%
Vol Thru, %	55%	1%	33%	77%
Vol Right, %	0%	36%	67%	21%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	182	461	3	184
LT Vol	81	287	0	4
Through Vol	101	6	1	141
RT Vol	0	168	2	39
Lane Flow Rate	194	490	3	196
Geometry Grp	1	1	1	1
Degree of Util (X)	0.303	0.67	0.005	0.294
Departure Headway (Hd)	5.639	4.919	5.342	5.399
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	637	741	668	666
Service Time	3.678	2.919	3.391	3.439
HCM Lane V/C Ratio	0.305	0.661	0.004	0.294
HCM Control Delay	11.1	17.3	8.4	10.7
HCM Lane LOS	B	C	A	B
HCM 95th-tile Q	1.3	5.2	0	1.2

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	97	287	85	341	346	108
Future Volume (vph)	97	287	85	341	346	108
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	14	14
Grade (%)	-1%			1%	-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.899				0.968	
Flt Protected	0.988			0.990		
Satd. Flow (prot)	1599	0	0	1759	1849	0
Flt Permitted	0.988			0.990		
Satd. Flow (perm)	1599	0	0	1759	1849	0
Link Speed (mph)	35			35	35	
Link Distance (ft)	212			489	343	
Travel Time (s)	4.1			9.5	6.7	
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	2%	0%	0%	1%	2%	0%
Adj. Flow (vph)	98	290	86	344	349	109
Shared Lane Traffic (%)						
Lane Group Flow (vph)	388	0	0	430	458	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			11	11	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.07	1.07	1.08	1.08	0.97	0.97
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 84.4%	ICU Level of Service E
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	10.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	97	287	85	341	346	108
Future Vol, veh/h	97	287	85	341	346	108
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-1	-	-	1	-2	-
Peak Hour Factor	99	99	99	99	99	99
Heavy Vehicles, %	2	0	0	1	2	0
Mvmt Flow	98	290	86	344	349	109

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	920	404	458	0	-	0
Stage 1	404	-	-	-	-	-
Stage 2	516	-	-	-	-	-
Critical Hdwy	6.22	6.1	4.1	-	-	-
Critical Hdwy Stg 1	5.22	-	-	-	-	-
Critical Hdwy Stg 2	5.22	-	-	-	-	-
Follow-up Hdwy	3.518	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	316	658	1114	-	-	-
Stage 1	689	-	-	-	-	-
Stage 2	617	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	286	658	1114	-	-	-
Mov Cap-2 Maneuver	286	-	-	-	-	-
Stage 1	624	-	-	-	-	-
Stage 2	617	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	33.8	1.7	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1114	-	495	-	-
HCM Lane V/C Ratio	0.077	-	0.784	-	-
HCM Control Delay (s)	8.5	0	33.8	-	-
HCM Lane LOS	A	A	D	-	-
HCM 95th %tile Q(veh)	0.2	-	7.1	-	-

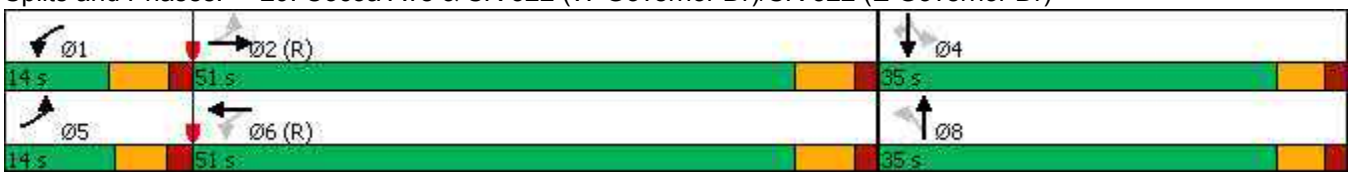
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	47	703	35	47	450	60	33	268	90	62	341	58
Future Volume (vph)	47	703	35	47	450	60	33	268	90	62	341	58
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	15	15	11	13	13	11	13	13	11	12	15
Grade (%)		-2%			-3%			0%			0%	
Storage Length (ft)	175		0	80		0	75		0	75		150
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.993			0.982			0.962				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1580	1949	0	1678	1836	0	1559	1750	0	1637	1748	1634
Flt Permitted	0.336			0.157			0.262			0.235		
Satd. Flow (perm)	559	1949	0	277	1836	0	430	1750	0	405	1748	1634
Right Turn on Red			No			Yes			No			Yes
Satd. Flow (RTOR)					9							103
Link Speed (mph)		35			40			35			35	
Link Distance (ft)		1911			1234			997			1054	
Travel Time (s)		37.2			21.0			19.4			20.5	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	2%	0%	0%	1%	1%	6%	3%	0%	1%	3%	3%
Adj. Flow (vph)	49	732	36	49	469	63	34	279	94	65	355	60
Shared Lane Traffic (%)												
Lane Group Flow (vph)	49	768	0	49	532	0	34	373	0	65	355	60
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.16	0.94	0.94	1.10	1.01	1.01	1.12	1.03	1.03	1.12	1.07	0.95
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	1		1	1	1
Detector Template		Main25			Main25							
Leading Detector (ft)	38	250		38	250		38	38		38	38	0
Trailing Detector (ft)	-2	0		-2	0		-2	-2		-2	-2	0
Detector 1 Position(ft)	-2	0		-2	0		-2	-2		-2	-2	0
Detector 1 Size(ft)	40	0		40	0		40	40		40	40	0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		244			244							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6			8			4		4
Detector Phase	5	2		1	6		8	8		4	4	4
Switch Phase												
Minimum Initial (s)	3.0	10.0		3.0	10.0		3.0	3.0		3.0	3.0	3.0
Minimum Split (s)	9.4	25.0		9.4	25.0		20.0	20.0		20.0	20.0	20.0
Total Split (s)	14.0	51.0		14.0	51.0		35.0	35.0		35.0	35.0	35.0
Total Split (%)	14.0%	51.0%		14.0%	51.0%		35.0%	35.0%		35.0%	35.0%	35.0%
Maximum Green (s)	8.2	44.8		7.8	44.8		29.6	29.6		29.6	29.6	29.6
Yellow Time (s)	3.8	4.4		4.4	4.4		3.6	3.6		3.6	3.6	3.6
All-Red Time (s)	2.0	1.8		1.8	1.8		1.8	1.8		1.8	1.8	1.8
Lost Time Adjust (s)	-1.5	-1.5		-1.5	-1.5		-1.5	-1.5		-1.5	-1.5	-1.5
Total Lost Time (s)	4.3	4.7		4.7	4.7		3.9	3.9		3.9	3.9	3.9
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	5.5		3.0	5.5		3.0	3.0		3.0	3.0	3.0
Minimum Gap (s)	3.0	2.0		3.0	2.0		3.0	3.0		3.0	3.0	3.0
Time Before Reduce (s)	0.0	25.0		0.0	25.0		0.0	0.0		0.0	0.0	0.0
Time To Reduce (s)	0.0	12.5		0.0	12.5		0.0	0.0		0.0	0.0	0.0
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	None
Act Effct Green (s)	61.2	54.0		61.0	54.2		26.9	26.9		26.9	26.9	26.9
Actuated g/C Ratio	0.61	0.54		0.61	0.54		0.27	0.27		0.27	0.27	0.27
v/c Ratio	0.11	0.73		0.17	0.53		0.30	0.79		0.60	0.76	0.12
Control Delay	13.1	36.0		9.2	19.1		34.8	46.5		54.6	43.9	1.8
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	13.1	36.0		9.2	19.1		34.8	46.5		54.6	43.9	1.8
LOS	B	D		A	B		C	D		D	D	A
Approach Delay		34.6			18.2			45.5			40.1	
Approach LOS		C			B			D			D	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 55 (55%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.79
Intersection Signal Delay: 33.5 Intersection LOS: C
Intersection Capacity Utilization 76.2% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 29: Cocoa Ave & SR 322 (W Governor Dr)/SR 322 (E Governor Dr)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	703	35	47	450	60	33	268	90	62	341	58
Future Volume (veh/h)	47	703	35	47	450	60	33	268	90	62	341	58
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1846	1920	1920	1912	1973	1973	1716	1828	1828	1786	1758	1828
Adj Flow Rate, veh/h	49	732	36	49	469	62	34	279	94	65	355	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	0	1	1	6	3	3	1	3	3
Cap, veh/h	473	973	48	311	921	122	184	382	129	174	514	
Arrive On Green	0.04	0.54	0.54	0.04	0.54	0.54	0.29	0.29	0.29	0.29	0.29	0.00
Sat Flow, veh/h	1758	1815	89	1821	1707	226	994	1308	441	1017	1758	1549
Grp Volume(v), veh/h	49	0	768	49	0	531	34	0	373	65	355	0
Grp Sat Flow(s),veh/h/ln	1758	0	1904	1821	0	1933	994	0	1749	1017	1758	1549
Q Serve(g_s), s	1.2	0.0	31.4	1.2	0.0	17.4	3.1	0.0	19.2	6.1	17.9	0.0
Cycle Q Clear(g_c), s	1.2	0.0	31.4	1.2	0.0	17.4	21.1	0.0	19.2	25.3	17.9	0.0
Prop In Lane	1.00		0.05	1.00		0.12	1.00		0.25	1.00		1.00
Lane Grp Cap(c), veh/h	473	0	1020	311	0	1043	184	0	511	174	514	
V/C Ratio(X)	0.10	0.00	0.75	0.16	0.00	0.51	0.18	0.00	0.73	0.37	0.69	
Avail Cap(c_a), veh/h	575	0	1020	409	0	1043	203	0	544	193	547	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	10.8	0.0	18.0	14.6	0.0	14.6	40.7	0.0	31.8	43.2	31.4	0.0
Incr Delay (d2), s/veh	0.1	0.0	5.1	0.2	0.0	1.8	0.5	0.0	4.6	1.3	3.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.8	0.0	20.2	0.8	0.0	11.9	1.4	0.0	13.3	2.8	12.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.9	0.0	23.2	14.8	0.0	16.4	41.2	0.0	36.5	44.6	34.8	0.0
LnGrp LOS	B	A	C	B	A	B	D	A	D	D	C	
Approach Vol, veh/h		817			580			407			420	A
Approach Delay, s/veh		22.4			16.3			36.9			36.3	
Approach LOS		C			B			D			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.6	58.3		33.1	8.2	58.7		33.1
Change Period (Y+Rc), s	* 6.2	* 6.2		* 5.4	* 5.8	* 6.2		* 5.4
Max Green Setting (Gmax), s	* 7.8	* 45		* 30	* 8.2	* 45		* 30
Max Q Clear Time (g_c+I1), s	3.2	33.4		27.3	3.2	19.4		23.1
Green Ext Time (p_c), s	0.0	9.0		0.4	0.0	11.8		0.9

Intersection Summary	
HCM 6th Ctrl Delay	26.1
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

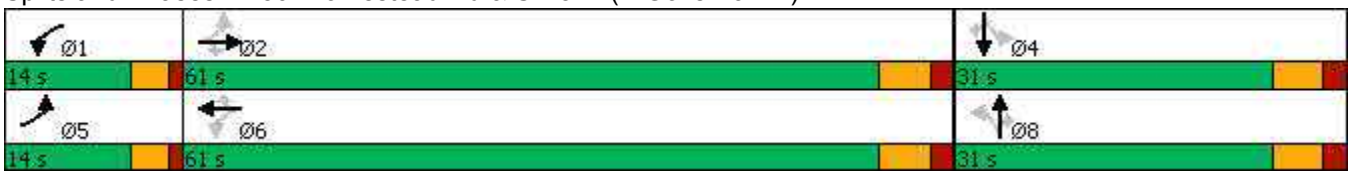
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	742	8	45	415	24	7	159	39	55	281	175
Future Volume (vph)	100	742	8	45	415	24	7	159	39	55	281	175
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Grade (%)		2%			2%			2%			2%	
Storage Length (ft)	125		100	100		100	100		100	110		200
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1693	1764	1515	1660	1764	1515	1693	1747	1515	1628	1747	1515
Flt Permitted	0.389			0.185			0.338			0.574		
Satd. Flow (perm)	693	1764	1515	323	1764	1515	602	1747	1515	984	1747	1515
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			72			72			72			188
Link Speed (mph)		40			40			35			35	
Link Distance (ft)		1219			3941			1026			2312	
Travel Time (s)		20.8			67.2			20.0			45.0	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	1%	0%	2%	1%	0%	0%	2%	0%	4%	2%	0%
Adj. Flow (vph)	108	798	9	48	446	26	8	171	42	59	302	188
Shared Lane Traffic (%)												
Lane Group Flow (vph)	108	798	9	48	446	26	8	171	42	59	302	188
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	1	1	1	1	1
Detector Template		Main25			Main25							
Leading Detector (ft)	38	250	38	38	250	38	38	38	38	38	38	38
Trailing Detector (ft)	-2	0	-2	-2	0	-2	-2	-2	-2	-2	-2	-2
Detector 1 Position(ft)	-2	0	-2	-2	0	-2	-2	-2	-2	-2	-2	-2
Detector 1 Size(ft)	40	0	40	40	0	40	40	40	40	40	40	40
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		244			244							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6		6	8		8	4		4
Detector Phase	5	2	2	1	6	6	8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	3.0	12.0	12.0	3.0	12.0	12.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Split (s)	8.5	29.0	29.0	8.5	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0
Total Split (s)	14.0	61.0	61.0	14.0	61.0	61.0	31.0	31.0	31.0	31.0	31.0	31.0
Total Split (%)	13.2%	57.5%	57.5%	13.2%	57.5%	57.5%	29.2%	29.2%	29.2%	29.2%	29.2%	29.2%
Maximum Green (s)	10.0	55.0	55.0	10.0	55.0	55.0	25.0	25.0	25.0	25.0	25.0	25.0
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5
Total Lost Time (s)	2.5	4.5	4.5	2.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0	6.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	28.0	28.0	0.0	28.0	28.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	14.0	14.0	0.0	14.0	14.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	Min	Min	None	Min	Min	None	None	None	None	None	None
Act Effct Green (s)	57.7	50.3	50.3	55.1	46.8	46.8	21.8	21.8	21.8	21.8	21.8	21.8
Actuated g/C Ratio	0.66	0.58	0.58	0.63	0.54	0.54	0.25	0.25	0.25	0.25	0.25	0.25
v/c Ratio	0.19	0.79	0.01	0.14	0.47	0.03	0.05	0.39	0.10	0.24	0.69	0.36
Control Delay	6.4	23.4	0.0	6.5	16.0	0.1	30.4	33.2	3.1	32.9	41.5	7.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.4	23.4	0.0	6.5	16.0	0.1	30.4	33.2	3.1	32.9	41.5	7.0
LOS	A	C	A	A	B	A	C	C	A	C	D	A
Approach Delay		21.2			14.3			27.4			28.8	
Approach LOS		C			B			C			C	

Intersection Summary	
Area Type:	Other
Cycle Length: 106	
Actuated Cycle Length: 87.4	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay: 22.1	Intersection LOS: C
Intersection Capacity Utilization 78.1%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 30: Homestead Rd & SR 322 (E Governor Dr)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	742	8	45	415	24	7	159	39	55	281	175
Future Volume (veh/h)	100	742	8	45	415	24	7	159	39	55	281	175
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1778	1764	1778	1750	1764	1778	1778	1750	1778	1722	1750	1778
Adj Flow Rate, veh/h	108	798	9	48	446	26	8	171	42	59	302	188
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	1	0	2	1	0	0	2	0	4	2	0
Cap, veh/h	594	1055	901	333	1018	869	141	389	335	243	389	335
Arrive On Green	0.06	0.60	0.60	0.04	0.58	0.58	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	1693	1764	1507	1666	1764	1507	909	1750	1507	1135	1750	1507
Grp Volume(v), veh/h	108	798	9	48	446	26	8	171	42	59	302	188
Grp Sat Flow(s),veh/h/ln	1693	1764	1507	1666	1764	1507	909	1750	1507	1135	1750	1507
Q Serve(g_s), s	2.0	27.8	0.2	0.9	12.0	0.6	0.7	7.0	1.9	3.9	13.6	9.3
Cycle Q Clear(g_c), s	2.0	27.8	0.2	0.9	12.0	0.6	14.2	7.0	1.9	11.0	13.6	9.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	594	1055	901	333	1018	869	141	389	335	243	389	335
V/C Ratio(X)	0.18	0.76	0.01	0.14	0.44	0.03	0.06	0.44	0.13	0.24	0.78	0.56
Avail Cap(c_a), veh/h	721	1193	1019	493	1193	1019	227	555	478	351	555	478
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	6.5	12.3	6.8	10.6	10.0	7.6	37.2	28.0	26.0	32.7	30.5	28.9
Incr Delay (d2), s/veh	0.1	4.4	0.0	0.2	1.1	0.1	0.2	0.8	0.2	0.5	4.4	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.0	15.2	0.1	0.5	7.5	0.3	0.3	5.2	1.2	2.0	9.9	6.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.6	16.7	6.8	10.8	11.1	7.6	37.4	28.8	26.1	33.2	34.9	30.3
LnGrp LOS	A	B	A	B	B	A	D	C	C	C	C	C
Approach Vol, veh/h		915			520			221			549	
Approach Delay, s/veh		15.4			10.9			28.6			33.2	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.0	54.4		23.1	7.8	52.7		23.1
Change Period (Y+Rc), s	4.0	6.0		6.0	4.0	6.0		6.0
Max Green Setting (Gmax), s	10.0	55.0		25.0	10.0	55.0		25.0
Max Q Clear Time (g_c+I1), s	2.9	29.8		15.6	4.0	14.0		16.2
Green Ext Time (p_c), s	0.0	18.7		1.5	0.1	13.6		0.5

Intersection Summary	
HCM 6th Ctrl Delay	20.1
HCM 6th LOS	C

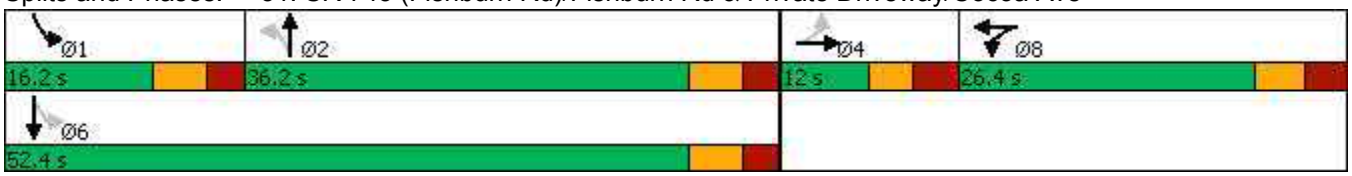
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	383	0	65	0	289	191	117	565	0
Future Volume (vph)	0	0	0	383	0	65	0	289	191	117	565	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	11	11	11	11	12
Grade (%)		0%			2%			1%			-1%	
Storage Length (ft)	0		0	200		0	0		0	75		0
Storage Lanes	0		0	1		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.850			0.946				
Flt Protected				0.950						0.950		
Satd. Flow (prot)	0	1800	0	1628	1443	0	0	1593	0	1613	1731	0
Flt Permitted				0.950						0.244		
Satd. Flow (perm)	0	1800	0	1628	1443	0	0	1593	0	414	1731	0
Right Turn on Red			Yes			No			No			Yes
Satd. Flow (RTOR)												
Link Speed (mph)		25			35			35			35	
Link Distance (ft)		169			1587			679			2277	
Travel Time (s)		4.6			30.9			13.2			44.4	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	0%	0%	4%	0%	5%	0%	2%	4%	3%	1%	0%
Adj. Flow (vph)	0	0	0	395	0	67	0	298	197	121	582	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	395	67	0	0	495	0	121	582	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.09	1.09	1.09	1.08	1.13	1.13	1.11	1.11	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	1		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left		
Leading Detector (ft)	48	48		48	48		48	48		48	225	
Trailing Detector (ft)	-2	-2		-2	-2		-2	-2		-2	0	
Detector 1 Position(ft)	-2	-2		-2	-2		-2	-2		-2	0	
Detector 1 Size(ft)	50	50		50	50		50	50		50	0	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)											219	
Detector 2 Size(ft)											6	
Detector 2 Type											Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)											0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type				Split	NA			NA		pm+pt	NA	
Protected Phases		4		8	8			2		1	6	
Permitted Phases	4						2			6		
Detector Phase	4	4		8	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	2.0	2.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Split (s)	12.0	12.0		18.0	18.0		20.0	20.0		9.2	40.0	
Total Split (s)	12.0	12.0		26.4	26.4		36.2	36.2		16.2	52.4	
Total Split (%)	13.2%	13.2%		29.1%	29.1%		39.9%	39.9%		17.8%	57.7%	
Maximum Green (s)	6.0	6.0		20.0	20.0		30.0	30.0		10.0	46.2	
Yellow Time (s)	3.0	3.0		3.4	3.4		3.7	3.7		3.7	3.7	
All-Red Time (s)	3.0	3.0		3.0	3.0		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)		-1.5		-1.5	-1.5			-1.5		-1.5	-1.5	
Total Lost Time (s)		4.5		4.9	4.9			4.7		4.7	4.7	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		6.0	6.0		3.0	6.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.5	3.5		3.0	3.5	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		23.0	23.0		0.0	23.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		12.0	12.0		0.0	12.0	
Recall Mode	None	None		Min	Min		Min	Min		Min	Min	
Act Effct Green (s)				21.6	21.6			30.1		44.4	44.4	
Actuated g/C Ratio				0.29	0.29			0.40		0.59	0.59	
v/c Ratio				0.85	0.16			0.78		0.31	0.57	
Control Delay				46.0	22.8			30.5		8.9	12.3	
Queue Delay				0.0	0.0			0.0		0.0	0.0	
Total Delay				46.0	22.8			30.5		8.9	12.3	
LOS				D	C			C		A	B	
Approach Delay					42.7			30.5			11.7	
Approach LOS					D			C			B	

Intersection Summary

Area Type: Other
Cycle Length: 90.8
Actuated Cycle Length: 75.6
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.85
Intersection Signal Delay: 25.9 Intersection LOS: C
Intersection Capacity Utilization 94.1% ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 31: SR 743 (Fishburn Rd)/Fishburn Rd & Private Driveway/Cocoa Ave



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	383	0	65	0	289	191	117	565	0
Future Volume (veh/h)	0	0	0	383	0	65	0	289	191	117	565	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1722	1778	1778	1766	1766	1766	1795	1823	1823
Adj Flow Rate, veh/h	0	0	0	395	0	67	0	298	197	121	582	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	4	0	0	2	2	2	3	1	1
Cap, veh/h	0	3	0	479	0	440	0	382	253	388	1012	0
Arrive On Green	0.00	0.00	0.00	0.29	0.00	0.29	0.00	0.39	0.39	0.10	0.56	0.00
Sat Flow, veh/h	0	1800	0	1640	0	1507	0	992	656	1709	1823	0
Grp Volume(v), veh/h	0	0	0	395	0	67	0	0	495	121	582	0
Grp Sat Flow(s),veh/h/ln	0	1800	0	1640	0	1507	0	0	1648	1709	1823	0
Q Serve(g_s), s	0.0	0.0	0.0	14.1	0.0	2.1	0.0	0.0	16.6	2.3	13.1	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	14.1	0.0	2.1	0.0	0.0	16.6	2.3	13.1	0.0
Prop In Lane	0.00		0.00	1.00		1.00	0.00		0.40	1.00		0.00
Lane Grp Cap(c), veh/h	0	3	0	479	0	440	0	0	635	388	1012	0
V/C Ratio(X)	0.00	0.00	0.00	0.82	0.00	0.15	0.00	0.00	0.78	0.31	0.58	0.00
Avail Cap(c_a), veh/h	0	215	0	560	0	515	0	0	825	538	1383	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	20.8	0.0	16.5	0.0	0.0	17.0	11.2	9.1	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	8.6	0.0	0.2	0.0	0.0	7.7	0.5	1.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	0.0	0.0	10.0	0.0	1.2	0.0	0.0	11.0	1.3	8.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	0.0	29.3	0.0	16.6	0.0	0.0	24.7	11.7	11.0	0.0
LnGrp LOS	A	A	A	C	A	B	A	A	C	B	B	A
Approach Vol, veh/h		0			462			495			703	
Approach Delay, s/veh		0.0			27.5			24.7			11.1	
Approach LOS					C			C			B	

Timer - Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	10.7	28.9		0.0		39.6		23.3
Change Period (Y+Rc), s	* 6.2	* 6.2		6.0		* 6.2		6.4
Max Green Setting (Gmax), s	* 10	* 30		6.0		* 46		20.0
Max Q Clear Time (g_c+I1), s	4.3	18.6		0.0		15.1		16.1
Green Ext Time (p_c), s	0.2	4.1		0.0		15.3		0.7

Intersection Summary	
HCM 6th Ctrl Delay	19.7
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	39	56	45	427	862	89
Future Volume (vph)	39	56	45	427	862	89
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	15	15	12	12	12	12
Grade (%)	-4%			-2%	2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.920				0.987	
Flt Protected	0.980			0.995		
Satd. Flow (prot)	1821	0	0	1761	1726	0
Flt Permitted	0.980			0.995		
Satd. Flow (perm)	1821	0	0	1761	1726	0
Link Speed (mph)	25			35	35	
Link Distance (ft)	948			1033	614	
Travel Time (s)	25.9			20.1	12.0	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	0%	3%	2%	1%
Adj. Flow (vph)	41	60	48	454	917	95
Shared Lane Traffic (%)						
Lane Group Flow (vph)	101	0	0	502	1012	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	15			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.92	0.92	1.06	1.06	1.09	1.09
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 75.9%	ICU Level of Service D
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	39	56	45	427	862	89
Future Vol, veh/h	39	56	45	427	862	89
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-4	-	-	-2	2	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	3	2	1
Mvmt Flow	41	60	48	454	917	95

Major/Minor	Minor2		Major1		Major2		
Conflicting Flow All	1515	965	1012	0	-	0	
Stage 1	965	-	-	-	-	-	
Stage 2	550	-	-	-	-	-	
Critical Hdwy	5.6	5.8	4.1	-	-	-	
Critical Hdwy Stg 1	4.6	-	-	-	-	-	
Critical Hdwy Stg 2	4.6	-	-	-	-	-	
Follow-up Hdwy	3.5	3.3	2.2	-	-	-	
Pot Cap-1 Maneuver	186	347	693	-	-	-	
Stage 1	462	-	-	-	-	-	
Stage 2	658	-	-	-	-	-	
Platoon blocked, %				-	-	-	
Mov Cap-1 Maneuver	169	347	693	-	-	-	
Mov Cap-2 Maneuver	169	-	-	-	-	-	
Stage 1	419	-	-	-	-	-	
Stage 2	658	-	-	-	-	-	

Approach	EB	NB	SB
HCM Control Delay, s	16.6	1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	693	-	412	-	-
HCM Lane V/C Ratio	0.069	-	0.245	-	-
HCM Control Delay (s)	10.6	0	16.6	-	-
HCM Lane LOS	B	A	C	-	-
HCM 95th %tile Q(veh)	0.2	-	1	-	-

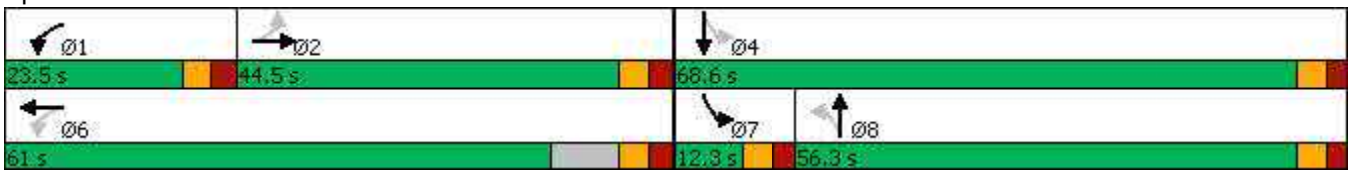
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	325	58	163	276	128	61	184	109	112	203	33
Future Volume (vph)	29	325	58	163	276	128	61	184	109	112	203	33
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	12	12	10	12	12	13	13	13	10	13	13
Grade (%)		-1%			1%			-4%			3%	
Storage Length (ft)	60		0	140		0	0		0	175		0
Storage Lanes	1		0	1		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								0.99		1.00	1.00	
Frt		0.977			0.953			0.958			0.979	
Flt Protected	0.950			0.950				0.991		0.950		
Satd. Flow (prot)	1499	1767	0	1572	1707	0	0	1749	0	1526	1788	0
Flt Permitted	0.516			0.211				0.896		0.349		
Satd. Flow (perm)	814	1767	0	349	1707	0	0	1581	0	560	1788	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			23			19			8	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		552			1053			474			481	
Travel Time (s)		15.1			28.7			12.9			13.1	
Confl. Peds. (#/hr)							1		4	4		1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	7%	0%	0%	1%	0%	0%	3%	2%	2%	3%	0%	0%
Adj. Flow (vph)	30	339	60	170	288	133	64	192	114	117	211	34
Shared Lane Traffic (%)												
Lane Group Flow (vph)	30	399	0	170	421	0	0	370	0	117	245	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.16	1.07	1.07	1.18	1.08	1.08	1.00	1.00	1.00	1.19	1.05	1.05
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template							Left					
Leading Detector (ft)	35	35		35	35		48	35		35	35	
Trailing Detector (ft)	-5	-5		-5	-5		-2	-5		-5	-5	
Detector 1 Position(ft)	-5	-5		-5	-5		-2	-5		-5	-5	
Detector 1 Size(ft)	40	40		40	40		50	40		40	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		pm+pt	NA	
Protected Phases		2		1	6			8		7	4	
Permitted Phases	2			6			8			4		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	2	2		1	6		8	8		7	4	
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Split (s)	10.0	10.0		23.5	10.0		10.0	10.0		8.5	10.0	
Total Split (s)	44.5	44.5		23.5	61.0		56.3	56.3		12.3	68.6	
Total Split (%)	32.6%	32.6%		17.2%	44.7%		41.2%	41.2%		9.0%	50.2%	
Maximum Green (s)	39.0	39.0		18.0	55.5		51.0	51.0		7.0	63.3	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.1	3.1		3.1	3.1	
All-Red Time (s)	2.5	2.5		2.5	2.5		2.2	2.2		2.2	2.2	
Lost Time Adjust (s)	-0.5	-0.5		-0.5	-0.5			-0.5		-0.5	-0.5	
Total Lost Time (s)	5.0	5.0		5.0	5.0			4.8		4.8	4.8	
Lead/Lag	Lag	Lag		Lead			Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		None	Min		None	None		None	None	
Act Effct Green (s)	28.1	28.1		46.2	46.2			29.4		42.3	42.3	
Actuated g/C Ratio	0.28	0.28		0.47	0.47			0.30		0.43	0.43	
v/c Ratio	0.13	0.79		0.53	0.52			0.77		0.37	0.32	
Control Delay	31.2	45.7		23.0	20.8			42.3		23.2	20.8	
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Delay	31.2	45.7		23.0	20.8			42.3		23.2	20.8	
LOS	C	D		C	C			D		C	C	
Approach Delay		44.7			21.4			42.3			21.6	
Approach LOS		D			C			D			C	

Intersection Summary

Area Type: Other
Cycle Length: 136.6
Actuated Cycle Length: 98.8
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.79
Intersection Signal Delay: 31.6 Intersection LOS: C
Intersection Capacity Utilization 82.0% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 33: S. Hanover St/N. Hanover St & W. Main St/E. Main St



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	325	58	163	276	128	61	184	109	112	203	33
Future Volume (veh/h)	29	325	58	163	276	128	61	184	109	112	203	33
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.99		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1738	1837	1837	1780	1794	1794	1997	1997	1997	1708	1820	1820
Adj Flow Rate, veh/h	30	339	60	170	288	133	64	192	114	117	211	34
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	7	0	0	1	0	0	2	2	2	3	0	0
Cap, veh/h	360	410	73	358	525	243	119	250	137	427	619	100
Arrive On Green	0.27	0.27	0.28	0.11	0.45	0.47	0.27	0.25	0.27	0.08	0.41	0.42
Sat Flow, veh/h	947	1520	269	1696	1161	536	228	993	544	1626	1528	246
Grp Volume(v), veh/h	30	0	399	170	0	421	370	0	0	117	0	245
Grp Sat Flow(s),veh/h/ln	947	0	1789	1696	0	1698	1765	0	0	1626	0	1774
Q Serve(g_s), s	1.6	0.0	14.4	4.5	0.0	12.4	9.0	0.0	0.0	3.4	0.0	6.5
Cycle Q Clear(g_c), s	1.6	0.0	14.4	4.5	0.0	12.4	13.3	0.0	0.0	3.4	0.0	6.5
Prop In Lane	1.00		0.15	1.00		0.32	0.17		0.31	1.00		0.14
Lane Grp Cap(c), veh/h	360	0	482	358	0	768	532	0	0	427	0	719
V/C Ratio(X)	0.08	0.00	0.83	0.47	0.00	0.55	0.70	0.00	0.00	0.27	0.00	0.34
Avail Cap(c_a), veh/h	648	0	1026	627	0	1380	1388	0	0	468	0	1643
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.0	0.0	23.6	15.4	0.0	13.6	23.9	0.0	0.0	14.6	0.0	14.1
Incr Delay (d2), s/veh	0.1	0.0	3.7	1.0	0.0	0.6	1.7	0.0	0.0	0.3	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.6	0.0	10.4	3.0	0.0	7.9	9.3	0.0	0.0	2.2	0.0	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.1	0.0	27.3	16.4	0.0	14.2	25.5	0.0	0.0	15.0	0.0	14.4
LnGrp LOS	B	A	C	B	A	B	C	A	A	B	A	B
Approach Vol, veh/h		429			591			370			362	
Approach Delay, s/veh		26.7			14.8			25.5			14.6	
Approach LOS		C			B			C			B	

Timer - Assigned Phs	1	2		4		6	7	8
Phs Duration (G+Y+Rc), s	12.6	23.6		32.7		36.2	10.6	22.2
Change Period (Y+Rc), s	5.5	5.5		* 5.3		5.5	* 5.3	* 5.3
Max Green Setting (Gmax), s	7.0	39.0		* 63		55.5	* 7	* 51
Max Q Clear Time (g_c+I1), s	7.0	16.4		8.5		14.4	5.9	15.3
Green Ext Time (p_c), s	0.4	1.6		0.9		1.7	0.0	1.6

Intersection Summary	
HCM 6th Ctrl Delay	19.9
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	384	85	105	491	3	42	6	78	0	0	0
Future Volume (vph)	1	384	85	105	491	3	42	6	78	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	11	11	14	14	14	11	11	11
Grade (%)		1%			-1%			0%			-5%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.976			0.999			0.916				
Flt Protected					0.991			0.984				
Satd. Flow (prot)	0	1673	0	0	1711	0	0	1720	0	0	0	0
Flt Permitted					0.991			0.984				
Satd. Flow (perm)	0	1673	0	0	1711	0	0	1720	0	0	0	0
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		1053			1492			867			476	
Travel Time (s)		28.7			40.7			23.6			13.0	
Confl. Peds. (#/hr)							2					2
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	1%	1%	2%	1%	0%	0%	0%	1%	0%	0%	0%
Adj. Flow (vph)	1	422	93	115	540	3	46	7	86	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	516	0	0	658	0	0	139	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.13	1.13	1.13	1.11	1.11	1.11	0.99	0.99	0.99	1.08	1.08	1.08
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 85.0%	ICU Level of Service E
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	384	85	105	491	3	42	6	78	0	0	0
Future Vol, veh/h	1	384	85	105	491	3	42	6	78	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	2	0	0	0	0	2
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	1	-	-	-1	-	-	0	-	-	-5	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	0	1	1	2	1	0	0	0	1	0	0	0
Mvmt Flow	1	422	93	115	540	3	46	7	86	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	543	0	0	515	0	0	1245	1244	469
Stage 1	-	-	-	-	-	-	471	471	-
Stage 2	-	-	-	-	-	-	774	773	-
Critical Hdwy	4.1	-	-	4.12	-	-	6.4	6.5	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-	5.4	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.4	5.5	-
Follow-up Hdwy	2.2	-	-	2.218	-	-	3.5	4	3.309
Pot Cap-1 Maneuver	1036	-	-	1051	-	-	194	176	596
Stage 1	-	-	-	-	-	-	632	563	-
Stage 2	-	-	-	-	-	-	458	412	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1036	-	-	1051	-	-	163	0	596
Mov Cap-2 Maneuver	-	-	-	-	-	-	163	0	-
Stage 1	-	-	-	-	-	-	532	0	-
Stage 2	-	-	-	-	-	-	457	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.6	25.8
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	309	1036	-	-	1051	-	-
HCM Lane V/C Ratio	0.448	0.001	-	-	0.11	-	-
HCM Control Delay (s)	25.8	8.5	0	-	8.8	0	-
HCM Lane LOS	D	A	A	-	A	A	-
HCM 95th %tile Q(veh)	2.2	0	-	-	0.4	-	-

APPENDIX E
TRIP GENERATION

Greater Hershey Area Transportation Study
AM Trip Generation

Development ID	Development Name	Development Land Uses	Entering Trips	Exiting Trips	Trips Total	Trips Rate	Trips Equation	Number of Studies	Pass-By Rate	Pass-By Trips	New Trips	Entering Trips	Exiting Trips
Derry Township													
E-2	Woodland	Residential - 5 Single Family Dwellings	2	6	**8**	3	8	173			8	2	6
E-20	Oak Springs -	Residential - 6-unit Townhouse	1	2	**3**	3	3	42			3	1	2
E-8	The Point	Residential - 22 Single Family Detached	3	10	**13**	8	13	173			13	3	10
			4	15	**19**	17	19	42			19	4	15
E-9	Muscalus	Residential - 32 Multi-family Apartments	2	6	**8**	7	8	42			8	2	6
E-4	Hershey	Residential - 3-lot Subdivision	2	5	**7**	1	6	173			7	2	5
E-5	Rosemont	Residential - 90 Multi-family Apartments	5	15	**20**	18	20	42			20	5	15
E-19	East Caracas	Residential - 24 Multi-family Apartments	1	5	**6**	6	6	42			6	1	5
E-6	Fox Glen	Residential - 5-lot Subdivision	2	6	**8**	3	8	173			8	2	6
E-7	Stoverdale	Commercial - Retail/Bank	95	59	**154**	5	154	84		52	102	63	39
			21	14	**35**	35	-	36		12	23	14	9
E-14	Chafia Capital	Commercial - Retail/Office	44	12	**56**	56	54	44			56	44	12
E-10	Hershey	Commercial -	68	68	**136**						136	68	68
E-11	Chocolate	Commercial - Retail/Office	99	60	**159**	13	159	84			159	99	60
E-13	Tanger	Commercial - Restaurant	99	96	**195**	195	-	61			195	99	96
E-15	Miller Oral	Medical-Dental Office Building	9	2	**11**	9	11	44			11	9	2
E-1	The Crossing	Commercial - Retail/Office	103	80	**183**						183	103	80
E-18	LIT Palmyra	Industrial - Warehouse	44	16	**60**	39	60	33			60	44	16
E-3	Hershey	Institutional - Hospital	70	33	**103**	103	212	20			103	70	33
R-9		21 Dwelling Single Family Units	9	28	**37**	35	37	42			37	9	28
R-4		27 Single Dwellings Family	6	18	**24**	20	24	173			24	6	18
R-3		16 Single Dwellings Family	4	12	**16**	12	16	173			16	4	12
R-5		48 Single Dwellings Family	10	29	**39**	36	39	173			39	10	29
R-2		48 Single Dwellings Family	10	29	**39**	36	39	173			39	10	29
R-1		58 Single Dwellings Family	12	35	**47**	43	46	173			47	12	35
R-10		54 Dwelling Units	4	7	**11**	11	11	11			11	4	7
R-15		30 Dwelling Units	2	4	**6**	6	6	11			6	2	4
R-16		12 Multi-family Units	1	5	**6**	6	6	42			6	1	5
R-12		500 Dwelling Units	37	111	**148**	148	147	173			148	37	111
R-12		500 Dwelling Units	11	37	**48**	46	48	42			48	11	37
R-12		500 Dwelling Units	14	26	**40**	40	40	11			40	14	26
R-14		26 Dwelling Units	6	17	**23**	19	23	173			23	6	17
MU-3		160 Dwelling (124 in multi-family Units)	8	23	**31**	27	30	173			31	8	23
MU-3		apartments)	14	45	**59**	57	59	42			59	14	45
E-12		Hershey Park 2020 Attraction									222	200	22
E-15		Retail	117	72	**189**	71	189	84	0.34	125	64	40	24
E-17		Red Roof Inn	10	17	**27**	0	0				27	10	17
MU-1		Retail	100	62	**162**	19	162	84	0.34	107	55	34	21
MU-1		Restaurant	30	24	**54**	54	-	39	0.43	31	23	13	10
C-9		Hotel	22	16	**38**	36	38	25			38	22	16
C-10		Retail	131	81	**212**	113	212	84	0.34	140	72	45	27
C-5		Office	31	5	**36**	12	36	35			36	31	5

Greater Hershey Area Transportation Study
AM Trip Generation

C-5		Restaurant	28	23	**51**	50	-	39	0.43	29	22	12	10
C-5		Restaurant	0	0	**0**	4	-	7	0.44	0	0	0	0
C-5		Hotel	27	18	**45**	42	45	25			45	27	18
MU-5		Office	177	13	**190**	0	0				190	177	13
C-4		Retail	117	72	**189**	71	189	84	0.34	125	64	40	24
C-4		Hotel	27	18	**45**	42	45	25			45	27	18
C-6		Restaurant	54	45	**99**	99	-	39	0.43	56	43	24	19
C-6		Restaurant	205	197	**402**	402	-	111	0.5	201	201	103	98
C-6		Hotel	41	29	**70**	66	70	25			70	41	29
C-6		Retail	117	72	**189**	71	189	84	0.34	125	64	40	24
C-3		Research	90	30	**120**	120	-	11			120	90	30
C-3		Research	20	7	**27**	27	-	11			27	20	7
C-3		Hospital	287	135	**422**	356	422	20			422	287	135
C-3		University	75	23	**98**	98	-	3			98	75	23
C-3		Hotel	41	29	**70**	66	70	25			70	41	29
MU-3		Office	157	26	**183**	183	175	35			183	157	26
MU-2		Retail	85	56	**141**						141	85	56
MU-2		Restaurant - Barn	0	2	**2**						2	0	2
MU-2		Hotel	37	17	**54**						54	37	17
MU-2		Office	53	7	**60**						60	53	7
MU-2		Hospital	138	51	**189**						189	138	51
MU-2		Single-Family Detached	21	64	**85**						85	21	64
MU-2		Multi-Family Low Rise	57	190	**247**						247	57	190
MU-2		Assisted Living	11	6	**17**						17	11	6
MU-2		Senior Adult - Attached	6	10	**16**						16	6	10
C-1		Restaurant	34	27	**61**	61	-	39	0.43	35	26	14	12
C-1		Restaurant	0	0	**0**	4	-	7	0.44	0	0	0	0
C-2		Retail	187	115	**302**	282	302	84	0.34	199	103	64	39
C-15		Office	108	22	**130**	130	119	19			130	108	22
C-16		10% Increase in Shopping Center	11	8	**19**	0	0	0			19	11	8

Greater Hershey Area Transportation Study
AM Trip Generation

Londonderry Township													
C-7		High Cube Warehouse	92	28	**120**	120	-	102			120	92	28
C-8		Retail	321	196	**517**	517	427	84	0.34	341	176	109	67
C-11		High Cube Warehouse	52	16	**68**	68	-	102			68	52	16
MU-6		Retail	105	64	**169**	32	169	84	0.34	112	57	35	22
MU-6		Office	91	15	**106**	99	106	35			106	91	15
MU-6		Single-fanily homes	50	149	**199**	198	194	173			199	50	149
MU-6		Apartments	32	108	**140**	140	137	42			140	32	108
MU-6		Townhouses	11	36	**47**	46	47	42			47	11	36
MU-6		Condos	32	106	**138**	138	135	42			138	32	106
MU-6		Senior Housing	7	14	**21**	21	21	11			21	7	14
MU-6		Continuing Care	48	28	**76**	76	-	9			76	48	28
Hummelstown Borough													
R-17		Verdelli Farms	5	17	**22**	21	22	42			22	5	17
R-18		Verdelli Tract near Swim Club	15	44	**59**	56	58	173			59	15	44
C-12		CAMASTA Motel	9	15	**24**	23	24	16			24	9	15
C-13		Restaurant (Micro-brew)	18	16	**34**	34	-	9	0.43	19	15	0	0
C-14		Restaurant (The Gas Station)	20	18	**38**	38	-	9	0.43	22	16	0	0

Greater Hershey Area Transportation Study
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Development ID	Development Name	Development Land Uses	Entering Trips	Exiting Trips	Trips Total	Trips Rate	Trips Equation	Number of Studies	Pass-By Rate	Pass-By Trips	New Trips	Entering Trips	Exiting Trips
Derry Township													
E-2	Woodland	Residential - 5 Single Family Dwellings	3	2	**5**	4	5	190			5	3	2
E-20	Oak Springs -	Residential - 6-unit Townhouse	3	2	**5**	3	5	50			5	3	2
E-8	The Point	Residential - 22 Single Family Detached	8	4	**12**	11	12	190			12	8	4
			16	9	**25**	21	25	50			25	16	9
E-9	Muscalus	Residential - 32 Multi-family Apartments	8	4	**12**	9	12	50			12	8	4
E-4	Hershey	Residential - 3-lot Subdivision	1	1	**2**	2	2	190			2	1	1
E-5	Rosemont	Residential - 90 Multi-family Apartments	16	10	**26**	22	26	50			26	16	10
E-19	East Caracas	Residential - 24 Multi-family Apartments	6	3	**9**	7	9	50			9	6	3
E-6	Fox Glen	Residential - 5-lot Subdivision	3	2	**5**	4	5	190			5	3	2
E-7	Stoverdale	Commercial - Retail/Bank	27	30	**57**	18	57	261		19	38	18	20
			53	56	**109**	109	-	108		38	71	35	36
E-14	Chafia Capital	Commercial - Retail/Office	20	51	**71**	70	71	65			71	20	51
E-10	Hershey	Commercial -	72	50	**122**						122	72	50
E-11	Chocolate	Commercial - Retail/Office	60	64	**124**	52	124	261			124	60	64
E-13	Tanger	Commercial - Restaurant	48	48	**96**	95	-	26			96	48	48
E-15	Miller Oral	Medical-Dental Office Building	4	9	**13**	11	13	65			13	4	9
E-1	The Crossing	Commercial - Retail/Office	123	135	**258**						258	123	135
E-18	LIT Palmyra	Industrial - Warehouse	24	37	**61**	35	61	34			61	24	37
E-3	Hershey	Institutional - Hospital	36	77	**113**	113	198	19			113	36	77
R-9		21 Dwelling Single Family Units	29	17	**46**	43	46	50			46	29	17
R-4		27 Single Dwellings Family	18	11	**29**	27	29	190			29	18	11
R-3		16 Single Dwellings Family	11	6	**17**	16	17	190			17	11	6
R-5		48 Single Dwellings Family	32	19	**51**	48	50	190			51	32	19
R-2		48 Single Dwellings Family	32	19	**51**	48	50	190			51	32	19
R-1		58 Single Dwellings Family	38	22	**60**	57	60	190			60	38	22
R-10		54 Dwelling Units	8	7	**15**	14	15	11			15	8	7
R-15		30 Dwelling Units	5	4	**9**	8	9	11			9	5	4
R-16		12 Multi-family Units	6	3	**9**	7	9	50			9	6	3
R-12		500 Dwelling Units	125	73	**198**	198	198	190			198	125	73
R-12		500 Dwelling Units	37	22	**59**	56	59	50			59	37	22
R-12		500 Dwelling Units	29	23	**52**	52	50	11			52	29	23
R-14		26 Dwelling Units	18	10	**28**	26	28	190			28	18	10
MU-3		160 Dwelling (124 in multi-family Units)	24	14	**38**	36	38	190			38	24	14
MU-3		apartments)	45	27	**72**	69	72	50			72	45	27
E-12		Hershey Park 2020 Attraction											
E-15		Retail	211	228	**439**	286	439	261	0.34	290	149	72	77
E-17		Red Roof Inn	15	13	**28**	0	0				28	15	13
MU-1		Retail	79	86	**165**	76	165	261	0.34	109	56	27	29
MU-1		Restaurant	33	20	**53**	53	-	107	0.43	30	23	14	9
C-9		Hotel	23	23	**46**	46	31	28			46	23	23
C-10		Retail	299	323	**622**	457	622	261	0.34	411	211	101	110
C-5		Office	2	11	**13**	12	13	32			13	2	11

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C-5		Restaurant	30	19	**49**	49	-	107	0.43	28	21	13	8
C-5		Restaurant	26	13	**39**	39	-	19	0.44	22	17	11	6
C-5		Hotel	28	26	**54**	54	41	28			54	28	26
MU-5		Office	28	191	**219**	0	0				219	28	191
C-4		Retail	211	228	**439**	286	439	261	0.34	290	149	72	77
C-4		Hotel	28	26	**54**	54	41	28			54	28	26
C-6		Restaurant	61	37	**98**	98	-	107	0.43	56	42	26	16
C-6		Restaurant	170	157	**327**	327	-	185	0.5	164	163	85	78
C-6		Hotel	43	41	**84**	84	79	28			84	43	41
C-6		Retail	211	228	**439**	286	439	261	0.34	290	149	72	77
C-3		Research	21	119	**140**	140	77	5			140	21	119
C-3		Research	7	38	**45**	31	45	5			45	7	38
C-3		Hospital	140	297	**437**	388	437	19			437	140	297
C-3		University	34	71	**105**	105	-	3			105	34	71
C-3		Hotel	43	41	**84**	84	79	28			84	43	41
MU-3		Office	29	152	**181**	181	175	32			181	29	152
MU-2		Retail	200	168	**368**						368	200	168
MU-2		Restaurant - Barn	15	2	**17**						17	15	2
MU-2		Hotel	25	29	**54**						54	25	29
MU-2		Office	7	38	**45**						45	7	38
MU-2		Hospital	53	120	**173**						173	53	120
MU-2		Single-Family Detached	46	33	**79**						79	46	33
MU-2		Multi-Family Low Rise	110	77	**187**						187	110	77
MU-2		Assisted Living	6	11	**17**						17	6	11
MU-2		Senior Adult - Attached	8	7	**15**						15	8	7
C-1		Restaurant	37	23	**60**	60	-	107	0.43	34	26	16	10
C-1		Restaurant	32	16	**48**	48	-	19	0.44	27	21	14	7
C-2		Retail	588	637	**1225**	1143	1225	261	0.34	809	416	200	216
C-15		Office	28	112	**140**	140	118	20			140	28	112
C-16		10% Increase in Shopping Center	35	44	**79**	0	0	0			79	35	44

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Londonderry Township													
C-7		High Cube Warehouse	42	108	**150**	150	-	103			150	42	108
C-8		Retail	1006	1090	**2096**	2096	1919	261	0.34	1383	713	342	371
C-11		High Cube Warehouse	24	61	**85**	85	-	103			85	24	61
MU-6		Retail	118	127	**245**	130	245	261	0.34	162	83	40	43
MU-6		Office	16	82	**98**	98	98	32			98	16	82
MU-6		Single-fanily homes	166	98	**264**	264	261	190			264	166	98
MU-6		Apartments	107	63	**170**	170	159	50			170	107	63
MU-6		Townhouses	37	22	**59**	55	59	50			59	37	22
MU-6		Condos	106	62	**168**	168	157	50			168	106	62
MU-6		Senior Housing	15	12	**27**	27	27	11			27	15	12
MU-6		Continuing Care	40	64	**104**	104	-	9			104	40	64
Hummelstown Borough													
R-17		Verdelli Farms	18	11	**29**	25	29	50			29	18	11
R-18		Verdelli Tract near Swim Club	49	28	**77**	74	77	190			77	49	28
C-12		CAMASTA Motel	14	12	**26**	23	25	19			26	14	12
C-13		Restaurant (Micro-brew)	17	12	**29**	29	-	16	0.43	17	12	7	5
C-14		Restaurant (The Gas Station)	19	15	**34**	34	-	16	0.43	19	15	9	6

APPENDIX F
TRAFFIC DISTRIBUTION AND ASSIGNMENT

Future Developments (Build) PM Peak - Trip Distribution and Assignment Summary

JOB NAME: Hershey Greater Area Study
JOB NUMBER: R002484.0484
ANALYST: CBM
CHECKED: TMH
DATE: 08/13/18

INTERSECTION	MOVEMENT	E-2	E-20	E-8	E-9	E-4	E-5	E-19	E-6	E-7	E-14	E-10	E-11	E-13	E-1	E-18	E-3	E-12	E-15	E-17	R-1	R-2	R-3	R-4	R-5	R-9	R-10	R-12	R-14	R-15	R-16	R-17	R-18	MU-1	MU-2	MU-3	MU-6	C-1	C-2	C-3	C-4	C-5	C-6	C-7	C-8	C-9	C-10	C-11	C-12	C-13	C-14	C-15	C-16	2028	Post 2028	Total
INTERSECTION #1: Middletown Road (SR 2003) and Off Ramp 322	EBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
	EBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	83	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	53	35	88
	EBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WBL	0	0	1	0	0	0	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	8	10	0	5	2	0	2	0	0	0	0	6	0	0	1	0	0	0	0	0	34	14	48
	WBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	91	1	1	0	0	11	0	0	0	0	0	0	0	0	1	0	0	0	0	66	42	108
	NBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NBT	0	0	4	2	0	0	0	0	8	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	4	1	0	0	0	0	0	1	6	0	5	9	2	11	0	1	0	1	0	4	0	0	0	0	0	0	0	0	41	20	61
	NBR	0	0	4	1	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	1	0	0	0	0	0	0	5	10	1	8	2	0	4	0	0	0	0	4	0	0	0	0	0	0	0	0	35	16	51
	SBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	7	5	12
	SBT	0	0	1	1	0	0	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	3	8	0	1	5	2	18	0	0	0	1	0	7	0	0	1	1	0	0	0	0	44	20	64
	SBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
	OVERALL	0	0	10	4	0	0	0	0	38	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	10	4	0	0	0	0	2	6	27	205	12	28	8	29	20	1	0	2	0	21	0	0	2	2	0	0	0	0	281	153	434
INTERSECTION #2: Middletown Rd (SR 2003) and Private Dwy / Wood Rd	EBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	EBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	EBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WBL	0	0	1	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	4	0	0	2	1	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	15	5	20
	WBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NBT	0	0	9	1	0	0	0	1	17	0	0	0	1	0	0	0	3	0	0	1	1	0	1	3	8	2	0	0	0	0	0	1	12	20	5	35	4	29	5	1	0	1	0	9	0	0	4	0	0	0	0	0	105	69	174
	NBR	0	0	2	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	3	0	0	4	1	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	14	5	19
	SBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SBT	0	0	3	3	0	0	0	2	26	0	0	0	1	0	0	0	0	0	0	3	3	1	2	9	3	1	1	0	0	0	1	3	18	20	1	41	4	18	2	1	0	0	0	15	0	0	3	1	0	0	0	0	104	82	186
	SBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	OVERALL	0	0	15	4	0	0	0	3	54	0	0	0	2	0	0	0	3	0	0	4	4	1	3	12	14	4	1	0	0	0	1	4	37	40	6	82	10	47	7	2	0	1	0	30	0	0	7	1	0	0	0	0	238	161	399
INTERSECTION #3: Middletown Road (SR 2003) and Deer Run Drive / Stoverdale Road	EBL	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	3	0	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	17	6	23
	EBT	0	0	0	0	0	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	8
	EBR	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	14	2	16
	WBL	0	0	0	0	0	0	0	0	37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	37	0	37
	WBT	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	5
	WBR	0	0	0	0	0	0	0	0	35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	36	0	36
	NBL	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	1	6
	NBT	0	0	0	1	0	0	0	1	14	0	0	0	0	0	0	0	3	0	0	1	1	0	0	3	10	3	0	0	0	0	0	1	15	17	4	36	5	24	3	1	0	0	0	11	0	0	4	0	0	0	0	0	93	65	158
	NBR	0	0	0	0	0	0	0	0	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22	0	22
	SBL	0	0	0	0	0	0	0	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14	1	15
	SBT	0	0	0	2	0	0	0	2	-14	0	0	0	0	0	0	0	0	0	0	3	2	1	1	8	3	2	1	0	0	0	1	3	23	17	1	39	5	15	1	1	0	0	0	18	0	0	3	1	0	0	0	0	61	78	139
	SBR	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2	0	4	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6	12
	OVERALL	0	0	32	3	0	0	0	3	121	0	0	0	0	0	0	0	3	0	0	4	3	1	1	12	13	5	1	0	0	0	1	4	40	38	6	85	10	46	5	2	0	0	0	30	0	0	7	1	0	0	0	0	319	158	477
INTERSECTION #4: Middletown Road (SR 2003) and Locust Lane / Kaylor Rd	EBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	EBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	EBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1
	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1
	WBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WBR	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	2	8
	NBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
	NBT	0	0	3	1	0	0	0	0	30	0	0	0	0	0	0	0	2	0	0	1	1	0	0	2	12	3	0	0	0	0	0	1	21	14	4	36	5	20	3	1	0	0	0	13	0	0	3	0	0	0	0	0	113	63	176
	NBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
	SBL	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	2	7
	SBT	0	0	11	2	0	0	0	1	19	0	0	0	0	0	0	0	0	0	0	2	2	1	1	6	4	2	1	0	0	0	1	2	14	14	1	36	6	12	1	1	0	0	0	21	0	0	3	1	0	0	0	0	92	73	165
	SBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	OVERALL	0	0	15	3	0	0	0	1	52	0	0	0	0	0	0	0	2	0	0	3	3	1	1	8	16	5	1	0	0	0	1	3	38	30	5	77	11	35	4	2	0	0	0	36	0	0	6	1	0	0	0	0	217	143	360
INTERSECTION #5: Waltonville Road and SR 2034 / Route 322 EB On-Ramp	EBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2
	EBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	EBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NBT	0	0	1	0	0	0	0	0	2	0	0	0	1	0	0	0	3	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	17	9	3	0	1	5	1	0	1	0	1	0	0	0	1	0	0	0	0	29	20	49
	NBR	0	0	2	1	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	1	0	0	0	0	0	0	3	77	0	8	1	2	9	0	0	0	0	2	0	0	0	0	0	0	0	0	69	44	113
	SBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SBT	0	0	1	0	0	0	0	0	9	0	0	0	1	0	0	1	0	0	0	0	0	0	0	1	1	0	1	0	0	0	1	3	7	96	2	7	2	5	28	1	0	1	1	5	0	0	1	1	0	0	0	0	108	68	176
	SBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2
	OVERALL	0	0	4	1	0	0	0	0	15	0	0	0	2	0	0	1	3	0	0	0	0	0	0	2	4	1	1	0	0	0	1	4	11	194	11	18	3	8	42	2	0	2	1	8	0	0	1	2	0	0	0	0	209	133	342
INTERSECTION #6: Waltonville Rd and Wood Rd	EBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	EBT	0	0	2	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	0	0	3	1	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	11	4	15
	EBR	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	3
	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	9	0	0	0	1	0	0	0	0	0	0	0	0	0	7	8	15
	WBT	0	0	1	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	4	0	0	2	1	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	13	4	17
	WBR	0	0	0	0	0	2	0	0	1	0	0	0	0	0	0	2	0	0	0	4	3	1	2	0	0	0	0	0	0	0	0	0	0	17	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	16	18	34
	NBL	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
	NBT	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0	11	0	0	0	0	0	0	0	0	1	22	2	40	0	5	6	0	0	0	2	0	0	0	1	0	0	0	0	0	41	54	95
	NBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2	1	3	0	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0	12	15	27
	SBL	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	5	2	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	17	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	20	12	32
	SBT	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	1	0	0	0	0	0	0	1	1	22	0	26	0	3	3	0	0	0	7	0	0	0	4	0	0	0	0	0	41	34	75
	SBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	OVERALL	0	0	4	0	0	3	0	3	15	0	0	0	0	0	0	7	3	0	0	6	4	1	3	16	4	0	0	0	0	0	0	1	10	82	3	77	2	10	40	1	0	0	10	5	0	0	5	0	0	0	0	0	166	149	315
INTERSECTION #7: Bullfrog Valley Rd and Wood Rd	EBL	0	0	1	0	0	0	0	0	3	0	0	0	0	0	0	5	2	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	2	17	1	4	1	0	19	1	0	0	0	1	0	0	0	0	0	0	0	0	36	23	59
	EBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	EBR	0	0	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2	1	1	1	0	0	0	0	0	0	0	0	0	1	1	0	2	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	6	8	14
	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NBL	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	5	4	2	2	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	6	16	22
	NBT	0	0	0	0	1	7	0	0	0	0	0	0	0	0	0	6	2	0	0	16	13	5	8	0	0	0	0	0	0	0	0	0	0	14	2	0	0	0	31	1	0	0	0	0	0	0	0	0	0	0	0	0	41	65	106
	NBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SBT	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	3	0	0	0	5	5	2	3	0	0	0	1	0	0	0	0	0	0	14	0	0	0	0	19	1	0	0	0	0	0	0	0	0	0	0	0	0	23	32	55
	SBR	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	3	17	0	3	1	1	9	1	0	0	0	2	0	0	0	0	0	0	0	0	27	18	45
	OVERALL	0	0	2	0	1	12	0	0	10	0	0	0	0	0	0	17	4	0	0	28	23	10	14	1	1	0	2	0	0	0	0	0	7	64	3	10	2	1	80	4	0	0	0	5	0	0	0	0	0	0	0	0	140	161	301
INTERSECTION #8: Bullfrog Valley Road and Research Blvd / Life Lion Drive	EBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	54	1	0	0	2	4	0	0	0	0	0	0	0	0	0	0	0	0	0	37	25	62
	EBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	0	1	64	0	0	0	0	0	0	0	0	0	0	0	0	0	95	71	166
	EBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17	10	27
	WBL	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	4	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	12	0	0	0	0	1	0	0	0	0	0	0	0	0	14	11	25
	WBT	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	102	1	0	0	1	28	0	0	0	0	0	0	0	0	0	0	0	0	0	78	55	133
	WBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0	16	11	27
	NBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17	10	27
	NBT	0	0	1	0	1	5	0	0	2	0	0	0	1	0	0	3	4	0	0	12	10	4	6	0	1	0	0	0	0	0	0	0	2	5	3	3	0	0	23	2	0	0	0	1	0	0	0	0	0	0	1	0	37	53	90
	NBR	0	0	0	0	0	2	0	0	1	0	0	0	0	0	0	8	0	0	0	4	3	1	2	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	26	0	0	0	0	0	0	0	0	0	0	0	0	0	25	24	49
	SBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40	0	0	0	0	0	0	0	0	0	0	0	0	0	29	20	49
	SBT	0	0	0	0	0	2	0	0	3	0	0	0	1	0	0	2	0	0	0	4	3	1	2	0	0	0	1	0	0	0	0	0	2	5	1	2	1	1	14	1	0	0	0	2	0	0	0	0	0	0	0	0	23	25	48
	SBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	55	0	0	0	4	2	0	0	0	0	0	0	0	0	0	0	0	0	0	37	24	61
	OVERALL	0	0	1	0	1	10	0	0	8	0	0	0	2	0	0	32	6	0	0	21	17	6	11	0	1	0	1	0	0	0	0	0	5	377	7	7	1	9	233	3	0	0	0	4	0	0	0	0	0	0	1	0	425	339	764

INTERSECTION	MOVEMENT	E-2	E-20	E-8	E-9	E-4	E-5	E-19	E-6	E-7	E-14	E-10	E-11	E-13	E-1	E-18	E-3	E-12	E-15	E-17	R-1	R-2	R-3	R-4	R-5	R-9	R-10	R-12	R-14	R-15	R-16	R-17	R-18	MU-1	MU-2	MU-3	MU-6	C-1	C-2	C-3	C-4	C-5	C-6	C-7	C-8	C-9	C-10	C-11	C-12	C-13	C-14	C-15	C-16	2028	Post 2028	Total
INTERSECTION #9: Wagner St / E. Main St and South / Walton Ave	EBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	EBT	0	0	1	0	0	0	0	0	2	0	1	1	3	0	1	2	19	1	0	0	0	0	0	0	1	0	2	0	0	0	8	14	1	21	0	2	0	2	13	8	1	7	0	1	1	1	0	7	0	0	3	3	97	30	127
	EBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	52	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	21	35	56
	WBL	0	0	0	0	0	0	0	0	0	0	1	1	2	0	0	1	1	0	0	1	0	0	0	0	0	0	3	0	0	0	0	0	0	4	103	0	0	0	4	3	0	4	0	0	0	0	0	0	0	0	0	1	49	80	129
	WBT	0	0	0	0	0	0	0	0	2	0	1	1	3	0	0	1	2	0	0	1	1	0	0	0	0	0	5	0	0	0	2	5	2	21	0	1	0	2	5	5	0	6	0	1	0	1	0	4	0	0	1	2	49	26	75
	WBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	6	10
	NBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NBR	0	0	0	0	0	0	0	0	0	0	1	1	2	0	1	1	13	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	4	17	0	0	0	9	5	0	5	0	0	0	1	0	0	0	0	2	2	41	24	65
	SBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2
	SBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2
	SBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	OVERALL	0	0	1	0	0	0	0	0	4	0	4	4	10	0	2	5	36	1	0	2	1	0	0	0	1	0	11	0	0	0	11	20	3	52	183	3	0	4	31	22	1	22	0	2	1	3	0	12	0	0	6	8	263	203	466
INTERSECTION #10: W. Hersheypark Dr and Walton Ave / Mae St	EBL	0	0	0	0	0	0	0	0	1	0	1	2	6	0	2	0	34	0	0	0	0	0	0	0	0	0	3	0	0	0	4	7	0	7	9	0	0	1	0	13	1	12	0	0	0	0	0	4	0	0	5	0	87	25	112
	EBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	5	12	3	15
	EBR	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	3	1	1	0	0	0	0	0	0	0	0	0	0	0	0	3	5	1	15	6	0	0	0	24	0	1	0	0	1	1	1	0	2	0	0	1	0	44	24	68
	WBL	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	10	0	0	0	0	0	0	1	0	0	0	0	0	3	14	7	21
	WBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	3	17	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	3	12	13	25
	WBR	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	7	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	3	0	2	0	0	0	0	0	0	0	0	1	2	13	4	17
	NBL	0	0	0	0	0	1	0	0	1	0	1	0	0	0	0	2	0	0	0	1	1	0	1	0	0	0	0	0	0	0	1	2	1	15	35	0	0	0	11	0	0	0	0	1	1	1	0	1	0	0	0	0	37	40	77
	NBT	0	0	1	0	0	2	0	0	1	1	5	4	9	0	3	5	50	2	0	5	4	2	2	0	1	0	6	1	0	0	0	0	1	32	0	3	0	1	34	20	2	18	0	1	2	3	0	0	0	0	7	0	152	76	228
	NBR	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	3	10	5	15
	SBL	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	3	7	4	11
	SBT	0	0	0	0	0	1	0	0	2	2	5	3	9	0	1	11	10	2	0	2	1	1	1	0	0	0	13	1	0	0	0	0	2	33	1	2	0	1	78	13	3	14	0	1	3	5	0	0	0	0	4	0	132	93	225
	SBR	0	0	0	0	0	0	0	0	1	0	1	1	6	0	1	0	4	0	0	0	0	0	0	0	0	0	8	0	0	0	1	2	1	8	51	0	0	2	0	8	0	10	0	1	0	0	0	2	0	0	1	0	54	55	109
	OVERALL	0	0	1	0	0	4	0	0	7	3	16	10	32	0	7	23	107	5	0	9	6	3	4	0	1	0	33	2	0	0	10	19	6	126	122	5	0	5	161	59	7	58	0	5	7	11	0	11	0	0	19	19	573	350	923
INTERSECTION #11: Hersheypark Drive (SR 0743) and Park Blvd / Hershey Road (SR 0039)	EBL	0	0	0	0	0	1	0	0	1	0	3	1	1	0	0	2	0	1	0	1	1	0	1	0	0	0	0	0	0	0	1	2	1	13	3	0	0	1	11	6	1	0	0	0	1	2	0	1	0	0	0	1	33	24	57
	EBT	0	0	0	0	0	1	0	0	1	2	6	1	22	0	8	2	0	3	1	2	2	1	1	0	0	0	12	1	0	0	2	3	1	18	4	0	0	1	14	8	3	43	0	0	1	4	0	1	0	0	18	1	141	47	188
	EBR	0	0	0	0	0	0	0	0	0	0	1	8	0	0	0	0	121	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	1	0	0	0	2	2	0	0	0	0	0	1	0	0	0	0	0	0	134	5	139
	WBL	0	0	0	0	0	0	0	0	0	0	1	6	3	0	0	0	161	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	1	0	178	5	183
	WBT	0	0	0	0	0	0	0	0	1	2	6	1	21	0	3	4	18	2	1	1	1	0	0	0	0	0	30	1	0	1	1	1	1	18	21	0	0	1	31	13	3	35	0	1	2	4	0	1	0	0	6	1	145	88	233
	WBR	0	0	0	0	0	0	0	0	0	0	2	0	10	0	1	0	7	0	0	0	0	0	0	0	0	0	15	0	0	0	0	0	0	1	0	0	0	0	0	0	1	17	0	0	0	0	0	0	0	0	2	0	41	15	56
	NBL	0	0	0	0	0	0	0	0	0	0	1	5	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	4	0	0	0	5	3	0	0	0	0	0	1	0	0	0	0	0	0	13	9	22
	NBT	0	0	0	0	0	0	0	0	0	0	3	37	1	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2	0	0	0	0	0	1	1	0	0	0	1	1	0	0	0	0	1	0	46	4	50
	NBR	0	0	0	0	0	0	0	0	0	0	1	3	3	0	1	0	20	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	3	0	38	2	40
	SBL	0	0	0	0	0	0	0	0	0	1	2	0	10	0	4	0	0	1	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	1	0	0	0	0	0	0	1	21	0	0	0	1	0	0	0	0	8	0	49	6	55
	SBT	0	0	0	0	0	0	0	0	0	1	3	61	1	0	0	0	61	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	1	1	2	0	0	0	1	2	0	0	0	0	3	0	136	5	141
	SBR	0	0	0	0	0	0	0	0	1	1	3	1	1	0	0	4	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	14	17	0	0	2	25	10	1	0	0	1	1	3	0	1	0	0	2	1	51	44	95
	OVERALL	0	0	0	0	0	2	0	0	4	7	32	124	73	0	17	13	391	10	2	4	4	1	2	0	0	0	70	2	0	1	4	8	4	73	51	0	0	5	89	44	13	129	0	2	7	19	0	4	0	0	44	4	1004	255	1259
INTERSECTION #12: Hersheypark Drive and Park Avenue / Sand Beach Road	EBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	29	0	29	0	29
	EBT	0	0	0	0	0	1	0	0	1	0	3	3	36	0	13	2	17	1	0	1	1	0	1	0	0	0	19	0	0	0	1	2	0	13	3	0	0	0	10	6	1	75	0	0	1	2	0	1	0	0	1	1	174	42	216
	EBR	0	0	0	0	0	0	0	0	0	3	6	1	1	0	0	0	7	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	2	0	0	0	2	2	4	0	0	0	1	3	0	0	0	0	1	0	32	8	40
	WBL	0	0	0	0	0	0	0	0	0	1	3	0	8	0	1	0	2	2	0	0	0	0	0	0	0	0	11	0	0	0	0	0	0	1	1	0	0	0	1	0	2	13	0	0	1	1	0	0	0	0	0	0	34	14	48
	WBT	0	0	0	0	0	0	0	0	1	1	3	5	35	0	5	3	159	1	0	0	0	0	0	0	0	0	52	0	0	0	0	1	1	13	16	0	0	1	23	10	1	61	0	0	1	3	0	1	0	0	2	1	308	92	400
	WBR	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	19	0	22	2	24
	NBL	0	0	0	0	0	0	0	0	0	1	6	1	1	0	0	1	32	2	1	0	0	0	0	0	0	0	1	1	0	1	0	0	0	4	3	0	0	0	4	2	2	0	0	0	1	2	0	0	0	0	0	0	54	12	66
	NBT	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	49	0	53	0	53
	NBR	0	0	0	0	0	0	0	0	0	0	3	0	8	0	3	0	0	1	0	0	0	0	0	0	0	0	4	1	0	1	0	0	0	1	0	0	0	0	0	0	1	16	0	0	0	1	0	0	0	0	0	0	34	6	40
	SBL	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	4	0	7	1	8
	SBT	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	10	0	17	1	18
	SBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	10	0	10
	OVERALL	0	0	0	0	0	1	0	0	2	7	28	10	91	0	22	6	222	11	1	1	1	0	1	0	0	0	90	2	0	2	1	3	1	38	25	0	0	1	40	20	13	169	0	0	5	13	0	2	0	0	121	2	774	178	952
INTERSECTION #13: Hersheypark Drive and Laudermilch Road	EBL	0	0	0	0	0	0	0	0	0	0	2	1	21	0	0	1	7	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	5	1	0	0	0	3	3	1	38	0	0	0	1	0	0	0	0	2	0	81	8	89
	EBT	0	0	0	0	0	0	0	0	0	0	3	1	23	0	18	1	7	1	0	1	0	0	0	0	0	0	26	0	0	0	1	1	0	5	1	0	0	0	4	3	1	40	0	0	1	1	0	0	0	0	2	0	105	36	141
	EBR	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	1	0	14	0	14
	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
	WBT	0	0	0	0	0	0	0	0	0	0	3	2	24	0	7	1	67	1	0	0	0	0	0	0	0	0	72	0	0	0	0	0	0	5	7	0	0	0	9	4	1	49	0	0	1	2	0	0	0	0	9	0	175	89	264
	WBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
	NBL	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	0	9	0	0	0	0	0	0	0	0	2	0	28	2	30
	NBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
	NBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	0	2
	SBR	0	0	0	0	0	0	0	0	0	1	2	2	22	0	0	1	62	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	6	0	0	1	8	4	1	46	0	0	1	2	0	0	0	0	8	0	157	16	173
	OVERALL	0	0	0	0	0	0	0	0	0	1	10	6	98	0	25	4	157	4	0	1	0	0	0	0	0	0	100	0	1	1	2	2	0	22	16	0	0	1	24	15	4	189	0	0	3	6	0	0	0	0	25	0	563	154	717
INTERSECTION #14: N. Lingle Ave and Hersheypark Dr / Commercial Dwy	EBL	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	6	0	6
	EBT	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	0	2
	EBR	0	0	0	0	0	0	0	0	0	0	2	1	21	0	19	1	7	1	0	0	0	0	0	0	0	0	26	0	0	0	0	1	0	4	1	0	0	0	3	2	1	36	0	0	0	1	0	0	0	0	2	0	97	32	129
	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2
	WBT	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	4	0	4
	WBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NBL	0	0	0	0	0	0	0	0	0	0	2	2	21	0	7	1	59	1	0	0	0	0	0	0	0	0	73	0	0	0	0	0	0	4	6	0	0	0	7	4	1	44	0	0	1	2	0	0	0	0	8	0	155	88	243
	NBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	18	20
	NBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
	SBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	7	12
	SBR	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	1	0	12	1	13
	OVERALL	0	0	0	0	0	0	0	0	0	0	4	3	48	0	34	2	74	2	0	0	0	0	0	0	0	0	128	0	0	0	0	1	0	8	8	0	0	0	10	6	2	89	0	0	1	3	0	0	0	0	11	0	284	150	434
INTERSECTION #15: Park Avenue and Derry Road	EBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	EBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	EBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
	WBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WBR	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	9	0	9
	NBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NBT	0	0	0	0	0	0	1	0	0	2	10	1	8	0	3	1	30	3	1	0	0	0	0	0	0	0	5	2	0	0	0	0	0	5	3	0	0	0	4	3	3	16	0	0	2	3	0	0	0	0	47	0	134	19	153
	NBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
	SBL	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	4	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	7	1	8
	SBT	0	0	0	0	0	0	0	0	0	5	10	1	7	0	1	1	7	6	1	0	0	0	0	0	0	0	11	1	0	0	0	0	0	5	3	0	0	0	5	3	7	13	0	0	2	5	0	0	0	0	10	0	78	26	104
	SBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	OVERALL	0	0	0	0	0	0	1	0	0	7	20	2	19	0	4	2	44	9	2	0	0	0	0	0	0	0	17	3	0	3	0	0	0	10	6	0	0	0	9	6	10	29	0	0	4	8	0	0	0	0	61	0	230	46	276
INTERSECTION #16: Park Blvd / and N Ridge Road	EBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	EBT	0	0	0	0	0	0	0	0	0	2	5	16	4	0	1	1	7	2	0	0	0	0	0	0	0	0	5	0	0	0	0	1	0	5	3	0	0	0	3	3	2	6	0	0	2	3	0	0	0	0	4	0	58	17	75
	EBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NBL	0	0	0	0	0	0	0	0	0	0	4	27	1	0	0	0	1	1	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	3	0	0	0	0	1	1	1	0	0	0	1	2	0	0	0	0	1	0	39	7	46
	NBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	OVERALL	0	0	0	0	0	0	0	0	0	2	9	43	5	0	1	1	8	3	0	0	0	0	0	0	0	0	6	1	0	0	0	1	0	8	3	0	0	0	4	4	3	6	0	0	3	5	0	0	0	0	5	0	97	24	121
INTERSECTION #17: W. Chocolate Ave and University Dr	EBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	EBT	0	0	1	0	0	0	0	0	2	5	14	6	8	0	2	2	20	6	1	0	0	0	0	0	1	0	9	1	0	0	2	3	1	39	8	2	0	1	14	10	7	9	0	1	9	15	0	2	0	0	11	2	147	67	214
	EBR	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	5	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	6	1	0	0	0	39	1	0	0	0	0	0	0	0	0	0	0	0	0	31	24	55
	WBL	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	26	0	0	0	0	0	1	1	0	0	0	0	0	0	21	15	36
	WBT	0	0	0	0	0	0	1	0	2	2	14	5	8	0	2	1	31	3	1	1	1	0	1	0	0	0	8	2	0	0	1	2	2	39	22	1	0	2	11	14	4	7	0	1	7	9	0	1	0	0	6	2	138	76	214
	WBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NBL	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	2	0	0	0	17	1	0	0	0	0	0	0	0	0	0	0	0	0	20	13	33
	NBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
	NBR	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	12	0	1	1	0	0	1	1	0	0	0	0	1	0	15	8	23
	SBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2
	SBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	OVERALL	0	0	1	0	0	0	1	0	4	7	30	11	18	0	4	17	57	9	2	1	1	0	1	0	1	0	18	3	0	0	3	5	3	94	33	3	0	3	122	26	12	17	0	2	18	26	0	3	0	0	18	4	372	206	578

INTERSECTION	MOVEMENT	E-2	E-20	E-8	E-9	E-4	E-5	E-19	E-6	E-7	E-14	E-10	E-11	E-13	E-1	E-18	E-3	E-12	E-15	E-17	R-1	R-2	R-3	R-4	R-5	R-9	R-10	R-12	R-14	R-15	R-16	R-17	R-18	MU-1	MU-2	MU-3	MU-6	C-1	C-2	C-3	C-4	C-5	C-6	C-7	C-8	C-9	C-10	C-11	C-12	C-13	C-14	C-15	C-16	2028	Post 2028	Total
INTERSECTION #18: W Chocolate Avenue and Hockersville Road	EBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
	EBT	0	0	1	0	0	0	0	0	1	5	15	7	7	0	2	2	20	6	1	0	0	0	0	0	1	0	7	1	0	0	1	2	1	29	7	1	0	1	14	8	7	10	0	0	10	16	0	1	0	0	11	1	138	58	196
	EBR	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2	1	1	0	0	0	0	0	0	0	0	2	0	0	0	0	1	0	10	1	0	0	0	3	2	1	0	0	0	0	0	0	0	0	0	0	0	15	10	25
	WBL	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	0	1	1	0	0	1	1	0	0	0	0	0	0	7	3	10
	WBT	0	0	0	0	0	0	1	0	2	2	15	5	7	0	2	3	22	3	1	0	0	0	0	0	0	0	7	2	0	0	1	1	1	29	16	1	0	1	23	10	4	8	0	1	7	10	0	1	0	0	5	2	126	67	193
	WBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	4	2	6
	NBL	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	2	8	0	0	1	1	0	0	0	0	0	1	0	0	0	0	0	0	10	6	0	0	0	8	3	0	0	0	0	0	0	0	0	0	0	1	1	27	18	45
	NBT	0	0	0	0	0	0	0	0	0	0	1	1	2	0	1	1	9	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2	4	0	0	0	6	2	0	3	0	0	0	0	0	0	0	0	1	0	25	9	34
	NBR	0	0	0	0	0	0	0	0	0	1	2	1	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	1	0	0	1	2	0	0	0	0	2	0	14	3	17
	SBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	1	3
	SBT	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	2	0	0	0	0	1	0	2	1	0	0	0	5	1	0	3	0	0	0	0	0	0	0	0	0	0	12	7	19
	SBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	4
	OVERALL	0	0	1	0	0	0	1	0	4	8	36	14	19	0	6	11	68	12	2	1	1	0	0	0	1	0	22	3	0	0	2	5	2	86	38	2	0	2	63	27	14	28	0	1	19	29	0	2	0	0	20	4	373	181	554
INTERSECTION #19: E. Chocolate Ave and Homestead Rd / Hershey Food Driveway	EBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	EBT	0	0	0	0	0	0	0	0	0	19	22	7	6	0	1	1	4	21	3	0	0	0	0	0	0	0	9	3	0	1	1	1	0	10	1	0	0	0	4	3	26	8	0	0	3	6	0	1	0	0	5	0	138	28	166
	EBR	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	5	1	6
	WBL	0	0	0	0	0	0	1	0	0	2	0	0	0	0	0	1	0	5	2	0	0	0	0	0	0	0	1	3	0	0	0	0	0	1	0	0	0	0	6	0	5	0	0	0	0	0	0	0	0	0	0	0	20	7	27
	WBT	0	0	0	0	0	0	2	0	0	6	22	12	6	0	2	1	29	12	4	0	0	0	0	0	0	0	5	7	0	0	0	0	0	10	8	0	0	0	10	5	12	10	0	0	5	10	0	0	0	0	22	1	160	41	201
	WBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NBL	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	2	0	9	1	10
	NBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NBR	0	0	0	0	0	0	0	0	0	9	0	0	0	0	0	0	1	10	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	2	0	11	0	0	0	0	0	0	0	0	0	0	0	34	2	36
	SBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	OVERALL	0	0	0	0	0	0	3	0	0	36	48	21	12	0	3	3	36	48	10	0	0	0	0	0	0	0	16	14	0	1	1	1	0	24	9	0	0	0	22	8	54	20	0	0	8	17	0	1	0	0	29	1	365	81	446
INTERSECTION #20: Chocolate Ave and / E. Derry Rd	EBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	EBT	0	0	0	0	0	0	2	0	0	4	20	7	9	0	1	1	6	9	4	1	0	0	0	0	0	0	9	6	3	1	1	1	0	10	2	0	0	0	6	3	14	15	0	0	3	6	0	1	0	0	5	0	117	33	150
	EBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WBT	0	0	0	0	0	0	0	0	0	15	20	11	9	0	2	2	34	17	7	0	0	0	0	0	0	0	6	2	1	0	0	0	0	10	8	0	0	0	13	5	30	18	0	0	4	9	0	0	0	0	21	1	208	37	245
	WBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
	NBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	OVERALL	0	0	0	0	0	0	2	0	0	19	40	18	18	0	3	3	40	26	12	1	0	0	0	0	0	0	15	8	4	1	1	1	0	20	10	0	0	0	19	8	44	33	0	0	7	15	0	1	0	0	26	1	326	70	396
INTERSECTION #21: E. Chocolate Ave and S. Lingle Ave / N. Lingle Ave	EBL	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	2	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	1	5
	EBT	0	0	0	0	0	0	1	0	0	2	11	4	4	0	0	0	2	5	5	0	0	0	0	0	0	0	4	3	2	1	0	1	0	5	1	0	0	0	2	2	8	8	0	0	2	3	0	0	0	0	2	0	62	16	78
	EBR	0	0	0	0	0	0	1	0	0	2	8	3	3	0	0	0	2	4	4	0	0	0	0	0	0	0	3	2	1	0	0	0	0	3	1	0	0	0	2	1	6	6	0	0	1	2	0	0	0	0	2	0	46	11	57
	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WBT	0	0	0	0	0	0	0	0	0	8	11	6	4	0	1	1	18	9	3	0	0	0	0	0	0	0	1	1	1	0	0	0	0	5	4	0	0	0	5	3	16	10	0	0	2	5	0	0	0	0	12	0	109	17	126
	WBR	0	0	0	0	0	0	0	0	0	0	1	0	6	0	5	0	16	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	1	1	0	0	0	1	1	0	44	0	0	0	0	0	0	0	0	2	0	75	10	85
	NBL	0	0	0	0	0	0	0	0	0	6	8	5	3	0	1	1	14	7	2	0	0	0	0	0	0	0	1	1	1	0	0	0	0	3	3	0	0	0	4	2	13	8	0	0	2	4	0	0	0	0	9	0	85	13	98
	NBT	0	0	0	0	0	0	0	0	0	1	1	1	15	0	14	1	42	1	0	0	0	0	0	0	0	0	20	0	0	0	0	0	0	2	4	0	0	0	5	3	1	0	0	0	0	1	0	0	0	0	5	0	88	29	117
	NBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SBL	0	0	0	0	0	0	0	0	0	0	1	0	5	0	2	0	2	0	0	0	0	0	0	0	0	0	21	0	0	0	0	0	0	1	0	0	0	0	1	1	0	36	0	0	0	0	0	0	0	0	0	0	47	23	70
	SBT	0	0	0	0	0	0	0	0	0	0	1	1	14	0	5	0	5	0	0	0	0	0	0	0	0	0	56	0	0	0	0	1	0	2	1	0	0	0	2	2	0	0	0	0	0	1	0	0	0	0	1	0	31	61	92
	SBR	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	3	5
	OVERALL	0	0	0	0	0	0	2	0	0	19	42	20	56	0	29	3	103	26	14	0	0	0	0	0	0	0	117	7	5	1	0	2	0	22	15	0	0	0	22	15	45	112	0	0	7	16	0	0	0	0	33	0	549	184	733
INTERSECTION #22: Hockersville Road and W Areba Avenue	EBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	4	3	7
	EBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	EBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	3	2	5
	NBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NBT	1	0	0	0	0	1	0	0	0	1	3	2	3	0	1	2	15	1	0	1	1	0	1	0	0	0	1	0	0	0	0	0	0	10	8	0	0	0	9	5	2	4	0	0	1	2	0	0	0	0	3	1	54	25	79
	NBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
	SBT	0	0	0	0	0	0	0	0	0	1	3	1	2	0	0	3	2	1	0	1	1	0	0	0	0	0	4	0	0	0	1	1	0	10	1	0	0	0	4	3	1	3	1	0	1	1	0	1	0	0	1	0	31	17	48
	SBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2
	OVERALL	1	0	0	0	0	1	0	0	0	2	6	3	5	0	1	5	21	2	0	2	2	0	1	0	0	0	6	0	0	0	1	1	0	24	11	0	0	0	15	10	3	7	1	0	2	3	0	1	0	0	5	1	94	49	143
INTERSECTION #23: Governor Rd (SR 0322) and University Dr	EBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	4	2	6
	EBT	0	0	1	0	0	1	0	0	1	1	1	0	1	0	0	10	1	1	0	3	2	1	2	0	0	0	2	0	0	0	0	1	1	27	1	1	0	3	73	2	1	0	0	1	0	0	0	0	0	0	1	0	77	63	140
	EBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	56	0	0	0	0	0	0	0	0	0	0	0	0	0	40	32	72
	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	26	0	0	0	0	0	0	0	0	0	0	0	0	0	17	13	30
	WBT	0	0	0	0	0	1	0	0	1	0	1	1	1	0	0	6	7	1	0	2	2	1	1	0	0	0	1	0	0	0	0	0	1	27	5	0	0	4	42	3	1	0	0	1	0	0	0	0	0	0	1	0	63	48	111
	WBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	6	5	11
	NBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	1	0	0	0	26	1	0	0	0	0	0	0	0	0	0	0	0	0	24	17	41
	NBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22	0	0	0	0	0	0	0	0	0	0	0	0	0	14	11	25
	NBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0	10	8	18
	SBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22	0	0	0	0	0	0	0	0	0	0	0	0	0	14	11	25
	SBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	51	0	0	0	0	0	0	0	0	0	0	0	0	0	33	25	58
	SBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	5	4	9
	OVERALL	0	0	1	0	0	2	0	0	2	1	2	1	2	0	0	48	11	2	0	6	5	2	3	0	0	0	3	0	0	0	0	1	2	77	8	1	0	7	347	6	2	0	0	2	0	0	0	0	0	0	2	0	306	240	546
INTERSECTION #24: Governor Rd (SR 0322) and Centerview Ln	EBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
	EBT	0	0	0	0	0	1	0	0	1	1	1	0	1	0	0	6	1	1	0	3	2	1	1	0	0	0	1	0	0	0	0	1	1	24	1	0	0	2	33	2	2	0	0	0	0	0	0	0	0	0	1	0	51	37	88
	EBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	73	0	0	0	0	0	0	0	0	0	0	0	0	0	48	38	86
	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	0	0	0	0	27	21	48
	WBT	0	0	0	0	0	1	0	0	1	0	1	1	1	0	0	6	6	1	0	2	2	1	1	0	0	0	1	0	0	0	0	0	1	24	4	0	0	4	40	2	1	0	0	1	0	0	0	0	0	0	1	0	59	44	103
	WBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
	NBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	34	0	0	0	0	0	0	0	0	0	0	0	0	0	25	18	43
	NBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	5	3	8
	NBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0	13	10	23
	SBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	3
	SBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17	0	0	0	0	0	0	0	0	0	0	0	0	0	11	8	19
	SBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2
	OVERALL	0	0	0	0	0	2	0	0	2	1	2	1	2	0	0	39	8	2	0	5	4	2	2	0	0	0	2	0	0	0	0	1	2	56	5	0	0	6	271	4	3	0	0	1	0	0	0	0	0	0	2	0	242	183	425
INTERSECTION #25: Rt. 322 and Cherry Dr	EBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	EBT	0	0	0	0	0	1	0	0	1	1	1	1	1	0	0	4	1	2	0	2	2	1	1	0	0	0	1	0	0	0	0	0	0	19	1	0	0	2	24	1	2	0	0	0	0	1	0	0	0	0	1	0	41	30	71
	EBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	29	0	0	0	0	0	0	0	0	0	0	0	0	0	22	18	40
	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	40	0	0	0	0	0	0	0	0	0	0	0	0	0	27	21	48
	WBT	0	0	0	0	0	1	0	0	1	0	1	1	1	0	0	8	5	1	0	1	1	0	1	0	0	0	0	1	0	0	0	0	1	19	3	0	0	3	55	2	1	0	0	1	0	0	0	0	0	0	1	0	64	45	109
	WBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	5	1	0	0	1	24	0	0	0	0	0	0	0	0	0	0	0	0	0	21	17	38
	NBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	3
	NBR	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	3	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	19	0	0	0	0	0	0	0	0	0	0	0	0	0	14	13	27
	SBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
	SBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	4	3	7
	SBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
	OVERALL	0	0	0	0	0	3	0	0	2	1	2	2	2	0	0	30	7	3	0	7	6	1	3	0	0	0	1	1	0	0	0	0	1	50	5	0	0	6	202	3	3	0	0	1	0	1	0	0	0	0	2	0	195	150	345
INTERSECTION #26: Governor Rd (SR 0322) and Fishburn Rd (SR 2011) / Hockersville Rd (SR 2011)	EBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	4
	EBT	0	0	0	0	0	1	0	0	0	2	1	1	1	0	0	5	0	2	0	2	2	1	1	0	0	0	1	0	0	0	0	0	0	15	1	0	0	1	32	1	2	0	0	0	0	0	0	0	0	0	1	0	42	31	73
	EBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6	12
	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WBT	0	0	0	0	0	0	0	0	1	1	1	1	1	0	0	10	4	1	0	1	1	0	0	0	0	0	0	1	0	0	0	0	1	15	3	0	0	2	73	1	1	0	0	0	0	0	0	0	0	0	1	0	71	49	120
	WBR	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	3	0	0	0	3	2	1	1	0	0	1	1	0	0	0	0	1	0	18	9	27
	NBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	3	1	0	0	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	13	12	25
	NBT	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0	1	7	0	0	1	1	0	1	0	0	0	1	0	0	0	0	0	0	5	4	0	0	0	4	2	0	1	0	0	1	1	0	0	0	0	1	0	21	14	35
	NBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	2	3
	SBL	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	4	1	0	0	0	1	1	1	1	0	0	0	1	0	0	0	0	0	0	11	5	16
	SBT	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	5	1	0	0	0	2	1	0	1	1	0	1	1	0	0	0	0	1	0	12	8	20
	SBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	5	4	9
	OVERALL	1	0	0	0	0	1	0	0	1	4	6	5	6	0	0	20	20	5	0	7	7	1	3	0	0	0	5	1	0	0	0	0	1	58	14	0	0	3	144	8	6	4	1	0	3	4	0	0	0	0	5	0	202	142	344

INTERSECTION	MOVEMENT	E-2	E-20	E-8	E-9	E-4	E-5	E-19	E-6	E-7	E-14	E-10	E-11	E-13	E-1	E-18	E-3	E-12	E-15	E-17	R-1	R-2	R-3	R-4	R-5	R-9	R-10	R-12	R-14	R-15	R-16	R-17	R-18	MU-1	MU-2	MU-3	MU-6	C-1	C-2	C-3	C-4	C-5	C-6	C-7	C-8	C-9	C-10	C-11	C-12	C-13	C-14	C-15	C-16	2028	Post 2028	Total
INTERSECTION #27: Sand Hill Rd and Cherry Dr / Private Drive	EBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	EBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	EBR	0	0	0	0	1	1	0	0	1	0	0	0	0	0	0	4	1	0	0	3	2	1	1	0	0	0	0	0	0	0	0	0	0	9	1	0	0	1	24	1	0	0	0	0	0	0	0	0	0	0	0	0	26	25	51
	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NBL	0	1	0	0	2	3	0	0	1	0	0	0	0	0	0	6	2	0	0	6	5	2	3	0	0	0	0	0	0	0	0	0	0	9	1	0	0	1	42	1	0	0	0	0	0	0	0	0	0	0	0	0	42	43	85
	NBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	OVERALL	0	1	0	0	3	4	0	0	2	0	0	0	0	0	0	10	3	0	0	9	7	3	4	0	0	0	0	0	0	0	0	0	0	18	2	0	0	2	66	2	0	0	0	0	0	0	0	0	0	0	0	0	69	67	136
INTERSECTION #28: Fishburn Rd (SR 2011) and Sand Hill Rd	EBL	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	2	0	0	3	2	1	1	0	0	0	0	0	0	0	0	0	0	3	1	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	8	11	19
	EBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	EBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18	0	0	0	0	0	0	0	0	0	0	0	0	0	12	11	23
	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40	0	0	0	0	0	0	0	0	0	0	0	0	0	26	20	46
	NBT	1	0	0	0	0	0	0	0	0	1	1	1	1	0	0	2	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	3	0	0	0	12	2	1	1	0	0	1	1	0	0	0	0	1	0	27	13	40
	NBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SBT	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	1	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	5	1	0	0	0	5	1	1	1	1	0	1	1	0	0	0	0	1	0	16	9	25
	SBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	5	7
	OVERALL	1	0	0	0	1	1	0	0	0	1	2	2	2	0	0	12	8	2	0	5	4	1	2	0	0	0	1	0	0	0	0	0	0	16	5	0	0	0	79	4	2	2	1	0	2	2	0	0	0	0	2	0	91	69	160
INTERSECTION #29: W. Governor Road (SR 322) / E. Governor Road (SR 322) and Cocoa Ave	EBL	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2	0	1	0	0	0	0	0	0	0	0	0	1	0	9	1	10
	EBT	0	0	0	0	0	1	0	0	1	2	1	1	1	0	0	5	1	3	0	3	2	1	1	0	0	0	2	0	0	0	0	1	0	17	1	0	0	1	32	2	3	1	0	0	0	1	0	0	0	0	1	0	50	35	85
	EBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2
	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WBT	0	0	0	0	0	0	0	0	1	1	1	1	1	0	1	10	8	2	0	1	1	0	0	0	0	0	1	1	0	0	0	0	1	17	5	0	0	2	74	3	2	1	0	0	1	1	0	0	0	0	2	0	83	56	139
	WBR	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	7	0	7
	NBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	4
	NBT	1	0	0	0	0	0	0	0	0	3	6	3	2	0	1	0	8	3	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2	2	0	0	0	2	1	4	3	0	0	1	3	0	0	0	0	6	0	44	8	52
	NBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SBL	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	3	0	3
	SBT	0	0	0	0	0	0	0	0	0	1	6	2	2	0	0	0	1	2	1	0	0	0	0	0	0	0	3	1	0	0	0	0	0	2	1	0	0	0	2	1	2	2	1	0	1	2	0	0	0	0	1	0	25	9	34
	SBR	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	5	2	7
	OVERALL	1	0	0	0	0	1	0	0	2	9	18	9	6	0	2	16	20	13	1	4	3	1	1	0	0	0	7	2	0	0	0	1	1	42	9	0	0	3	120	7	14	7	1	0	3	7	0	0	0	0	12	0	228	115	343
INTERSECTION #30: E Governor Road and Homestead Road	EBL	0	0	0	0	0	0	0	0	0	3	1	0	0	0	0	1	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	3	0	4	0	0	0	0	0	0	0	0	0	1	0	15	2	17
	EBT	1	0	0	0	0	1	0	0	0	0	2	1	1	0	0	4	1	0	0	2	2	1	1	0	0	0	2	0	0	0	0	1	0	14	1	0	0	1	28	2	0	1	0	0	0	1	0	0	0	0	0	0	37	31	68
	EBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WBT	0	0	0	0	0	0	0	0	1	1	2	1	1	0	1	9	8	1	0	1	1	0	0	0	0	0	1	0	0	0	0	0	1	15	5	0	0	2	64	3	1	1	1	0	1	1	0	0	0	0	2	0	75	50	125
	WBR	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	3	0	3
	NBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NBT	0	0	0	0	0	0	0	0	0	4	1	0	0	0	0	0	1	5	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	1	0	19	1	20
	NBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1
	SBT	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	8	3	11
	SBR	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	0	2	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	8	0	2	0	0	0	0	0	0	0	0	0	0	0	13	5	18
	OVERALL	1	0	0	0	0	1	0	0	1	11	8	2	2	0	1	15	10	14	3	3	3	1	1	0	0	0	4	4	0	0	0	1	1	31	6	0	0	3	103	5	18	2	1	0	1	2	0	0	0	0	4	0	171	92	263
INTERSECTION #31: Fishburn Rd and Cocoa Ave	EBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	EBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	EBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WBL	0	0	0	0	0	0	0	0	0	1	5	2	1	0	0	0	1	2	1	0	0	0	0	0	0	0	2	1	0	0	0	0	0	2	0	0	0	0	1	1	2	2	1	0	1	1	0	0	0	0	1	0	21	7	28
	WBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WBR	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2	5
	NBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NBT	2	0	0	0	0	0	0	0	0	0	1	0	1	0	0	6	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	3	0	0	0	40	2	0	1	1	0	0	1	0	0	0	0	1	0	41	26	67
	NBR	1	0	0	0	0	0	0	0	0	3	5	3	1	0	1	0	7	3	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2	2	0	0	0	3	1	4	2	0	0	1	2	0	0	0	0	5	0	39	8	47
	SBL	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	5	0	5
	SBT	1	0	0	0	0	0	0	0	0	0	1	0	1	0	0	3	0	0	0	1	1	0	0	0	0	0	1	0	0	0	0	0	0	4	0	0	0	0	18	1	0	1	2	0	0	0	0	0	0	0	0	0	20	15	35
	SBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	OVERALL	4	0	0	0	0	0	0	0	0	4	14	5	4	0	1	9	13	5	1	1	1	0	0	0	0	0	4	1	0	0	0	0	0	12	6	0	0	0	66	5	7	6	4	0	2	4	0	0	0	0	8	0	129	58	187
INTERSECTION #32: Fishburn Rd and Church Rd /	EBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	2	0	2
	EBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	EBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NBT	1	0	0	0	0	0	0	0	0	3	5	3	2	0	1	6	10	3	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	6	4	0	0	0	40	2	4	3	0	0	1	3	0	0	0	0	5	0	73	30	103
	NBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SBT	3	0	0	0	0	0	0	0	0	1	5	2	2	0	0	3	1	2	1	1	1	0	0	0	0	0	3	1	0	0	0	0	0	6	1	0	0	0	18	2	2	2	0	0	1	2	0	0	0	0	1	0	39	22	61
	SBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	3	0	3
	OVERALL	4	0	0	0	0	0	0	0	0	4	10	5	4	0	1	9	11	5	1	1	1	0	0	0	0	0	4	1	0	0	0	0	0	12	5	0	0	0	59	4	6	5	4	0	2	5	0	0	0	0	6	0	116	53	169
INTERSECTION #33: Main St &	EBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	EBT	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	6	0	0	0	0	0	0	0	0	0	1	0	0	0	1	3	0	4	17	0	0	0	4	2	0	2	0	0	0	0	0	1	0	0	1	1	26	18	44
	EBR	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	8	1	0	0	2	3	0	0	0	0	1	0	0	0	0	0	0	0	0	10	7	17
	WBL	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	6	1	17	2	1	0	3	1	1	0	1	0	1	0	0	0	1	0	0	0	0	27	14	41
	WBT	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	2	0	0	0	3	10	0	3	3	0	0	0	2	1	0	2	0	0	0	0	0	2	0	0	0	1	24	7	31
	WBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	5	0	2	1	0	0	0	0	1	0	1	0	0	0	0	0	1	0	0	0	0	10	3	13
	NBL	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	7	5	12
	NBT	0	0	1	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	24	0	2	0	3	4	0	0	0	0	1	0	0	0	0	0	0	0	0	24	15	39
	NBR	0	0	1	0	0	0	0	0	1	0	0	0	1	0	0	0	4	0	0	0	0	0	0	0	1	0	0	0	0	0	1	2	1	16	10	1	0	2	2	1	0	1	0	1	0	0	0	1	0	0	0	1	30	18	48
	SBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	8	0	0	0	1	1	0	1	0	0	0	0	0	1	0	0	0	0	11	8	19
	SBT	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	24	2	1	1	5	9	0	0	0	0	2	0	0	0	0	0	0	0	0	29	20	49
	SBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	OVERALL	0	0	2	0	0	0	0	0	10	0	0	0	4	0	0	0	14	0	0	0	0	0	0	0	2	0	5	0	0	0	8	28	6	108	44	6	1	16	27	7	0	8	0	6	0	0	0	7	0	0	1	3	198	115	313
INTERSECTION #34: Main St &	EBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	EBT	0	0	0	0	0	0	0	0	1	0	1	1	3	0	1	1	15	0	0	0	0	0	0	0	0	0	1	0	0	0	2	15	1	12	43	1	0	1	10	6	1	6	0	0	0	1	0	4	0	0	3	2	85	47	132
	EBR	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	7	0	0	0	0	2	0	0	0	0	1	0	0	0	0	0	0	0	0	10	5	15
	WBL	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	10	2	1	0	1	5	1	0	1	0	1	0	0	0	1	0	0	0	0	16	12	28
	WBT	0	0	0	0	0	0	0	0	1	0	1	1	3	0	0	1	2	0	0	1	0	0	0	0	0	0	4	0	0	0	7	5	1	12	7	0	0	2	5	4	0	5	0	1	0	0	0	6	0	0	1	2	49	23	72
	WBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NBL	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	7	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	8	3	11
	NBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
	NBR	0	0	1	0	0	0	0	0	1	0	0	0	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	10	9	2	0	0	3	1	0	1	0	1	0	0	0	1	0	0	0	0	20	15	35
	SBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
	SBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	OVERALL	0	0	1	0	0	0	0	0	6	0	2	2	8	0	1	2	20	0	0	1	0	0	0	0	0	0	6	0	0	0	10	24	6	60	61	4	0	4	26	12	1	13	0	4	0	1	0	12	0	0	4	4	190	105	295

INTERSECTION	MOVEMENT	E-2	E-20	E-8	E-9	E-4	E-5	E-19	E-6	E-7	E-14	E-10	E-11	E-13	E-1	E-18	E-3	E-12	E-15	E-17	R-1	R-2	R-3	R-4	R-5	R-9	R-10	R-12	R-14	R-15	R-16	R-17	R-18	MU-1	MU-2	MU-3	MU-6	C-1	C-2	C-3	C-4	C-5	C-6	C-7	C-8	C-9	C-10	C-11	C-12	C-13	C-14	C-15	C-16	2028	Post 2028	Total
INTERSECTION #35: Middletown Rd	EBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	EBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	EBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WBL	0	0	0	0	0	1	0	2	2	0	0	0	0	0	0	2	0	0	0	3	3	1	2	9	0	0	0	0	0	0	0	0	1	11	0	32	0	18	0	0	0	0	2	1	0	0	1	0	0	0	0	0	0	36	55	91
	WBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	3	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	9	17
	NBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NBT	0	0	9	1	0	0	0	0	16	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	8	2	0	0	0	0	0	1	11	9	5	15	3	0	4	1	0	1	0	9	0	0	0	0	0	0	0	0	68	29	97
	NBR	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	4	2	0	0	1	1	0	1	3	0	0	0	0	0	0	0	0	1	12	0	21	0	29	1	1	0	0	5	0	0	0	3	0	0	0	0	0	46	41	87
	SBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	0	19	0	0	0	0	1	0	0	0	0	0	0	0	0	0	12	11	23
	SBT	0	0	2	3	0	0	0	0	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0	0	0	0	1	3	17	8	1	9	4	0	2	0	0	0	0	14	0	0	0	2	1	0	0	0	71	25	96
	SBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	OVERALL	0	0	11	4	0	1	0	3	44	0	0	0	0	0	0	6	4	0	0	4	4	1	3	13	11	3	0	0	0	0	1	4	30	42	6	82	7	78	7	2	0	1	8	24	0	0	6	1	0	0	0	0	240	171	411
INTERSECTION #36: Waltonville Rd	EBL	0	0	3	1	0	0	0	0	6	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	3	1	0	0	0	0	0	1	4	1	5	6	1	0	0	1	0	1	0	3	0	0	0	0	0	0	0	0	27	12	39
	EBT	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	102	0	0	0	0	31	0	0	0	0	0	0	0	0	0	0	0	0	0	80	55	135
	EBR	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	5	2	7
	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	28	0	0	0	5	4	0	0	0	0	0	0	0	0	0	0	0	0	0	22	15	37
	WBT	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	101	0	0	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	71	45	116
	WBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	93	1	0	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	63	43	106
	NBL	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	4	2	6
	NBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	2	5	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	8	13
	NBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	29	0	0	0	3	8	0	0	0	0	0	0	0	0	0	0	0	0	0	23	17	40
	SBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	94	0	0	0	0	28	0	0	0	0	0	0	0	0	0	0	0	0	0	73	50	123
	SBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	3	0	5	0	0	0	0	1	0	0	0	0	1	0	0	0	0	7	5	12
	SBR	0	0	1	0	0	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	2	6	1	1	4	1	0	0	0	0	1	0	5	0	0	1	1	0	0	0	0	26	9	35
	OVERALL	0	2	5	1	0	0	0	0	20	0	0	0	0	0	0	2	3	0	0	0	0	0	0	1	5	1	0	0	0	0	1	4	13	451	9	22	2	16	96	1	0	2	1	10	0	0	2	2	1	0	0	0	405	264	669
INTERSECTION #37: Hope Rd and	EBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	32	0	0	0	0	0	0	0	0	0	0	0	0	0	22	16	38
	EBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0	10	8	18
	EBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	8	5	13
	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	5	7	12
	WBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	37	0	0	0	0	0	0	0	0	0	0	0	0	0	24	18	42
	WBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	0	0	0	0	0	0	0	0	0	0	0	0	0	15	14	29
	NBT	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	2	1	0	0	2	2	1	1	0	0	0	0	0	0	0	0	0	0	5	1	0	0	1	13	0	0	0	0	0	0	0	0	0	0	0	0	0	15	16	31
	NBR	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	1	1	0	0	3	3	1	2	0	0	0	0	0	0	0	0	0	0	3	1	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	8	13	21
	SBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8	16
	SBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	68	0	0	0	0	0	0	0	0	0	0	0	0	0	44	34	78
	OVERALL	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	31	2	0	0	8	8	2	5	0	0	0	0	0	0	0	0	0	0	18	2	0	0	1	217	0	0	0	0	0	0	0	0	0	0	0	0	0	158	140	298

Future Developments (Build) PM Peak - Trip Distribution and Assignment Summary

JOB NAME: Hershey Greater Area Study
JOB NUMBER: R002484.0484
ANALYST: CBM
CHECKED: TMH
DATE: 08/13/18

INTERSECTION	MOVEMENT	E-2	E-20	E-8	E-9	E-4	E-5	E-19	E-6	E-7	E-14	E-10	E-11	E-13	E-1	E-18	E-3	E-12	E-15	E-17	R-1	R-2	R-3	R-4	R-5	R-9	R-10	R-12	R-14	R-15	R-16	R-17	R-18	MU-1	MU-2	MU-3	MU-6	C-1	C-2	C-3	C-4	C-5	C-6	C-7	C-8	C-9	C-10	C-11	C-12	C-13	C-14	C-15	C-16	2028	Post 2028	Total
INTERSECTION #1: Middletown Road (SR 2003) and Off Ramp 322	EBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
	EBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	96	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	63	39	102
	EBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WBL	0	0	4	2	0	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	1	0	0	0	0	0	0	7	12	1	9	4	0	5	0	0	0	0	20	0	0	0	0	0	0	0	0	43	34	77
	WBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	108	6	1	0	0	29	1	0	1	0	0	0	0	0	1	0	0	0	1	90	61	151
	NBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NBT	0	0	2	1	0	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	1	3	7	0	3	7	2	62	0	1	0	1	0	23	0	0	1	1	2	0	0	1	68	62	130
	NBR	0	0	2	1	0	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	6	12	0	7	2	0	2	0	0	0	0	22	0	0	1	0	0	0	0	0	34	32	66
	SBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	8	5	13
	SBT	0	0	4	2	0	0	0	0	8	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	4	1	0	0	0	0	0	2	7	0	6	9	4	57	0	1	0	1	0	21	0	0	0	1	2	0	0	1	71	61	132
	SBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
	OVERALL	0	0	12	6	0	0	0	0	33	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	12	4	0	0	0	0	2	8	27	241	20	33	12	119	37	3	0	3	0	86	0	0	2	3	4	0	0	3	378	295	673
INTERSECTION #2: Middletown Rd (SR 2003) and Private Dwy / Wood Rd	EBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	EBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	EBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NBT	0	0	5	4	0	0	0	1	19	0	0	0	0	0	0	0	0	0	0	4	3	1	2	10	5	2	1	0	0	0	1	3	15	23	3	47	5	90	2	2	0	1	0	50	0	0	4	1	2	0	0	1	144	163	307
	NBR	0	0	1	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	4	0	0	3	1	0	0	0	0	0	0	12	0	0	0	0	0	0	0	0	14	14	28
	SBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SBT	0	0	9	2	0	0	0	1	18	0	0	0	0	0	0	0	1	0	0	2	2	1	1	6	9	2	1	0	0	0	1	2	16	24	6	43	9	97	5	2	0	1	0	46	0	0	5	1	1	0	0	1	160	155	315
	SBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	OVERALL	0	0	15	6	0	0	0	2	42	0	0	0	0	0	0	0	1	0	0	6	5	2	3	16	15	5	2	0	0	0	2	5	35	47	9	93	15	187	7	4	0	2	0	108	0	0	9	2	3	0	0	2	318	332	650
INTERSECTION #3: Middletown Road (SR 2003) and Deer Run Drive / Stoverdale Road	EBL	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	3	0	5	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	12	27
	EBT	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	5
	EBR	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	8	3	11
	WBL	0	0	0	0	0	0	0	0	41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	41	1	42
	WBT	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	6
	WBR	0	0	0	0	0	0	0	0	39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40	2	42
	NBL	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	13	4	17
	NBT	0	0	0	3	0	0	0	1	5	0	0	0	0	0	0	0	0	0	0	3	3	1	1	8	6	3	1	0	0	0	1	3	18	20	3	45	6	76	2	2	0	1	0	62	0	0	4	1	2	0	0	1	121	161	282
	NBR	0	0	0	0	0	0	0	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	20	1	21
	SBL	0	0	0	0	0	0	0	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	2	17
	SBT	0	0	0	2	0	0	0	1	-14	0	0	0	0	0	0	0	1	0	0	2	2	0	1	5	11	3	0	0	0	0	0	2	20	20	5	43	11	83	4	2	0	0	0	57	0	0	4	1	1	0	0	1	115	153	268
	SBR	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	3	1	3	0	13	1	0	0	0	0	0	0	0	1	0	0	0	0	0	22	12	34
	OVERALL	0	0	36	5	0	0	0	2	116	0	0	0	0	0	0	0	1	0	0	5	5	1	2	15	17	6	1	0	0	0	1	5	40	46	9	100	17	188	7	4	0	1	0	126	0	0	9	2	3	0	0	2	422	350	772
INTERSECTION #4: Middletown Road (SR 2003) and Locust Lane / Kaylor Rd	EBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
	EBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	EBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	3	3
	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	3	3
	WBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WBR	0	0	1	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	0	2	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	5	13
	NBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	3	3
	NBT	0	0	10	3	0	0	0	1	21	0	0	0	0	0	0	0	0	0	0	3	2	1	1	7	7	3	1	0	0	0	1	2	19	16	2	43	7	63	1	1	0	0	0	73	0	0	4	1	1	0	0	1	137	158	295
	NBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	3	3
	SBL	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	4	10
	SBT	0	0	6	1	0	0	0	0	22	0	0	0	0	0	0	0	1	0	0	1	1	0	1	4	13	4	0	0	0	0	0	1	17	17	4	43	13	68	3	1	0	0	0	67	0	0	4	0	1	0	0	1	144	150	294
	SBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
	OVERALL	0	0	17	4	0	0	0	1	47	0	0	0	0	0	0	0	1	0	0	4	3	1	2	12	20	7	1	0	0	0	1	3	38	35	6	93	20	143	4	2	0	0	0	148	0	0	8	1	2	0	0	2	297	329	626
INTERSECTION #5: Waltonville Road and SR 2034 / Route 322 EB On-Ramp	EBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	EBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	EBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NBT	0	0	1	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	1	4	2	20	5	2	1	5	9	2	0	1	0	5	0	0	0	1	0	1	0	1	38	27	65
	NBR	0	0	1	1	0	0	0	0	5	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	4	92	0	7	1	11	22	0	0	0	1	13	0	0	1	0	0	0	0	0	92	71	163
	SBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SBT	0	0	2	1	0	0	0	0	5	0	0	0	0	0	0	1	1	0	0	1	0	0	0	1	2	1	1	0	0	0	1	2	4	90	11	9	2	11	11	2	0	1	0	12	0	0	0	1	0	0	0	2	99	76	175
	SBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2
	OVERALL	0	0	4	2	0	0	0	0	12	0	0	0	0	0	0	2	1	0	0	1	0	0	0	2	4	2	2	0	0	0	2	6	10	204	16	18	4	27	42	4	0	2	1	30	0	0	1	2	0	1	0	3	231	174	405
INTERSECTION #6: Waltonville Rd and Wood Rd	EBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	EBT	0	0	1	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	3	0	0	3	1	0	0	0	0	0	0	10	0	0	0	0	0	0	0	0	11	12	23
	EBR	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	3
	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2	2	3	0	0	22	0	0	0	0	0	0	0	0	0	0	0	0	0	15	16	31
	WBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	3
	WBR	0	0	2	0	0	1	0	0	4	0	0	0	0	0	0	5	1	0	0	3	2	1	1	0	2	1	0	0	0	0	0	0	4	19	0	0	2	3	1	1	0	0	0	9	0	0	0	0	0	0	0	1	37	26	63
	NBL	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	3
	NBT	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	1	0	0	0	0	0	0	1	1	25	1	34	1	17	3	0	0	0	8	0	0	0	5	0	0	0	0	0	56	51	107
	NBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	2	1	3	0	0	9	0	0	0	1	0	0	0	0	0	0	0	0	0	8	10	18
	SBL	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	3	0	0	0	4	4	1	2	0	0	0	1	0	0	0	0	0	0	19	0	0	0	4	1	1	0	0	0	0	0	0	0	0	0	0	0	1	20	23	43
	SBT	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	0	0	0	0	0	0	0	0	1	26	2	45	0	18	7	0	0	0	3	0	0	0	2	0	0	0	0	0	51	68	119
	SBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	OVERALL	0	0	4	0	0	3	0	2	12	0	0	0	0	0	0	9	1	0	0	8	6	2	3	22	4	1	1	0	0	0	0	1	11	93	6	93	4	42	43	2	0	0	12	19	0	0	7	0	0	0	0	2	203	210	413
INTERSECTION #7: Bullfrog Valley Rd and Wood Rd	EBL	0	0	1	0	0	0	0	0	3	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	2	20	1	4	1	3	10	1	0	0	0	7	0	0	1	0	0	0	0	1	33	27	60
	EBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	EBR	0	0	0	0	0	2	0	0	1	0	0	0	0	0	0	0	0	0	0	5	4	1	2	0	0	0	0	0	0	0	0	0	1	2	0	2	0	1	1	0	0	0	0	3	0	0	0	0	0	0	0	0	7	18	25
	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NBL	0	0	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	3	3	1	1	0	1	0	0	0	0	0	0	0	1	2	0	2	1	1	2	0	0	0	0	3	0	0	0	0	0	0	0	0	9	15	24
	NBT	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	4	0	0	0	10	9	3	5	0	0	0	1	0	0	0	0	0	0	16	1	0	0	0	21	1	0	0	0	1	0	0	0	0	0	0	0	1	31	47	78
	NBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SBT	0	1	0	0	0	7	0	0	0	0	0	0	0	0	0	6	1	0	0	17	15	5	8	0	0	0	0	0	0	0	0	0	0	17	2	0	0	0	34	1	0	0	0	1	0	0	0	0	0	0	0	1	44	72	116
	SBR	0	0	1	0	0	0	0	0	3	0	0	0	0	0	0	6	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	3	20	2	5	1	2	21	1	0	0	0	7	0	0	0	0	0	0	0	1	43	33	76
	OVERALL	0	1	3	0	0	15	0	0	8	0	0	0	0	0	0	19	2	0	0	35	31	10	16	1	3	0	2	0	0	0	0	0	7	77	6	13	3	7	89	4	0	0	0	22	0	0	1	0	0	0	0	4	168	211	379
INTERSECTION #8: Bullfrog Valley Road and Research Blvd / Life Lion Drive	EBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	64	1	0	0	13	2	1	0	0	0	0	0	0	0	0	0	0	0	0	47	34	81
	EBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	119	1	0	0	3	31	0	0	0	0	1	0	0	0	0	0	0	0	0	91	64	155
	EBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	12	32
	WBL	0	0	0	0	0	2	0	0	1	0	0	0	0	0	0	9	0	0	0	5	4	1	2	0	0	0	0	0	0	0	0	0	1	1	0	1	0	1	29	0	0	0	0	2	0	0	0	0	0	0	0	0	29	30	59
	WBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	117	0	0	0	3	71	0	0	0	0	1	0	0	0	0	0	0	0	0	110	83	193
	WBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	44	1	0	0	0	0	0	0	0	0	0	0	0	0	32	23	55
	NBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19	12	31
	NBT	0	0	1	0	0	3	0	0	3	0	0	0	0	0	0	2	1	0	0	8	7	2	4	0	1	0	1	0	0	0	0	1	2	5	2	3	1	2	16	3	0	0	0	6	0	0	0	0	0	0	0	1	30	45	75
	NBR	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	4	0	0	0	3	2	1	1	0	0	0	0	0	0	0	0	0	1	1	0	1	0	1	14	0	0	0	0	2	0	0	0	0	0	0	0	0	15	18	33
	SBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	22	1	0	0	0	0	0	0	0	0	0	0	0	0	16	13	29
	SBT	0	1	1	0	0	5	0	0	2	0	0	0	0	0	0	3	1	0	0	13	11	4	6	1	1	0	1	0	0	0	0	0	2	5	4	3	1	2	26	3	0	0	0	6	0	0	0	0	0	0	1	1	39	65	104
	SBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	63	1	0	0	12	4	1	0	0	0	0	0	0	0	0	0	0	0	0	48	34	82
	OVERALL	0	1	2	0	0	11	0	0	7	0	0	0	0	0	0	35	2	0	0	29	24	8	13	1	2	0	2	0	0	0	0	1	6	438	10	8	2	37	259	10	0	0	0	18	0	0	0	0	0	0	1	2	497	432	929

INTERSECTION	MOVEMENT	E-2	E-20	E-8	E-9	E-4	E-5	E-19	E-6	E-7	E-14	E-10	E-11	E-13	E-1	E-18	E-3	E-12	E-15	E-17	R-1	R-2	R-3	R-4	R-5	R-9	R-10	R-12	R-14	R-15	R-16	R-17	R-18	MU-1	MU-2	MU-3	MU-6	C-1	C-2	C-3	C-4	C-5	C-6	C-7	C-8	C-9	C-10	C-11	C-12	C-13	C-14	C-15	C-16	2028	Post 2028	Total
INTERSECTION #9: Wagner St / E. Main St and South / Walton Ave	EBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	EBT	0	0	1	0	0	0	0	0	2	0	1	1	2	0	1	1	2	1	0	1	1	0	0	0	1	0	5	0	0	0	5	9	1	24	0	2	1	8	6	11	0	7	0	5	1	2	0	6	0	3	1	8	77	43	120
	EBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14	21	35
	WBL	0	0	0	0	0	0	0	0	0	0	1	1	1	0	1	1	4	1	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	5	64	0	0	0	10	8	0	5	0	0	0	2	0	0	0	0	2	7	57	58	115
	WBT	0	0	1	0	0	0	0	0	2	1	1	1	2	0	1	2	6	1	0	1	0	0	0	0	1	0	3	0	0	0	9	15	2	24	0	2	1	8	14	12	0	7	0	4	1	2	0	7	0	4	3	11	105	44	149
	WBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	2
	NBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	27	40	67
	NBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2
	NBR	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	1	2	1	0	1	0	0	0	0	0	0	4	0	0	0	0	0	0	5	127	0	0	0	4	8	0	5	0	0	0	2	0	0	0	0	1	6	73	97	170
	SBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1	2	1	3
	SBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
	SBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
	OVERALL	0	0	2	0	0	0	0	0	4	1	4	4	6	0	3	5	14	4	0	3	1	0	0	0	2	0	14	0	0	0	15	27	3	60	291	4	2	16	34	41	0	25	0	9	2	8	0	13	0	7	7	34	359	306	665
INTERSECTION #10: W. Hersheypark Dr and Walton Ave / Mae St	EBL	0	0	0	0	0	0	0	0	1	0	1	1	3	0	1	0	4	1	0	0	0	0	0	0	0	0	9	0	0	0	3	4	1	9	63	0	0	7	0	20	0	13	0	2	0	1	0	3	0	1	1	0	71	78	149
	EBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	3	21	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	15	28	15	43
	EBR	0	0	0	0	0	1	0	0	1	0	1	0	0	0	0	2	0	1	0	2	1	0	1	0	0	0	0	0	0	0	2	3	1	18	43	0	0	1	12	0	1	0	0	3	1	3	0	2	0	1	0	0	51	50	101
	WBL	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	1	5	0	0	0	0	0	0	1	0	0	0	0	0	14	23	7	30
	WBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	0	3	11	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	0	19	32	8	40
	WBR	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	4	0	3	0	0	0	0	0	0	0	0	0	12	17	6	23
	NBL	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	4	0	1	0	1	1	0	0	0	0	0	0	0	0	0	3	5	1	18	22	0	0	1	27	0	0	0	0	3	1	3	0	2	0	1	1	0	56	42	98
	NBT	0	0	0	0	0	1	0	0	2	2	4	3	5	0	2	12	7	5	1	3	3	1	2	0	0	0	14	1	0	0	0	0	1	38	2	2	0	4	87	30	2	19	0	5	3	12	0	0	0	0	5	0	147	131	278
	NBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	1	11	0	0	0	0	0	0	1	0	0	0	0	0	11	23	8	31
	SBL	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	2	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	4	0	3	0	0	0	0	0	0	0	0	1	9	17	5	22
	SBT	0	0	1	0	0	2	0	0	2	2	5	3	5	0	4	6	17	4	1	5	4	2	2	0	1	0	10	1	0	0	0	0	1	38	1	3	1	4	37	31	2	18	0	4	3	11	0	0	0	0	8	0	134	105	239
	SBR	0	0	0	0	0	0	0	0	1	1	1	1	3	0	3	0	11	1	0	0	0	0	0	0	0	0	6	0	0	0	4	8	1	9	32	0	0	6	0	21	0	12	0	2	0	1	0	3	0	2	5	0	78	56	134
	OVERALL	0	0	1	0	0	4	0	0	8	6	14	8	18	0	11	27	42	13	2	12	10	3	5	0	1	0	42	2	0	0	14	24	6	146	195	5	1	27	179	110	5	68	0	19	8	33	0	12	0	6	21	80	677	511	1188
INTERSECTION #11: Hersheypark Drive (SR 0743) and Park Blvd / Hershey Road (SR 0039)	EBL	0	0	0	0	0	0	0	0	1	1	2	1	0	0	0	4	1	2	0	1	1	0	0	0	0	0	0	0	0	0	1	1	1	16	20	0	0	6	27	16	1	0	0	2	1	7	0	1	0	0	2	4	60	60	120
	EBT	0	0	0	0	0	1	0	0	1	2	6	1	10	0	4	5	1	5	1	1	1	0	1	0	0	0	34	1	0	1	1	2	1	21	26	0	0	3	34	20	3	47	0	2	2	12	0	1	0	1	7	5	153	111	264
	EBR	0	0	0	0	0	0	0	0	0	0	1	5	0	0	0	1	14	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	5	0	0	0	5	4	0	0	0	0	0	2	0	0	0	0	0	1	30	12	42
	WBL	0	0	0	0	0	0	0	0	0	0	1	3	2	0	2	0	25	1	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	1	0	0	0	0	3	0	45	3	48
	WBT	0	0	0	0	0	1	0	0	1	2	6	1	10	0	9	2	40	5	1	2	2	1	1	0	0	0	21	1	0	1	2	3	1	21	14	0	0	3	15	20	3	44	0	2	2	11	0	1	0	1	18	4	189	83	272
	WBR	0	0	0	0	0	0	0	0	0	1	1	0	5	0	5	0	20	2	0	0	0	0	0	0	0	0	10	0	0	0	0	0	0	1	0	0	0	0	0	0	1	22	0	0	0	2	0	0	0	0	9	0	68	11	79
	NBL	0	0	0	0	0	0	0	0	0	0	1	5	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	3	3	0	0	0	2	4	0	0	0	0	0	2	0	0	0	0	0	1	14	9	23
	NBT	0	0	0	0	0	0	0	0	0	1	2	39	0	0	0	0	1	2	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2	2	0	0	0	1	1	1	0	0	0	1	6	0	0	0	0	3	1	55	9	64
	NBR	0	0	0	0	0	0	0	0	0	0	1	4	2	0	1	0	2	1	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	0	0	1	0	0	0	0	1	0	21	5	26
	SBL	0	0	0	0	0	0	0	0	0	0	2	0	5	0	2	0	0	1	0	0	0	0	0	0	0	0	16	0	0	1	0	0	0	1	0	0	0	0	0	0	1	23	0	0	0	2	0	0	0	0	2	0	39	17	56
	SBT	0	0	0	0	0	0	0	0	0	1	4	37	0	0	0	0	7	2	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2	1	0	0	0	1	1	1	0	0	0	1	5	0	0	0	0	1	0	58	7	65
	SBR	0	0	0	0	0	1	0	0	1	0	3	1	0	0	0	2	0	2	0	2	1	0	1	0	0	0	1	0	0	0	1	2	1	16	10	0	0	6	12	15	1	0	0	2	1	6	0	1	0	1	0	3	46	47	93
	OVERALL	0	0	0	0	0	3	0	0	4	8	30	97	34	0	23	14	111	25	2	6	5	1	3	0	0	0	92	2	0	3	5	9	4	86	81	0	0	18	97	81	12	151	0	8	8	57	0	4	0	3	46	19	777	375	1152
INTERSECTION #12: Hersheypark Drive and Park Avenue / Sand Beach Road	EBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	9	0	9
	EBT	0	0	0	0	0	0	0	0	1	1	2	3	18	0	6	4	52	2	0	1	1	0	0	0	0	0	58	0	0	0	1	1	1	15	20	0	0	2	26	15	1	82	0	1	1	7	0	1	0	0	2	4	216	113	329
	EBR	0	0	0	0	0	0	0	0	0	1	6	1	0	0	0	1	11	5	1	0	0	0	0	0	0	0	1	1	0	2	0	0	0	4	5	0	0	0	4	4	3	0	0	0	1	7	0	0	0	0	0	1	42	17	59
	WBL	0	0	0	0	0	0	0	0	0	1	3	0	4	0	3	0	0	2	0	0	0	0	0	0	0	0	8	1	0	1	0	0	0	1	0	0	0	0	0	1	1	16	0	0	1	3	0	0	0	0	0	0	33	13	46
	WBT	0	0	0	0	0	1	0	0	1	1	3	3	18	0	16	2	18	2	0	2	1	0	1	0	0	0	36	0	0	0	1	2	1	15	10	0	0	2	11	15	1	77	0	1	1	7	0	1	0	1	1	3	176	79	255
	WBR	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	5	0	8	1	9
	NBL	0	0	0	0	0	0	0	0	0	3	4	1	0	0	0	0	5	6	1	0	0	0	0	0	0	0	0	1	0	1	0	1	0	4	4	0	0	0	3	4	3	0	0	0	1	7	0	0	0	0	1	1	36	15	51
	NBT	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	2	0	0	0	0	13	0	20	1	21
	NBR	0	0	0	0	0	0	0	0	0	2	2	0	4	0	1	0	1	3	0	0	0	0	0	0	0	0	12	0	0	0	0	0	0	1	1	0	0	0	1	1	1	17	0	0	1	3	0	0	0	0	0	0	34	17	51
	SBL	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	19	0	23	2	25
	SBT	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	2	0	0	0	0	51	0	57	1	58
	SBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	30	0	30	0	30
	OVERALL	0	0	0	0	0	1	0	0	2	10	23	8	46	0	26	7	88	23	2	3	2	0	1	0	0	0	118	3	0	4	2	4	2	42	40	0	0	4	45	40	12	197	0	2	6	38	0	2	0	1	130	9	684	259	943
INTERSECTION #13: Hersheypark Drive and Laudermilch Road	EBL	0	0	0	0	0	0	0	0	0	1	2	1	11	0	0	1	21	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	6	8	0	0	2	8	6	1	47	0	0	1	4	0	0	0	0	8	2	112	21	133
	EBT	0	0	0	0	0	0	0	0	0	0	2	1	11	0	8	1	22	2	0	0	0	0	0	0	0	0	79	0	0	0	0	1	0	6	8	0	0	0	10	7	1	50	0	0	1	4	0	0	0	0	9	2	124	101	225
	EBR	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	0	9	0	0	0	1	0	0	0	0	2	0	18	3	21
	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WBT	0	0	0	0	0	0	0	0	0	0	3	1	11	0	22	1	8	2	0	1	0	0	0	0	0	0	49	0	0	0	1	1	0	6	4	0	0	0	4	6	1	54	0	0	1	4	0	0	0	0	2	1	117	66	183
	WBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
	NBL	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	0	10	0	0	0	1	0	0	0	0	1	0	15	3	18
	NBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	3	0	3
	NBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
	SBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
	SBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
	SBR	0	0	0	0	0	0	0	0	0	0	2	1	11	0	0	1	7	2	0	1	0	0	0	0	0	0	0	0	0	0	1	1	0	6	4	0	0	2	4	6	1	50	0	0	1	4	0	0	0	0	2	1	90	18	108
	OVERALL	0	0	0	0	0	0	0	0	0	1	9	4	48	0	30	4	63	8	0	2	0	0	0	0	0	0	131	0	2	2	2	4	0	26	26	0	0	4	26	27	4	220	0	0	4	18	0	0	0	0	25	6	482	214	696
INTERSECTION #14: N. Lingle Ave and Hersheypark Dr / Commercial Dwy	EBL	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	1	0	8	1	9
	EBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	0	2
	EBR	0	0	0	0	0	0	0	0	0	0	2	1	10	0	8	1	20	2	0	0	0	0	0	0	0	0	81	0	0	0	0	0	0	5	8	0	0	0	8	6	1	45	0	0	1	4	0	0	0	0	8	1	111	101	212
	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
	WBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1
	WBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NBL	0	0	0	0	0	0	0	0	0	0	2	1	10	0	22	1	7	2	0	0	0	0	0	0	0	0	50	0	0	0	1	1	0	5	4	0	0	0	3	6	1	48	0	0	1	4	0	0	0	0	2	1	107	65	172
	NBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	12	18
	NBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	3
	SBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	20	22
	SBR	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	6	0	6
	OVERALL	0	0	0	0	0	0	0	0	0	0	4	2	22	0	39	2	31	4	0	0	0	0	0	0	0	0	168	0	0	0	1	1	0	10	13	0	0	0	11	12	2	103	0	0	2	8	0	0	0	0	11	2	245	203	448
INTERSECTION #15: Park Avenue and Derry Road	EBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	EBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	EBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
	WBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WBR	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	4	2	6
	NBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NBT	0	0	0	0	0	0	0	0	0	6	8	1	4	0	1	1	5	10	1	0	0	0	0	0	0	0	12	1	0	0	0	1	0	6	5	0	0	1	5	5	5	17	0	0	2	12	0	0	0	0	13	1	89	34	123
	NBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
	SBL	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	8	1	9
	SBT	0	0	0	0	0	0	1	0	0	2	11	1	4	0	3	1	10	9	1	0	0	0	0	0	0	0	8	2	0	0	0	1	0	6	5	0	0	1	5	5	5	16	0	0	2	11	0	0	0	0	48	1	128	31	159
	SBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	OVERALL	0	0	0	0	0	0	1	0	0	8	19	2	10	0	4	2	17	19	2	0	0	0	0	0	0	0	22	3	0	6	0	2	0	12	11	0	0	2	10	10	10	33	0	0	4	23	0	0	0	0	65	2	231	68	299
INTERSECTION #16: Park Blvd / and N Ridge Road	EBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	EBT	0	0	0	0	0	0	0	0	0	1	5	17	2	0	2	1	7	3	0	0	0	0	0	0	0	0	5	1	0	0	0	1	0	6	6	0	0	0	6	6	2	7	0	0	2	9	0	0	0	0	4	2	67	28	95
	EBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NBL	0	0	0	0	0	0	0	0	0	2	3	16	0	0	0	0	2	3	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	3	2	0	0	0	1	2	1	0	0	0	1	7	0	0	0	0	3	1	38	10	48
	NBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	OVERALL	0	0	0	0	0	0	0	0	0	3	8	33	2	0	2	1	9	6	0	0	0	0	0	0	0	0	6	1	0	0	0	1	0	9	8	0	0	0	7	8	3	7	0	0	3	16	0	0	0	0	7	3	105	38	143
INTERSECTION #17: W. Chocolate Ave and University Dr	EBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	EBT	0	0	0	0	0	0	1	0	2	3	15	4	4	0	3	1	12	10	1	1	1	0	1	0	0	0	10	2	0	0	1	2	1	46	29	2	0	6	12	22	6	10	0	4	9	34	0	1	0	1	7	9	160	113	273
	EBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	7	3	0	0	0	19	2	0	0	0	0	0	0	0	0	0	0	0	1	20	17	37
	WBL	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	13	1	0	1	0	0	1	3	0	0	0	0	1	0	16	11	27
	WBT	0	0	1	0	0	0	0	0	2	6	11	4	4	0	2	2	9	11	1	1	1	0	0	0	1	0	11	1	0	0	2	3	1	46	19	2	1	6	16	22	5	9	1	4	9	36	0	2	0	1	11	8	163	109	272
	WBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1
	NBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	7	2	0	0	0	43	2	0	0	0	0	0	0	0	0	0	0	0	1	35	28	63
	NBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2
	NBR	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	4	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	28	1	0	1	0	0	1	3	0	0	0	0	0	0	24	19	43
	SBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1
	SBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
	SBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	OVERALL	0	0	1	0	0	0	1	0	4	9	28	8	8	0	5	18	23	23	2	2	2	0	1	0	1	0	23	3	0	0	3	5	2	110	55	4	1	12	134	50	11	21	1	8	20	78	0	3	0	2	19	19	420	300	720

INTERSECTION	MOVEMENT	E-2	E-20	E-8	E-9	E-4	E-5	E-19	E-6	E-7	E-14	E-10	E-11	E-13	E-1	E-18	E-3	E-12	E-15	E-17	R-1	R-2	R-3	R-4	R-5	R-9	R-10	R-12	R-14	R-15	R-16	R-17	R-18	MU-1	MU-2	MU-3	MU-6	C-1	C-2	C-3	C-4	C-5	C-6	C-7	C-8	C-9	C-10	C-11	C-12	C-13	C-14	C-15	C-16	2028	Post 2028	Total
INTERSECTION #18: W Chocolate Avenue and Hockersville Road	EBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	3	4
	EBT	0	0	0	0	0	0	1	0	1	3	16	4	3	0	2	3	9	10	1	1	0	0	0	0	0	0	9	2	0	0	1	2	1	34	21	1	0	5	26	17	6	11	0	3	10	36	0	1	0	1	6	7	152	102	254
	EBR	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2	3	1	0	1	1	0	0	0	0	0	1	0	0	0	0	0	0	12	7	0	0	2	9	5	1	0	0	1	0	1	0	0	0	0	1	2	28	24	52
	WBL	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	2	0	0	2	6	0	0	0	0	2	0	15	7	22
	WBT	0	0	1	0	0	0	0	0	1	6	11	5	3	0	2	2	8	11	1	0	0	0	0	0	1	0	9	1	0	0	1	3	1	33	15	2	1	4	15	17	5	10	0	2	10	40	0	1	0	1	12	6	149	92	241
	WBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0	0	0	0	1	0	1	0	0	0	1	0	0	0	0	0	0	2	4	6
	NBL	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	2	1	1	0	0	0	0	0	0	0	0	2	0	0	0	0	1	0	12	4	0	0	1	4	5	1	0	0	1	0	1	0	0	0	0	1	2	23	18	41
	NBT	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	1	1	1	0	0	0	0	0	0	0	0	2	0	0	0	0	1	0	3	2	0	0	1	6	4	0	3	0	0	0	1	0	0	0	0	0	1	17	12	29
	NBR	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	1	1	2	0	0	2	5	0	0	0	0	0	0	10	7	17
	SBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	0	1	0	0	0	1	0	0	0	0	0	0	3	3	6
	SBT	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	3	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	3	5	0	0	1	6	4	0	3	0	0	0	1	0	0	0	0	1	1	20	13	33
	SBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	2	3
	OVERALL	0	0	1	0	0	0	1	0	2	11	32	9	10	0	6	11	27	28	2	2	1	0	0	0	1	0	26	3	0	0	2	7	2	101	59	3	1	14	70	58	15	33	0	7	24	93	0	2	0	2	23	19	421	287	708
INTERSECTION #19: E. Chocolate Ave and Homestead Rd / Hershey Food Driveway	EBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	EBT	0	0	0	0	0	0	3	0	0	9	16	8	3	0	3	1	10	34	4	0	0	0	0	0	0	0	7	8	0	0	0	1	0	11	10	0	0	0	11	7	20	10	0	1	5	25	0	0	0	0	22	3	176	56	232
	EBR	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	0	0	0	2	0	0	0	0	2	0	8	2	10
	WBL	0	0	0	0	0	0	1	0	0	10	0	0	0	0	0	0	0	17	2	0	0	0	0	0	0	0	1	2	0	0	0	0	0	1	0	0	0	0	3	0	8	0	0	0	0	0	0	0	0	0	0	0	40	5	45
	WBT	0	0	0	0	0	0	1	0	0	22	23	7	3	0	1	1	4	38	4	0	0	0	0	0	0	0	10	4	0	1	1	1	0	11	5	0	0	0	5	7	19	11	0	1	5	23	0	1	0	0	6	2	169	48	217
	WBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NBL	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	2	0	0	0	0	0	0	6	2	8
	NBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NBR	0	0	0	0	0	0	1	0	0	4	0	0	0	0	0	1	0	15	2	0	0	0	0	0	0	0	1	4	0	0	0	0	0	1	0	0	0	0	6	0	9	0	0	0	0	0	0	0	0	0	0	0	36	8	44
	SBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	OVERALL	0	0	0	0	0	0	6	0	0	45	42	17	6	0	4	3	15	104	12	0	0	0	0	0	0	0	20	18	0	1	1	2	0	26	16	0	0	0	25	14	56	23	0	2	10	52	0	1	0	0	30	5	434	122	556
INTERSECTION #20: Chocolate Ave and / E. Derry Rd	EBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	EBT	0	0	0	0	0	0	1	0	0	17	15	7	4	0	3	2	12	29	7	0	0	0	0	0	0	0	8	3	3	1	0	1	0	11	10	0	0	0	14	8	22	18	0	1	5	23	0	0	0	0	22	3	196	54	250
	EBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WBT	0	0	0	0	0	0	2	0	0	7	21	7	4	0	2	1	5	26	7	1	0	0	0	0	0	0	11	6	4	1	1	1	0	11	5	0	0	0	6	7	23	19	0	1	5	21	0	1	0	0	6	2	162	52	214
	WBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
	NBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
	SBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	OVERALL	0	0	0	0	0	0	3	0	0	24	36	14	8	0	5	3	17	55	16	1	0	0	0	0	0	0	19	9	7	2	1	2	0	22	15	0	0	0	20	15	45	37	0	2	10	44	0	1	0	0	28	5	360	106	466
INTERSECTION #21: E. Chocolate Ave and S. Lingle Ave / N. Lingle Ave	EBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	4
	EBT	0	0	0	0	0	0	1	0	0	9	8	4	2	0	1	1	6	16	5	0	0	0	0	0	0	0	3	2	2	0	0	0	0	5	5	0	0	0	6	4	12	10	0	0	2	12	0	0	0	0	12	1	104	25	129
	EBR	0	0	0	0	0	0	0	0	0	7	6	3	2	0	1	1	5	12	4	0	0	0	0	0	0	0	2	1	1	0	0	0	0	4	4	0	0	0	5	3	9	8	0	0	2	9	0	0	0	0	10	1	81	19	100
	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WBT	0	0	0	0	0	0	1	0	0	4	11	4	2	0	0	0	2	14	5	0	0	0	0	0	0	0	5	3	2	1	0	1	0	5	3	0	0	0	3	4	12	10	0	0	2	11	0	0	0	0	3	1	84	25	109
	WBR	0	0	0	0	0	0	0	0	0	0	1	0	3	0	2	0	2	0	0	0	0	0	0	0	0	0	23	0	0	0	0	0	0	1	1	0	0	0	1	1	0	48	0	0	0	1	0	0	0	0	0	0	58	26	84
	NBL	0	0	0	0	0	0	1	0	0	3	9	3	2	0	0	0	2	11	4	0	0	0	0	0	0	0	4	3	2	1	0	0	0	4	2	0	0	0	2	3	10	8	0	0	2	8	0	0	0	0	2	1	67	20	87
	NBT	0	0	0	0	0	0	0	0	0	0	1	1	7	0	6	0	5	1	0	0	0	0	0	0	0	0	61	0	0	0	0	1	0	3	3	0	0	0	2	4	1	0	0	0	0	2	0	0	0	0	1	1	30	70	100
	NBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SBL	0	0	0	0	0	0	0	0	0	0	0	0	3	0	6	0	5	0	0	0	0	0	0	0	0	0	14	0	0	0	0	0	0	1	2	0	0	0	1	1	0	45	0	0	0	1	0	0	0	0	2	0	63	18	81
	SBT	0	0	0	0	0	0	0	0	0	1	1	1	7	0	17	1	14	1	0	0	0	0	0	0	0	0	38	0	0	0	0	0	0	3	5	0	0	0	5	4	1	0	0	0	0	2	0	0	0	0	6	1	58	50	108
	SBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	4
	OVERALL	0	0	0	0	0	0	3	0	0	24	37	16	28	0	34	3	42	56	18	0	0	0	0	0	0	0	155	9	7	2	0	2	0	26	25	0	0	0	25	24	45	129	0	0	8	46	0	0	0	0	36	6	549	257	806
INTERSECTION #22: Hockersville Road and W Areba Avenue	EBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	1	4	5
	EBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	EBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	1	3	4
	NBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
	NBT	0	0	0	0	0	0	0	0	0	1	3	1	1	0	0	3	2	3	0	1	1	0	0	0	0	0	4	0	0	0	1	1	0	12	5	0	0	0	4	7	1	4	1	1	1	5	0	0	0	0	1	2	39	27	66
	NBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	2	3	5
	SBT	0	0	0	0	0	1	0	0	0	1	2	1	1	0	1	3	5	3	0	1	1	0	1	0	0	0	2	0	0	0	0	1	0	12	9	0	0	0	10	7	1	4	0	1	1	6	0	0	0	0	3	3	49	32	81
	SBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	1	1	0	0	0	0	0	1	0	0	0	0	1	0	4	4	8
	OVERALL	0	0	0	0	0	1	0	0	0	2	5	2	2	0	1	6	9	6	0	2	2	0	1	0	0	0	7	0	0	0	1	2	0	28	19	0	0	0	16	18	2	8	1	2	2	15	0	0	0	0	5	5	98	72	170
INTERSECTION #23: Governor Rd (SR 0322) and University Dr	EBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	1	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	4	5	9
	EBT	0	0	0	0	0	1	0	0	1	0	1	0	1	0	1	7	2	2	0	3	2	1	1	0	0	0	1	0	0	0	0	0	1	32	6	0	0	15	46	4	1	0	0	3	0	1	0	0	0	0	1	2	74	62	136
	EBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	1	0	0	0	29	1	0	0	0	0	0	0	0	0	0	0	0	0	25	19	44
	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17	0	0	0	0	0	0	0	0	0	0	0	0	0	11	8	19
	WBT	0	0	1	0	0	1	0	0	1	1	1	0	1	0	0	11	1	2	0	4	3	1	2	0	0	0	2	0	0	0	0	1	1	31	3	1	1	14	81	4	1	0	0	3	0	1	0	0	0	0	1	2	96	81	177
	WBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	0	0	0	0	0	0	0	0	0	0	0	0	0	16	12	28
	NBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	7	1	0	0	0	61	1	0	0	0	0	0	0	0	0	0	0	0	0	43	37	80
	NBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	56	0	0	0	0	0	0	0	0	0	0	0	0	0	36	28	64
	NBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	28	0	0	0	0	0	0	0	0	0	0	0	0	0	18	14	32
	SBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	8	5	13
	SBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	0	0	0	0	0	0	0	0	0	0	0	0	0	16	12	28
	SBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	4	4	8
	OVERALL	0	0	1	0	0	2	0	0	2	1	2	0	2	0	1	53	4	4	0	8	6	2	3	0	0	0	3	0	0	0	0	1	2	88	13	1	1	29	381	12	2	0	0	6	0	2	0	0	0	0	2	4	350	288	638
INTERSECTION #24: Governor Rd (SR 0322) and Centerview Ln	EBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2
	EBT	0	0	0	0	0	1	0	0	1	1	1	0	0	0	0	7	2	2	0	3	2	1	1	0	0	0	1	0	0	0	0	0	1	28	5	0	0	13	44	4	1	0	0	3	0	1	0	0	0	0	1	2	68	58	126
	EBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0	0	1	37	0	0	0	0	0	0	0	0	0	0	0	0	0	27	22	49
	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22	0	0	0	0	0	0	0	0	0	0	0	0	0	14	11	25
	WBT	0	0	0	0	0	1	0	0	1	1	1	0	0	0	0	6	1	2	0	3	3	1	2	0	0	0	2	0	0	0	0	1	1	28	3	0	0	12	37	4	1	0	0	2	0	1	0	0	0	0	1	1	61	55	116
	WBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	3
	NBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	1	81	0	0	0	0	0	0	0	0	0	0	0	0	0	54	43	97
	NBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19	0	0	0	0	0	0	0	0	0	0	0	0	0	13	9	22
	NBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	46	0	0	0	0	0	0	0	0	0	0	0	0	0	29	23	52
	SBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
	SBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	5	4	9
	SBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
	OVERALL	0	0	0	0	0	2	0	0	2	2	2	0	0	0	0	43	3	4	0	8	5	2	3	0	0	0	3	0	0	0	0	1	2	64	9	0	0	27	299	8	2	0	0	5	0	2	0	0	0	0	2	3	275	228	503
INTERSECTION #25: Rt. 322 and Cherry Dr	EBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
	EBT	0	0	0	0	0	1	0	0	1	1	1	0	0	0	0	9	2	3	0	2	2	1	1	0	0	0	1	1	0	0	0	0	1	22	4	0	0	10	61	3	2	0	0	2	0	1	0	0	0	0	1	1	74	60	134
	EBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	6	1	0	0	3	26	1	0	0	0	0	0	0	0	0	0	0	0	0	23	21	44
	WBL	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	3	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	21	0	0	0	0	0	0	0	0	0	0	0	0	0	15	14	29
	WBT	0	0	0	0	0	1	0	0	1	2	1	0	0	0	0	4	1	3	0	3	2	1	1	0	0	0	1	0	0	0	0	0	1	22	2	0	0	9	26	3	1	0	0	2	0	1	0	0	0	0	1	1	49	41	90
	WBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
	NBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	6	1	0	0	3	31	1	0	0	0	0	0	0	0	0	0	0	0	0	26	23	49
	NBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	5	3	8
	NBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	45	0	0	0	0	0	0	0	0	0	0	0	0	0	29	25	54
	SBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	3
	SBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	OVERALL	0	0	0	0	0	3	0	0	2	3	2	0	0	0	0	32	3	6	0	9	8	2	4	0	0	0	2	1	0	0	0	0	2	58	8	0	0	25	222	8	3	0	0	4	0	2	0	0	0	0	2	2	223	190	413
INTERSECTION #26: Governor Rd (SR 0322) and Fishburn Rd (SR 2011) / Hockersville Rd (SR 2011)	EBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	1	6	1	0	0	0	0	0	0	0	0	0	0	0	0	6	6	12
	EBT	0	0	0	0	0	1	0	0	1	1	1	0	0	0	0	11	1	3	0	1	1	0	1	0	0	0	1	1	0	0	0	0	0	18	3	0	0	8	81	2	2	0	0	2	0	1	0	0	0	0	1	1	80	63	143
	EBR	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	4	1	0	0	1	16	0	0	0	0	0	0	0	0	0	0	0	0	0	14	14	28
	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	3
	WBT	0	0	0	0	0	1	0	0	1	2	1	0	0	0	0	5	0	3	0	3	2	1	1	0	0	0	1	0	0	0	0	0	0	17	2	0	0	7	35	2	2	0	0	1	0	1	0	0	0	0	1	1	50	40	90
	WBR	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	4	2	0	0	0	2	3	1	1	0	0	1	2	0	0	0	0	1	1	14	11	25
	NBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	4	0	0	0	1	7	0	0	0	1	0	0	0	0	0	0	0	0	0	8	9	17
	NBT	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	1	0	1	1	0	0	0	0	0	2	0	0	0	0	1	0	6	2	0	0	0	2	3	0	2	1	0	1	3	0	0	0	0	1	1	18	14	32
	NBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
	SBL	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	4	4	0	0	0	3	3	1	1	0	0	1	2	0	0	0	0	1	1	16	12	28
	SBT	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0	1	2	1	0	1	1	0	1	0	0	0	1	0	0	0	0	0	0	6	5	0	0	0	5	3	0	1	0	0	1	3	0	0	0	0	2	1	22	17	39
	SBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	1	3	1	0	0	0	0	0	0	0	0	0	0	0	0	4	4	8
	OVERALL	0	0	0	0	0	4	0	0	2	5	6	2	2	0	0	21	7	14	0	9	8	1	5	0	0	0	8	1	0	0	0	1	0	67	21	0	0	19	160	18	6	5	2	3	4	12	0	0	0	0	7	6	235	191	426

INTERSECTION	MOVEMENT	E-2	E-20	E-8	E-9	E-4	E-5	E-19	E-6	E-7	E-14	E-10	E-11	E-13	E-1	E-18	E-3	E-12	E-15	E-17	R-1	R-2	R-3	R-4	R-5	R-9	R-10	R-12	R-14	R-15	R-16	R-17	R-18	MU-1	MU-2	MU-3	MU-6	C-1	C-2	C-3	C-4	C-5	C-6	C-7	C-8	C-9	C-10	C-11	C-12	C-13	C-14	C-15	C-16	2028	Post 2028	Total
INTERSECTION #27: Sand Hill Rd and Cherry Dr / Private Drive	EBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	EBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	EBR	0	1	0	0	0	3	0	0	1	0	0	0	0	0	0	7	1	1	0	7	6	2	3	0	0	0	0	0	0	0	0	0	0	10	2	0	0	3	46	2	0	0	0	1	0	1	0	0	0	0	0	1	47	51	98
	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NBL	0	1	0	0	0	2	0	0	1	0	0	0	0	0	0	4	0	1	0	4	4	1	2	0	0	0	0	0	0	0	0	0	0	10	1	0	0	3	26	2	0	0	0	1	0	1	0	0	0	0	0	1	32	33	65
	NBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	OVERALL	0	2	0	0	0	5	0	0	2	0	0	0	0	0	0	11	1	2	0	11	10	3	5	0	0	0	0	0	0	0	0	0	0	20	3	0	0	6	72	4	0	0	0	2	0	2	0	0	0	0	0	2	78	85	163
INTERSECTION #28: Fishburn Rd (SR 2011) and Sand Hill Rd	EBL	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	1	0	0	0	0	0	0	0	0	0	0	4	1	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	5	9	14
	EBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	EBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	44	0	0	0	0	0	0	0	0	0	0	0	0	0	28	22	50
	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19	0	0	0	0	0	0	0	0	0	0	0	0	0	13	11	24
	NBT	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	1	2	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	6	2	0	0	1	6	3	1	1	2	0	1	3	0	0	0	0	1	1	22	14	36
	NBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SBT	1	0	0	0	0	0	0	0	0	1	1	1	0	0	0	2	2	2	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	6	4	0	0	1	14	3	1	1	1	0	1	3	0	0	0	0	1	1	29	19	48
	SBR	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	1	1	0	0	0	0	0	0	0	0	0	0	4	1	0	0	0	4	1	0	0	0	0	0	1	0	0	0	0	0	0	6	14	20
	OVERALL	1	0	0	0	0	2	0	0	0	2	2	2	0	0	0	12	3	4	0	6	6	1	2	0	0	0	2	0	0	0	0	0	0	20	8	0	0	2	89	8	2	2	3	0	2	7	0	0	0	0	2	2	103	89	192
INTERSECTION #29: W. Governor Road (SR 322) / E. Governor Road (SR 322) and Cocoa Ave	EBL	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	4	0	1	0	0	0	0	1	0	0	0	0	0	0	7	3	10
	EBT	0	0	0	0	0	1	0	0	1	1	1	1	1	0	1	11	3	4	1	2	2	0	1	0	0	0	2	1	0	0	0	0	0	20	6	0	0	7	81	5	2	1	0	1	1	3	0	0	0	0	2	2	93	72	165
	EBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	4
	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WBT	0	0	0	0	0	1	0	0	1	3	1	1	1	0	0	5	1	5	1	3	3	1	1	0	0	0	2	1	0	0	0	1	1	19	3	0	0	7	35	4	2	1	0	1	1	2	0	0	0	0	1	1	62	48	110
	WBR	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	6	1	7
	NBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2
	NBT	0	0	0	0	0	0	0	0	0	1	7	2	1	0	0	0	1	5	1	0	0	0	0	0	0	0	3	1	0	0	0	0	0	3	2	0	0	0	2	2	3	3	1	0	1	6	0	0	0	0	2	1	35	13	48
	NBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SBL	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	1	0	7	1	8
	SBT	0	0	0	0	0	0	0	0	0	4	5	2	1	0	1	0	3	6	1	0	0	0	0	0	0	0	2	1	0	0	0	0	0	3	3	0	0	0	2	2	3	3	0	0	1	7	0	0	0	0	7	1	44	14	58
	SBR	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2	0	1	0	0	0	0	1	0	0	0	0	1	0	7	2	9
	OVERALL	0	0	0	0	0	2	0	0	2	12	18	6	4	0	2	17	8	26	4	5	5	1	2	0	0	0	9	4	0	0	0	1	1	51	14	0	0	14	130	13	14	8	1	2	4	22	0	0	0	0	14	5	265	156	421
INTERSECTION #30: E Governor Road and Homestead Road	EBL	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	0	5	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	1	0	0	1	9	1	3	0	0	0	0	1	0	0	0	0	0	0	19	9	28
	EBT	0	0	0	0	0	1	0	0	1	1	1	1	1	0	1	10	3	1	0	2	1	0	1	0	0	0	1	0	0	0	0	0	0	17	6	0	0	6	70	4	1	1	1	1	1	3	0	0	0	0	2	2	80	61	141
	EBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WBT	0	0	0	0	0	1	0	0	1	0	2	1	1	0	0	5	1	1	0	3	2	1	1	0	0	0	2	0	0	0	0	1	0	17	3	0	0	6	30	4	1	1	0	1	1	3	0	0	0	0	1	1	49	43	92
	WBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	0	2
	NBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NBT	0	0	0	0	0	0	1	0	0	2	1	0	0	0	0	0	0	7	1	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	1	0	0	0	0	0	0	17	3	20
	NBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SBL	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	4	0	4
	SBT	0	0	0	0	0	0	0	0	0	5	1	0	0	0	0	0	0	8	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	1	0	0	0	0	1	0	21	1	22
	SBR	0	0	0	0	0	0	0	0	0	3	1	0	0	0	0	1	0	5	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	0	0	1	4	1	3	0	0	0	0	1	0	0	0	0	1	0	19	6	25
	OVERALL	0	0	0	0	0	2	1	0	2	13	7	2	2	0	1	17	4	30	4	5	3	1	2	0	0	0	4	5	0	0	0	1	0	38	10	0	0	14	113	10	18	2	1	2	2	10	0	0	0	0	5	3	211	123	334
INTERSECTION #31: Fishburn Rd and Cocoa Ave	EBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	EBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	EBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WBL	1	0	0	0	0	0	0	0	0	3	4	2	1	0	1	0	2	5	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	3	2	0	0	0	3	2	3	2	1	0	1	5	0	0	0	0	5	1	39	11	50
	WBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WBR	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	1	0	0	0	0	0	1	0	0	0	0	1	0	5	3	8
	NBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NBT	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	3	1	1	0	1	1	0	0	0	0	0	1	0	0	0	0	0	0	5	2	0	0	1	19	2	0	1	2	0	0	1	0	0	0	0	0	1	25	19	44
	NBR	0	0	0	0	0	0	0	0	0	1	5	2	1	0	0	0	1	5	1	0	0	0	0	0	0	0	2	1	0	0	0	0	0	3	1	0	0	0	1	2	3	2	1	0	1	5	0	0	0	0	1	1	29	11	40
	SBL	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	3	1	0	0	0	0	0	1	0	0	0	0	0	0	5	4	9
	SBT	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	1	1	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	5	3	0	0	1	44	2	0	1	1	0	0	2	0	0	0	0	1	1	41	31	72
	SBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	OVERALL	3	0	0	0	0	0	0	0	0	4	12	4	2	0	1	9	5	14	2	2	1	0	0	0	0	0	5	2	0	0	0	0	0	18	10	0	0	2	71	10	6	6	5	0	2	15	0	0	0	0	8	4	144	79	223
INTERSECTION #32: Fishburn Rd and Church Rd /	EBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	1	0	0	0	0	0	0	5	0	5
	EBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	EBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NBT	1	0	0	0	0	0	0	0	0	1	5	2	1	0	0	3	1	5	1	1	1	0	0	0	0	0	3	1	0	0	0	1	0	7	3	0	0	1	19	4	3	3	0	0	1	6	0	0	0	0	1	1	47	29	76
	NBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SBT	1	0	0	0	0	0	0	0	0	3	4	2	1	0	1	6	3	6	1	1	0	0	0	0	0	0	2	1	0	0	0	0	0	7	5	0	0	1	44	4	3	3	0	0	1	6	0	0	0	0	6	1	73	40	113
	SBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	1	0	0	0	0	0	0	2	1	3
	OVERALL	2	0	0	0	0	0	0	0	0	4	9	4	2	0	1	9	4	11	2	2	1	0	0	0	0	0	5	2	0	0	0	1	0	14	8	0	0	2	64	8	6	6	5	0	2	14	0	0	0	0	7	2	127	70	197
INTERSECTION #33: Main St &	EBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	EBT	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	2	0	0	0	3	11	0	4	10	0	0	1	2	4	0	2	0	1	0	1	0	2	0	1	0	3	32	17	49
	EBR	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	9	0	1	0	5	2	0	0	0	0	2	0	0	0	0	1	0	0	0	12	10	22
	WBL	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	0	0	0	1	4	1	19	12	1	1	9	2	2	0	1	0	3	0	0	0	1	1	1	1	2	40	27	67
	WBT	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2	0	0	0	0	0	0	0	0	0	1	0	0	0	2	6	0	4	21	0	0	1	4	4	0	2	0	1	0	1	0	2	0	1	1	3	34	24	58
	WBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	0	2	10	0	0	0	1	2	0	1	0	0	0	0	0	1	0	0	0	2	15	9	24
	NBL	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	10	1	1	0	5	3	0	0	0	0	2	0	0	0	0	0	0	0	0	13	11	24
	NBT	0	0	1	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2	29	2	2	1	16	10	0	0	0	0	6	0	0	0	0	1	0	0	0	40	33	73
	NBR	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	7	1	19	6	1	0	10	1	2	0	1	0	4	0	0	0	1	1	1	0	2	38	24	62
	SBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	5	0	2	5	0	0	0	0	2	0	1	0	0	0	0	0	1	0	1	0	1	13	7	20
	SBT	0	0	1	1	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2	28	1	2	1	15	5	0	0	0	0	6	0	0	0	0	2	0	0	0	38	29	67
	SBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	OVERALL	0	0	3	1	0	0	0	0	9	0	0	0	2	0	0	1	5	0	0	0	0	0	0	0	3	0	6	0	0	0	10	36	8	126	68	8	3	62	30	16	0	8	0	25	0	2	0	8	6	5	2	13	276	190	466
INTERSECTION #34: Main St &	EBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	EBT	0	0	0	0	0	0	0	0	1	0	1	1	1	0	0	1	2	1	0	1	1	0	0	0	0	0	4	0	0	0	7	10	1	14	27	0	0	6	5	9	0	6	0	2	0	2	0	5	0	4	1	7	74	46	120
	EBR	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	8	0	0	0	1	1	0	0	0	0	2	0	0	0	0	0	0	0	0	10	6	16
	WBL	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	12	11	2	1	2	3	2	0	1	0	3	0	0	0	1	0	0	0	2	24	21	45
	WBT	0	0	0	0	0	0	0	0	1	0	1	1	1	0	1	2	5	1	0	0	0	0	0	0	0	0	3	0	0	0	4	17	1	14	53	1	0	6	11	10	0	6	0	2	0	2	0	5	0	2	3	9	98	64	162
	WBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NBL	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	1	8	0	0	0	1	3	0	0	0	0	2	0	0	0	0	0	0	0	0	13	7	20
	NBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
	NBR	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	12	6	1	0	3	5	2	0	1	0	3	0	0	0	1	0	1	0	1	21	19	40
	SBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
	SBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	OVERALL	0	0	0	0	0	0	0	0	6	0	2	2	2	0	1	3	8	2	0	1	1	0	0	0	0	0	9	0	0	0	13	33	6	70	97	4	1	19	28	23	0	14	0	14	0	4	0	12	0	7	4	19	242	163	405

INTERSECTION	MOVEMENT	E-2	E-20	E-8	E-9	E-4	E-5	E-19	E-6	E-7	E-14	E-10	E-11	E-13	E-1	E-18	E-3	E-12	E-15	E-17	R-1	R-2	R-3	R-4	R-5	R-9	R-10	R-12	R-14	R-15	R-16	R-17	R-18	MU-1	MU-2	MU-3	MU-6	C-1	C-2	C-3	C-4	C-5	C-6	C-7	C-8	C-9	C-10	C-11	C-12	C-13	C-14	C-15	C-16	2028	Post 2028	Total
INTERSECTION #35: Middletown &	EBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	EBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	EBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WBL	0	0	2	0	0	1	0	1	4	0	0	0	0	0	0	4	1	0	0	2	2	1	1	6	2	0	0	0	0	0	0	0	3	14	0	30	2	97	1	1	0	0	6	9	0	0	4	0	0	0	0	0	0	97	97	194
	WBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2	0	3	0	65	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	36	36	72
	NBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NBT	0	0	5	4	0	0	0	0	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	2	0	0	0	0	1	3	14	10	3	12	5	0	2	1	0	1	0	47	0	0	2	1	2	0	0	1	76	63	139
	NBR	0	0	0	0	0	1	0	1	1	0	0	0	0	0	0	2	0	0	0	4	3	1	2	10	0	0	0	0	0	0	0	0	1	13	0	35	0	90	0	1	0	0	2	2	0	0	2	0	0	0	0	0	0	74	97	171
	SBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2	0	3	0	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32	34	66
	SBT	0	0	8	2	0	0	0	0	17	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	8	2	0	0	0	0	1	2	15	10	6	16	9	0	4	1	0	1	0	44	0	0	1	1	1	0	0	1	85	66	151
	SBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	OVERALL	0	0	15	6	0	2	0	2	40	0	0	0	0	0	0	6	2	0	0	6	5	2	3	18	15	4	0	0	0	0	2	5	33	51	9	99	16	312	7	4	0	2	9	102	0	0	9	2	3	0	0	2	399	394	793
INTERSECTION #36: Waltonville and	EBL	0	0	2	1	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	0	0	0	1	2	5	1	3	5	2	0	0	1	0	1	0	17	0	0	1	1	0	0	0	1	30	25	55
	EBT	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	117	0	0	0	0	15	0	0	0	0	2	0	0	0	0	0	0	0	0	81	54	135
	EBR	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	3	4	7
	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	34	0	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	26	17	43
	WBT	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	119	0	0	0	0	34	0	0	0	0	1	0	0	0	0	0	0	0	0	93	63	156
	WBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	110	1	0	0	0	31	0	0	0	0	0	0	0	0	0	0	0	0	0	85	58	143
	NBL	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	2	1	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	6	4	10
	NBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	2	1	4	0	16	0	1	0	0	1	1	0	0	1	0	0	0	0	0	14	15	29
	NBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	33	0	0	0	16	4	0	0	0	0	0	0	0	0	0	0	0	0	0	30	23	53
	SBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	108	2	0	0	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	75	49	124
	SBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	2	3	5	0	15	0	1	0	0	0	1	0	0	0	0	0	0	0	1	13	18	31
	SBR	0	0	3	2	0	0	0	0	6	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	3	1	0	0	0	0	0	1	6	1	6	7	3	0	0	1	0	1	0	16	0	0	0	1	0	0	0	1	35	26	61
	OVERALL	0	0	6	3	0	0	0	0	17	0	0	0	0	0	0	2	1	0	0	1	0	0	0	2	6	2	1	0	0	0	2	5	13	527	16	25	6	47	107	4	0	2	1	44	0	0	2	2	0	0	0	3	489	358	847
INTERSECTION #37: Cherry Way &	EBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	75	0	0	0	0	0	0	0	0	0	0	0	0	0	48	38	86
	EBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	41	0	0	0	0	0	0	0	0	0	0	0	0	0	27	20	47
	EBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	27	0	0	0	0	0	0	0	0	0	0	0	0	0	18	15	33
	WBL	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	1	0	0	0	4	3	1	2	0	0	0	0	0	0	0	0	0	0	4	1	0	0	0	4	1	0	0	0	0	0	1	0	0	0	0	0	0	8	16	24
	WBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18	0	0	0	0	0	0	0	0	0	0	0	0	0	12	9	21
	WBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	8	5	13
	NBT	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	2	2	0	1	0	0	0	0	0	0	0	0	0	0	6	1	0	0	2	8	1	0	0	0	0	0	0	0	0	0	0	0	0	11	14	25
	NBR	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	2	2	1	1	0	0	0	0	0	0	0	0	0	0	4	1	0	0	0	5	1	0	0	0	0	0	1	0	0	0	0	0	0	8	12	20
	SBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SBT	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2	1	1	0	0	0	0	0	0	0	0	0	0	6	1	0	0	2	14	1	0	0	0	0	0	0	0	0	0	0	0	0	15	18	33
	SBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	35	0	0	0	0	0	0	0	0	0	0	0	0	0	23	18	41
	OVERALL	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	35	0	0	0	11	10	3	5	0	0	0	0	0	0	0	0	0	0	22	4	0	0	4	238	4	0	0	0	0	0	2	0	0	0	0	0	0	177	166	343

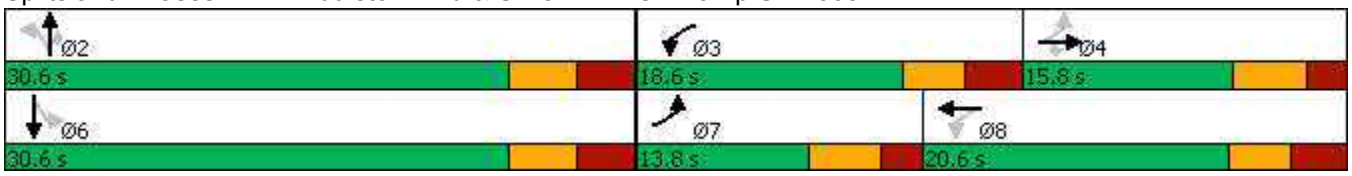
APPENDIX G
2028 AM INTERSECTION CAPACITY ANALYSIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	193	207	281	462	0	184	0	493	433	27	509	1
Future Volume (vph)	193	207	281	462	0	184	0	493	433	27	509	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	11	12	12	12
Grade (%)		0%			3%			4%			-1%	
Storage Length (ft)	230		150	150		0	0		0	0		0
Storage Lanes	1		1	1		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.850				0.850			
Flt Protected	0.950			0.950							0.997	
Satd. Flow (prot)	1693	1800	1530	1651	1507	0	0	1747	1421	0	1804	0
Flt Permitted	0.638			0.339							0.889	
Satd. Flow (perm)	1137	1800	1530	589	1507	0	0	1747	1421	0	1608	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			181		261				446			
Link Speed (mph)		35			45			35			25	
Link Distance (ft)		830			1331			2061			1362	
Travel Time (s)		16.2			20.2			40.1			37.1	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	0%	0%	2%	0%	0%	0%	1%	2%	0%	0%	0%
Adj. Flow (vph)	199	213	290	476	0	190	0	508	446	28	525	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	199	213	290	476	190	0	0	508	446	0	554	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.09	1.09	1.09	1.10	1.10	1.15	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	1	1	1		1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Main30	Right	Left	Main30	
Leading Detector (ft)	48	48	48	48	48		48	300	48	48	300	
Trailing Detector (ft)	-2	-2	-2	-2	-2		-2	0	-2	-2	0	
Detector 1 Position(ft)	-2	-2	-2	-2	-2		-2	0	-2	-2	0	
Detector 1 Size(ft)	50	50	50	50	50		50	0	50	50	0	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)								294			294	
Detector 2 Size(ft)								6			6	
Detector 2 Type								Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)								0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	Perm	pm+pt	NA			NA	Perm	Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4		4	8			2		2	6		
Detector Phase	7	4	4	3	8		2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	3.0	10.0	10.0	10.0	10.0		3.0	3.0	3.0	3.0	3.0	
Minimum Split (s)	8.5	15.8	15.8	15.8	15.8		30.2	30.2	30.2	30.2	30.2	
Total Split (s)	13.8	15.8	15.8	18.6	20.6		30.6	30.6	30.6	30.6	30.6	
Total Split (%)	21.2%	24.3%	24.3%	28.6%	31.7%		47.1%	47.1%	47.1%	47.1%	47.1%	
Maximum Green (s)	8.3	10.2	10.2	12.8	14.8		24.4	24.4	24.4	24.4	24.4	
Yellow Time (s)	3.5	3.6	3.6	3.0	3.0		3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	2.0	2.0	2.0	2.8	2.8		2.9	2.9	2.9	2.9	2.9	
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	-1.5			-1.5	-1.5		-1.5	
Total Lost Time (s)	4.0	4.1	4.1	4.3	4.3			4.7	4.7		4.7	
Lead/Lag	Lead	Lag	Lag	Lead	Lag							
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None		Min	Min	Min	Min	Min	
Act Effct Green (s)	21.2	11.7	11.7	30.1	16.6			25.0	25.0		25.0	
Actuated g/C Ratio	0.33	0.18	0.18	0.47	0.26			0.39	0.39		0.39	
v/c Ratio	0.43	0.65	0.68	0.93	0.33			0.75	0.54		0.88	
Control Delay	14.4	35.7	19.7	42.7	2.7			25.0	4.3		37.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0			0.0	0.0		0.0	
Total Delay	14.4	35.7	19.7	42.7	2.7			25.0	4.3		37.0	
LOS	B	D	B	D	A			C	A		D	
Approach Delay		23.1			31.3			15.4			37.0	
Approach LOS		C			C			B			D	

Intersection Summary	
Area Type:	Other
Cycle Length: 65	
Actuated Cycle Length: 64.1	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 25.1	Intersection LOS: C
Intersection Capacity Utilization 101.0%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 1: Middletown Rd & SR 322 EB Off Ramp/SR 2003



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	193	207	281	462	0	184	0	493	433	27	509	1
Future Volume (veh/h)	193	207	281	462	0	184	0	493	433	27	509	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1786	1800	1800	1722	1750	1750	1697	1697	1683	1837	1837	1837
Adj Flow Rate, veh/h	199	213	0	476	0	190	0	508	446	28	525	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	0	0	2	0	0	1	1	2	0	0	0
Cap, veh/h	533	318		547	0	386	0	676	568	70	560	1
Arrive On Green	0.14	0.18	0.00	0.22	0.00	0.26	0.00	0.40	0.40	0.40	0.40	0.40
Sat Flow, veh/h	1701	1800	1525	1640	0	1483	0	1697	1426	30	1406	3
Grp Volume(v), veh/h	199	213	0	476	0	190	0	508	446	554	0	0
Grp Sat Flow(s),veh/h/ln	1701	1800	1525	1640	0	1483	0	1697	1426	1438	0	0
Q Serve(g_s), s	5.9	7.2	0.0	14.3	0.0	7.1	0.0	16.7	17.8	8.1	0.0	0.0
Cycle Q Clear(g_c), s	5.9	7.2	0.0	14.3	0.0	7.1	0.0	16.7	17.8	24.8	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.00		1.00	0.05		0.00
Lane Grp Cap(c), veh/h	533	318		547	0	386	0	676	568	631	0	0
V/C Ratio(X)	0.37	0.67		0.87	0.00	0.49	0.00	0.75	0.78	0.88	0.00	0.00
Avail Cap(c_a), veh/h	549	324		547	0	386	0	676	568	631	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	17.1	25.0	0.0	16.5	0.0	20.4	0.0	16.8	17.1	18.4	0.0	0.0
Incr Delay (d2), s/veh	0.4	5.1	0.0	14.2	0.0	1.0	0.0	4.7	7.1	13.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.8	5.9	0.0	10.9	0.0	4.0	0.0	10.7	9.8	15.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.6	30.1	0.0	30.7	0.0	21.4	0.0	21.5	24.2	31.7	0.0	0.0
LnGrp LOS	B	C		C	A	C	A	C	C	C	A	A
Approach Vol, veh/h		412	A		666			954			554	
Approach Delay, s/veh		24.0			28.0			22.8			31.7	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	30.6	18.6	15.8	30.6	13.2	21.2
Change Period (Y+Rc), s	* 6.2	* 5.8	* 5.8	* 6.2	5.5	* 5.8
Max Green Setting (Gmax), s	* 24	* 13	* 10	* 24	8.3	* 15
Max Q Clear Time (g_c+I1), s	19.8	16.3	9.2	26.8	7.9	9.1
Green Ext Time (p_c), s	3.1	0.0	0.1	0.0	0.0	0.3

Intersection Summary	
HCM 6th Ctrl Delay	26.2
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	16	1025	222	0	1209
Future Volume (vph)	0	16	1025	222	0	1209
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	10	12	12	12	12
Grade (%)	1%		-3%			3%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95
Frt	0.865		0.976			
Flt Protected						
Satd. Flow (prot)	1446	0	1754	0	0	3335
Flt Permitted						
Satd. Flow (perm)	1446	0	1754	0	0	3335
Link Speed (mph)	35		35			35
Link Distance (ft)	609		1026			507
Travel Time (s)	11.9		20.0			9.9
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	1%	0%	2%	0%	0%	1%
Adj. Flow (vph)	0	17	1068	231	0	1259
Shared Lane Traffic (%)						
Lane Group Flow (vph)	17	0	1299	0	0	1259
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	10		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.18	1.18	1.05	1.05	1.09	1.09
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 81.2%	ICU Level of Service D
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	16	1025	222	0	1209
Future Vol, veh/h	0	16	1025	222	0	1209
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	1	-	-3	-	-	3
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	1	0	2	0	0	1
Mvmt Flow	0	17	1068	231	0	1259

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1814	1184	0	0	-	-
Stage 1	1184	-	-	-	-	-
Stage 2	630	-	-	-	-	-
Critical Hdwy	6.815	6.3	-	-	-	-
Critical Hdwy Stg 1	5.615	-	-	-	-	-
Critical Hdwy Stg 2	6.015	-	-	-	-	-
Follow-up Hdwy	3.5095	3.3	-	-	-	-
Pot Cap-1 Maneuver	71	225	-	-	0	-
Stage 1	273	-	-	-	0	-
Stage 2	479	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	71	225	-	-	-	-
Mov Cap-2 Maneuver	71	-	-	-	-	-
Stage 1	273	-	-	-	-	-
Stage 2	479	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	22.3	0	0
HCM LOS	C		

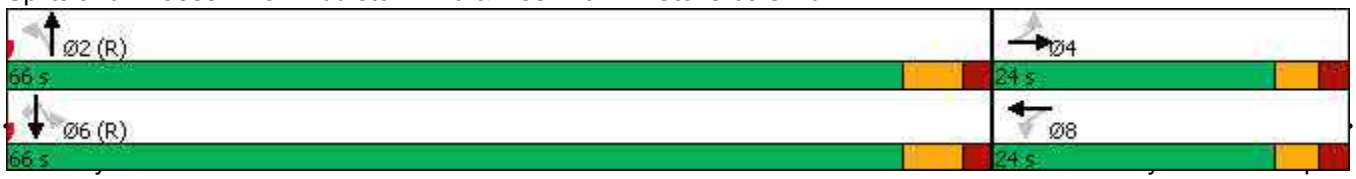
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	225	-
HCM Lane V/C Ratio	-	-	0.074	-
HCM Control Delay (s)	-	-	22.3	-
HCM Lane LOS	-	-	C	-
HCM 95th %tile Q(veh)	-	-	0.2	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	107	15	32	126	62	58	50	1151	32	34	1140	153
Future Volume (vph)	107	15	32	126	62	58	50	1151	32	34	1140	153
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	11	12	12	11	14	13
Grade (%)		3%			4%			-1%			-2%	
Storage Length (ft)	125		0	125		0	135		140	100		0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00				0.99							
Frt		0.898			0.927			0.996				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1684	1500	0	1676	1618	0	1661	1784	0	1670	1920	1597
Flt Permitted	0.586			0.724			0.079			0.061		
Satd. Flow (perm)	1037	1500	0	1277	1618	0	138	1784	0	107	1920	1597
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		34			49			4				163
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		1291			1010			1123			1026	
Travel Time (s)		35.2			27.5			21.9			20.0	
Confl. Peds. (#/hr)	1					1						
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	9%	0%	0%	0%	0%	1%	0%	0%	1%	0%
Adj. Flow (vph)	114	16	34	134	66	62	53	1224	34	36	1213	163
Shared Lane Traffic (%)												
Lane Group Flow (vph)	114	50	0	134	128	0	53	1258	0	36	1213	163
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.10	1.10	1.10	1.11	1.07	1.07	1.11	0.97	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	2		1	2	1
Detector Template												
Leading Detector (ft)	38	38		38	38		0	230		0	230	0
Trailing Detector (ft)	-2	-2		-2	-2		0	0		0	0	0
Detector 1 Position(ft)	-2	-2		-2	-2		0	0		0	0	0
Detector 1 Size(ft)	40	40		40	40		0	0		0	0	0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)								224			224	
Detector 2 Size(ft)								6			6	
Detector 2 Type								Cl+Ex			Cl+Ex	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)								0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0		16.0	16.0		16.0	16.0	16.0
Minimum Split (s)	24.0	24.0		24.0	24.0		24.0	24.0		24.0	24.0	24.0
Total Split (s)	24.0	24.0		24.0	24.0		66.0	66.0		66.0	66.0	66.0
Total Split (%)	26.7%	26.7%		26.7%	26.7%		73.3%	73.3%		73.3%	73.3%	73.3%
Maximum Green (s)	18.9	18.9		18.9	18.9		60.0	60.0		60.0	60.0	60.0
Yellow Time (s)	3.0	3.0		3.0	3.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.1	2.1		2.1	2.1		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-1.5	-1.5		-1.5	-1.5		-1.5	-1.5		-1.5	-1.5	-1.5
Total Lost Time (s)	3.6	3.6		3.6	3.6		4.5	4.5		4.5	4.5	4.5
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		6.0	6.0		6.0	6.0	6.0
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0		25.0	25.0		25.0	25.0	25.0
Time To Reduce (s)	0.0	0.0		0.0	0.0		15.0	15.0		15.0	15.0	15.0
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	C-Max
Act Effct Green (s)	15.8	15.8		15.8	15.8		66.1	66.1		66.1	66.1	66.1
Actuated g/C Ratio	0.18	0.18		0.18	0.18		0.73	0.73		0.73	0.73	0.73
v/c Ratio	0.63	0.17		0.60	0.40		0.52	0.96		0.46	0.86	0.13
Control Delay	49.2	15.6		44.8	23.3		25.8	26.8		24.5	14.0	0.6
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	49.2	15.6		44.8	23.3		25.8	26.8		24.5	14.0	0.6
LOS	D	B		D	C		C	C		C	B	A
Approach Delay		38.9			34.3			26.7			12.7	
Approach LOS		D			C			C			B	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 7.3 (8%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.96	
Intersection Signal Delay: 21.7	Intersection LOS: C
Intersection Capacity Utilization 87.1%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 3: Middletown Rd & Deer Run Dr/Stoverdale Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	107	15	32	126	62	58	50	1151	32	34	1140	153
Future Volume (veh/h)	107	15	32	126	62	58	50	1151	32	34	1140	153
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1750	1750	1750	1711	1711	1711	1837	1823	1823	1875	1935	1950
Adj Flow Rate, veh/h	114	16	34	134	66	62	53	1224	34	36	1213	163
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	1	1	0	1	0
Cap, veh/h	240	99	211	305	161	152	370	1255	35	106	1375	1174
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.71	0.71	0.71	1.00	1.00	1.00
Sat Flow, veh/h	1245	498	1058	1305	810	761	409	1765	49	467	1935	1652
Grp Volume(v), veh/h	114	0	50	134	0	128	53	0	1258	36	1213	163
Grp Sat Flow(s),veh/h/ln	1245	0	1556	1305	0	1571	409	0	1814	467	1935	1652
Q Serve(g_s), s	7.9	0.0	2.4	8.5	0.0	6.4	3.9	0.0	58.9	5.1	0.0	0.0
Cycle Q Clear(g_c), s	14.3	0.0	2.4	10.9	0.0	6.4	3.9	0.0	58.9	64.0	0.0	0.0
Prop In Lane	1.00		0.68	1.00		0.48	1.00		0.03	1.00		1.00
Lane Grp Cap(c), veh/h	240	0	310	305	0	313	370	0	1289	106	1375	1174
V/C Ratio(X)	0.48	0.00	0.16	0.44	0.00	0.41	0.14	0.00	0.98	0.34	0.88	0.14
Avail Cap(c_a), veh/h	274	0	353	341	0	356	370	0	1289	106	1375	1174
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.6	0.0	29.8	34.3	0.0	31.4	4.3	0.0	12.3	30.1	0.0	0.0
Incr Delay (d2), s/veh	1.5	0.0	0.2	1.0	0.0	0.9	0.8	0.0	19.9	8.4	8.5	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.5	0.0	1.6	5.0	0.0	4.5	0.6	0.0	32.2	1.8	5.8	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.1	0.0	30.0	35.3	0.0	32.3	5.1	0.0	32.2	38.6	8.5	0.2
LnGrp LOS	D	A	C	D	A	C	A	A	C	D	A	A
Approach Vol, veh/h		164			262			1311			1412	
Approach Delay, s/veh		36.3			33.8			31.1			8.3	
Approach LOS		D			C			C			A	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	68.5	21.5	68.5	21.5
Change Period (Y+Rc), s	6.0	5.1	6.0	5.1
Max Green Setting (Gmax), s	60.0	18.9	60.0	18.9
Max Q Clear Time (g_c+I1), s	60.9	16.3	2.0	12.9
Green Ext Time (p_c), s	0.0	0.1	52.1	0.5

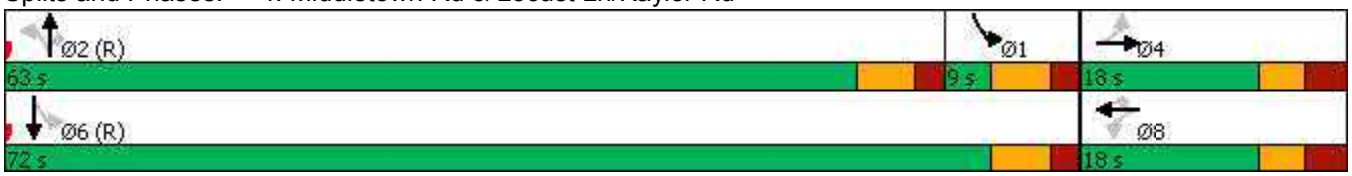
Intersection Summary	
HCM 6th Ctrl Delay	21.4
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	78	12	18	55	12	66	23	1111	25	76	1241	10
Future Volume (vph)	78	12	18	55	12	66	23	1111	25	76	1241	10
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	14	14	14	12	12	14	10	12	14	10	12	12
Grade (%)		0%			-3%			3%			-3%	
Storage Length (ft)	0		0	125		50	135		320	75		0
Storage Lanes	0		0	1		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.977				0.850			0.850		0.999	
Flt Protected		0.965		0.950			0.950			0.950		
Satd. Flow (prot)	0	1810	0	1736	1827	1656	1572	1755	1608	1620	1807	0
Flt Permitted		0.780		0.714			0.065			0.080		
Satd. Flow (perm)	0	1463	0	1304	1827	1656	108	1755	1608	136	1807	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10				109			109		1	
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		1378			1146			1358			921	
Travel Time (s)		37.6			31.3			26.5			17.9	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	1%	0%
Adj. Flow (vph)	81	13	19	57	13	69	24	1157	26	79	1293	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	113	0	57	13	69	24	1157	26	79	1303	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	1.05	1.05	0.97	1.19	1.09	1.01	1.15	1.05	1.05
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1	1	1	2	1	1	2	
Detector Template	Left							Main25	Right		Main25	
Leading Detector (ft)	48	38		38	38	38	38	250	48	38	250	
Trailing Detector (ft)	-2	-2		-2	-2	-2	-2	0	-2	-2	0	
Detector 1 Position(ft)	-2	-2		-2	-2	-2	-2	0	-2	-2	0	
Detector 1 Size(ft)	50	40		40	40	40	40	0	50	40	0	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)								244			244	
Detector 2 Size(ft)								6			6	
Detector 2 Type								Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)								0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8		8	2		2	6		
Detector Phase	4	4		8	8	8	2	2	2	1	6	
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0	3.0	15.0	15.0	15.0	3.0	15.0	
Minimum Split (s)	18.0	18.0		18.0	18.0	18.0	21.0	21.0	21.0	9.0	21.0	
Total Split (s)	18.0	18.0		18.0	18.0	18.0	63.0	63.0	63.0	9.0	72.0	
Total Split (%)	20.0%	20.0%		20.0%	20.0%	20.0%	70.0%	70.0%	70.0%	10.0%	80.0%	
Maximum Green (s)	12.0	12.0		12.0	12.0	12.0	57.0	57.0	57.0	3.0	66.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-1.5		-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	
Total Lost Time (s)		4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
Lead/Lag							Lead	Lead	Lead	Lag		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	6.0	6.0	6.0	3.0	6.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	4.0	4.0	4.0	3.0	4.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	30.0	30.0	30.0	0.0	30.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0	15.0	15.0	15.0	0.0	15.0	
Recall Mode	None	None		None	None	None	C-Max	C-Max	C-Max	None	C-Max	
Act Effct Green (s)		11.9		11.7	11.7	11.7	65.3	65.3	65.3	71.6	72.5	
Actuated g/C Ratio		0.13		0.13	0.13	0.13	0.73	0.73	0.73	0.80	0.81	
v/c Ratio		0.56		0.34	0.05	0.22	0.31	0.91	0.02	0.43	0.89	
Control Delay		44.1		40.5	33.6	4.3	20.3	26.9	0.0	19.6	17.8	
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay		44.1		40.5	33.6	4.3	20.3	26.9	0.0	19.6	17.8	
LOS		D		D	C	A	C	C	A	B	B	
Approach Delay		44.1			21.9			26.2			17.9	
Approach LOS		D			C			C			B	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 7.3 (8%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay: 22.7	Intersection LOS: C
Intersection Capacity Utilization 90.1%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 4: Middletown Rd & Locust Ln/Kaylor Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	78	12	18	55	12	66	23	1111	25	76	1241	10
Future Volume (veh/h)	78	12	18	55	12	66	23	1111	25	76	1241	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1872	1872	1872	1912	1912	1988	1750	1736	1820	1912	1898	1898
Adj Flow Rate, veh/h	81	12	19	57	12	69	24	1157	26	79	1293	10
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	1	0	0	1	1
Cap, veh/h	184	22	28	253	219	193	154	1128	1002	236	1477	11
Arrive On Green	0.11	0.11	0.11	0.11	0.11	0.11	0.65	0.65	0.65	0.09	0.79	0.79
Sat Flow, veh/h	1006	194	245	1487	1912	1685	417	1736	1542	1821	1880	15
Grp Volume(v), veh/h	112	0	0	57	12	69	24	1157	26	79	0	1303
Grp Sat Flow(s),veh/h/ln	1445	0	0	1487	1912	1685	417	1736	1542	1821	0	1895
Q Serve(g_s), s	6.2	0.0	0.0	0.0	0.5	3.4	4.5	58.5	0.5	0.0	0.0	42.5
Cycle Q Clear(g_c), s	6.7	0.0	0.0	3.1	0.5	3.4	47.0	58.5	0.5	0.0	0.0	42.5
Prop In Lane	0.72		0.17	1.00		1.00	1.00		1.00	1.00		0.01
Lane Grp Cap(c), veh/h	235	0	0	253	219	193	154	1128	1002	236	0	1488
V/C Ratio(X)	0.48	0.00	0.00	0.23	0.05	0.36	0.16	1.03	0.03	0.34	0.00	0.88
Avail Cap(c_a), veh/h	286	0	0	306	287	253	154	1128	1002	236	0	1488
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	38.3	0.0	0.0	36.7	35.5	36.8	32.3	15.7	5.6	37.6	0.0	6.6
Incr Delay (d2), s/veh	1.5	0.0	0.0	0.4	0.1	1.1	2.1	33.5	0.0	0.8	0.0	7.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.4	0.0	0.0	2.1	0.4	2.6	1.0	38.3	0.3	2.9	0.0	18.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.8	0.0	0.0	37.1	35.6	37.9	34.4	49.2	5.7	38.5	0.0	14.1
LnGrp LOS	D	A	A	D	D	D	C	F	A	D	A	B
Approach Vol, veh/h		112			138			1207			1382	
Approach Delay, s/veh		39.8			37.4			48.0			15.5	
Approach LOS		D			D			D			B	

Timer - Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	12.2	63.0		14.8		75.2		14.8
Change Period (Y+Rc), s	6.0	6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s	6.0	57.0		12.0		66.0		12.0
Max Q Clear Time (g_c+I1), s	2.0	60.5		8.7		44.5		5.4
Green Ext Time (p_c), s	0.0	0.0		0.1		21.1		0.2

Intersection Summary	
HCM 6th Ctrl Delay	31.3
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	59	147	35	49	27	396	20	277	21	104	313	0
Future Volume (vph)	59	147	35	49	27	396	20	277	21	104	313	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	10	10	10	10	10	10	10	10	10	10	10
Grade (%)		-1%			1%			-8%			11%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.981			0.887			0.991				
Flt Protected		0.988			0.995			0.997			0.988	
Satd. Flow (prot)	0	1627	0	0	1475	0	0	1705	0	0	1561	0
Flt Permitted		0.988			0.995			0.997			0.988	
Satd. Flow (perm)	0	1627	0	0	1475	0	0	1705	0	0	1561	0
Link Speed (mph)		35			30			35			35	
Link Distance (ft)		2048			1531			1852			607	
Travel Time (s)		39.9			34.8			36.1			11.8	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	1%	0%	0%	0%	0%	6%	1%	0%	2%	0%	0%
Adj. Flow (vph)	65	162	38	54	30	435	22	304	23	114	344	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	265	0	0	519	0	0	349	0	0	458	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.16	1.16	1.16	1.18	1.18	1.18	1.11	1.11	1.11	1.26	1.26	1.26
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 84.8%	ICU Level of Service E
Analysis Period (min) 15	

Intersection	
Intersection Delay, s/veh	81.9
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	59	147	35	49	27	396	20	277	21	104	313	0
Future Vol, veh/h	59	147	35	49	27	396	20	277	21	104	313	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	0	1	0	0	0	0	6	1	0	2	0	0
Mvmt Flow	65	162	38	54	30	435	22	304	23	114	344	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	31.1	115.5	48.6	98.7
HCM LOS	D	F	E	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	6%	24%	10%	25%
Vol Thru, %	87%	61%	6%	75%
Vol Right, %	7%	15%	84%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	318	241	472	417
LT Vol	20	59	49	104
Through Vol	277	147	27	313
RT Vol	21	35	396	0
Lane Flow Rate	349	265	519	458
Geometry Grp	1	1	1	1
Degree of Util (X)	0.854	0.673	1.141	1.08
Departure Headway (Hd)	9.551	9.933	8.273	9.027
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	381	365	441	408
Service Time	7.551	7.933	6.273	7.027
HCM Lane V/C Ratio	0.916	0.726	1.177	1.123
HCM Control Delay	48.6	31.1	115.5	98.7
HCM Lane LOS	E	D	F	F
HCM 95th-tile Q	8.1	4.7	18	14.9

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	174	70	59	203	441	421
Future Volume (vph)	174	70	59	203	441	421
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	10	11	11	11	11
Grade (%)	1%			-1%	1%	
Storage Length (ft)	0	0	0			200
Storage Lanes	1	0	0			1
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.961					0.850
Flt Protected	0.966			0.989		
Satd. Flow (prot)	1532	0	0	1703	1714	1472
Flt Permitted	0.966			0.989		
Satd. Flow (perm)	1532	0	0	1703	1714	1472
Link Speed (mph)	30			35	35	
Link Distance (ft)	796			2135	675	
Travel Time (s)	18.1			41.6	13.1	
Confl. Peds. (#/hr)			12			12
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	2%	0%	2%	1%	0%
Adj. Flow (vph)	179	72	61	209	455	434
Shared Lane Traffic (%)						
Lane Group Flow (vph)	251	0	0	270	455	434
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	10			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.18	1.18	1.11	1.11	1.13	1.13
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 63.9%	ICU Level of Service B
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	7.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	174	70	59	203	441	421
Future Vol, veh/h	174	70	59	203	441	421
Conflicting Peds, #/hr	0	0	12	0	0	12
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	200
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	1	-	-	-1	1	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	1	2	0	2	1	0
Mvmt Flow	179	72	61	209	455	434

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	798	467	901	0	-	0
Stage 1	467	-	-	-	-	-
Stage 2	331	-	-	-	-	-
Critical Hdwy	6.61	6.32	4.1	-	-	-
Critical Hdwy Stg 1	5.61	-	-	-	-	-
Critical Hdwy Stg 2	5.61	-	-	-	-	-
Follow-up Hdwy	3.509	3.318	2.2	-	-	-
Pot Cap-1 Maneuver	341	588	763	-	-	-
Stage 1	617	-	-	-	-	-
Stage 2	717	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	304	582	756	-	-	-
Mov Cap-2 Maneuver	304	-	-	-	-	-
Stage 1	555	-	-	-	-	-
Stage 2	710	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	37.1	2.3	0
HCM LOS	E		

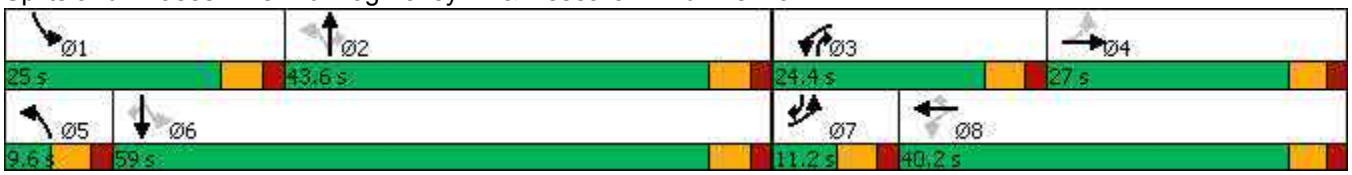
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	756	-	352	-	-
HCM Lane V/C Ratio	0.08	-	0.715	-	-
HCM Control Delay (s)	10.2	0	37.1	-	-
HCM Lane LOS	B	A	E	-	-
HCM 95th %tile Q(veh)	0.3	-	5.3	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	72	117	38	71	80	148	68	303	515	277	129	145
Future Volume (vph)	72	117	38	71	80	148	68	303	515	277	129	145
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Grade (%)		6%			-7%			-2%			2%	
Storage Length (ft)	100		0	250		0	190		270	185		175
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.963				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1626	1632	0	1686	931	1494	1693	1765	1545	1676	1497	1485
Flt Permitted	0.699			0.380			0.665			0.313		
Satd. Flow (perm)	1197	1632	0	674	931	1494	1185	1765	1545	552	1497	1485
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12				178			384			163
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		395			391			967			1702	
Travel Time (s)		10.8			10.7			18.8			33.2	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	2%	4%	0%	5%	100%	6%	2%	3%	0%	1%	19%	2%
Adj. Flow (vph)	81	131	43	80	90	166	76	340	579	311	145	163
Shared Lane Traffic (%)												
Lane Group Flow (vph)	81	174	0	80	90	166	76	340	579	311	145	163
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.11	1.11	1.11	1.03	1.03	1.03	1.06	1.06	1.06	1.09	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1	1	1	2	2	1	2	2
Detector Template	Left	Thru		Left	Thru	Right	Left	Main25	Main25	Left	Main25	Main25
Leading Detector (ft)	48	48		48	48	48	48	250	250	48	250	250
Trailing Detector (ft)	-2	-2		-2	-2	-2	-2	0	0	-2	0	0
Detector 1 Position(ft)	-2	-2		-2	-2	-2	-2	0	0	-2	0	0
Detector 1 Size(ft)	50	50		50	50	50	50	0	0	50	0	0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)								244	244		244	244
Detector 2 Size(ft)								6	6		6	6
Detector 2 Type								Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)								0.0	0.0		0.0	0.0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	7	4		3	8		5	2	3	1	6	7
Permitted Phases	4			8		8	2		2	6		6
Detector Phase	7	4		3	8	8	5	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0	3.0	3.0	10.0	3.0	3.0	10.0	3.0
Minimum Split (s)	8.5	20.0		8.5	20.0	20.0	8.5	20.0	8.5	8.8	20.0	8.5
Total Split (s)	11.2	27.0		24.4	40.2	40.2	9.6	43.6	24.4	25.0	59.0	11.2
Total Split (%)	9.3%	22.5%		20.3%	33.5%	33.5%	8.0%	36.3%	20.3%	20.8%	49.2%	9.3%
Maximum Green (s)	5.7	21.6		18.9	34.8	34.8	4.1	37.8	18.9	19.2	53.2	5.7
Yellow Time (s)	3.5	3.4		3.5	3.4	3.4	3.5	3.8	3.5	3.8	3.8	3.5
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.5	-1.5		-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5
Total Lost Time (s)	4.0	3.9		4.0	3.9	3.9	4.0	4.3	4.0	4.3	4.3	4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	6.0	3.0	3.0	6.0	3.0
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	25.0	0.0	0.0	25.0	0.0
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	13.0	0.0	0.0	13.0	0.0
Recall Mode	None	None		None	None	None	None	Min	None	None	Min	None
Act Effct Green (s)	23.9	16.5		34.6	23.5	23.5	34.6	28.4	47.5	49.8	42.5	54.5
Actuated g/C Ratio	0.26	0.18		0.37	0.25	0.25	0.37	0.30	0.51	0.53	0.45	0.58
v/c Ratio	0.24	0.59		0.20	0.39	0.33	0.16	0.64	0.60	0.63	0.21	0.17
Control Delay	24.3	44.7		22.6	36.5	5.8	14.4	35.8	8.1	19.6	18.7	2.5
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.3	44.7		22.6	36.5	5.8	14.4	35.8	8.1	19.6	18.7	2.5
LOS	C	D		C	D	A	B	D	A	B	B	A
Approach Delay		38.2			18.0			18.1			14.9	
Approach LOS		D			B			B			B	

Intersection Summary	
Area Type: Other	
Cycle Length: 120	
Actuated Cycle Length: 93.6	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.64	
Intersection Signal Delay: 19.5	Intersection LOS: B
Intersection Capacity Utilization 69.0%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 8: Bullfrog Valley Dr & Research Blvd/Life Lion Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	72	117	38	71	80	148	68	303	515	277	129	145
Future Volume (veh/h)	72	117	38	71	80	148	68	303	515	277	129	145
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1571	1543	1543	1990	639	1976	1846	1832	1875	1764	1511	1750
Adj Flow Rate, veh/h	81	131	43	80	90	166	76	340	579	311	145	163
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	4	4	5	100	6	2	3	0	1	19	2
Cap, veh/h	238	212	70	317	118	309	645	769	771	491	769	863
Arrive On Green	0.07	0.19	0.19	0.07	0.18	0.18	0.06	0.42	0.42	0.14	0.51	0.51
Sat Flow, veh/h	1496	1112	365	1895	639	1674	1758	1832	1589	1680	1511	1483
Grp Volume(v), veh/h	81	0	174	80	90	166	76	340	579	311	145	163
Grp Sat Flow(s),veh/h/ln	1496	0	1477	1895	639	1674	1758	1832	1589	1680	1511	1483
Q Serve(g_s), s	3.9	0.0	9.8	3.0	12.1	8.2	2.2	12.0	26.8	8.6	4.7	4.7
Cycle Q Clear(g_c), s	3.9	0.0	9.8	3.0	12.1	8.2	2.2	12.0	26.8	8.6	4.7	4.7
Prop In Lane	1.00		0.25	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	238	0	282	317	118	309	645	769	771	491	769	863
V/C Ratio(X)	0.34	0.00	0.62	0.25	0.76	0.54	0.12	0.44	0.75	0.63	0.19	0.19
Avail Cap(c_a), veh/h	248	0	376	618	255	669	656	793	792	636	910	1001
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.4	0.0	33.7	27.1	35.2	33.5	13.1	18.8	18.9	11.9	12.1	8.9
Incr Delay (d2), s/veh	0.8	0.0	2.2	0.4	9.8	1.5	0.1	1.5	5.9	1.4	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.6	0.0	6.6	2.5	4.0	6.2	1.5	8.8	16.0	5.4	2.8	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.2	0.0	35.9	27.6	45.0	35.0	13.2	20.2	24.8	13.3	12.5	9.3
LnGrp LOS	C	A	D	C	D	D	B	C	C	B	B	A
Approach Vol, veh/h		255			336			995			619	
Approach Delay, s/veh		33.4			35.9			22.4			12.0	
Approach LOS		C			D			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.2	42.4	10.0	21.2	9.0	50.5	10.6	20.6
Change Period (Y+Rc), s	* 5.8	* 5.8	5.5	5.4	5.5	* 5.8	5.5	5.4
Max Green Setting (Gmax), s	* 19	* 38	18.9	21.6	4.1	* 53	5.7	34.8
Max Q Clear Time (g_c+I1), s	10.6	28.8	5.0	11.8	4.2	6.7	5.9	14.1
Green Ext Time (p_c), s	0.8	7.8	0.2	0.4	0.0	9.1	0.0	1.1

Intersection Summary	
HCM 6th Ctrl Delay	22.8
HCM 6th LOS	C

Notes

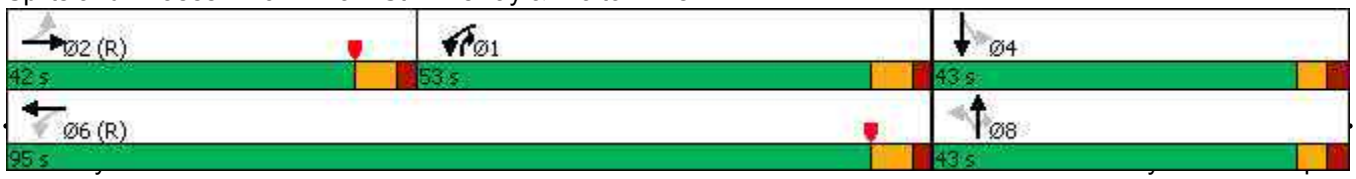
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	455	57	385	578	28	160	5	355	16	6	3
Future Volume (vph)	12	455	57	385	578	28	160	5	355	16	6	3
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	12	12	12	12	12	12	12	13	15	15	15
Grade (%)		-6%			0%			-2%			0%	
Storage Length (ft)	50		300	0		0	0		115	0		0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00				1.00							
Frt		0.983			0.993				0.850		0.984	
Flt Protected	0.950			0.950				0.954			0.968	
Satd. Flow (prot)	1644	3463	0	1693	1769	0	0	1734	1535	0	1886	0
Flt Permitted	0.346			0.410				0.713			0.800	
Satd. Flow (perm)	598	3463	0	731	1769	0	0	1296	1535	0	1559	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10			4				107		3	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		689			599			643			403	
Travel Time (s)		13.4			11.7			17.5			11.0	
Confl. Peds. (#/hr)	1					1						
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	0%	1%	1%	0%	0%	0%	4%	0%	0%	0%
Adj. Flow (vph)	13	474	59	401	602	29	167	5	370	17	6	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	13	533	0	401	631	0	0	172	370	0	26	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		23			23			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.13	1.03	1.03	1.07	1.07	1.07	1.06	1.06	1.01	0.95	0.95	0.95
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	1	1	1	1	
Detector Template							Left			Left	Thru	
Leading Detector (ft)	0	220		38	220		48	38	38	48	48	
Trailing Detector (ft)	0	0		-2	0		-2	-2	-2	-2	-2	
Detector 1 Position(ft)	0	0		-2	0		-2	-2	-2	-2	-2	
Detector 1 Size(ft)	0	0		40	0		50	40	40	50	50	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		214			214							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	pm+ov	Perm	NA	
Protected Phases		2		1	6			8	1		4	
Permitted Phases	2			6			8		8	4		
Detector Phase	2	2		1	6		8	8	1	4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		3.0	10.0		3.0	3.0	3.0	3.0	3.0	
Minimum Split (s)	25.0	25.0		9.2	25.0		15.5	15.5	9.2	15.5	15.5	
Total Split (s)	42.0	42.0		53.0	95.0		43.0	43.0	53.0	43.0	43.0	
Total Split (%)	30.4%	30.4%		38.4%	68.8%		31.2%	31.2%	38.4%	31.2%	31.2%	
Maximum Green (s)	35.8	35.8		46.8	88.8		37.5	37.5	46.8	37.5	37.5	
Yellow Time (s)	4.2	4.2		4.2	4.2		3.0	3.0	4.2	3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.5	2.5	2.0	2.5	2.5	
Lost Time Adjust (s)	-1.5	-1.5		-1.5	-1.5			-1.5	-1.5		-1.5	
Total Lost Time (s)	4.7	4.7		4.7	4.7			4.0	4.7		4.0	
Lead/Lag	Lead	Lead		Lag					Lag			
Lead-Lag Optimize?	Yes	Yes		Yes					Yes			
Vehicle Extension (s)	5.0	5.0		3.0	5.0		3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)	2.0	2.0		3.0	2.0		3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	22.0	22.0		0.0	22.0		0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	10.0	10.0		0.0	10.0		0.0	0.0	0.0	0.0	0.0	
Recall Mode	C-Min	C-Min		None	C-Min		None	None	None	None	None	
Act Effct Green (s)	72.5	72.5		104.1	104.1			25.2	56.1		25.2	
Actuated g/C Ratio	0.53	0.53		0.75	0.75			0.18	0.41		0.18	
v/c Ratio	0.04	0.29		0.54	0.47			0.73	0.54		0.09	
Control Delay	22.2	20.7		15.0	8.7			69.8	22.8		40.2	
Queue Delay	0.0	0.0		0.0	1.4			0.0	0.0		0.0	
Total Delay	22.2	20.7		15.1	10.1			69.8	22.8		40.2	
LOS	C	C		B	B			E	C		D	
Approach Delay		20.7			12.0			37.7			40.2	
Approach LOS		C			B			D			D	

Intersection Summary	
Area Type:	Other
Cycle Length: 138	
Actuated Cycle Length: 138	
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.73	
Intersection Signal Delay: 21.0	Intersection LOS: C
Intersection Capacity Utilization 66.9%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 9: E Main St/Driveway & Walton Ave



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	455	57	385	578	28	160	5	355	16	6	3
Future Volume (veh/h)	12	455	57	385	578	28	160	5	355	16	6	3
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	2024	2024	2024	1786	1786	1786	1875	1875	1890	1872	1872	1872
Adj Flow Rate, veh/h	12	474	59	401	602	29	167	5	370	17	6	3
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	1	1	1	0	0	4	0	0	0
Cap, veh/h	120	708	88	989	1290	62	269	7	1117	76	24	7
Arrive On Green	0.21	0.21	0.21	0.52	0.76	0.76	0.17	0.17	0.17	0.17	0.17	0.17
Sat Flow, veh/h	908	3441	426	1701	1690	81	1251	37	1602	190	139	43
Grp Volume(v), veh/h	12	264	269	401	0	631	172	0	370	26	0	0
Grp Sat Flow(s),veh/h/ln	908	1922	1946	1701	0	1771	1289	0	1602	371	0	0
Q Serve(g_s), s	1.7	17.4	17.6	9.8	0.0	18.1	0.0	0.0	0.0	1.2	0.0	0.0
Cycle Q Clear(g_c), s	19.8	17.4	17.6	9.8	0.0	18.1	18.3	0.0	0.0	19.6	0.0	0.0
Prop In Lane	1.00		0.22	1.00		0.05	0.97		1.00	0.65		0.12
Lane Grp Cap(c), veh/h	120	395	400	989	0	1352	275	0	1117	108	0	0
V/C Ratio(X)	0.10	0.67	0.67	0.41	0.00	0.47	0.63	0.00	0.33	0.24	0.00	0.00
Avail Cap(c_a), veh/h	179	520	526	989	0	1352	438	0	1292	242	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.44	0.00	0.44	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	59.9	50.5	50.5	16.4	0.0	6.0	54.7	0.0	8.2	54.1	0.0	0.0
Incr Delay (d2), s/veh	1.7	8.6	8.7	0.1	0.0	0.5	2.3	0.0	0.2	1.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.8	14.3	14.6	9.7	0.0	8.7	10.0	0.0	7.8	1.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.5	59.1	59.3	16.5	0.0	6.5	57.0	0.0	8.4	55.3	0.0	0.0
LnGrp LOS	E	E	E	B	A	A	E	A	A	E	A	A
Approach Vol, veh/h		545			1032			542			26	
Approach Delay, s/veh		59.2			10.4			23.8			55.3	
Approach LOS		E			B			C			E	

Timer - Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	77.0	33.1		28.0		110.0		28.0
Change Period (Y+Rc), s	6.2	6.2		5.5		6.2		5.5
Max Green Setting (Gmax), s	46.8	35.8		37.5		88.8		37.5
Max Q Clear Time (g_c+I1), s	11.8	19.6		21.6		20.1		20.3
Green Ext Time (p_c), s	1.5	7.3		0.0		19.9		2.1

Intersection Summary	
HCM 6th Ctrl Delay	26.7
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	593	178	406	173	234	143	431	1312	165	110	937	614
Future Volume (vph)	593	178	406	173	234	143	431	1312	165	110	937	614
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		1%			2%			-1%			1%	
Storage Length (ft)	150		150	180		250	750		150	130		300
Storage Lanes	1		1	2		1	2		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	1.00	1.00	0.97	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	0.99		0.99	1.00		0.98			0.98	1.00		
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3159	1791	1522	3284	1782	1500	3301	3273	1507	1701	3304	1507
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3115	1791	1501	3269	1782	1469	3301	3273	1476	1700	3304	1507
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			296			296			255			475
Link Speed (mph)		35			25			45			45	
Link Distance (ft)		599			1652			760			1056	
Travel Time (s)		11.7			45.1			11.5			16.0	
Confl. Peds. (#/hr)	4		1	1		4			1	1		
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	0%	0%	0%	0%	1%	1%	5%	2%	0%	3%	1%
Adj. Flow (vph)	611	184	419	178	241	147	444	1353	170	113	966	633
Shared Lane Traffic (%)												
Lane Group Flow (vph)	611	184	419	178	241	147	444	1353	170	113	966	633
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.13	1.08	1.08	1.09	1.09	1.09	1.07	1.07	1.07	1.08	1.08	1.08
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	1	1	1	1	1	2	1	1	2	1
Detector Template							Left	Main25	Right	Left	Main25	Right
Leading Detector (ft)	38	38	0	38	38	0	48	250	48	48	250	48
Trailing Detector (ft)	-2	-2	0	-2	-2	0	-2	0	-2	-2	0	-2
Detector 1 Position(ft)	-2	-2	0	-2	-2	0	-2	0	-2	-2	0	-2
Detector 1 Size(ft)	40	40	0	40	40	0	50	0	50	50	0	50
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)								244			244	
Detector 2 Size(ft)								6			6	
Detector 2 Type								Cl+Ex			Cl+Ex	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)								0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	12.0	12.0	3.0	12.0	12.0
Minimum Split (s)	12.0	10.3	10.3	12.0	10.3	10.3	10.0	18.0	18.0	10.0	18.0	18.0
Total Split (s)	17.0	21.0	21.0	15.0	19.0	19.0	19.0	44.0	44.0	12.0	37.0	37.0
Total Split (%)	18.5%	22.8%	22.8%	16.3%	20.7%	20.7%	20.7%	47.8%	47.8%	13.0%	40.2%	40.2%
Maximum Green (s)	8.0	13.7	13.7	6.0	11.7	11.7	12.5	38.0	38.0	5.5	31.0	31.0
Yellow Time (s)	3.0	3.5	3.5	3.0	3.5	3.5	3.0	3.5	3.5	3.0	3.5	3.5
All-Red Time (s)	6.0	3.8	3.8	6.0	3.8	3.8	3.5	2.5	2.5	3.5	2.5	2.5
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5
Total Lost Time (s)	7.5	5.8	5.8	7.5	5.8	5.8	5.0	4.5	4.5	5.0	4.5	4.5
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	5.0	5.0	5.0	2.0	2.0	2.0
Minimum Gap (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.0	20.0	0.0	20.0	20.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	25.0	25.0	0.0	25.0	25.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Min	Min	None	Min	Min
Act Effct Green (s)	9.5	15.2	15.2	7.5	13.2	13.2	14.0	39.5	39.5	7.0	32.5	32.5
Actuated g/C Ratio	0.10	0.17	0.17	0.08	0.14	0.14	0.15	0.43	0.43	0.08	0.35	0.35
v/c Ratio	1.87	0.62	0.85	0.67	0.95	0.32	0.88	0.96	0.22	0.88	0.83	0.75
Control Delay	431.6	46.0	28.8	54.2	85.1	1.8	59.2	43.3	1.0	96.1	34.6	13.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	431.6	46.0	28.8	54.2	85.1	1.8	59.2	43.3	1.0	96.1	34.6	13.1
LOS	F	D	C	D	F	A	E	D	A	F	C	B
Approach Delay		234.1			53.7			43.2			30.7	
Approach LOS		F			D			D			C	

Intersection Summary	
Area Type: Other	
Cycle Length: 92	
Actuated Cycle Length: 92	
Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow, Master Intersection	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.87	
Intersection Signal Delay: 82.8	Intersection LOS: F
Intersection Capacity Utilization 93.2%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 10: Route 0039 (W Hersheypark Drive) & Walton Ave/Mae St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	593	178	406	173	234	143	431	1312	165	110	937	614
Future Volume (veh/h)	593	178	406	173	234	143	431	1312	165	110	937	614
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1780	1794	1794	1778	1778	1764	1823	1766	1809	1794	1752	1780
Adj Flow Rate, veh/h	611	184	0	178	241	0	444	1353	170	113	966	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	0	0	0	0	1	1	5	2	0	3	1
Cap, veh/h	2390	1382		268	255		513	1440	657	130	1176	
Arrive On Green	0.73	0.77	0.00	0.08	0.14	0.00	0.15	0.43	0.43	0.08	0.35	0.00
Sat Flow, veh/h	3289	1794	1521	3284	1778	1495	3368	3356	1531	1709	3329	1509
Grp Volume(v), veh/h	611	184	0	178	241	0	444	1353	170	113	966	0
Grp Sat Flow(s),veh/h/ln	1645	1794	1521	1642	1778	1495	1684	1678	1531	1709	1665	1509
Q Serve(g_s), s	5.7	2.4	0.0	4.8	12.4	0.0	11.8	35.5	6.6	6.0	24.3	0.0
Cycle Q Clear(g_c), s	5.7	2.4	0.0	4.8	12.4	0.0	11.8	35.5	6.6	6.0	24.3	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	2390	1382		268	255		513	1440	657	130	1176	
V/C Ratio(X)	0.26	0.13		0.66	0.94		0.87	0.94	0.26	0.87	0.82	
Avail Cap(c_a), veh/h	2390	1382		268	255		513	1441	657	130	1176	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.93	0.93	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	4.2	2.7	0.0	41.0	39.0	0.0	38.1	25.1	16.9	42.0	27.1	0.0
Incr Delay (d2), s/veh	0.0	0.2	0.0	4.9	43.8	0.0	15.5	12.4	0.4	41.1	4.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.6	1.1	0.0	3.9	13.2	0.0	9.6	21.3	4.2	7.0	14.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	4.2	2.9	0.0	46.0	82.8	0.0	53.6	37.5	17.3	83.1	31.6	0.0
LnGrp LOS	A	A		D	F		D	D	B	F	C	
Approach Vol, veh/h		795	A		419	A		1967			1079	A
Approach Delay, s/veh		3.9			67.2			39.4			37.0	
Approach LOS		A			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	44.0	15.0	80.0	19.0	37.0	76.0	19.0
Change Period (Y+Rc), s	6.5	6.0	9.0	* 9	6.5	6.0	* 9	7.3
Max Green Setting (Gmax), s	5.5	38.0	6.0	* 14	12.5	31.0	* 8	11.7
Max Q Clear Time (g_c+I1), s	8.0	37.5	6.8	4.4	13.8	26.3	7.7	14.4
Green Ext Time (p_c), s	0.0	0.5	0.0	0.2	0.0	3.1	0.1	0.0

Intersection Summary	
HCM 6th Ctrl Delay	34.9
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	180	577	284	264	608	210	30	104	59	256	307	390
Future Volume (vph)	180	577	284	264	608	210	30	104	59	256	307	390
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Grade (%)		3%			-3%			1%			4%	
Storage Length (ft)	350		500	575		475	0		350	400		450
Storage Lanes	2		2	2		1	2		1	2		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.95	0.88	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3172	3303	2600	3301	3370	1538	3301	3369	1522	3219	3352	1456
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3172	3303	2600	3301	3370	1538	3301	3369	1522	3219	3352	1456
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			290			268			350			398
Link Speed (mph)		45			45			35			35	
Link Distance (ft)		1096			1663			1072			729	
Travel Time (s)		16.6			25.2			20.9			14.2	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	3%	2%	2%	2%	3%	1%	0%	1%	0%	1%	0%	3%
Adj. Flow (vph)	184	589	290	269	620	214	31	106	60	261	313	398
Shared Lane Traffic (%)												
Lane Group Flow (vph)	184	589	290	269	620	214	31	106	60	261	313	398
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.05	1.05	1.05	1.08	1.08	1.08	1.10	1.10	1.10
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	1	1	1	1	1
Detector Template	Left	Main30	Right	Left	Main30	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	48	300	48	48	300	48	48	48	48	48	48	48
Trailing Detector (ft)	-2	0	-2	-2	0	-2	-2	-2	-2	-2	-2	-2
Detector 1 Position(ft)	-2	0	-2	-2	0	-2	-2	-2	-2	-2	-2	-2
Detector 1 Size(ft)	50	0	50	50	0	50	50	50	50	50	50	50
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		294			294							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases			6			2			8			4
Detector Phase	1	6	6	5	2	2	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	3.0	12.0	12.0	3.0	12.0	12.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Split (s)	9.7	18.5	18.5	9.7	18.5	18.5	10.0	10.0	10.0	9.2	10.0	10.0
Total Split (s)	17.0	33.0	33.0	27.0	43.0	43.0	10.0	13.0	13.0	17.0	20.0	20.0
Total Split (%)	18.9%	36.7%	36.7%	30.0%	47.8%	47.8%	11.1%	14.4%	14.4%	18.9%	22.2%	22.2%
Maximum Green (s)	10.5	26.5	26.5	20.5	36.5	36.5	3.8	6.8	6.8	10.8	13.8	13.8
Yellow Time (s)	4.7	4.7	4.7	4.7	4.7	4.7	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.8	1.8	1.8	1.8	1.8	1.8	2.7	2.7	2.7	2.7	2.7	2.7
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.7	4.7	4.7	4.7	4.7	4.7
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag	Lag	Lead	Lead	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0	6.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.5	3.5	3.0	3.5	3.5	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	30.0	30.0	0.0	30.0	30.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	15.0	15.0	0.0	15.0	15.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	None
Act Effct Green (s)	11.2	30.8	30.8	22.0	41.6	41.6	5.3	8.2	8.2	12.1	16.5	16.5
Actuated g/C Ratio	0.12	0.34	0.34	0.24	0.46	0.46	0.06	0.09	0.09	0.13	0.18	0.18
v/c Ratio	0.47	0.52	0.27	0.33	0.40	0.25	0.16	0.35	0.13	0.60	0.51	0.67
Control Delay	40.6	26.8	3.6	14.4	4.7	1.1	42.3	41.8	0.6	43.0	36.5	10.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.6	26.8	3.6	14.4	4.7	1.1	42.3	41.8	0.6	43.0	36.5	10.1
LOS	D	C	A	B	A	A	D	D	A	D	D	B
Approach Delay		22.8			6.4			29.3			27.5	
Approach LOS		C			A			C			C	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 75 (83%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.67	
Intersection Signal Delay: 19.1	Intersection LOS: B
Intersection Capacity Utilization 58.6%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 11: Park Blvd/Route 39 (Hershey Rd) & Route 39 (W Hersheypark Drive)/W Hersheypark Drive

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	180	577	284	264	608	210	30	104	59	256	307	390
Future Volume (veh/h)	180	577	284	264	608	210	30	104	59	256	307	390
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1708	1722	1722	1883	1869	1898	1794	1780	1794	1697	1711	1669
Adj Flow Rate, veh/h	184	589	0	269	620	0	31	106	0	261	313	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	2	2	2	3	1	0	1	0	1	0	3
Cap, veh/h	304	1018		985	1768		180	236		378	442	
Arrive On Green	0.10	0.31	0.00	0.28	0.50	0.00	0.05	0.07	0.00	0.12	0.14	0.00
Sat Flow, veh/h	3155	3271	2568	3480	3551	1608	3315	3383	1521	3135	3250	1414
Grp Volume(v), veh/h	184	589	0	269	620	0	31	106	0	261	313	0
Grp Sat Flow(s),veh/h/ln	1578	1636	1284	1740	1776	1608	1658	1691	1521	1567	1625	1414
Q Serve(g_s), s	5.0	13.6	0.0	5.4	9.6	0.0	0.8	2.7	0.0	7.2	8.3	0.0
Cycle Q Clear(g_c), s	5.0	13.6	0.0	5.4	9.6	0.0	0.8	2.7	0.0	7.2	8.3	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	304	1018		985	1768		180	236		378	442	
V/C Ratio(X)	0.61	0.58		0.27	0.35		0.17	0.45		0.69	0.71	
Avail Cap(c_a), veh/h	421	1018		985	1768		195	312		428	553	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	39.0	26.0	0.0	25.1	13.7	0.0	40.6	40.2	0.0	38.0	37.2	0.0
Incr Delay (d2), s/veh	1.9	2.4	0.0	0.1	0.5	0.0	0.4	1.3	0.0	4.0	3.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.5	9.0	0.0	3.8	6.3	0.0	0.6	2.1	0.0	5.2	6.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.0	28.4	0.0	25.2	14.3	0.0	41.1	41.6	0.0	42.0	40.3	0.0
LnGrp LOS	D	C		C	B		D	D		D	D	
Approach Vol, veh/h		773	A		889	A		137	A		574	A
Approach Delay, s/veh		31.4			17.6			41.4			41.0	
Approach LOS		C			B			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.7	49.8	9.6	16.9	30.5	33.0	15.6	11.0
Change Period (Y+Rc), s	* 6.5	* 6.5	* 6.2	* 6.2	* 6.5	* 6.5	* 6.2	* 6.2
Max Green Setting (Gmax), s	* 11	* 37	* 3.8	* 14	* 21	* 27	* 11	* 6.8
Max Q Clear Time (g_c+I1), s	7.0	11.6	2.8	10.3	7.4	15.6	9.2	4.7
Green Ext Time (p_c), s	0.2	14.6	0.0	0.4	0.9	7.3	0.2	0.1

Intersection Summary	
HCM 6th Ctrl Delay	29.2
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

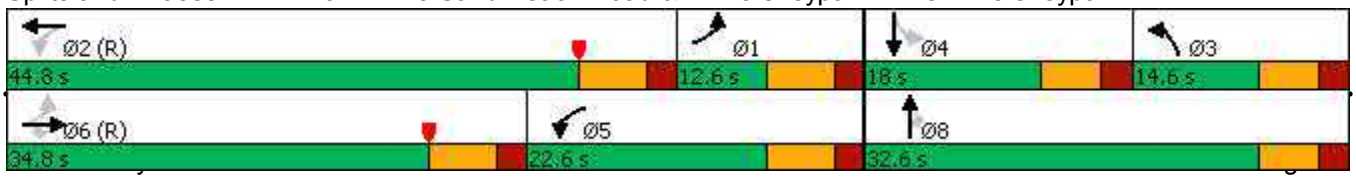
Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	75	453	218	242	1081	43	239	131	111	23	129	36
Future Volume (vph)	75	453	218	242	1081	43	239	131	111	23	129	36
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	11	11	11	12	12	12
Grade (%)		2%			-2%			3%			-3%	
Storage Length (ft)	75		150	190		0	125		185	0		0
Storage Lanes	1		1	1		0	2		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	0.97	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.98						0.99		1.00	
Frt			0.850		0.994				0.850		0.974	
Flt Protected	0.950			0.950			0.950				0.994	
Satd. Flow (prot)	1582	3194	1429	1629	3362	0	3067	1664	1349	0	1661	0
Flt Permitted	0.131			0.398			0.950				0.938	
Satd. Flow (perm)	218	3194	1399	683	3362	0	3067	1664	1331	0	1567	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			269		6				200		11	
Link Speed (mph)		45			45			35			35	
Link Distance (ft)		789			2028			659			1125	
Travel Time (s)		12.0			30.7			12.8			21.9	
Confl. Peds. (#/hr)									1	1		
Confl. Bikes (#/hr)			1	1								
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	7%	6%	6%	6%	2%	5%	3%	3%	8%	7%	6%	8%
Adj. Flow (vph)	83	503	242	269	1201	48	266	146	123	26	143	40
Shared Lane Traffic (%)												
Lane Group Flow (vph)	83	503	242	269	1249	0	266	146	123	0	209	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			22			22	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.06	1.06	1.06	1.14	1.14	1.14	1.05	1.05	1.05
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	1	1	1	1	
Detector Template		Main30	Right		Main30					Left		
Leading Detector (ft)	35	300	48	35	300		30	30	30	48	35	
Trailing Detector (ft)	-5	0	-2	-5	0		-10	-10	-10	-2	-5	
Detector 1 Position(ft)	-5	0	-2	-5	0		-10	-10	-10	-2	-5	
Detector 1 Size(ft)	40	0	50	40	0		40	40	40	50	40	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		294			294							
Detector 2 Size(ft)		6			6							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Prot	NA	Perm	Perm	NA	
Protected Phases	1	6		5	2		3	8			4	
Permitted Phases	6		6	2					8	4		
Detector Phase	1	6	6	5	2		3	8	8	4	4	
Switch Phase												
Minimum Initial (s)	3.0	10.0	10.0	3.0	10.0		3.0	3.0	3.0	3.0	3.0	
Minimum Split (s)	12.5	16.5	16.5	12.5	16.5		12.5	10.0	10.0	12.5	12.5	
Total Split (s)	12.6	34.8	34.8	22.6	44.8		14.6	32.6	32.6	18.0	18.0	
Total Split (%)	14.0%	38.7%	38.7%	25.1%	49.8%		16.2%	36.2%	36.2%	20.0%	20.0%	
Maximum Green (s)	6.1	28.3	28.3	16.1	38.3		8.5	26.5	26.5	11.9	11.9	
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5		3.9	3.9	3.9	3.9	3.9	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.2	2.2	2.2	2.2	2.2	
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	-1.5		-1.5	-1.5	-1.5		-1.5	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		4.6	4.6	4.6		4.6	
Lead/Lag	Lag	Lead	Lead	Lag	Lead		Lag			Lead	Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes			Yes	Yes	
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0		3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	15.0	15.0	0.0	15.0		0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	30.0	30.0	0.0	30.0		0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	C-Max	C-Max	None	C-Max		None	None	None	None	None	
Act Effct Green (s)	39.4	31.9	31.9	52.4	42.3		10.0	28.0	28.0		13.4	
Actuated g/C Ratio	0.44	0.35	0.35	0.58	0.47		0.11	0.31	0.31		0.15	
v/c Ratio	0.40	0.44	0.36	0.48	0.79		0.78	0.28	0.22		0.86	
Control Delay	31.0	12.4	5.9	17.3	25.5		56.3	25.3	1.4		68.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	
Total Delay	31.0	12.4	5.9	17.3	25.5		56.3	25.3	1.4		68.7	
LOS	C	B	A	B	C		E	C	A		E	
Approach Delay		12.4			24.0			35.2			68.7	
Approach LOS		B			C			D			E	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 88 (98%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay: 25.9	Intersection LOS: C
Intersection Capacity Utilization 71.5%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 12: Park Drive/Sand Beach Road & W Hersheypark Drive/E Hersheypark Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	75	453	218	242	1081	43	239	131	111	23	129	36
Future Volume (veh/h)	75	453	218	242	1081	43	239	131	111	23	129	36
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1679	1693	1693	1789	1846	1846	1708	1708	1637	1826	1826	1826
Adj Flow Rate, veh/h	83	503	242	269	1201	48	266	146	123	26	143	40
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	7	6	6	6	2	2	3	3	8	6	6	6
Cap, veh/h	228	1065	465	531	1519	61	351	531	431	61	155	41
Arrive On Green	0.08	0.33	0.33	0.20	0.44	0.44	0.11	0.31	0.31	0.15	0.15	0.15
Sat Flow, veh/h	1599	3218	1405	1704	3435	137	3155	1708	1386	109	1042	272
Grp Volume(v), veh/h	83	503	242	269	613	636	266	146	123	209	0	0
Grp Sat Flow(s),veh/h/ln	1599	1609	1405	1704	1754	1818	1578	1708	1386	1423	0	0
Q Serve(g_s), s	0.0	11.2	12.5	1.2	27.0	27.0	7.4	5.8	6.0	6.9	0.0	0.0
Cycle Q Clear(g_c), s	0.0	11.2	12.5	1.2	27.0	27.0	7.4	5.8	6.0	13.2	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.08	1.00		1.00	0.12		0.19
Lane Grp Cap(c), veh/h	228	1065	465	531	776	804	351	531	431	257	0	0
V/C Ratio(X)	0.36	0.47	0.52	0.51	0.79	0.79	0.76	0.27	0.29	0.81	0.00	0.00
Avail Cap(c_a), veh/h	228	1065	465	531	776	804	351	531	431	257	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	37.5	23.9	24.3	26.0	21.5	21.5	38.8	23.4	23.4	38.4	0.0	0.0
Incr Delay (d2), s/veh	1.0	1.5	4.1	0.8	8.1	7.8	9.3	0.3	0.4	17.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.0	7.5	7.8	8.1	17.1	17.6	5.8	4.1	3.5	9.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.5	25.4	28.4	26.7	29.6	29.4	48.1	23.6	23.8	56.2	0.0	0.0
LnGrp LOS	D	C	C	C	C	C	D	C	C	E	A	A
Approach Vol, veh/h		828			1518			535			209	
Approach Delay, s/veh		27.6			29.0			35.8			56.2	
Approach LOS		C			C			D			E	

Timer - Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	12.6	44.8	14.6	18.0	22.6	34.8		32.6
Change Period (Y+Rc), s	6.5	6.5	* 6.1	* 6.1	6.5	6.5		* 6.1
Max Green Setting (Gmax), s	6.1	38.3	* 8.5	* 12	16.1	28.3		* 27
Max Q Clear Time (g_c+I1), s	2.5	29.5	9.9	15.2	3.7	14.5		8.5
Green Ext Time (p_c), s	0.1	8.4	0.0	0.0	0.7	9.3		0.8

Intersection Summary	
HCM 6th Ctrl Delay	31.6
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

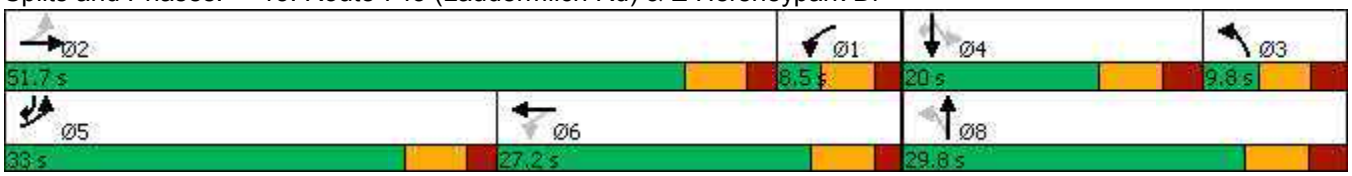
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	800	936	152	3	524	6	102	202	3	9	103	410
Future Volume (vph)	800	936	152	3	524	6	102	202	3	9	103	410
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	11	11	11	11	11	11
Grade (%)		2%			3%			6%			-6%	
Storage Length (ft)	265		0	150		0	250		0	150		230
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.979			0.998			0.998				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3220	3259	0	1684	3204	0	1603	1684	0	1703	1774	1493
Flt Permitted	0.238			0.248			0.687			0.449		
Satd. Flow (perm)	807	3259	0	440	3204	0	1160	1684	0	805	1774	1493
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		30			1			1				198
Link Speed (mph)		45			45			35			35	
Link Distance (ft)		2621			1081			1569			722	
Travel Time (s)		39.7			16.4			30.6			14.1	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	2%	0%	0%	5%	0%	0%	0%	0%	0%	1%	2%
Adj. Flow (vph)	842	985	160	3	552	6	107	213	3	9	108	432
Shared Lane Traffic (%)												
Lane Group Flow (vph)	842	1145	0	3	558	0	107	216	0	9	108	432
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.16	1.16	1.16	1.08	1.08	1.08
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	1		1	1	1
Detector Template	Left	Main30		Left	Main30		Left	Thru		Left	Thru	Right
Leading Detector (ft)	48	300		48	300		48	48		48	48	48
Trailing Detector (ft)	-2	0		-2	0		-2	-2		-2	-2	-2
Detector 1 Position(ft)	-2	0		-2	0		-2	-2		-2	-2	-2
Detector 1 Size(ft)	50	0		50	0		50	50		50	50	50
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		294			294							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		Perm	NA	pm+ov
Protected Phases	5	2		1	6		3	8			4	5
Permitted Phases	2			6			8			4		4
Detector Phase	5	2		1	6		3	8		4	4	5
Switch Phase												
Minimum Initial (s)	3.0	10.0		3.0	10.0		3.0	3.0		3.0	3.0	3.0
Minimum Split (s)	9.2	16.2		8.5	16.2		9.7	10.0		10.0	10.0	9.2
Total Split (s)	33.0	51.7		8.5	27.2		9.8	29.8		20.0	20.0	33.0
Total Split (%)	36.7%	57.4%		9.4%	30.2%		10.9%	33.1%		22.2%	22.2%	36.7%
Maximum Green (s)	26.8	45.5		3.0	21.0		3.8	22.9		13.1	13.1	26.8
Yellow Time (s)	4.2	4.2		3.5	4.2		3.5	4.2		4.2	4.2	4.2
All-Red Time (s)	2.0	2.0		2.0	2.0		2.5	2.7		2.7	2.7	2.0
Lost Time Adjust (s)	-1.5	-1.5		-1.5	-1.5		-1.5	-1.5		-1.5	-1.5	-1.5
Total Lost Time (s)	4.7	4.7		4.0	4.7		4.5	5.4		5.4	5.4	4.7
Lead/Lag	Lead	Lead		Lag	Lag		Lag			Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes			Yes	Yes	Yes
Vehicle Extension (s)	3.0	5.7		3.0	5.7		3.0	3.0		3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Time Before Reduce (s)	0.0	30.0		0.0	30.0		0.0	0.0		0.0	0.0	0.0
Time To Reduce (s)	0.0	15.0		0.0	15.0		0.0	0.0		0.0	0.0	0.0
Recall Mode	None	Min		None	Min		None	None		None	None	None
Act Effct Green (s)	48.8	48.8		25.1	21.8		20.7	19.8		12.4	12.4	38.0
Actuated g/C Ratio	0.61	0.61		0.31	0.27		0.26	0.25		0.15	0.15	0.47
v/c Ratio	0.70	0.58		0.01	0.64		0.33	0.52		0.07	0.40	0.53
Control Delay	14.8	11.8		25.3	31.4		28.8	31.9		33.8	38.3	7.4
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	14.8	11.8		25.3	31.4		28.8	31.9		33.8	38.3	7.4
LOS	B	B		C	C		C	C		C	D	A
Approach Delay		13.1			31.4			30.9			13.9	
Approach LOS		B			C			C			B	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 80.4
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.70
Intersection Signal Delay: 17.9 Intersection LOS: B
Intersection Capacity Utilization 64.5% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 13: Route 743 (Laudermilch Rd) & E Hersheypark Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	800	936	152	3	524	6	102	202	3	9	103	410
Future Volume (veh/h)	800	936	152	3	524	6	102	202	3	9	103	410
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1750	1750	1750	1750	1680	1680	1599	1599	1599	2024	2009	1995
Adj Flow Rate, veh/h	842	985	0	3	552	0	107	213	3	9	108	432
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	0	5	5	0	0	0	0	1	2
Cap, veh/h	1094	1704		202	855		222	448	6	169	335	730
Arrive On Green	0.27	0.51	0.00	0.02	0.27	0.00	0.05	0.28	0.28	0.17	0.17	0.17
Sat Flow, veh/h	3233	3412	0	1666	3275	0	1523	1573	22	1331	2009	1691
Grp Volume(v), veh/h	842	985	0	3	552	0	107	0	216	9	108	432
Grp Sat Flow(s),veh/h/ln	1616	1662	0	1666	1596	0	1523	0	1595	1331	2009	1691
Q Serve(g_s), s	14.8	16.7	0.0	0.0	12.5	0.0	0.0	0.0	9.1	0.5	3.9	8.6
Cycle Q Clear(g_c), s	14.8	16.7	0.0	0.0	12.5	0.0	0.0	0.0	9.1	9.1	3.9	8.6
Prop In Lane	1.00		0.00	1.00		0.00	1.00		0.01	1.00		1.00
Lane Grp Cap(c), veh/h	1094	1704		202	855		222	0	454	169	335	730
V/C Ratio(X)	0.77	0.58		0.01	0.65		0.48	0.00	0.48	0.05	0.32	0.59
Avail Cap(c_a), veh/h	1360	1919		260	882		242	0	478	186	360	752
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.4	13.7	0.0	28.8	26.4	0.0	35.1	0.0	24.1	36.2	29.9	5.7
Incr Delay (d2), s/veh	2.2	1.0	0.0	0.0	2.8	0.0	1.6	0.0	0.8	0.1	0.6	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	8.5	9.3	0.0	0.1	8.2	0.0	3.7	0.0	6.1	0.3	3.3	7.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.6	14.7	0.0	28.8	29.2	0.0	36.7	0.0	24.9	36.3	30.4	6.9
LnGrp LOS	B	B		C	C		D	A	C	D	C	A
Approach Vol, veh/h		1827	A		555	A		323			549	
Approach Delay, s/veh		16.5			29.2			28.8			12.0	
Approach LOS		B			C			C			B	

Timer - Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	6.4	46.4	9.6	19.0	26.3	26.5		28.6
Change Period (Y+Rc), s	6.2	* 6.2	* 6.9	* 6.9	6.2	6.2		* 6.9
Max Green Setting (Gmax), s	3.0	* 46	* 3.8	* 13	26.8	21.0		* 23
Max Q Clear Time (g_c+I1), s	2.5	19.2	2.5	11.6	17.3	15.0		11.1
Green Ext Time (p_c), s	0.0	21.0	0.0	0.4	2.9	4.0		0.6

Intersection Summary	
HCM 6th Ctrl Delay	19.1
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

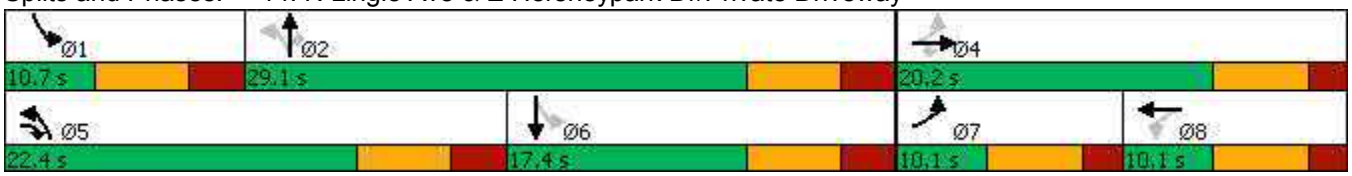
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	61	26	786	38	47	33	427	81	18	17	175	13
Future Volume (vph)	61	26	786	38	47	33	427	81	18	17	175	13
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	16	16	12	12	12	12	12	12
Grade (%)		1%			-3%			-6%			1%	
Storage Length (ft)	200		0	75		0	175		100	125		0
Storage Lanes	1		1	1		0	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.938				0.850		0.990	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1668	1060	1522	1653	1465	0	1727	1520	1126	851	1741	0
Flt Permitted	0.426			0.833			0.493			0.703		
Satd. Flow (perm)	748	1060	1522	1449	1465	0	896	1520	1126	630	1741	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			349		34				289		5	
Link Speed (mph)		45			25			35			35	
Link Distance (ft)		1844			617			1844			713	
Travel Time (s)		27.9			16.8			35.9			13.9	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	2%	69%	0%	5%	28%	39%	2%	22%	40%	100%	2%	0%
Adj. Flow (vph)	62	27	802	39	48	34	436	83	18	17	179	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	62	27	802	39	82	0	436	83	18	17	192	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.08	1.08	1.08	1.05	0.89	0.89	1.03	1.03	1.03	1.08	1.08	1.08
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	1	1	1		1	2	1	1	2	
Detector Template	Left		Right	Left			Left	Main20	Right	Left	Main20	
Leading Detector (ft)	48	48	48	48	48		48	200	48	48	200	
Trailing Detector (ft)	-2	-2	-2	-2	-2		-2	0	-2	-2	0	
Detector 1 Position(ft)	-2	-2	-2	-2	-2		-2	0	-2	-2	0	
Detector 1 Size(ft)	50	50	50	50	50		50	0	50	50	0	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)								194			194	
Detector 2 Size(ft)								6			6	
Detector 2 Type								Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)								0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	pm+ov	Perm	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	7	4	5		8		5	2		1	6	
Permitted Phases	4		4	8			2		2	6		
Detector Phase	7	4	5	8	8		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0	3.0	4.0	4.0		3.0	10.0	10.0	3.0	10.0	
Minimum Split (s)	10.1	10.1	10.7	10.1	10.1		10.7	16.7	16.7	10.7	16.7	
Total Split (s)	10.1	20.2	22.4	10.1	10.1		22.4	29.1	29.1	10.7	17.4	
Total Split (%)	16.8%	33.7%	37.3%	16.8%	16.8%		37.3%	48.5%	48.5%	17.8%	29.0%	
Maximum Green (s)	4.0	14.1	15.7	4.0	4.0		15.7	22.4	22.4	4.0	10.7	
Yellow Time (s)	4.3	4.3	4.2	4.3	4.3		4.2	4.2	4.2	4.2	4.2	
All-Red Time (s)	1.8	1.8	2.5	1.8	1.8		2.5	2.5	2.5	2.5	2.5	
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	-1.5		-1.5	-1.5	-1.5	-1.5	-1.5	
Total Lost Time (s)	4.6	4.6	5.2	4.6	4.6		5.2	5.2	5.2	5.2	5.2	
Lead/Lag	Lead		Lead	Lag	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes			Yes	Yes			Yes	Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	5.6	5.6	3.0	5.6	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	24.0	24.0	0.0	24.0	
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	12.0	12.0	0.0	12.0	
Recall Mode	None	None	None	None	None		None	Min	Min	None	Min	
Act Effct Green (s)	11.5	12.0	29.8	6.1	6.1		34.6	34.3	34.3	18.3	12.6	
Actuated g/C Ratio	0.22	0.23	0.56	0.11	0.11		0.65	0.64	0.64	0.34	0.24	
v/c Ratio	0.24	0.11	0.80	0.23	0.41		0.52	0.08	0.02	0.07	0.46	
Control Delay	19.9	18.4	11.5	29.0	24.5		8.8	8.3	0.1	8.8	24.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	19.9	18.4	11.5	29.0	24.5		8.8	8.3	0.1	8.8	24.4	
LOS	B	B	B	C	C		A	A	A	A	C	
Approach Delay		12.3			26.0			8.5			23.2	
Approach LOS		B			C			A			C	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 53.2	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.80	
Intersection Signal Delay: 13.4	Intersection LOS: B
Intersection Capacity Utilization 77.8%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 14: N Lingle Ave & E Hersheypark Dr/Private Driveway



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	61	26	786	38	47	33	427	81	18	17	175	13
Future Volume (veh/h)	61	26	786	38	47	33	427	81	18	17	175	13
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1766	826	1794	1841	1574	1574	1995	1711	1455	390	1766	1766
Adj Flow Rate, veh/h	62	27	802	39	48	34	436	83	18	17	179	13
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	69	0	5	28	28	2	22	40	100	2	2
Cap, veh/h	362	233	792	217	108	77	743	686	494	207	338	25
Arrive On Green	0.07	0.28	0.28	0.13	0.13	0.13	0.24	0.40	0.40	0.05	0.21	0.21
Sat Flow, veh/h	1682	826	1521	687	857	607	1900	1711	1233	372	1627	118
Grp Volume(v), veh/h	62	27	802	39	0	82	436	83	18	17	0	192
Grp Sat Flow(s),veh/h/ln	1682	826	1521	687	0	1465	1900	1711	1233	372	0	1745
Q Serve(g_s), s	1.6	1.3	15.6	2.9	0.0	2.9	8.4	1.7	0.5	2.0	0.0	5.4
Cycle Q Clear(g_c), s	1.6	1.3	15.6	2.9	0.0	2.9	8.4	1.7	0.5	2.0	0.0	5.4
Prop In Lane	1.00		1.00	1.00		0.41	1.00		1.00	1.00		0.07
Lane Grp Cap(c), veh/h	362	233	792	217	0	185	743	686	494	207	0	363
V/C Ratio(X)	0.17	0.12	1.01	0.18	0.00	0.44	0.59	0.12	0.04	0.08	0.00	0.53
Avail Cap(c_a), veh/h	407	233	792	217	0	185	881	740	533	227	0	385
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.6	14.7	13.3	22.4	0.0	22.4	10.0	10.4	10.1	16.1	0.0	19.5
Incr Delay (d2), s/veh	0.2	0.2	35.2	0.4	0.0	1.7	0.7	0.2	0.1	0.2	0.0	3.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.0	0.4	22.1	0.8	0.0	1.8	5.0	1.0	0.2	0.3	0.0	4.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.8	14.9	48.5	22.8	0.0	24.0	10.7	10.7	10.2	16.3	0.0	22.9
LnGrp LOS	B	B	F	C	A	C	B	B	B	B	A	C
Approach Vol, veh/h		891			121			537			209	
Approach Delay, s/veh		45.3			23.6			10.7			22.4	
Approach LOS		D			C			B			C	

Timer - Assigned Phs	1	2		4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.7	27.4		20.2	18.4	16.7	8.6	11.6
Change Period (Y+Rc), s	6.7	6.7		* 6.1	6.7	6.7	* 6.1	* 6.1
Max Green Setting (Gmax), s	4.0	22.4		* 14	15.7	10.7	* 4	* 4
Max Q Clear Time (g_c+I1), s	4.5	4.2		18.1	10.9	7.4	4.1	5.4
Green Ext Time (p_c), s	0.0	1.2		0.0	0.8	0.7	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	30.5
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	25	66	683	21	39	671
Future Volume (vph)	25	66	683	21	39	671
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	15	15	14	14	14	14
Grade (%)	1%		2%			-1%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.902		0.996			
Flt Protected	0.986					0.997
Satd. Flow (prot)	1733	0	1837	0	0	1854
Flt Permitted	0.986					0.997
Satd. Flow (perm)	1733	0	1837	0	0	1854
Link Speed (mph)	25		35			35
Link Distance (ft)	2491		680			1197
Travel Time (s)	67.9		13.2			23.3
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	4%	0%	3%	5%	0%	4%
Adj. Flow (vph)	26	68	704	22	40	692
Shared Lane Traffic (%)						
Lane Group Flow (vph)	94	0	726	0	0	732
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	15		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	0.95	0.95	1.00	1.00	0.98	0.98
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 83.4%		ICU Level of Service E	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	25	66	683	21	39	671
Future Vol, veh/h	25	66	683	21	39	671
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	1	-	2	-	-	-1
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	4	0	3	5	0	4
Mvmt Flow	26	68	704	22	40	692

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1487	715	0	0	726	0
Stage 1	715	-	-	-	-	-
Stage 2	772	-	-	-	-	-
Critical Hdwy	6.64	6.3	-	-	4.1	-
Critical Hdwy Stg 1	5.64	-	-	-	-	-
Critical Hdwy Stg 2	5.64	-	-	-	-	-
Follow-up Hdwy	3.536	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	125	426	-	-	886	-
Stage 1	462	-	-	-	-	-
Stage 2	433	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	116	426	-	-	886	-
Mov Cap-2 Maneuver	116	-	-	-	-	-
Stage 1	428	-	-	-	-	-
Stage 2	433	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	28.4	0	0.5
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	246	886	-
HCM Lane V/C Ratio	-	-	0.381	0.045	-
HCM Control Delay (s)	-	-	28.4	9.3	0
HCM Lane LOS	-	-	D	A	A
HCM 95th %tile Q(veh)	-	-	1.7	0.1	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	312	0	0	0	211	10
Future Volume (vph)	312	0	0	0	211	10
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	13	13	12	12	12	12
Grade (%)	1%			0%	11%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.994	
Flt Protected					0.954	
Satd. Flow (prot)	1814	0	0	1800	1591	0
Flt Permitted					0.954	
Satd. Flow (perm)	1814	0	0	1800	1591	0
Link Speed (mph)	30			25	25	
Link Distance (ft)	1120			1174	602	
Travel Time (s)	25.5			32.0	16.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	0%	0%	0%	1%	10%
Adj. Flow (vph)	339	0	0	0	229	11
Shared Lane Traffic (%)						
Lane Group Flow (vph)	339	0	0	0	240	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.03	1.03	1.07	1.07	1.15	1.15
Turning Speed (mph)		9	15		15	9
Sign Control	Stop			Stop	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 37.0%	ICU Level of Service A
Analysis Period (min) 15	

Intersection	
Intersection Delay, s/veh	10.7
Intersection LOS	B

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	312	0	0	0	211	10
Future Vol, veh/h	312	0	0	0	211	10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	0	0	0	1	10
Mvmt Flow	339	0	0	0	229	11
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	11	0	10.3
HCM LOS	B	-	B

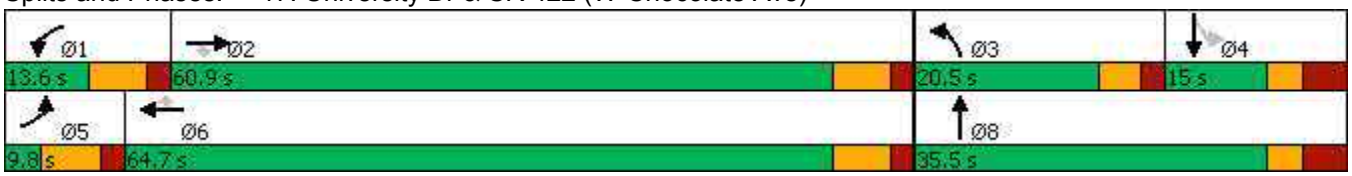
Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	95%	0%	0%
Vol Thru, %	0%	100%	100%
Vol Right, %	5%	0%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	221	312	0
LT Vol	211	0	0
Through Vol	0	312	0
RT Vol	10	0	0
Lane Flow Rate	240	339	0
Geometry Grp	1	1	1
Degree of Util (X)	0.326	0.428	0
Departure Headway (Hd)	4.888	4.547	4.911
Convergence, Y/N	Yes	Yes	Yes
Cap	735	794	0
Service Time	2.923	2.575	2.959
HCM Lane V/C Ratio	0.327	0.427	0
HCM Control Delay	10.3	11	8
HCM Lane LOS	B	B	N
HCM 95th-tile Q	1.4	2.2	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	1547	150	103	1292	18	436	26	294	37	19	45
Future Volume (vph)	11	1547	150	103	1292	18	436	26	294	37	19	45
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	12	14	11	12	12	12	12	12	11	12	12
Grade (%)		1%			-1%			0%			1%	
Storage Length (ft)	210		225	240		225	200		0	0		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.862			0.894	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1645	3369	1608	1661	3403	1451	3285	1537	0	1645	1552	0
Flt Permitted	0.950			0.950			0.950			0.556		
Satd. Flow (perm)	1645	3369	1608	1661	3403	1451	3285	1537	0	963	1552	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			159			159		69			48	
Link Speed (mph)		50			50			25			25	
Link Distance (ft)		1997			877			940			239	
Travel Time (s)		27.2			12.0			25.6			6.5	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	1%	1%	0%	1%	6%	1%	0%	1%	0%	6%	2%
Adj. Flow (vph)	12	1646	160	110	1374	19	464	28	313	39	20	48
Shared Lane Traffic (%)												
Lane Group Flow (vph)	12	1646	160	110	1374	19	464	341	0	39	68	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.13	1.08	0.99	1.11	1.07	1.07	1.07	1.07	1.07	1.13	1.08	1.08
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	1		1	1	
Detector Template		Main35			Main35							
Leading Detector (ft)	38	350	0	38	350	0	38	38		38	38	
Trailing Detector (ft)	-2	0	0	-2	0	0	-2	-2		-2	-2	
Detector 1 Position(ft)	-2	0	0	-2	0	0	-2	-2		-2	-2	
Detector 1 Size(ft)	40	0	0	40	0	0	40	40		40	40	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		344			344							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Perm	NA	
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases			2			6				4		
Detector Phase	5	2	2	1	6	6	3	8		4	4	
Switch Phase												
Minimum Initial (s)	3.0	15.0	15.0	3.0	15.0	15.0	3.0	3.0		3.0	3.0	
Minimum Split (s)	9.8	21.8	21.8	9.8	21.8	21.8	8.5	15.0		15.0	15.0	
Total Split (s)	9.8	60.9	60.9	13.6	64.7	64.7	20.5	35.5		15.0	15.0	
Total Split (%)	8.9%	55.4%	55.4%	12.4%	58.8%	58.8%	18.6%	32.3%		13.6%	13.6%	
Maximum Green (s)	3.0	54.1	54.1	6.8	57.9	57.9	15.0	28.8		8.3	8.3	
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	4.8	3.5	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	3.7		3.7	3.7	
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5		-1.5	-1.5	
Total Lost Time (s)	5.3	5.3	5.3	5.3	5.3	5.3	4.0	5.2		5.2	5.2	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes			Yes	Yes	
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0	6.0	3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.5	3.5	3.0	3.5	3.5	3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	35.0	35.0	0.0	35.0	35.0	0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	18.0	18.0	0.0	18.0	18.0	0.0	0.0		0.0	0.0	
Recall Mode	None	Min	Min	None	Min	Min	None	None		None	None	
Act Effct Green (s)	4.5	55.8	55.8	8.3	67.5	67.5	16.6	27.0		9.1	9.1	
Actuated g/C Ratio	0.04	0.52	0.52	0.08	0.63	0.63	0.16	0.25		0.09	0.09	
v/c Ratio	0.17	0.94	0.18	0.85	0.64	0.02	0.91	0.78		0.48	0.39	
Control Delay	56.8	36.5	2.8	98.7	15.3	0.1	68.5	42.1		67.6	26.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	56.8	36.5	2.8	98.7	15.3	0.1	68.5	42.1		67.6	26.9	
LOS	E	D	A	F	B	A	E	D		E	C	
Approach Delay		33.7			21.3			57.3			41.8	
Approach LOS		C			C			E			D	

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 107	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.94	
Intersection Signal Delay: 34.0	Intersection LOS: C
Intersection Capacity Utilization 92.6%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 17: University Dr & SR 422 (W Chocolate Ave)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	1547	150	103	1292	18	436	26	294	37	19	45
Future Volume (veh/h)	11	1547	150	103	1292	18	436	26	294	37	19	45
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1794	1780	1852	1837	1823	1752	1786	1800	1800	1794	1710	1710
Adj Flow Rate, veh/h	12	1646	160	110	1374	19	464	28	313	39	20	48
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	1	1	0	1	6	1	0	0	0	6	6
Cap, veh/h	38	1714	795	132	1941	832	496	35	388	137	39	93
Arrive On Green	0.02	0.51	0.51	0.08	0.56	0.56	0.15	0.27	0.27	0.09	0.09	0.09
Sat Flow, veh/h	1709	3383	1569	1750	3464	1485	3300	127	1418	1053	446	1071
Grp Volume(v), veh/h	12	1646	160	110	1374	19	464	0	341	39	0	68
Grp Sat Flow(s),veh/h/ln	1709	1691	1569	1750	1732	1485	1650	0	1545	1053	0	1517
Q Serve(g_s), s	0.8	51.3	6.1	6.8	31.7	0.6	15.3	0.0	22.6	3.9	0.0	4.7
Cycle Q Clear(g_c), s	0.8	51.3	6.1	6.8	31.7	0.6	15.3	0.0	22.6	6.0	0.0	4.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.92	1.00		0.71
Lane Grp Cap(c), veh/h	38	1714	795	132	1941	832	496	0	423	137	0	132
V/C Ratio(X)	0.32	0.96	0.20	0.83	0.71	0.02	0.94	0.00	0.81	0.28	0.00	0.52
Avail Cap(c_a), veh/h	70	1714	795	132	1941	832	496	0	427	140	0	136
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	52.8	26.0	14.9	50.0	17.6	10.7	46.1	0.0	37.1	49.5	0.0	47.9
Incr Delay (d2), s/veh	4.8	14.0	0.4	34.0	1.9	0.0	25.2	0.0	10.8	1.1	0.0	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.7	29.0	4.1	7.4	17.0	0.3	12.6	0.0	14.9	2.0	0.0	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.6	40.0	15.3	84.0	19.5	10.8	71.3	0.0	48.0	50.6	0.0	51.0
LnGrp LOS	E	D	B	F	B	B	E	A	D	D	A	D
Approach Vol, veh/h		1818			1503			805			107	
Approach Delay, s/veh		37.9			24.1			61.4			50.9	
Approach LOS		D			C			E			D	

Timer - Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	13.6	60.9	20.5	14.7	7.7	66.8		35.2
Change Period (Y+Rc), s	6.8	6.8	5.5	* 6.7	6.8	6.8		* 6.7
Max Green Setting (Gmax), s	6.8	54.1	15.0	* 8.3	3.0	57.9		* 29
Max Q Clear Time (g_c+I1), s	8.8	53.3	17.3	8.0	2.8	33.7		24.6
Green Ext Time (p_c), s	0.0	0.8	0.0	0.0	0.0	23.1		0.6

Intersection Summary	
HCM 6th Ctrl Delay	37.8
HCM 6th LOS	D

Notes

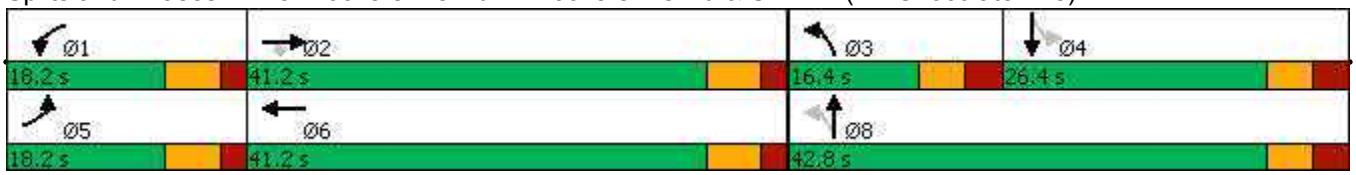
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	1352	477	142	1043	18	365	149	110	41	165	12
Future Volume (vph)	55	1352	477	142	1043	18	365	149	110	41	165	12
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	12	14	11	12	12	11	11	13	12	12	12
Grade (%)		-2%			2%			1%			-2%	
Storage Length (ft)	125		200	125		0	0		100	0		0
Storage Lanes	1		1	1		0	1		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor											1.00	
Frt			0.850		0.997			0.937			0.993	
Flt Protected	0.950			0.950			0.950				0.991	
Satd. Flow (prot)	1670	3386	1632	1604	3311	0	1628	1606	0	0	1774	0
Flt Permitted	0.950			0.950			0.357				0.880	
Satd. Flow (perm)	1670	3386	1632	1604	3311	0	612	1606	0	0	1576	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			331		2			41			3	
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		2885			1404			806			192	
Travel Time (s)		56.2			27.4			15.7			3.7	
Confl. Peds. (#/hr)							1					1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	2%	1%	2%	2%	0%	1%	1%	1%	0%	1%	0%
Adj. Flow (vph)	57	1394	492	146	1075	19	376	154	113	42	170	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	57	1394	492	146	1094	0	376	267	0	0	224	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.11	1.06	0.97	1.13	1.09	1.09	1.13	1.13	1.03	1.06	1.06	1.06
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	2	1	2		1	1		1	1	
Detector Template		Main25			Main25					Left		
Leading Detector (ft)	38	250	106	38	250		38	38		48	38	
Trailing Detector (ft)	-2	0	0	-2	0		-2	-2		-2	-2	
Detector 1 Position(ft)	-2	0	0	-2	0		-2	-2		-2	-2	
Detector 1 Size(ft)	40	0	0	40	0		40	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		244	100		244							
Detector 2 Size(ft)		6	6		6							
Detector 2 Type		Cl+Ex	Cl+Ex		Cl+Ex							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0	0.0		0.0							
Turn Type	Prot	NA	Perm	Prot	NA		pm+pt	NA		Perm	NA	
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases			2				8			4		
Detector Phase	5	2	2	1	6		3	8		4	4	
Switch Phase												
Minimum Initial (s)	3.0	15.0	15.0	3.0	15.0		3.0	3.0		3.0	3.0	
Minimum Split (s)	9.4	21.2	21.2	9.2	25.0		10.0	25.0		10.0	10.0	
Total Split (s)	18.2	41.2	41.2	18.2	41.2		16.4	42.8		26.4	26.4	
Total Split (%)	17.8%	40.3%	40.3%	17.8%	40.3%		16.0%	41.9%		25.8%	25.8%	
Maximum Green (s)	12.0	35.0	35.0	12.0	35.0		10.0	36.4		20.0	20.0	
Yellow Time (s)	4.2	4.2	4.2	4.2	4.2		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.9	2.9		2.9	2.9	
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	-1.5		-1.5	-1.5			-1.5	
Total Lost Time (s)	4.7	4.7	4.7	4.7	4.7		4.9	4.9			4.9	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes			Yes	Yes	
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.5	3.5	3.0	3.5		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	25.0	25.0	0.0	25.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	12.5	12.5	0.0	12.5		0.0	0.0		0.0	0.0	
Recall Mode	None	Min	Min	None	Min		None	None		None	None	
Walk Time (s)							2.0					
Flash Dont Walk (s)							1.0					
Pedestrian Calls (#/hr)							0					
Act Effct Green (s)	10.3	36.6	36.6	12.9	41.7		35.2	35.2			18.8	
Actuated g/C Ratio	0.10	0.37	0.37	0.13	0.42		0.36	0.36			0.19	
v/c Ratio	0.33	1.11	0.61	0.70	0.78		1.12	0.45			0.74	
Control Delay	46.7	94.3	11.9	61.0	31.9		114.8	23.1			53.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	
Total Delay	46.7	94.3	11.9	61.0	31.9		114.8	23.1			53.2	
LOS	D	F	B	E	C		F	C			D	
Approach Delay		72.0			35.3			76.7			53.2	
Approach LOS		E			D			E			D	

Intersection Summary	
Area Type: Other	
Cycle Length: 102.2	
Actuated Cycle Length: 99	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.12	
Intersection Signal Delay: 60.5	Intersection LOS: E
Intersection Capacity Utilization 97.4%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 18: Hockersville Rd/N. Hockersville Rd & SR 422 (W. Chocolate Ave)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	55	1352	477	142	1043	18	365	149	110	41	165	12
Future Volume (veh/h)	55	1352	477	142	1043	18	365	149	110	41	165	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1875	1846	1935	1750	1750	1750	1780	1780	1852	1860	1860	1860
Adj Flow Rate, veh/h	57	1394	492	146	1075	19	376	154	113	42	170	12
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	2	1	2	2	2	1	1	1	1	1	1
Cap, veh/h	102	1359	635	200	1506	27	422	325	238	85	228	15
Arrive On Green	0.06	0.39	0.39	0.12	0.45	0.45	0.12	0.34	0.34	0.17	0.17	0.17
Sat Flow, veh/h	1785	3508	1640	1666	3342	59	1696	954	700	238	1373	91
Grp Volume(v), veh/h	57	1394	492	146	535	559	376	0	267	224	0	0
Grp Sat Flow(s),veh/h/ln	1785	1754	1640	1666	1662	1739	1696	0	1654	1702	0	0
Q Serve(g_s), s	2.9	36.5	24.7	8.0	24.5	24.5	11.5	0.0	12.0	8.1	0.0	0.0
Cycle Q Clear(g_c), s	2.9	36.5	24.7	8.0	24.5	24.5	11.5	0.0	12.0	11.8	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.03	1.00		0.42	0.19		0.05
Lane Grp Cap(c), veh/h	102	1359	635	200	749	784	422	0	563	329	0	0
V/C Ratio(X)	0.56	1.03	0.77	0.73	0.71	0.71	0.89	0.00	0.47	0.68	0.00	0.00
Avail Cap(c_a), veh/h	256	1359	635	239	749	784	422	0	665	431	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	43.3	28.8	25.2	40.0	20.9	20.9	31.4	0.0	24.4	37.5	0.0	0.0
Incr Delay (d2), s/veh	4.8	31.1	8.1	8.8	5.1	4.8	20.3	0.0	0.6	2.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.5	28.1	15.8	6.6	15.1	15.6	9.3	0.0	8.1	8.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.0	60.0	33.4	48.8	26.0	25.8	51.7	0.0	25.0	40.3	0.0	0.0
LnGrp LOS	D	F	C	D	C	C	D	A	C	D	A	A
Approach Vol, veh/h		1943			1240			643			224	
Approach Delay, s/veh		52.9			28.6			40.6			40.3	
Approach LOS		D			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	16.0	41.2	16.4	20.6	10.1	47.2		37.0
Change Period (Y+Rc), s	6.2	6.2	6.4	6.4	6.2	6.2		6.4
Max Green Setting (Gmax), s	12.0	35.0	10.0	20.0	12.0	35.0		36.4
Max Q Clear Time (g_c+I1), s	10.0	38.5	13.5	13.8	4.9	26.5		14.0
Green Ext Time (p_c), s	0.1	0.0	0.0	0.4	0.1	7.8		0.9

Intersection Summary	
HCM 6th Ctrl Delay	42.8
HCM 6th LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	648	236	309	1060	93	56	74	187	6	2	5
Future Volume (vph)	36	648	236	309	1060	93	56	74	187	6	2	5
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	12	12	10	13	13	13	13	13	13	13	13
Grade (%)		-3%			3%			-1%			-2%	
Storage Length (ft)	200		0	575		0	0		150	0		0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99		1.00								
Frt		0.960			0.988				0.850		0.952	
Flt Protected	0.950			0.950				0.979			0.976	
Satd. Flow (prot)	1620	3144	0	1526	1794	0	0	1784	1513	0	1746	0
Flt Permitted	0.150			0.176				0.854			0.770	
Satd. Flow (perm)	256	3144	0	283	1794	0	0	1556	1513	0	1377	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)		108			19				123			
Link Speed (mph)		25			35			25			25	
Link Distance (ft)		592			1437			1120			398	
Travel Time (s)		16.1			28.0			30.5			10.9	
Confl. Peds. (#/hr)			1	1								
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	3%	12%	3%	1%	0%	6%	0%	5%	0%	0%	0%
Adj. Flow (vph)	39	704	257	336	1152	101	61	80	203	7	2	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	39	961	0	336	1253	0	0	141	203	0	14	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.15	1.05	1.05	1.19	1.05	1.05	1.02	1.02	1.02	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	1	1	1	1	
Detector Template							Left	Thru	Right	Left	Thru	
Leading Detector (ft)	0	150		38	150		48	48	48	48	48	
Trailing Detector (ft)	0	0		-2	0		-2	-2	-2	-2	-2	
Detector 1 Position(ft)	0	0		-2	0		-2	-2	-2	-2	-2	
Detector 1 Size(ft)	0	0		40	0		50	50	50	50	50	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		144			144							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	pm+ov	Perm	NA	
Protected Phases		2		1	6			8	1		4	
Permitted Phases	2			6			8		8	4		
Detector Phase	2	2		1	6		8	8	1	4	4	
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Minimum Split (s)	10.0	10.0		9.7	10.0		10.0	10.0	9.7	10.0	10.0	
Total Split (s)	30.8	30.8		18.2	49.0		11.0	11.0	18.2	11.0	11.0	
Total Split (%)	51.3%	51.3%		30.3%	81.7%		18.3%	18.3%	30.3%	18.3%	18.3%	
Maximum Green (s)	24.1	24.1		11.5	42.3		4.2	4.2	11.5	4.2	4.2	
Yellow Time (s)	3.4	3.4		3.4	3.4		3.8	3.8	3.4	3.8	3.8	
All-Red Time (s)	3.3	3.3		3.3	3.3		3.0	3.0	3.3	3.0	3.0	
Lost Time Adjust (s)	-1.5	-1.5		-1.5	-1.5			-1.5	-1.5		-1.5	
Total Lost Time (s)	5.2	5.2		5.2	5.2			5.3	5.2		5.3	
Lead/Lag	Lag	Lag		Lead					Lead			
Lead-Lag Optimize?	Yes	Yes		Yes					Yes			
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max		None	C-Max		None	None	None	None	None	
Act Effct Green (s)	26.7	26.7		43.8	43.8			5.7	22.9		5.7	
Actuated g/C Ratio	0.44	0.44		0.73	0.73			0.10	0.38		0.10	
v/c Ratio	0.34	0.66		0.74	0.95			0.96	0.31		0.11	
Control Delay	22.1	14.4		19.5	25.9			98.2	6.8		26.9	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Delay	22.1	14.4		19.5	25.9			98.2	6.8		26.9	
LOS	C	B		B	C			F	A		C	
Approach Delay		14.7			24.5			44.3			26.9	
Approach LOS		B			C			D			C	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.96	
Intersection Signal Delay: 23.5	Intersection LOS: C
Intersection Capacity Utilization 90.4%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 19: Homestead Rd & SR 422 (E. Chocolate Ave)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	648	236	309	1060	93	56	74	187	6	2	5
Future Volume (veh/h)	36	648	236	309	1060	93	56	74	187	6	2	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1912	1869	1869	1708	1805	1805	1911	1911	1837	1950	1950	1950
Adj Flow Rate, veh/h	39	704	257	336	1152	101	61	80	203	7	2	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	3	3	3	1	1	0	0	5	0	0	0
Cap, veh/h	162	1255	458	533	1194	105	158	94	382	101	30	23
Arrive On Green	0.49	0.49	0.49	0.15	0.73	0.73	0.09	0.09	0.09	0.09	0.09	0.09
Sat Flow, veh/h	478	2547	930	1626	1636	143	758	994	1557	120	316	242
Grp Volume(v), veh/h	39	491	470	336	0	1253	141	0	203	14	0	0
Grp Sat Flow(s),veh/h/ln	478	1776	1701	1626	0	1779	1751	0	1557	678	0	0
Q Serve(g_s), s	4.9	11.6	11.6	5.1	0.0	38.6	0.0	0.0	5.7	0.0	0.0	0.0
Cycle Q Clear(g_c), s	29.2	11.6	11.6	5.1	0.0	38.6	4.7	0.0	5.7	4.8	0.0	0.0
Prop In Lane	1.00		0.55	1.00		0.08	0.43		1.00	0.50		0.36
Lane Grp Cap(c), veh/h	162	875	838	533	0	1299	252	0	382	154	0	0
V/C Ratio(X)	0.24	0.56	0.56	0.63	0.00	0.96	0.56	0.00	0.53	0.09	0.00	0.00
Avail Cap(c_a), veh/h	162	875	838	641	0	1299	252	0	382	154	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	27.2	10.7	10.7	7.8	0.0	7.4	26.7	0.0	19.6	24.9	0.0	0.0
Incr Delay (d2), s/veh	3.5	2.6	2.7	1.4	0.0	17.8	2.7	0.0	1.4	0.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.2	8.1	7.8	2.1	0.0	18.1	3.8	0.0	4.4	0.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.7	13.3	13.4	9.2	0.0	25.2	29.5	0.0	21.0	25.1	0.0	0.0
LnGrp LOS	C	B	B	A	A	C	C	A	C	C	A	A
Approach Vol, veh/h		1000			1589			344			14	
Approach Delay, s/veh		14.0			21.8			24.5			25.1	
Approach LOS		B			C			C			C	

Timer - Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	14.2	34.8		11.0		49.0		11.0
Change Period (Y+Rc), s	* 6.7	* 6.7		* 6.8		* 6.7		* 6.8
Max Green Setting (Gmax), s	* 12	* 24		* 4.2		* 42		* 4.2
Max Q Clear Time (g_c+I1), s	7.1	13.6		6.8		40.6		7.7
Green Ext Time (p_c), s	0.5	5.9		0.0		1.5		0.0

Intersection Summary	
HCM 6th Ctrl Delay	19.5
HCM 6th LOS	B

Notes

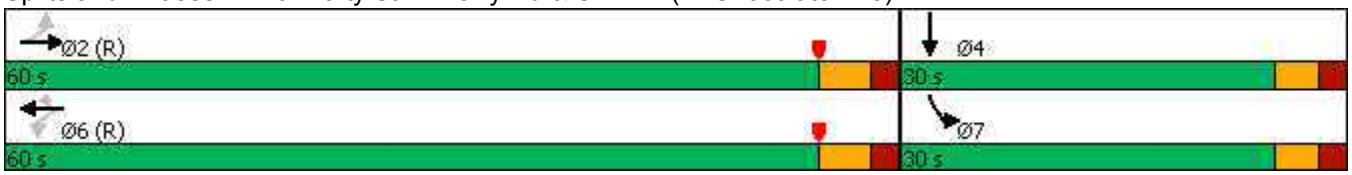
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1298	2	2	744	63	0	0	0	111	0	38
Future Volume (vph)	0	1298	2	2	744	63	0	0	0	111	0	38
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	11	11	13	12	12	12	10	10	10
Grade (%)		2%			3%			2%			2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850					0.965	
Flt Protected											0.964	
Satd. Flow (prot)	0	1747	0	0	1664	1557	0	0	0	0	1255	0
Flt Permitted					0.783						0.964	
Satd. Flow (perm)	0	1747	0	0	1303	1557	0	0	0	0	1255	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						66					30	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		4173			285			432			3474	
Travel Time (s)		81.3			5.6			11.8			94.7	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	2%	0%	0%	3%	0%	0%	0%	0%	1%	0%	88%
Adj. Flow (vph)	0	1352	2	2	775	66	0	0	0	116	0	40
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1354	0	0	777	66	0	0	0	0	156	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.14	1.14	1.05	1.09	1.09	1.09	1.19	1.19	1.19
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1				1	1	
Detector Template	Left	Main25		Left	Main25	Right				Left		
Leading Detector (ft)	48	250		48	250	48				48	45	
Trailing Detector (ft)	-2	0		-2	0	-2				-2	-5	
Detector 1 Position(ft)	-2	0		-2	0	-2				-2	-5	
Detector 1 Size(ft)	50	0		50	0	50				50	50	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex				Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0				0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0				0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0				0.0	0.0	
Detector 2 Position(ft)		244			244							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							
Turn Type		NA		Perm	NA	Perm				Prot	NA	
Protected Phases		2			6					7	4	
Permitted Phases	2			6		6						

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	2	2		6	6	6				7	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0				3.0	3.0	
Minimum Split (s)	15.5	15.5		15.5	15.5	15.5				8.0	10.0	
Total Split (s)	60.0	60.0		60.0	60.0	60.0				30.0	30.0	
Total Split (%)	66.7%	66.7%		66.7%	66.7%	66.7%				33.3%	33.3%	
Maximum Green (s)	54.5	54.5		54.5	54.5	54.5				25.0	25.0	
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5				3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0				2.0	2.0	
Lost Time Adjust (s)		-1.5			-1.5	-1.5					-1.5	
Total Lost Time (s)		4.0			4.0	4.0					3.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	6.0	6.0		6.0	6.0	6.0				3.0	3.0	
Minimum Gap (s)	5.0	5.0		5.0	5.0	5.0				3.0	3.0	
Time Before Reduce (s)	13.0	13.0		13.0	13.0	13.0				0.0	0.0	
Time To Reduce (s)	25.0	25.0		25.0	25.0	25.0				0.0	0.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max	C-Max				None	None	
Act Effct Green (s)		56.0			56.0	56.0					26.5	
Actuated g/C Ratio		0.62			0.62	0.62					0.29	
v/c Ratio		1.25			0.96	0.07					0.40	
Control Delay		138.9			38.8	1.9					24.0	
Queue Delay		0.0			0.0	0.0					0.0	
Total Delay		138.9			38.8	1.9					24.0	
LOS		F			D	A					C	
Approach Delay		138.9			35.9						24.0	
Approach LOS		F			D						C	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 9.3 (10%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.25	
Intersection Signal Delay: 94.4	Intersection LOS: F
Intersection Capacity Utilization 87.8%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 20: Yorty St/E. Derry Rd & SR 422 (E. Chocolate Ave)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1298	2	2	744	63	0	0	0	111	0	38
Future Volume (veh/h)	0	1298	2	2	744	63	0	0	0	111	0	38
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	1750	1750	1750	1708	1708	1820				1778	1778	1778
Adj Flow Rate, veh/h	0	1352	2	2	775	66				116	0	40
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96				0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	3	3	0				0	0	0
Cap, veh/h	0	1369	2	40	1218	1209				162	0	56
Arrive On Green	0.00	0.78	0.78	0.78	0.78	0.78				0.13	0.00	0.13
Sat Flow, veh/h	0	1747	3	0	1553	1542				1220	0	421
Grp Volume(v), veh/h	0	0	1354	777	0	66				156	0	0
Grp Sat Flow(s),veh/h/ln	0	0	1749	1553	0	1542				1641	0	0
Q Serve(g_s), s	0.0	0.0	66.6	3.9	0.0	0.9				8.2	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	66.6	70.6	0.0	0.9				8.2	0.0	0.0
Prop In Lane	0.00		0.00	0.00		1.00				0.74		0.26
Lane Grp Cap(c), veh/h	0	0	1371	1258	0	1209				218	0	0
V/C Ratio(X)	0.00	0.00	0.99	0.62	0.00	0.05				0.72	0.00	0.00
Avail Cap(c_a), veh/h	0	0	1371	1258	0	1209				483	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	1.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	9.3	4.3	0.0	2.2				37.4	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	21.5	2.3	0.0	0.1				4.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	0.0	29.7	7.3	0.0	3.7				6.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	30.8	6.5	0.0	2.3				41.8	0.0	0.0
LnGrp LOS	A	A	C	A	A	A				D	A	A
Approach Vol, veh/h		1354			843						156	
Approach Delay, s/veh		30.8			6.2						41.8	
Approach LOS		C			A						D	

Timer - Assigned Phs	2	4	6
Phs Duration (G+Y+Rc), s	74.6	15.4	74.6
Change Period (Y+Rc), s	5.5	5.0	5.5
Max Green Setting (Gmax), s	54.5	25.0	54.5
Max Q Clear Time (g_c+I1), s	68.6	10.2	72.6
Green Ext Time (p_c), s	0.0	0.5	0.0

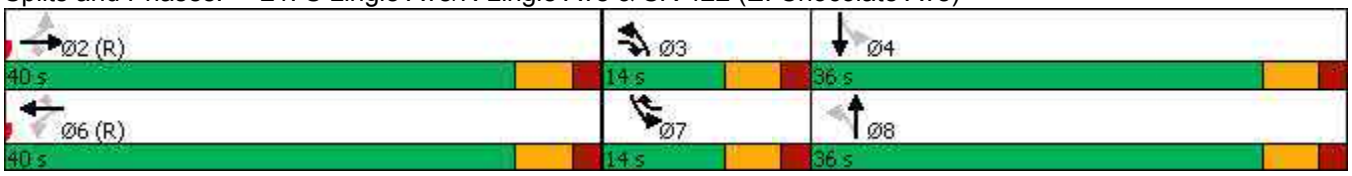
Intersection Summary	
HCM 6th Ctrl Delay	22.7
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	671	483	21	470	164	243	298	23	247	551	28
Future Volume (vph)	21	671	483	21	470	164	243	298	23	247	551	28
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	13	11	11	13	12	14	14	12	14	14
Grade (%)		1%			-2%			-2%			-3%	
Storage Length (ft)	100		525	100		150	500		0	200		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00					0.95		1.00				
Frt			0.850			0.850		0.989			0.993	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1482	1714	1573	1670	1706	1521	1727	1915	0	1736	1931	0
Flt Permitted	0.271			0.110			0.129			0.388		
Satd. Flow (perm)	422	1714	1573	193	1706	1448	235	1915	0	709	1931	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			124			173		5			3	
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		768			1230			1254			1637	
Travel Time (s)		15.0			24.0			24.4			31.9	
Confl. Peds. (#/hr)	5					5			1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	11%	1%	0%	0%	3%	5%	0%	0%	0%	0%	0%	4%
Adj. Flow (vph)	22	706	508	22	495	173	256	314	24	260	580	29
Shared Lane Traffic (%)												
Lane Group Flow (vph)	22	706	508	22	495	173	256	338	0	260	609	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.13	1.13	1.03	1.11	1.11	1.01	1.06	0.97	0.97	1.05	0.97	0.97
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	1		1	1	
Detector Template	Left	Main25	Right	Left	Main25	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	48	250	48	48	250	48	48	48		48	48	
Trailing Detector (ft)	-2	0	-2	-2	0	-2	-2	-2		-2	-2	
Detector 1 Position(ft)	-2	0	-2	-2	0	-2	-2	-2		-2	-2	
Detector 1 Size(ft)	50	0	50	50	0	50	50	50		50	50	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		244			244							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	pm+pt	NA		pm+pt	NA	
Protected Phases		2	3		6	7	3	8		7	4	
Permitted Phases	2		2	6		6	8			4		
Detector Phase	2	2	3	6	6	7	3	8		7	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0	3.0	10.0	10.0	3.0	3.0	3.0		3.0	3.0	
Minimum Split (s)	15.9	15.9	14.0	15.9	15.9	14.0	14.0	10.0		14.0	10.0	
Total Split (s)	40.0	40.0	14.0	40.0	40.0	14.0	14.0	36.0		14.0	36.0	
Total Split (%)	44.4%	44.4%	15.6%	44.4%	44.4%	15.6%	15.6%	40.0%		15.6%	40.0%	
Maximum Green (s)	34.1	34.1	8.2	34.1	34.1	8.2	8.2	30.2		8.2	30.2	
Yellow Time (s)	3.9	3.9	3.8	3.9	3.9	3.8	3.8	3.8		3.8	3.8	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5		-1.5	-1.5	
Total Lost Time (s)	4.4	4.4	4.3	4.4	4.4	4.3	4.3	4.3		4.3	4.3	
Lead/Lag			Lead			Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?			Yes			Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	6.3	6.3	3.0	6.3	6.3	3.0	3.0	3.0		3.0	3.0	
Minimum Gap (s)	5.0	5.0	3.0	5.0	5.0	3.0	3.0	3.0		3.0	3.0	
Time Before Reduce (s)	13.0	13.0	0.0	13.0	13.0	0.0	0.0	0.0		0.0	0.0	
Time To Reduce (s)	25.0	25.0	0.0	25.0	25.0	0.0	0.0	0.0		0.0	0.0	
Recall Mode	C-Max	C-Max	None	C-Max	C-Max	None	None	None		None	None	
Walk Time (s)			5.0			5.0	5.0			5.0		
Flash Dont Walk (s)			3.0			3.0	3.0			3.0		
Pedestrian Calls (#/hr)			0			0	0			0		
Act Effct Green (s)	36.4	36.4	50.5	36.4	36.4	46.2	40.6	30.9		40.6	30.9	
Actuated g/C Ratio	0.40	0.40	0.56	0.40	0.40	0.51	0.45	0.34		0.45	0.34	
v/c Ratio	0.13	1.02	0.54	0.28	0.72	0.21	0.96	0.51		0.60	0.92	
Control Delay	12.1	39.6	13.6	30.5	30.0	2.3	69.4	26.2		20.3	48.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	12.1	39.6	13.6	30.5	30.0	2.3	69.4	26.2		20.3	48.6	
LOS	B	D	B	C	C	A	E	C		C	D	
Approach Delay		28.4			23.1			44.8			40.2	
Approach LOS		C			C			D			D	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 7.3 (8%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.02	
Intersection Signal Delay: 33.2	Intersection LOS: C
Intersection Capacity Utilization 94.7%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 21: S Lingle Ave/N Lingle Ave & SR 422 (E. Chocolate Ave)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	21	671	483	21	470	164	243	298	23	247	551	28
Future Volume (veh/h)	21	671	483	21	470	164	243	298	23	247	551	28
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1640	1780	1866	1875	1832	1876	1875	1950	1950	1912	1988	1988
Adj Flow Rate, veh/h	22	706	508	22	495	173	256	314	24	260	580	29
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	11	1	0	0	3	5	0	0	0	0	0	0
Cap, veh/h	214	727	812	89	748	816	311	607	46	500	638	32
Arrive On Green	0.41	0.41	0.41	0.41	0.41	0.41	0.11	0.34	0.34	0.11	0.34	0.34
Sat Flow, veh/h	710	1780	1572	486	1832	1580	1785	1788	137	1821	1877	94
Grp Volume(v), veh/h	22	706	508	22	495	173	256	0	338	260	0	609
Grp Sat Flow(s),veh/h/ln	710	1780	1572	486	1832	1580	1785	0	1925	1821	0	1971
Q Serve(g_s), s	2.3	35.0	20.8	1.7	19.7	5.4	8.3	0.0	12.7	8.3	0.0	26.6
Cycle Q Clear(g_c), s	22.1	35.0	20.8	36.7	19.7	5.4	8.3	0.0	12.7	8.3	0.0	26.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.07	1.00		0.05
Lane Grp Cap(c), veh/h	214	727	812	89	748	816	311	0	654	500	0	670
V/C Ratio(X)	0.10	0.97	0.63	0.25	0.66	0.21	0.82	0.00	0.52	0.52	0.00	0.91
Avail Cap(c_a), veh/h	214	727	812	89	748	816	311	0	678	500	0	694
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.5	26.1	15.6	44.6	21.6	11.8	20.9	0.0	23.8	17.2	0.0	28.4
Incr Delay (d2), s/veh	1.0	27.1	3.6	6.5	4.6	0.6	16.3	0.0	0.6	1.0	0.0	15.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.8	26.3	12.1	1.2	13.8	3.4	8.1	0.0	9.5	6.1	0.0	21.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.5	53.3	19.2	51.1	26.2	12.4	37.3	0.0	24.4	18.2	0.0	44.1
LnGrp LOS	C	D	B	D	C	B	D	A	C	B	A	D
Approach Vol, veh/h		1236			690			594			869	
Approach Delay, s/veh		38.9			23.5			30.0			36.4	
Approach LOS		D			C			C			D	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	41.1	14.0	34.9	41.1	14.0	34.9
Change Period (Y+Rc), s	5.9	* 5.8	* 5.8	5.9	* 5.8	* 5.8
Max Green Setting (Gmax), s	34.1	* 8.2	* 30	34.1	* 8.2	* 30
Max Q Clear Time (g_c+I1), s	37.0	10.3	28.6	38.7	10.3	14.7
Green Ext Time (p_c), s	0.0	0.0	0.5	0.0	0.0	1.1

Intersection Summary	
HCM 6th Ctrl Delay	33.5
HCM 6th LOS	C

Notes

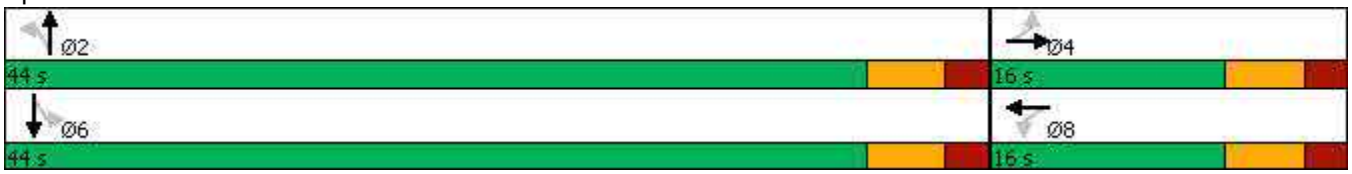
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	81	95	35	3	21	69	24	467	15	63	577	87
Future Volume (vph)	81	95	35	3	21	69	24	467	15	63	577	87
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	15	15	15	15	15	15	11	11	11	11	11	11
Grade (%)		-5%			9%			-1%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.978			0.899			0.996			0.984	
Flt Protected		0.981			0.999			0.998			0.996	
Satd. Flow (prot)	0	1908	0	0	1673	0	0	1707	0	0	1685	0
Flt Permitted		0.867			0.991			0.954			0.921	
Satd. Flow (perm)	0	1687	0	0	1660	0	0	1631	0	0	1558	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15			76			5			25	
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		525			421			813			806	
Travel Time (s)		14.3			11.5			15.8			15.7	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	4%	0%	3%	0%	0%	2%	0%	2%	0%	0%	2%	1%
Adj. Flow (vph)	89	104	38	3	23	76	26	513	16	69	634	96
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	231	0	0	102	0	0	555	0	0	799	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.92	0.92	0.92	1.01	1.01	1.01	1.11	1.11	1.11	1.11	1.11	1.11
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Split (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Total Split (s)	16.0	16.0		16.0	16.0		44.0	44.0		44.0	44.0	
Total Split (%)	26.7%	26.7%		26.7%	26.7%		73.3%	73.3%		73.3%	73.3%	
Maximum Green (s)	10.5	10.5		10.5	10.5		38.5	38.5		38.5	38.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-1.5			-1.5			-1.5			-1.5	
Total Lost Time (s)		4.0			4.0			4.0			4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Act Effct Green (s)		11.4			11.4			34.7			34.7	
Actuated g/C Ratio		0.21			0.21			0.64			0.64	
v/c Ratio		0.63			0.25			0.53			0.79	
Control Delay		28.8			10.2			7.5			14.4	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		28.8			10.2			7.5			14.4	
LOS		C			B			A			B	
Approach Delay		28.8			10.2			7.5			14.4	
Approach LOS		C			B			A			B	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 54.2	
Natural Cycle: 55	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay: 13.8	Intersection LOS: B
Intersection Capacity Utilization 87.6%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 22: Hockersville Rd & W Areba Ave



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	81	95	35	3	21	69	24	467	15	63	577	87
Future Volume (veh/h)	81	95	35	3	21	69	24	467	15	63	577	87
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	2066	2066	2066	1402	1402	1402	1809	1809	1809	1809	1809	1809
Adj Flow Rate, veh/h	89	104	38	3	23	76	26	513	16	69	634	96
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	2	2	2	2	2	2
Cap, veh/h	254	186	62	96	60	187	116	995	30	151	830	121
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.60	0.60	0.60	0.60	0.60	0.60
Sat Flow, veh/h	636	913	305	18	297	921	36	1666	51	89	1390	202
Grp Volume(v), veh/h	231	0	0	102	0	0	555	0	0	799	0	0
Grp Sat Flow(s),veh/h/ln	1854	0	0	1236	0	0	1753	0	0	1681	0	0
Q Serve(g_s), s	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.2	0.0	0.0
Cycle Q Clear(g_c), s	4.3	0.0	0.0	2.9	0.0	0.0	7.2	0.0	0.0	14.0	0.0	0.0
Prop In Lane	0.39		0.16	0.03		0.75	0.05		0.03	0.09		0.12
Lane Grp Cap(c), veh/h	502	0	0	344	0	0	1140	0	0	1101	0	0
V/C Ratio(X)	0.46	0.00	0.00	0.30	0.00	0.00	0.49	0.00	0.00	0.73	0.00	0.00
Avail Cap(c_a), veh/h	671	0	0	462	0	0	1818	0	0	1756	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	14.4	0.0	0.0	13.9	0.0	0.0	4.7	0.0	0.0	6.0	0.0	0.0
Incr Delay (d2), s/veh	0.7	0.0	0.0	0.5	0.0	0.0	0.3	0.0	0.0	0.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.1	0.0	0.0	1.3	0.0	0.0	2.2	0.0	0.0	4.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.0	0.0	0.0	14.3	0.0	0.0	5.0	0.0	0.0	6.9	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	A	A	A	A	A	A
Approach Vol, veh/h		231			102			555			799	
Approach Delay, s/veh		15.0			14.3			5.0			6.9	
Approach LOS		B			B			A			A	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	27.9	12.1	27.9	12.1
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	38.5	10.5	38.5	10.5
Max Q Clear Time (g_c+I1), s	9.2	6.3	16.0	4.9
Green Ext Time (p_c), s	4.0	0.5	6.4	0.2

Intersection Summary	
HCM 6th Ctrl Delay	7.9
HCM 6th LOS	A

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	815	345	223	414	86	93	95	94	65	159	21
Future Volume (vph)	28	815	345	223	414	86	93	95	94	65	159	21
Ideal Flow (vphpl)	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Lane Width (ft)	12	12	12	12	13	11	14	12	14	12	12	12
Grade (%)		1%			-1%			-1%			-3%	
Storage Length (ft)	150		150	175		125	0		165	0		0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00		0.98	1.00		0.99	1.00		0.98	0.99	1.00	
Frt			0.850			0.850			0.850		0.982	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1560	3058	1395	1575	1664	1310	1680	1642	1489	1560	1613	0
Flt Permitted	0.249			0.272			0.446			0.669		
Satd. Flow (perm)	409	3058	1364	451	1664	1293	788	1642	1456	1092	1613	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			355			165			238		7	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		1532			974			928			672	
Travel Time (s)		29.8			19.0			25.3			18.3	
Confl. Peds. (#/hr)	1		2	2		1	2		8	8		2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	2%	0%	0%	3%	4%	0%	1%	1%	2%	2%	0%
Adj. Flow (vph)	30	886	375	242	450	93	101	103	102	71	173	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	30	886	375	242	450	93	101	103	102	71	196	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			14			14	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.20	1.20	1.20	1.19	1.14	1.24	1.10	1.19	1.10	1.17	1.17	1.17
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	1	1	1	1	
Detector Template		Main25	Right		Main25							
Leading Detector (ft)	38	250	48	38	250	0	38	38	38	38	38	
Trailing Detector (ft)	-2	0	-2	-2	0	0	-2	-2	-2	-2	-2	
Detector 1 Position(ft)	-2	0	-2	-2	0	0	-2	-2	-2	-2	-2	
Detector 1 Size(ft)	40	0	50	40	0	0	40	40	40	40	40	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		244			244							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	
Switch Phase												
Minimum Initial (s)	3.0	10.0	10.0	3.0	10.0	10.0	3.0	3.0	3.0	3.0	3.0	
Minimum Split (s)	13.0	25.0	25.0	13.0	15.7	15.7	13.0	25.0	25.0	13.0	13.0	
Total Split (s)	13.0	37.0	37.0	15.0	39.0	39.0	13.0	25.0	25.0	13.0	25.0	
Total Split (%)	14.4%	41.1%	41.1%	16.7%	43.3%	43.3%	14.4%	27.8%	27.8%	14.4%	27.8%	
Maximum Green (s)	7.3	31.3	31.3	9.3	33.3	33.3	7.6	19.6	19.6	7.5	19.6	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.0	3.0	3.0	3.5	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.4	2.4	2.4	2.0	2.4	
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	
Total Lost Time (s)	4.2	4.2	4.2	4.2	4.2	4.2	3.9	3.9	3.9	4.0	3.9	
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0	6.0	3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	25.0	25.0	0.0	25.0	25.0	0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	13.0	13.0	0.0	13.0	13.0	0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	
Act Effct Green (s)	39.7	39.7	39.7	47.0	47.0	47.0	24.2	16.9	16.9	23.9	16.8	
Actuated g/C Ratio	0.44	0.44	0.44	0.52	0.52	0.52	0.27	0.19	0.19	0.27	0.19	
v/c Ratio	0.11	0.66	0.47	0.65	0.52	0.12	0.34	0.34	0.22	0.21	0.64	
Control Delay	18.6	24.7	5.1	33.5	21.7	2.3	24.0	33.6	1.1	21.6	41.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	18.6	24.7	5.1	33.5	21.7	2.3	24.0	33.6	1.1	21.6	41.7	
LOS	B	C	A	C	C	A	C	C	A	C	D	
Approach Delay		18.8			23.0			19.6			36.4	
Approach LOS		B			C			B			D	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.66
Intersection Signal Delay: 21.9 Intersection LOS: C
Intersection Capacity Utilization 70.9% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 23: University Dr & SR 322 (W Governor Dr)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	815	345	223	414	86	93	95	94	65	159	21
Future Volume (veh/h)	28	815	345	223	414	86	93	95	94	65	159	21
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.99		0.99	0.99		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1645	1619	1645	1684	1711	1632	1752	1671	1738	1726	1726	1726
Adj Flow Rate, veh/h	30	886	375	242	450	93	101	103	102	71	173	23
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	0	0	3	4	0	1	1	2	2	2
Cap, veh/h	361	1121	507	459	937	757	268	286	248	319	230	31
Arrive On Green	0.04	0.36	0.36	0.44	1.00	1.00	0.08	0.17	0.17	0.06	0.15	0.15
Sat Flow, veh/h	1567	3076	1390	1604	1711	1382	1668	1671	1452	1644	1489	198
Grp Volume(v), veh/h	30	886	375	242	450	93	101	103	102	71	0	196
Grp Sat Flow(s),veh/h/ln	1567	1538	1390	1604	1711	1382	1668	1671	1452	1644	0	1687
Q Serve(g_s), s	1.2	23.1	14.3	2.2	0.0	0.0	4.4	4.9	3.3	3.2	0.0	10.0
Cycle Q Clear(g_c), s	1.2	23.1	14.3	2.2	0.0	0.0	4.4	4.9	3.3	3.2	0.0	10.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.12
Lane Grp Cap(c), veh/h	361	1121	507	459	937	757	268	286	248	319	0	260
V/C Ratio(X)	0.08	0.79	0.74	0.53	0.48	0.12	0.38	0.36	0.41	0.22	0.00	0.75
Avail Cap(c_a), veh/h	459	1121	507	459	937	757	299	392	340	377	0	396
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.60	0.60	0.60	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	20.0	25.5	11.4	19.5	0.0	0.0	28.5	33.0	11.5	28.8	0.0	36.4
Incr Delay (d2), s/veh	0.1	5.7	9.4	0.7	1.1	0.2	0.9	0.8	1.1	0.3	0.0	4.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.8	13.7	9.3	5.2	0.5	0.1	3.3	3.7	3.6	2.3	0.0	7.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.1	31.2	20.7	20.2	1.1	0.2	29.4	33.7	12.6	29.1	0.0	40.8
LnGrp LOS	C	C	C	C	A	A	C	C	B	C	A	D
Approach Vol, veh/h		1291			785			306			267	
Approach Delay, s/veh		27.9			6.9			25.2			37.7	
Approach LOS		C			A			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.9	37.0	11.3	17.8	7.4	53.5	9.8	19.3
Change Period (Y+Rc), s	* 5.7	* 5.7	5.4	5.4	* 5.7	* 5.7	5.5	5.4
Max Green Setting (Gmax), s	* 33	* 31	7.6	19.6	* 7.3	* 33	7.5	19.6
Max Q Clear Time (g_c+I1), s	4.2	25.1	6.4	12.0	3.2	2.0	5.2	6.9
Green Ext Time (p_c), s	0.4	5.7	0.0	0.4	0.0	11.0	0.0	0.6

Intersection Summary	
HCM 6th Ctrl Delay	22.4
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

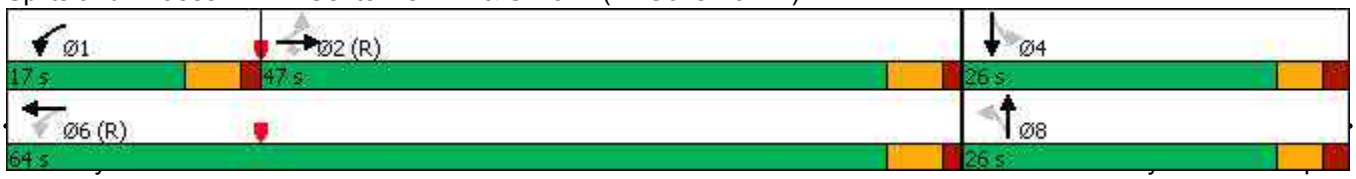
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	524	377	255	669	44	82	21	86	35	179	10
Future Volume (vph)	6	524	377	255	669	44	82	21	86	35	179	10
Ideal Flow (vphpl)	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Lane Width (ft)	12	14	12	12	12	12	12	12	14	16	16	16
Grade (%)		1%			-2%			1%			-1%	
Storage Length (ft)	130		0	165		0	150		350	0		0
Storage Lanes	1		1	1		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00		0.98	1.00	1.00			0.97			1.00	
Frt			0.850		0.991			0.879			0.994	
Flt Protected	0.950			0.950			0.950				0.992	
Satd. Flow (prot)	1560	1621	1395	1583	1599	0	1500	1385	0	0	1853	0
Flt Permitted	0.332			0.253			0.372				0.933	
Satd. Flow (perm)	545	1621	1366	422	1599	0	587	1385	0	0	1739	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			336		8			100			3	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		974			2832			941			923	
Travel Time (s)		19.0			55.2			25.7			25.2	
Confl. Peds. (#/hr)	1		1	1		1			8	8		
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	0%	8%	0%	0%	3%	5%	4%	6%	0%	0%	0%	0%
Adj. Flow (vph)	7	609	438	297	778	51	95	24	100	41	208	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	7	609	438	297	829	0	95	124	0	0	261	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.20	1.11	1.20	1.18	1.18	1.18	1.20	1.20	1.11	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	1		1	1	
Detector Template		Main25	Right	Left	Main25		Left	Thru		Left	Thru	
Leading Detector (ft)	0	250	48	48	250		48	48		48	48	
Trailing Detector (ft)	0	0	-2	-2	0		-2	-2		-2	-2	
Detector 1 Position(ft)	0	0	-2	-2	0		-2	-2		-2	-2	
Detector 1 Size(ft)	0	0	50	50	0		50	50		50	50	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		244			244							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							
Turn Type	Perm	NA	Perm	pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2		2	6			8			4		
Detector Phase	2	2	2	1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	3.0	10.0		3.0	3.0		3.0	3.0	
Minimum Split (s)	25.0	25.0	25.0	13.0	25.0		25.0	25.0		25.0	25.0	
Total Split (s)	47.0	47.0	47.0	17.0	64.0		26.0	26.0		26.0	26.0	
Total Split (%)	52.2%	52.2%	52.2%	18.9%	71.1%		28.9%	28.9%		28.9%	28.9%	
Maximum Green (s)	41.9	41.9	41.9	11.9	58.9		21.1	21.1		21.1	21.1	
Yellow Time (s)	3.8	3.8	3.8	3.8	3.8		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.3	1.3	1.3	1.3	1.3		1.9	1.9		1.9	1.9	
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	-1.5		-1.5	-1.0			-1.0	
Total Lost Time (s)	3.6	3.6	3.6	3.6	3.6		3.4	3.9			3.9	
Lead/Lag	Lag	Lag	Lag	Lead								
Lead-Lag Optimize?	Yes	Yes	Yes	Yes								
Vehicle Extension (s)	6.0	6.0	6.0	3.0	6.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	25.0	25.0	25.0	0.0	25.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	13.0	13.0	13.0	0.0	13.0		0.0	0.0		0.0	0.0	
Recall Mode	C-Max	C-Max	C-Max	None	C-Max		None	None		None	None	
Act Effct Green (s)	48.0	48.0	48.0	63.8	63.8		19.2	18.7			18.7	
Actuated g/C Ratio	0.53	0.53	0.53	0.71	0.71		0.21	0.21			0.21	
v/c Ratio	0.02	0.71	0.50	0.65	0.73		0.76	0.34			0.72	
Control Delay	5.3	20.1	6.9	12.5	10.0		69.4	11.4			44.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	
Total Delay	5.3	20.1	6.9	12.5	10.0		69.4	11.4			44.1	
LOS	A	C	A	B	B		E	B			D	
Approach Delay		14.5			10.7			36.5			44.1	
Approach LOS		B			B			D			D	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 86 (96%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.76
Intersection Signal Delay: 17.6 Intersection LOS: B
Intersection Capacity Utilization 85.4% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 24: Centerview Dr & SR 322 (W Governor Dr)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	524	377	255	669	44	82	21	86	35	179	10
Future Volume (veh/h)	6	524	377	255	669	44	82	21	86	35	179	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.99		0.98	0.99		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1645	1604	1645	1718	1679	1679	1593	1568	1630	1752	1752	1752
Adj Flow Rate, veh/h	7	609	438	297	778	51	95	24	100	41	208	12
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	0	8	0	0	3	3	4	6	6	0	0	0
Cap, veh/h	331	885	768	553	1098	72	215	55	231	81	274	15
Arrive On Green	1.00	1.00	1.00	0.11	0.70	0.70	0.22	0.21	0.21	0.22	0.21	0.22
Sat Flow, veh/h	614	1604	1393	1636	1559	102	1035	261	1087	162	1293	70
Grp Volume(v), veh/h	7	609	438	297	0	829	95	0	124	261	0	0
Grp Sat Flow(s),veh/h/ln	614	1604	1393	1636	0	1661	1035	0	1347	1525	0	0
Q Serve(g_s), s	0.3	0.0	0.0	6.3	0.0	26.5	0.9	0.0	7.2	7.8	0.0	0.0
Cycle Q Clear(g_c), s	13.1	0.0	0.0	6.3	0.0	26.5	15.8	0.0	7.2	14.9	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.06	1.00		0.81	0.16		0.05
Lane Grp Cap(c), veh/h	331	885	768	553	0	1170	215	0	286	379	0	0
V/C Ratio(X)	0.02	0.69	0.57	0.54	0.00	0.71	0.44	0.00	0.43	0.69	0.00	0.00
Avail Cap(c_a), veh/h	331	885	768	612	0	1170	249	0	331	433	0	0
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.78	0.78	0.78	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	1.7	0.0	0.0	5.5	0.0	7.9	34.1	0.0	30.7	33.8	0.0	0.0
Incr Delay (d2), s/veh	0.1	3.4	2.4	0.8	0.0	3.6	1.4	0.0	1.0	3.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	1.5	0.9	3.3	0.0	13.0	3.7	0.0	4.3	9.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	1.8	3.4	2.4	6.3	0.0	11.5	35.5	0.0	31.8	37.6	0.0	0.0
LnGrp LOS	A	A	A	A	A	B	D	A	C	D	A	A
Approach Vol, veh/h		1054			1126			219			261	
Approach Delay, s/veh		3.0			10.1			33.4			37.6	
Approach LOS		A			B			C			D	

Timer - Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	13.7	53.3		23.0		67.0		23.0
Change Period (Y+Rc), s	5.1	5.1		* 4.9		5.1		* 4.9
Max Green Setting (Gmax), s	11.9	41.9		* 21		58.9		* 21
Max Q Clear Time (g_c+I1), s	8.3	2.0		16.9		28.5		17.8
Green Ext Time (p_c), s	0.4	26.6		0.4		22.9		0.3

Intersection Summary	
HCM 6th Ctrl Delay	11.9
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

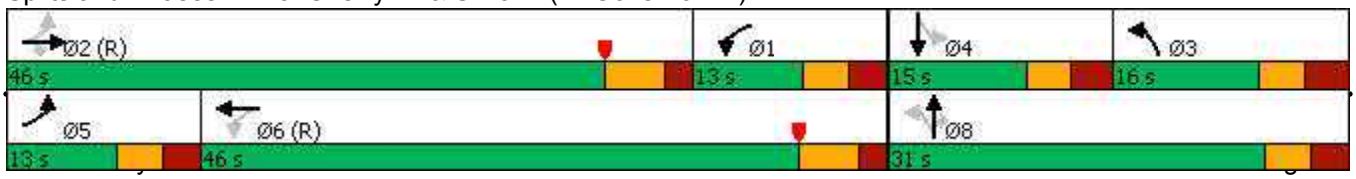
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	691	178	120	637	37	216	51	335	24	41	13
Future Volume (vph)	12	691	178	120	637	37	216	51	335	24	41	13
Ideal Flow (vphpl)	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Lane Width (ft)	10	12	14	10	14	14	10	11	12	10	12	12
Grade (%)		-3%			-2%			0%			1%	
Storage Length (ft)	100		200	205		0	100		75	75		0
Storage Lanes	1		1	1		0	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.98	1.00			1.00				0.99	
Frt			0.850		0.992				0.850		0.963	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1485	1626	1503	1435	1712	0	1449	1595	1402	1456	1504	0
Flt Permitted	0.138			0.171			0.720			0.722		
Satd. Flow (perm)	216	1626	1471	258	1712	0	1094	1595	1402	1106	1504	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			178		4				302		14	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		589			427			770			537	
Travel Time (s)		11.5			8.3			21.0			14.6	
Confl. Peds. (#/hr)			1	1			2					2
Confl. Bikes (#/hr)			1	1			2					2
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	3%	1%	3%	3%	3%	1%	0%	0%	0%	3%	8%
Adj. Flow (vph)	13	720	185	125	664	39	225	53	349	25	43	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	13	720	185	125	703	0	225	53	349	25	57	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.28	1.17	1.08	1.29	1.09	1.09	1.30	1.25	1.20	1.31	1.20	1.20
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	1	1	1	1	
Detector Template		Main25			Main25							
Leading Detector (ft)	38	250	38	38	250		38	38	38	38	38	
Trailing Detector (ft)	-2	0	-2	-2	0		-2	-2	-2	-2	-2	
Detector 1 Position(ft)	-2	0	-2	-2	0		-2	-2	-2	-2	-2	
Detector 1 Size(ft)	40	0	40	40	0		40	40	40	40	40	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		244			244							
Detector 2 Size(ft)		6			6							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases	2		2	6			8		8	4		
Detector Phase	5	2	2	1	6		3	8	8	4	4	
Switch Phase												
Minimum Initial (s)	3.0	10.0	10.0	3.0	10.0		3.0	3.0	3.0	3.0	3.0	
Minimum Split (s)	13.0	25.0	25.0	13.0	25.0		13.0	25.0	25.0	15.0	15.0	
Total Split (s)	13.0	46.0	46.0	13.0	46.0		16.0	31.0	31.0	15.0	15.0	
Total Split (%)	14.4%	51.1%	51.1%	14.4%	51.1%		17.8%	34.4%	34.4%	16.7%	16.7%	
Maximum Green (s)	7.3	40.1	40.1	7.3	40.1		9.9	25.3	25.3	9.3	9.3	
Yellow Time (s)	3.1	3.9	3.9	3.1	3.9		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.6	2.0	2.0	2.6	2.0		3.1	2.7	2.7	2.7	2.7	
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	-1.5		-1.5	-1.5	-1.5	-1.5	-1.5	
Total Lost Time (s)	4.2	4.4	4.4	4.2	4.4		4.6	4.2	4.2	4.2	4.2	
Lead/Lag	Lead	Lead	Lead	Lag	Lag		Lag			Lead	Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)	3.0	6.0	6.0	3.0	6.0		3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	12.5	12.5	0.0	12.5		0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	25.0	25.0	0.0	25.0		0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	C-Max	C-Max	None	C-Max		None	None	None	None	None	
Act Effct Green (s)	46.6	46.4	46.4	57.1	56.9		21.6	22.0	22.0	9.3	9.3	
Actuated g/C Ratio	0.52	0.52	0.52	0.63	0.63		0.24	0.24	0.24	0.10	0.10	
v/c Ratio	0.06	0.86	0.22	0.45	0.65		0.75	0.14	0.61	0.22	0.34	
Control Delay	6.9	28.8	2.1	9.4	6.1		47.1	25.0	10.1	41.2	35.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	6.9	28.8	2.1	9.4	6.1		47.1	25.0	10.1	41.2	35.4	
LOS	A	C	A	A	A		D	C	B	D	D	
Approach Delay		23.1			6.6			24.7			37.2	
Approach LOS		C			A			C			D	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 28 (31%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.86
Intersection Signal Delay: 18.4 Intersection LOS: B
Intersection Capacity Utilization 80.6% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 25: Cherry Dr & SR 322 (W Governor Dr)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	691	178	120	637	37	216	51	335	24	41	13
Future Volume (veh/h)	12	691	178	120	637	37	216	51	335	24	41	13
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	0.99		0.98	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1752	1713	1809	1679	1746	1746	1637	1650	1650	1645	1606	1606
Adj Flow Rate, veh/h	12	720	185	125	664	39	225	53	349	25	43	14
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	3	1	3	3	3	1	0	0	0	3	3
Cap, veh/h	179	792	693	266	886	52	330	470	392	140	103	33
Arrive On Green	0.03	0.46	0.46	0.10	0.54	0.54	0.15	0.28	0.28	0.09	0.09	0.09
Sat Flow, veh/h	1669	1713	1500	1599	1631	96	1559	1650	1376	909	1147	374
Grp Volume(v), veh/h	12	720	185	125	0	703	225	53	349	25	0	57
Grp Sat Flow(s),veh/h/ln	1669	1713	1500	1599	0	1727	1559	1650	1376	909	0	1521
Q Serve(g_s), s	0.4	35.1	6.8	0.8	0.0	28.2	6.3	2.1	21.9	2.4	0.0	3.2
Cycle Q Clear(g_c), s	0.4	35.1	6.8	0.8	0.0	28.2	6.3	2.1	21.9	4.5	0.0	3.2
Prop In Lane	1.00		1.00	1.00		0.06	1.00		1.00	1.00		0.25
Lane Grp Cap(c), veh/h	179	792	693	266	0	938	330	470	392	140	0	136
V/C Ratio(X)	0.07	0.91	0.27	0.47	0.00	0.75	0.68	0.11	0.89	0.18	0.00	0.42
Avail Cap(c_a), veh/h	299	792	693	266	0	938	330	491	410	168	0	183
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	0.64	0.64	0.64	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.5	22.4	14.8	35.9	0.0	15.8	33.9	23.8	30.8	40.4	0.0	38.7
Incr Delay (d2), s/veh	0.2	16.3	0.9	1.3	0.0	5.5	3.6	0.1	14.2	0.6	0.0	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.3	23.0	4.4	4.5	0.0	16.8	7.7	1.5	12.5	1.0	0.0	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.6	38.7	15.8	37.2	0.0	21.3	37.5	23.8	45.0	41.0	0.0	40.8
LnGrp LOS	B	D	B	D	A	C	D	C	D	D	A	D
Approach Vol, veh/h		917			828			627			82	
Approach Delay, s/veh		33.8			23.7			40.5			40.8	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	13.8	46.0	18.0	12.3	6.5	53.3		30.2
Change Period (Y+Rc), s	5.9	* 5.9	* 6.1	5.7	5.7	5.9		* 6.1
Max Green Setting (Gmax), s	7.3	* 40	* 9.9	9.3	7.3	40.1		* 25
Max Q Clear Time (g_c+I1), s	2.8	37.1	8.3	6.5	2.4	30.2		23.9
Green Ext Time (p_c), s	0.1	2.2	0.1	0.1	0.0	5.8		0.3

Intersection Summary	
HCM 6th Ctrl Delay	32.4
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

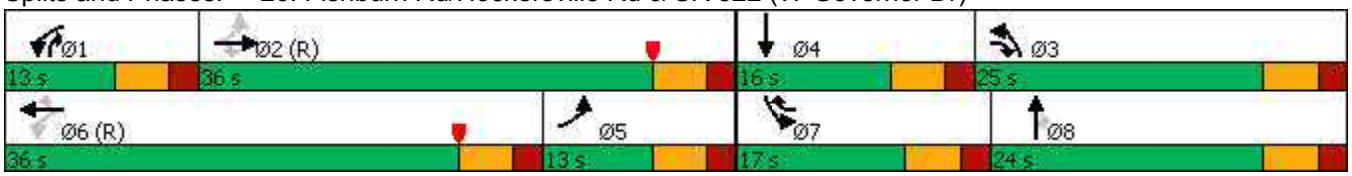
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	394	123	47	810	167	243	210	96	149	131	45
Future Volume (vph)	19	394	123	47	810	167	243	210	96	149	131	45
Ideal Flow (vphpl)	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Lane Width (ft)	11	12	14	11	12	14	11	11	13	11	12	12
Grade (%)		1%			0%			-1%			2%	
Storage Length (ft)	140		300	125		75	135		85	100		100
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850		0.961	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1422	2943	1474	1416	3074	1452	1493	1512	1387	1485	1513	0
Flt Permitted	0.304			0.379			0.950			0.950		
Satd. Flow (perm)	455	2943	1474	565	3074	1452	1493	1512	1387	1485	1513	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			131			124			168		16	
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		547			252			343			1393	
Travel Time (s)		10.7			4.9			6.7			27.1	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	6%	6%	1%	7%	2%	3%	2%	6%	5%	1%	4%	3%
Adj. Flow (vph)	20	419	131	50	862	178	259	223	102	159	139	48
Shared Lane Traffic (%)												
Lane Group Flow (vph)	20	419	131	50	862	178	259	223	102	159	187	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.26	1.20	1.11	1.25	1.20	1.10	1.24	1.24	1.14	1.26	1.21	1.21
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	1	1	1	1	
Detector Template		Main25	Right	Left	Main25	Right						
Leading Detector (ft)	38	250	48	48	250	48	38	38	38	38	38	
Trailing Detector (ft)	-2	0	-2	-2	0	-2	-2	-2	-2	-2	-2	
Detector 1 Position(ft)	-2	0	-2	-2	0	-2	-2	-2	-2	-2	-2	
Detector 1 Size(ft)	40	0	50	50	0	50	40	40	40	40	40	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		244			244							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases	5	2	3	1	6	7	3	8	1	7	4	
Permitted Phases	2		2	6		6			8			
Detector Phase	5	2	3	1	6	7	3	8	1	7	4	
Switch Phase												
Minimum Initial (s)	3.0	10.0	3.0	3.0	10.0	3.0	3.0	3.0	3.0	3.0	3.0	
Minimum Split (s)	13.0	25.0	13.0	13.0	25.0	13.0	13.0	13.0	13.0	13.0	13.0	
Total Split (s)	13.0	36.0	25.0	13.0	36.0	17.0	25.0	24.0	13.0	17.0	16.0	
Total Split (%)	14.4%	40.0%	27.8%	14.4%	40.0%	18.9%	27.8%	26.7%	14.4%	18.9%	17.8%	
Maximum Green (s)	7.4	30.4	19.3	7.4	30.4	11.3	19.3	18.3	7.4	11.3	10.3	
Yellow Time (s)	3.6	3.6	3.7	3.6	3.6	3.7	3.7	3.7	3.6	3.7	3.7	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	
Total Lost Time (s)	4.1	4.1	4.2	4.1	4.1	4.2	4.2	4.2	4.1	4.2	4.2	
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lead	Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	6.5	3.0	3.0	6.5	3.0	3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	25.0	0.0	0.0	25.0	0.0	0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	12.5	0.0	0.0	12.5	0.0	0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	C-Max	None	None	C-Max	None	None	None	None	None	None	
Act Effct Green (s)	36.1	36.1	56.3	41.0	41.0	55.9	19.5	18.8	31.3	12.5	11.8	
Actuated g/C Ratio	0.40	0.40	0.63	0.46	0.46	0.62	0.22	0.21	0.35	0.14	0.13	
v/c Ratio	0.08	0.36	0.14	0.15	0.62	0.19	0.80	0.71	0.17	0.77	0.88	
Control Delay	17.3	15.3	1.3	4.9	9.8	1.1	48.5	41.6	1.3	63.1	74.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	17.3	15.3	1.3	4.9	9.8	1.1	48.5	41.6	1.3	63.1	74.7	
LOS	B	B	A	A	A	A	D	D	A	E	E	
Approach Delay		12.1			8.2			37.6			69.4	
Approach LOS		B			A			D			E	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 22 (24%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.88
Intersection Signal Delay: 23.9 Intersection LOS: C
Intersection Capacity Utilization 69.5% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 26: Fishburn Rd/Hockersville Rd & SR 322 (W Governor Dr)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	19	394	123	47	810	167	243	210	96	149	131	45
Future Volume (veh/h)	19	394	123	47	810	167	243	210	96	149	131	45
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1568	1568	1697	1560	1624	1676	1658	1606	1684	1617	1578	1578
Adj Flow Rate, veh/h	20	419	131	50	862	178	259	223	102	159	139	48
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	6	6	1	7	2	3	2	6	5	1	4	4
Cap, veh/h	301	1287	914	279	1094	697	321	318	353	210	147	51
Arrive On Green	0.13	0.43	0.43	0.05	0.35	0.35	0.07	0.07	0.07	0.14	0.13	0.13
Sat Flow, veh/h	1493	2979	1438	1486	3086	1420	1579	1606	1427	1540	1121	387
Grp Volume(v), veh/h	20	419	131	50	862	178	259	223	102	159	0	187
Grp Sat Flow(s),veh/h/ln	1493	1489	1438	1486	1543	1420	1579	1606	1427	1540	0	1508
Q Serve(g_s), s	0.0	8.4	0.7	2.1	22.5	2.9	14.6	12.2	5.8	9.0	0.0	11.1
Cycle Q Clear(g_c), s	0.0	8.4	0.7	2.1	22.5	2.9	14.6	12.2	5.8	9.0	0.0	11.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.26
Lane Grp Cap(c), veh/h	301	1287	914	279	1094	697	321	318	353	210	0	198
V/C Ratio(X)	0.07	0.33	0.14	0.18	0.79	0.26	0.81	0.70	0.29	0.76	0.00	0.95
Avail Cap(c_a), veh/h	301	1287	914	353	1094	697	365	353	384	219	0	198
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.6	16.9	1.6	21.5	26.0	3.9	40.3	39.5	32.2	37.4	0.0	38.8
Incr Delay (d2), s/veh	0.1	0.7	0.3	0.3	5.8	0.9	10.8	5.1	0.4	13.6	0.0	48.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.7	5.1	0.6	1.3	13.5	2.3	11.3	9.5	3.7	7.3	0.0	10.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.7	17.6	1.9	21.8	31.8	4.8	51.1	44.6	32.7	51.1	0.0	87.3
LnGrp LOS	C	B	A	C	C	A	D	D	C	D	A	F
Approach Vol, veh/h		570			1090			584			346	
Approach Delay, s/veh		14.4			26.9			45.4			70.6	
Approach LOS		B			C			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.5	43.0	22.5	16.0	15.5	36.0	16.5	22.0
Change Period (Y+Rc), s	5.6	5.6	* 5.7	* 5.7	5.6	5.6	* 5.7	* 5.7
Max Green Setting (Gmax), s	7.4	30.4	* 19	* 10	7.4	30.4	* 11	* 18
Max Q Clear Time (g_c+I1), s	4.1	10.4	16.6	13.1	2.0	24.5	11.0	14.2
Green Ext Time (p_c), s	0.0	10.3	0.2	0.0	0.0	5.3	0.0	0.4

Intersection Summary	
HCM 6th Ctrl Delay	34.2
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	6	272	0	1	2	253	1	0	4	1	1
Future Volume (vph)	1	6	272	0	1	2	253	1	0	4	1	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	13	13	15	15	12	11	12	11	12	12	12
Grade (%)		2%			-1%			-2%			0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.868			0.910						0.977	
Flt Protected								0.953			0.968	
Satd. Flow (prot)	0	1598	0	0	1811	0	0	1699	0	0	1702	0
Flt Permitted								0.953			0.968	
Satd. Flow (perm)	0	1598	0	0	1811	0	0	1699	0	0	1702	0
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		199			375			774			244	
Travel Time (s)		5.4			10.2			15.1			4.8	
Confl. Peds. (#/hr)			4	4			1					1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	2%	1%	0%	0%	0%	0%
Adj. Flow (vph)	1	6	289	0	1	2	269	1	0	4	1	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	296	0	0	3	0	0	270	0	0	6	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.04	1.04	0.94	0.94	1.07	1.11	1.06	1.11	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 46.4%	ICU Level of Service A
Analysis Period (min) 15	

Intersection	
Intersection Delay, s/veh	9.7
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	6	272	0	1	2	253	1	0	4	1	1
Future Vol, veh/h	1	6	272	0	1	2	253	1	0	4	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	0	0	0	0	0	0	2	1	0	0	0	0
Mvmt Flow	1	6	289	0	1	2	269	1	0	4	1	1
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9	7.6	10.5	8
HCM LOS	A	A	B	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	100%	0%	0%	67%
Vol Thru, %	0%	2%	33%	17%
Vol Right, %	0%	97%	67%	17%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	254	279	3	6
LT Vol	253	1	0	4
Through Vol	1	6	1	1
RT Vol	0	272	2	1
Lane Flow Rate	270	297	3	6
Geometry Grp	1	1	1	1
Degree of Util (X)	0.36	0.331	0.004	0.009
Departure Headway (Hd)	4.799	4.016	4.506	4.894
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	754	896	792	729
Service Time	2.799	2.037	2.547	2.942
HCM Lane V/C Ratio	0.358	0.331	0.004	0.008
HCM Control Delay	10.5	9	7.6	8
HCM Lane LOS	B	A	A	A
HCM 95th-tile Q	1.6	1.5	0	0

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	112	339	110	424	442	129
Future Volume (vph)	112	339	110	424	442	129
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	14	14
Grade (%)	-1%			1%	-2%	
Storage Length (ft)	250	0	150			75
Storage Lanes	1	1	1			1
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1685	1538	1701	1773	1901	1648
Flt Permitted	0.950		0.483			
Satd. Flow (perm)	1685	1538	865	1773	1901	1648
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		342				102
Link Speed (mph)	35			35	35	
Link Distance (ft)	212			489	343	
Travel Time (s)	4.1			9.5	6.7	
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	2%	0%	0%	1%	2%	0%
Adj. Flow (vph)	113	342	111	428	446	130
Shared Lane Traffic (%)						
Lane Group Flow (vph)	113	342	111	428	446	130
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.07	1.07	1.08	1.08	0.97	0.97
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	1
Detector Template	Left	Right	Left	Thru	Thru	Right
Leading Detector (ft)	20	20	20	100	100	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	20	6	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	4			2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	2	2	6	6
Switch Phase						
Minimum Initial (s)	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	37.0	37.0	53.0	53.0	53.0	53.0
Total Split (%)	41.1%	41.1%	58.9%	58.9%	58.9%	58.9%
Maximum Green (s)	31.5	31.5	47.5	47.5	47.5	47.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	C-Min	C-Min	C-Min	C-Min
Act Effct Green (s)	13.1	13.1	68.9	68.9	68.9	68.9
Actuated g/C Ratio	0.15	0.15	0.77	0.77	0.77	0.77
v/c Ratio	0.46	0.66	0.17	0.32	0.31	0.10
Control Delay	40.5	10.7	4.1	4.4	4.7	1.3
Queue Delay	0.0	0.0	0.0	0.0	1.0	0.0
Total Delay	40.5	10.7	4.1	4.4	5.7	1.3
LOS	D	B	A	A	A	A
Approach Delay	18.1			4.4	4.7	
Approach LOS	B			A	A	

Intersection Summary	
Area Type: Other	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 8 (9%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	
Natural Cycle: 40	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.66	
Intersection Signal Delay: 8.5	Intersection LOS: A
Intersection Capacity Utilization 53.4%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 28: Fishburn Rd & Sand Hill Rd

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	112	339	110	424	442	129
Future Volume (veh/h)	112	339	110	424	442	129
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1809	1837	1794	1780	1920	1950
Adj Flow Rate, veh/h	113	342	111	428	446	130
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	0	0	1	2	0
Cap, veh/h	448	405	632	1159	1249	1075
Arrive On Green	0.26	0.26	0.65	0.65	1.00	1.00
Sat Flow, veh/h	1723	1557	848	1780	1920	1652
Grp Volume(v), veh/h	113	342	111	428	446	130
Grp Sat Flow(s),veh/h/ln	1723	1557	848	1780	1920	1652
Q Serve(g_s), s	4.7	18.7	4.7	9.9	0.0	0.0
Cycle Q Clear(g_c), s	4.7	18.7	4.7	9.9	0.0	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	448	405	632	1159	1249	1075
V/C Ratio(X)	0.25	0.84	0.18	0.37	0.36	0.12
Avail Cap(c_a), veh/h	632	571	632	1159	1249	1075
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.85	0.85
Uniform Delay (d), s/veh	26.3	31.6	6.3	7.2	0.0	0.0
Incr Delay (d2), s/veh	0.3	8.0	0.6	0.9	0.7	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.4	12.2	1.5	6.2	0.4	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	26.6	39.5	6.9	8.1	0.7	0.2
LnGrp LOS	C	D	A	A	A	A
Approach Vol, veh/h	455			539	576	
Approach Delay, s/veh	36.3			7.9	0.6	
Approach LOS	D			A	A	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		62.6		27.4		62.6
Change Period (Y+Rc), s		5.5		5.5		5.5
Max Green Setting (Gmax), s		47.5		31.5		47.5
Max Q Clear Time (g_c+I1), s		11.9		20.7		2.0
Green Ext Time (p_c), s		3.6		1.2		3.4

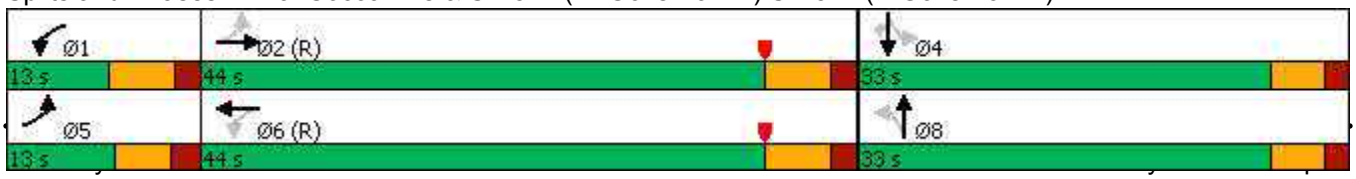
Intersection Summary	
HCM 6th Ctrl Delay	13.4
HCM 6th LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	474	34	55	867	37	12	275	26	26	178	36
Future Volume (vph)	35	474	34	55	867	37	12	275	26	26	178	36
Ideal Flow (vphpl)	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Lane Width (ft)	10	15	15	11	13	13	11	13	13	11	12	15
Grade (%)		-2%			-3%			0%			0%	
Storage Length (ft)	175		0	80		0	75		0	75		150
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00				1.00			1.00		1.00		
Frt		0.990			0.994			0.987				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1478	3295	0	1493	3170	0	1139	1583	0	1390	1486	1543
Flt Permitted	0.234			0.405			0.540			0.328		
Satd. Flow (perm)	364	3295	0	637	3170	0	648	1583	0	479	1486	1543
Right Turn on Red			No			Yes			No			Yes
Satd. Flow (RTOR)					6							114
Link Speed (mph)		35			40			35			35	
Link Distance (ft)		1911			1234			997			1054	
Travel Time (s)		37.2			21.0			19.4			20.5	
Confl. Peds. (#/hr)	1					1			2	2		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	5%	0%	3%	3%	3%	33%	6%	8%	9%	11%	0%
Adj. Flow (vph)	37	499	36	58	913	39	13	289	27	27	187	38
Shared Lane Traffic (%)												
Lane Group Flow (vph)	37	535	0	58	952	0	13	316	0	27	187	38
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.29	1.05	1.05	1.23	1.13	1.13	1.25	1.15	1.15	1.25	1.20	1.06
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	1		1	1	1
Detector Template		Main25			Main25							
Leading Detector (ft)	38	250		38	250		38	38		38	38	0
Trailing Detector (ft)	-2	0		-2	0		-2	-2		-2	-2	0
Detector 1 Position(ft)	-2	0		-2	0		-2	-2		-2	-2	0
Detector 1 Size(ft)	40	0		40	0		40	40		40	40	0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		244			244							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6			8			4		4
Detector Phase	5	2		1	6		8	8		4	4	4
Switch Phase												
Minimum Initial (s)	3.0	10.0		3.0	10.0		3.0	3.0		3.0	3.0	3.0
Minimum Split (s)	13.0	25.0		13.0	25.0		20.0	20.0		20.0	20.0	20.0
Total Split (s)	13.0	44.0		13.0	44.0		33.0	33.0		33.0	33.0	33.0
Total Split (%)	14.4%	48.9%		14.4%	48.9%		36.7%	36.7%		36.7%	36.7%	36.7%
Maximum Green (s)	7.2	37.8		6.8	37.8		27.6	27.6		27.6	27.6	27.6
Yellow Time (s)	3.8	4.4		4.4	4.4		3.6	3.6		3.6	3.6	3.6
All-Red Time (s)	2.0	1.8		1.8	1.8		1.8	1.8		1.8	1.8	1.8
Lost Time Adjust (s)	-1.5	-1.5		-1.5	-1.5		-1.5	-1.5		-1.5	-1.5	-1.5
Total Lost Time (s)	4.3	4.7		4.7	4.7		3.9	3.9		3.9	3.9	3.9
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	5.5		3.0	5.5		3.0	3.0		3.0	3.0	3.0
Minimum Gap (s)	3.0	2.0		3.0	2.0		3.0	3.0		3.0	3.0	3.0
Time Before Reduce (s)	0.0	25.0		0.0	25.0		0.0	0.0		0.0	0.0	0.0
Time To Reduce (s)	0.0	12.5		0.0	12.5		0.0	0.0		0.0	0.0	0.0
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	None
Act Effct Green (s)	54.1	47.2		54.8	49.8		24.0	24.0		24.0	24.0	24.0
Actuated g/C Ratio	0.60	0.52		0.61	0.55		0.27	0.27		0.27	0.27	0.27
v/c Ratio	0.12	0.31		0.13	0.54		0.08	0.75		0.21	0.47	0.08
Control Delay	8.6	12.8		2.0	3.5		23.3	41.4		28.1	30.9	0.3
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	8.6	12.8		2.0	3.5		23.3	41.4		28.1	30.9	0.3
LOS	A	B		A	A		C	D		C	C	A
Approach Delay		12.5			3.4			40.7			26.0	
Approach LOS		B			A			D			C	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 72 (80%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.75	
Intersection Signal Delay: 14.1	Intersection LOS: B
Intersection Capacity Utilization 68.0%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 29: Cocoa Ave & SR 322 (W Governor Dr)/SR 322 (E Governor Dr)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	474	34	55	867	37	12	275	26	26	178	36
Future Volume (veh/h)	35	474	34	55	867	37	12	275	26	26	178	36
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1718	1719	1719	1713	1782	1782	1225	1636	1636	1534	1508	1716
Adj Flow Rate, veh/h	37	499	36	58	913	39	13	289	27	27	187	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	5	5	3	3	3	33	6	6	9	11	0
Cap, veh/h	369	1710	123	547	1874	80	202	373	35	146	382	
Arrive On Green	0.04	0.55	0.55	0.05	0.57	0.57	0.25	0.25	0.25	0.25	0.25	0.00
Sat Flow, veh/h	1636	3090	222	1632	3308	141	826	1473	138	920	1508	1454
Grp Volume(v), veh/h	37	263	272	58	467	485	13	0	316	27	187	0
Grp Sat Flow(s),veh/h/ln	1636	1633	1679	1632	1693	1756	826	0	1611	920	1508	1454
Q Serve(g_s), s	0.9	7.7	7.8	1.3	14.9	14.9	1.2	0.0	16.4	2.5	9.5	0.0
Cycle Q Clear(g_c), s	0.9	7.7	7.8	1.3	14.9	14.9	10.7	0.0	16.4	18.9	9.5	0.0
Prop In Lane	1.00		0.13	1.00		0.08	1.00		0.09	1.00		1.00
Lane Grp Cap(c), veh/h	369	904	929	547	959	995	202	0	408	146	382	
V/C Ratio(X)	0.10	0.29	0.29	0.11	0.49	0.49	0.06	0.00	0.77	0.19	0.49	
Avail Cap(c_a), veh/h	467	904	929	623	959	995	260	0	521	210	488	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	8.8	10.7	10.7	7.9	11.7	11.7	33.2	0.0	31.2	40.0	28.6	0.0
Incr Delay (d2), s/veh	0.1	0.8	0.8	0.1	1.8	1.7	0.1	0.0	5.5	0.6	1.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.5	4.9	5.1	0.7	9.1	9.4	0.4	0.0	11.0	1.0	6.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.0	11.5	11.5	8.0	13.5	13.4	33.3	0.0	36.7	40.6	29.6	0.0
LnGrp LOS	A	B	B	A	B	B	C	A	D	D	C	
Approach Vol, veh/h		572			1010			329			214	A
Approach Delay, s/veh		11.3			13.1			36.6			31.0	
Approach LOS		B			B			D			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.8	54.5		26.7	7.6	55.7		26.7
Change Period (Y+Rc), s	* 6.2	* 6.2		* 5.4	* 5.8	* 6.2		* 5.4
Max Green Setting (Gmax), s	* 6.8	* 38		* 28	* 7.2	* 38		* 28
Max Q Clear Time (g_c+I1), s	3.3	9.8		20.9	2.9	16.9		18.4
Green Ext Time (p_c), s	0.0	12.0		0.4	0.0	15.9		0.8

Intersection Summary	
HCM 6th Ctrl Delay	18.1
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

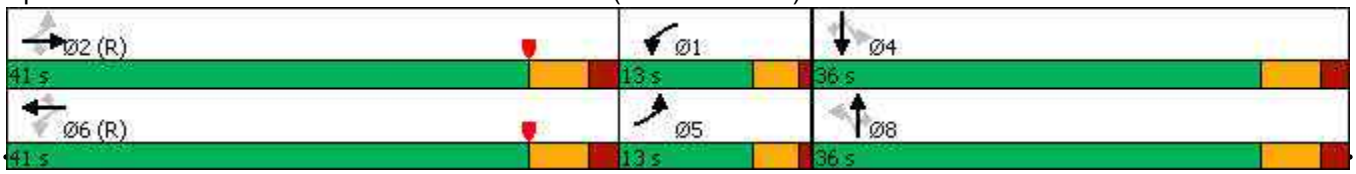
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	167	455	11	20	827	75	9	391	40	18	115	179
Future Volume (vph)	167	455	11	20	827	75	9	391	40	18	115	179
Ideal Flow (vphpl)	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Grade (%)		2%			2%			2%			2%	
Storage Length (ft)	125		100	100		100	100		100	110		200
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												0.99
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1492	2984	1388	1349	3013	1375	1552	1571	1262	1386	1433	1262
Flt Permitted	0.176			0.404			0.663			0.233		
Satd. Flow (perm)	276	2984	1388	574	3013	1375	1083	1571	1262	340	1433	1246
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			85			85			85			208
Link Speed (mph)		40			40			35			35	
Link Distance (ft)		1219			3941			1026			2312	
Travel Time (s)		20.8			67.2			20.0			45.0	
Confl. Bikes (#/hr)							1					1
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	4%	4%	0%	15%	3%	1%	0%	4%	10%	12%	14%	10%
Adj. Flow (vph)	194	529	13	23	962	87	10	455	47	21	134	208
Shared Lane Traffic (%)												
Lane Group Flow (vph)	194	529	13	23	962	87	10	455	47	21	134	208
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	1	1	1	1	1
Detector Template		Main25			Main25							
Leading Detector (ft)	38	250	38	38	250	38	38	38	38	38	38	38
Trailing Detector (ft)	-2	0	-2	-2	0	-2	-2	-2	-2	-2	-2	-2
Detector 1 Position(ft)	-2	0	-2	-2	0	-2	-2	-2	-2	-2	-2	-2
Detector 1 Size(ft)	40	0	40	40	0	40	40	40	40	40	40	40
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		244			244							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0							
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6		6	8		8	4		4
Detector Phase	5	2	2	1	6	6	8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	3.0	12.0	12.0	3.0	12.0	12.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Split (s)	13.0	29.0	29.0	13.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0
Total Split (s)	13.0	41.0	41.0	13.0	41.0	41.0	36.0	36.0	36.0	36.0	36.0	36.0
Total Split (%)	14.4%	45.6%	45.6%	14.4%	45.6%	45.6%	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%
Maximum Green (s)	9.0	35.0	35.0	9.0	35.0	35.0	30.0	30.0	30.0	30.0	30.0	30.0
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5
Total Lost Time (s)	2.5	4.5	4.5	2.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0	6.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	28.0	28.0	0.0	28.0	28.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	14.0	14.0	0.0	14.0	14.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
Act Effct Green (s)	51.8	45.6	45.6	45.3	38.6	38.6	29.7	29.7	29.7	29.7	29.7	29.7
Actuated g/C Ratio	0.58	0.51	0.51	0.50	0.43	0.43	0.33	0.33	0.33	0.33	0.33	0.33
v/c Ratio	0.66	0.35	0.02	0.06	0.74	0.14	0.03	0.88	0.10	0.19	0.28	0.38
Control Delay	30.0	8.7	0.0	10.8	26.6	4.8	19.7	48.2	1.9	25.6	23.5	5.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.0	8.7	0.0	10.8	26.6	4.8	19.7	48.2	1.9	25.6	23.5	5.3
LOS	C	A	A	B	C	A	B	D	A	C	C	A
Approach Delay		14.2			24.5			43.4			13.2	
Approach LOS		B			C			D			B	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 25 (28%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay: 23.7	Intersection LOS: C
Intersection Capacity Utilization 71.5%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 30: Homestead Rd & SR 322 (E Governor Dr)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	167	455	11	20	827	75	9	391	40	18	115	179
Future Volume (veh/h)	167	455	11	20	827	75	9	391	40	18	115	179
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1578	1578	1630	1436	1591	1617	1630	1578	1501	1475	1449	1501
Adj Flow Rate, veh/h	194	529	13	23	962	87	10	455	47	21	134	208
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	4	4	0	15	3	1	0	4	10	12	14	10
Cap, veh/h	298	904	416	479	1198	543	337	532	423	131	488	423
Arrive On Green	0.14	0.30	0.30	0.23	0.40	0.40	0.34	0.34	0.34	0.34	0.34	0.34
Sat Flow, veh/h	1503	2998	1381	1368	3023	1370	955	1578	1256	746	1449	1256
Grp Volume(v), veh/h	194	529	13	23	962	87	10	455	47	21	134	208
Grp Sat Flow(s),veh/h/ln	1503	1499	1381	1368	1511	1370	955	1578	1256	746	1449	1256
Q Serve(g_s), s	5.3	13.5	0.6	0.0	25.4	3.7	0.7	24.2	2.3	2.4	6.1	11.8
Cycle Q Clear(g_c), s	5.3	13.5	0.6	0.0	25.4	3.7	6.8	24.2	2.3	26.6	6.1	11.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	298	904	416	479	1198	543	337	532	423	131	488	423
V/C Ratio(X)	0.65	0.59	0.03	0.05	0.80	0.16	0.03	0.86	0.11	0.16	0.27	0.49
Avail Cap(c_a), veh/h	298	1216	560	479	1226	556	350	552	440	141	507	440
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.4	26.7	22.2	19.9	24.1	17.5	24.3	27.8	20.6	40.2	21.8	23.7
Incr Delay (d2), s/veh	4.9	2.8	0.1	0.0	5.8	0.6	0.0	12.2	0.1	0.6	0.3	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	7.4	8.5	0.4	0.6	14.2	2.1	0.3	15.7	1.2	0.8	3.7	6.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.3	29.4	22.3	19.9	29.8	18.1	24.3	40.0	20.7	40.8	22.1	24.6
LnGrp LOS	D	C	C	B	C	B	C	D	C	D	C	C
Approach Vol, veh/h		736			1072			512			363	
Approach Delay, s/veh		31.9			28.7			37.9			24.6	
Approach LOS		C			C			D			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	23.5	31.6		34.8	15.0	40.2		34.8
Change Period (Y+Rc), s	4.0	6.0		6.0	4.0	6.0		6.0
Max Green Setting (Gmax), s	19.0	35.0		30.0	9.0	35.0		30.0
Max Q Clear Time (g_c+I1), s	7.3	15.5		28.6	7.3	27.4		26.2
Green Ext Time (p_c), s	0.0	10.2		0.2	0.1	6.8		0.8

Intersection Summary	
HCM 6th Ctrl Delay	30.8
HCM 6th LOS	C

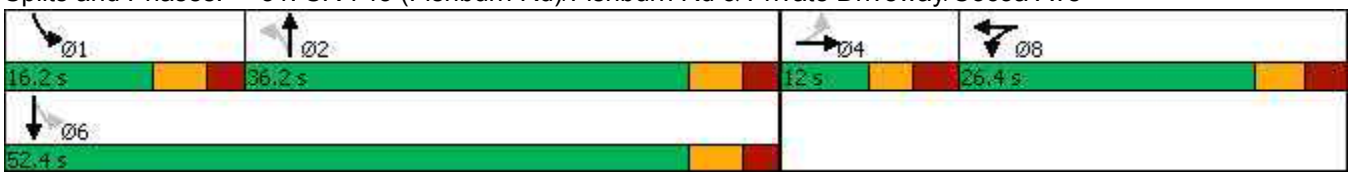
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	484	0	82	0	373	257	141	714	0
Future Volume (vph)	0	0	0	484	0	82	0	373	257	141	714	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	11	11	11	11	12
Grade (%)		0%			2%			1%			-1%	
Storage Length (ft)	0		0	200		0	0		0	75		0
Storage Lanes	0		0	1		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.850			0.945				
Flt Protected				0.950						0.950		
Satd. Flow (prot)	0	1800	0	1628	1443	0	0	1591	0	1613	1731	0
Flt Permitted				0.950						0.120		
Satd. Flow (perm)	0	1800	0	1628	1443	0	0	1591	0	204	1731	0
Right Turn on Red			Yes			No			No			Yes
Satd. Flow (RTOR)												
Link Speed (mph)		25			35			35			35	
Link Distance (ft)		169			1587			679			2277	
Travel Time (s)		4.6			30.9			13.2			44.4	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	0%	0%	4%	0%	5%	0%	2%	4%	3%	1%	0%
Adj. Flow (vph)	0	0	0	499	0	85	0	385	265	145	736	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	499	85	0	0	650	0	145	736	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.09	1.09	1.09	1.08	1.13	1.13	1.11	1.11	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	1		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left		
Leading Detector (ft)	48	48		48	48		48	48		48	225	
Trailing Detector (ft)	-2	-2		-2	-2		-2	-2		-2	0	
Detector 1 Position(ft)	-2	-2		-2	-2		-2	-2		-2	0	
Detector 1 Size(ft)	50	50		50	50		50	50		50	0	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)											219	
Detector 2 Size(ft)											6	
Detector 2 Type											Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)											0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type				Split	NA			NA		pm+pt	NA	
Protected Phases		4		8	8			2		1	6	
Permitted Phases	4						2			6		
Detector Phase	4	4		8	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	2.0	2.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Split (s)	12.0	12.0		18.0	18.0		20.0	20.0		9.2	40.0	
Total Split (s)	12.0	12.0		26.4	26.4		36.2	36.2		16.2	52.4	
Total Split (%)	13.2%	13.2%		29.1%	29.1%		39.9%	39.9%		17.8%	57.7%	
Maximum Green (s)	6.0	6.0		20.0	20.0		30.0	30.0		10.0	46.2	
Yellow Time (s)	3.0	3.0		3.4	3.4		3.7	3.7		3.7	3.7	
All-Red Time (s)	3.0	3.0		3.0	3.0		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)		-1.5		-1.5	-1.5			-1.5		-1.5	-1.5	
Total Lost Time (s)		4.5		4.9	4.9			4.7		4.7	4.7	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		6.0	6.0		3.0	6.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.5	3.5		3.0	3.5	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		23.0	23.0		0.0	23.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		12.0	12.0		0.0	12.0	
Recall Mode	None	None		Min	Min		Min	Min		Min	Min	
Act Effct Green (s)				21.5	21.5			31.6		46.3	46.3	
Actuated g/C Ratio				0.28	0.28			0.41		0.60	0.60	
v/c Ratio				1.10	0.21			1.00		0.48	0.71	
Control Delay				103.3	23.7			61.4		13.9	15.7	
Queue Delay				0.0	0.0			0.0		0.0	0.0	
Total Delay				103.3	23.7			61.4		13.9	15.7	
LOS				F	C			E		B	B	
Approach Delay					91.7			61.4			15.4	
Approach LOS					F			E			B	

Intersection Summary

Area Type: Other
Cycle Length: 90.8
Actuated Cycle Length: 77.4
Natural Cycle: 110
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.10
Intersection Signal Delay: 50.6 Intersection LOS: D
Intersection Capacity Utilization 117.2% ICU Level of Service H
Analysis Period (min) 15

Splits and Phases: 31: SR 743 (Fishburn Rd)/Fishburn Rd & Private Driveway/Cocoa Ave



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	484	0	82	0	373	257	141	714	0
Future Volume (veh/h)	0	0	0	484	0	82	0	373	257	141	714	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1722	1778	1778	1766	1766	1766	1795	1823	1823
Adj Flow Rate, veh/h	0	0	0	499	0	85	0	385	265	145	736	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	4	0	0	2	2	2	3	1	1
Cap, veh/h	0	2	0	476	0	437	0	414	285	293	1057	0
Arrive On Green	0.00	0.00	0.00	0.29	0.00	0.29	0.00	0.42	0.42	0.09	0.58	0.00
Sat Flow, veh/h	0	1800	0	1640	0	1507	0	975	671	1709	1823	0
Grp Volume(v), veh/h	0	0	0	499	0	85	0	0	650	145	736	0
Grp Sat Flow(s),veh/h/ln	0	1800	0	1640	0	1507	0	0	1646	1709	1823	0
Q Serve(g_s), s	0.0	0.0	0.0	21.5	0.0	3.1	0.0	0.0	27.8	3.1	21.1	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	21.5	0.0	3.1	0.0	0.0	27.8	3.1	21.1	0.0
Prop In Lane	0.00		0.00	1.00		1.00	0.00		0.41	1.00		0.00
Lane Grp Cap(c), veh/h	0	2	0	476	0	437	0	0	699	293	1057	0
V/C Ratio(X)	0.00	0.00	0.00	1.05	0.00	0.19	0.00	0.00	0.93	0.49	0.70	0.00
Avail Cap(c_a), veh/h	0	182	0	476	0	437	0	0	700	401	1174	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	26.3	0.0	19.8	0.0	0.0	20.3	15.5	11.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	54.5	0.0	0.2	0.0	0.0	20.3	1.3	3.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	0.0	0.0	21.9	0.0	1.9	0.0	0.0	19.3	2.0	12.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	0.0	80.7	0.0	20.0	0.0	0.0	40.5	16.8	14.2	0.0
LnGrp LOS	A	A	A	F	A	B	A	A	D	B	B	A
Approach Vol, veh/h		0			584			650			881	
Approach Delay, s/veh		0.0			71.9			40.5			14.6	
Approach LOS					E			D			B	

Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	11.5	36.1		0.0		47.7		26.4				
Change Period (Y+Rc), s	* 6.2	* 6.2		6.0		* 6.2		6.4				
Max Green Setting (Gmax), s	* 10	* 30		6.0		* 46		20.0				
Max Q Clear Time (g_c+I1), s	5.1	29.8		0.0		23.1		23.5				
Green Ext Time (p_c), s	0.2	0.1		0.0		15.9		0.0				

Intersection Summary	
HCM 6th Ctrl Delay	38.4
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	44	56	45	562	1092	92
Future Volume (vph)	44	56	45	562	1092	92
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	15	15	12	12	12	12
Grade (%)	-4%			-2%	2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.924				0.989	
Flt Protected	0.979			0.996		
Satd. Flow (prot)	1827	0	0	1762	1729	0
Flt Permitted	0.979			0.996		
Satd. Flow (perm)	1827	0	0	1762	1729	0
Link Speed (mph)	25			35	35	
Link Distance (ft)	948			1033	614	
Travel Time (s)	25.9			20.1	12.0	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	0%	3%	2%	1%
Adj. Flow (vph)	47	60	48	598	1162	98
Shared Lane Traffic (%)						
Lane Group Flow (vph)	107	0	0	646	1260	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	15			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.92	0.92	1.06	1.06	1.09	1.09
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 83.3%	ICU Level of Service E
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	44	56	45	562	1092	92
Future Vol, veh/h	44	56	45	562	1092	92
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-4	-	-	-2	2	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	3	2	1
Mvmt Flow	47	60	48	598	1162	98

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1905	1211	1260	0	-	0
Stage 1	1211	-	-	-	-	-
Stage 2	694	-	-	-	-	-
Critical Hdwy	5.6	5.8	4.1	-	-	-
Critical Hdwy Stg 1	4.6	-	-	-	-	-
Critical Hdwy Stg 2	4.6	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	117	257	559	-	-	-
Stage 1	372	-	-	-	-	-
Stage 2	583	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	102	257	559	-	-	-
Mov Cap-2 Maneuver	102	-	-	-	-	-
Stage 1	324	-	-	-	-	-
Stage 2	583	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	33	0.9	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	559	-	232	-	-
HCM Lane V/C Ratio	0.086	-	0.459	-	-
HCM Control Delay (s)	12	0	33	-	-
HCM Lane LOS	B	A	D	-	-
HCM 95th %tile Q(veh)	0.3	-	2.2	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	418	83	248	371	153	86	262	181	134	283	33
Future Volume (vph)	29	418	83	248	371	153	86	262	181	134	283	33
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	12	12	10	12	12	13	13	13	10	13	13
Grade (%)		-1%			1%			-4%			3%	
Storage Length (ft)	60		0	140		0	150		0	175		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor							1.00	0.99		1.00	1.00	
Frt		0.975			0.956			0.939			0.984	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1499	1764	0	1572	1712	0	1750	1726	0	1526	1798	0
Flt Permitted	0.397			0.120			0.382			0.166		
Satd. Flow (perm)	626	1764	0	199	1712	0	703	1726	0	266	1798	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			30			36			6	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		552			1053			474			481	
Travel Time (s)		15.1			28.7			12.9			13.1	
Confl. Peds. (#/hr)							1		4	4		1
Confl. Bikes (#/hr)							1					1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	7%	0%	0%	1%	0%	0%	3%	2%	2%	3%	0%	0%
Adj. Flow (vph)	30	435	86	258	386	159	90	273	189	140	295	34
Shared Lane Traffic (%)												
Lane Group Flow (vph)	30	521	0	258	545	0	90	462	0	140	329	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			13			13	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.16	1.07	1.07	1.18	1.08	1.08	1.00	1.00	1.00	1.19	1.05	1.05
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template							Left					
Leading Detector (ft)	35	35		35	35		48	35		35	35	
Trailing Detector (ft)	-5	-5		-5	-5		-2	-5		-5	-5	
Detector 1 Position(ft)	-5	-5		-5	-5		-2	-5		-5	-5	
Detector 1 Size(ft)	40	40		40	40		50	40		40	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2			6			8			4		
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Split (s)	8.5	10.0		23.5	10.0		8.5	10.0		8.5	10.0	
Total Split (s)	8.6	30.9		23.5	45.8		8.6	25.0		10.6	27.0	
Total Split (%)	9.6%	34.3%		26.1%	50.9%		9.6%	27.8%		11.8%	30.0%	
Maximum Green (s)	3.1	25.4		18.0	40.3		3.1	19.7		5.3	21.7	
Yellow Time (s)	3.5	3.0		3.0	3.0		3.5	3.1		3.1	3.1	
All-Red Time (s)	2.0	2.5		2.5	2.5		2.0	2.2		2.2	2.2	
Lost Time Adjust (s)	-0.5	-0.5		-0.5	-0.5		-1.5	-0.5		-0.5	-0.5	
Total Lost Time (s)	5.0	5.0		5.0	5.0		4.0	4.8		4.8	4.8	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Act Effct Green (s)	29.6	25.9		45.6	40.6		25.6	20.2		28.6	24.1	
Actuated g/C Ratio	0.34	0.30		0.53	0.47		0.30	0.23		0.33	0.28	
v/c Ratio	0.12	0.97		0.76	0.66		0.34	1.07		0.81	0.65	
Control Delay	12.8	63.7		33.4	22.1		23.9	95.3		58.8	35.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	12.8	63.7		33.4	22.1		23.9	95.3		58.8	35.9	
LOS	B	E		C	C		C	F		E	D	
Approach Delay		61.0			25.8			83.7			42.7	
Approach LOS		E			C			F			D	

Intersection Summary	
Area Type: Other	
Cycle Length: 90	
Actuated Cycle Length: 86.3	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.07	
Intersection Signal Delay: 50.7	Intersection LOS: D
Intersection Capacity Utilization 93.6%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 33: S. Hanover St/N. Hanover St & W. Main St/E. Main St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	418	83	248	371	153	86	262	181	134	283	33
Future Volume (veh/h)	29	418	83	248	371	153	86	262	181	134	283	33
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1738	1837	1837	1780	1794	1794	1983	1997	1997	1708	1820	1820
Adj Flow Rate, veh/h	30	435	86	258	386	159	90	273	189	140	295	34
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	7	0	0	1	0	0	3	2	2	3	0	0
Cap, veh/h	264	466	92	349	509	210	326	265	183	206	428	49
Arrive On Green	0.03	0.31	0.33	0.14	0.42	0.43	0.06	0.24	0.26	0.07	0.27	0.28
Sat Flow, veh/h	1655	1490	295	1696	1208	497	1888	1085	751	1626	1596	184
Grp Volume(v), veh/h	30	0	521	258	0	545	90	0	462	140	0	329
Grp Sat Flow(s),veh/h/ln	1655	0	1784	1696	0	1705	1888	0	1836	1626	0	1780
Q Serve(g_s), s	1.0	0.0	23.4	7.7	0.0	22.4	2.9	0.0	20.2	5.3	0.0	13.7
Cycle Q Clear(g_c), s	1.0	0.0	23.4	7.7	0.0	22.4	2.9	0.0	20.2	5.3	0.0	13.7
Prop In Lane	1.00		0.17	1.00		0.29	1.00		0.41	1.00		0.10
Lane Grp Cap(c), veh/h	264	0	558	349	0	719	326	0	448	206	0	478
V/C Ratio(X)	0.11	0.00	0.93	0.74	0.00	0.76	0.28	0.00	1.03	0.68	0.00	0.69
Avail Cap(c_a), veh/h	291	0	558	498	0	841	326	0	448	206	0	478
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.4	0.0	27.5	17.9	0.0	20.2	21.5	0.0	31.1	23.7	0.0	27.1
Incr Delay (d2), s/veh	0.2	0.0	22.8	3.5	0.0	3.4	0.5	0.0	50.7	8.6	0.0	4.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.7	0.0	19.1	5.7	0.0	14.1	2.3	0.0	21.7	4.5	0.0	10.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.6	0.0	50.3	21.4	0.0	23.6	21.9	0.0	81.8	32.4	0.0	31.3
LnGrp LOS	B	A	D	C	A	C	C	A	F	C	A	C
Approach Vol, veh/h		551			803			552			469	
Approach Delay, s/veh		48.7			22.9			72.0			31.6	
Approach LOS		D			C			E			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.3	30.9	8.6	27.0	7.2	39.9	10.6	25.0
Change Period (Y+Rc), s	5.5	5.5	5.5	* 5.3	5.5	5.5	* 5.3	* 5.3
Max Green Setting (Gmax), s	18.0	25.4	3.1	* 22	3.1	40.3	* 5.3	* 20
Max Q Clear Time (g_c+I1), s	10.2	25.4	4.9	15.7	3.5	24.4	7.8	22.2
Green Ext Time (p_c), s	0.5	0.0	0.0	0.6	0.0	2.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	42.0
HCM 6th LOS	D

Notes

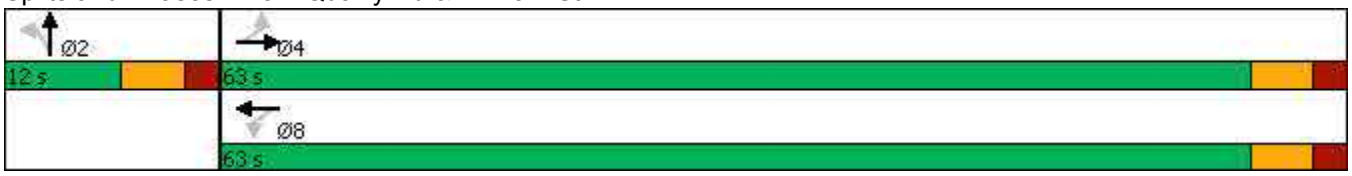
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	553	113	165	716	3	67	8	127	0	0	0
Future Volume (vph)	1	553	113	165	716	3	67	8	127	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	11	11	14	14	14	11	11	11
Grade (%)		1%			-1%			0%			-5%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								1.00				
Frt		0.977						0.915				
Flt Protected					0.991			0.984				
Satd. Flow (prot)	0	1675	0	0	1713	0	0	1718	0	0	0	0
Flt Permitted		0.999			0.758			0.984				
Satd. Flow (perm)	0	1673	0	0	1310	0	0	1713	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		46			1			91				
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		1053			1492			867			476	
Travel Time (s)		28.7			40.7			23.6			13.0	
Confl. Peds. (#/hr)							2					2
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	1%	1%	2%	1%	0%	0%	0%	1%	0%	0%	0%
Adj. Flow (vph)	1	608	124	181	787	3	74	9	140	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	733	0	0	971	0	0	223	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.13	1.13	1.13	1.11	1.11	1.11	0.99	0.99	0.99	1.08	1.08	1.08
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	1				
Detector Template	Left	Thru		Left	Thru		Left	Thru				
Leading Detector (ft)	48	48		48	48		48	48				
Trailing Detector (ft)	-2	-2		-2	-2		-2	-2				
Detector 1 Position(ft)	-2	-2		-2	-2		-2	-2				
Detector 1 Size(ft)	50	50		50	50		50	50				
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex				
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0				
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0				
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0				
Turn Type	Perm	NA		Perm	NA		Perm	NA				
Protected Phases		4			8			2				
Permitted Phases	4			8			2					
Detector Phase	4	4		8	8		2	2				
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0		3.0	3.0				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	10.0	10.0		10.0	10.0		10.0	10.0				
Total Split (s)	63.0	63.0		63.0	63.0		12.0	12.0				
Total Split (%)	84.0%	84.0%		84.0%	84.0%		16.0%	16.0%				
Maximum Green (s)	57.5	57.5		57.5	57.5		6.5	6.5				
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5				
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0				
Lost Time Adjust (s)		-1.5			-1.5			-1.5				
Total Lost Time (s)		4.0			4.0			4.0				
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0				
Recall Mode	None	None		None	None		Max	Max				
Act Effct Green (s)		55.9			55.9			8.1				
Actuated g/C Ratio		0.78			0.78			0.11				
v/c Ratio		0.56			0.96			0.82				
Control Delay		4.8			29.0			45.6				
Queue Delay		0.0			0.0			0.0				
Total Delay		4.8			29.0			45.6				
LOS		A			C			D				
Approach Delay		4.8			29.0			45.6				
Approach LOS		A			C			D				

Intersection Summary	
Area Type: Other	
Cycle Length: 75	
Actuated Cycle Length: 72	
Natural Cycle: 80	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.96	
Intersection Signal Delay: 21.7	Intersection LOS: C
Intersection Capacity Utilization 116.9%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 34: Quarry Rd & E. Main St



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	553	113	165	716	3	67	8	127	0	0	0
Future Volume (veh/h)	1	553	113	165	716	3	67	8	127	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1780	1780	1780	1823	1823	1823	1872	1872	1872			
Adj Flow Rate, veh/h	1	608	124	181	787	3	74	9	140			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91			
Percent Heavy Veh, %	1	1	1	1	1	1	0	0	0			
Cap, veh/h	67	1010	206	245	898	3	81	10	153			
Arrive On Green	0.70	0.70	0.70	0.70	0.70	0.70	0.15	0.15	0.15			
Sat Flow, veh/h	0	1435	292	235	1275	5	547	67	1036			
Grp Volume(v), veh/h	733	0	0	971	0	0	223	0	0			
Grp Sat Flow(s),veh/h/ln	1727	0	0	1515	0	0	1650	0	0			
Q Serve(g_s), s	0.0	0.0	0.0	15.2	0.0	0.0	7.2	0.0	0.0			
Cycle Q Clear(g_c), s	11.8	0.0	0.0	27.0	0.0	0.0	7.2	0.0	0.0			
Prop In Lane	0.00		0.17	0.19		0.00	0.33		0.63			
Lane Grp Cap(c), veh/h	1283	0	0	1145	0	0	244	0	0			
V/C Ratio(X)	0.57	0.00	0.00	0.85	0.00	0.00	0.91	0.00	0.00			
Avail Cap(c_a), veh/h	1950	0	0	1701	0	0	244	0	0			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	4.1	0.0	0.0	5.8	0.0	0.0	22.7	0.0	0.0			
Incr Delay (d2), s/veh	0.4	0.0	0.0	2.8	0.0	0.0	39.0	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(95%),veh/ln	4.3	0.0	0.0	8.3	0.0	0.0	9.0	0.0	0.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	4.5	0.0	0.0	8.6	0.0	0.0	61.7	0.0	0.0			
LnGrp LOS	A	A	A	A	A	A	E	A	A			
Approach Vol, veh/h		733			971			223				
Approach Delay, s/veh		4.5			8.6			61.7				
Approach LOS		A			A			E				

Timer - Assigned Phs		2		4				8				
Phs Duration (G+Y+Rc), s		12.0		42.1				42.1				
Change Period (Y+Rc), s		5.5		5.5				5.5				
Max Green Setting (Gmax), s		6.5		57.5				57.5				
Max Q Clear Time (g_c+I1), s		9.2		13.8				29.0				
Green Ext Time (p_c), s		0.0		4.1				7.6				

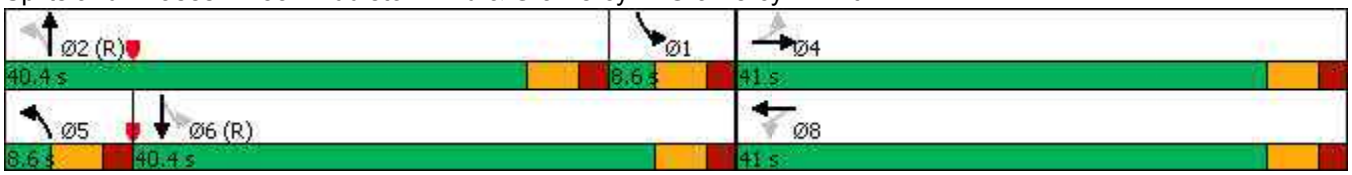
Intersection Summary												
HCM 6th Ctrl Delay			13.2									
HCM 6th LOS			B									

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	4	8	421	5	41	12	935	109	50	1084	15
Future Volume (vph)	7	4	8	421	5	41	12	935	109	50	1084	15
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Grade (%)		0%			0%			0%			3%	
Storage Length (ft)	0		0	350		0	150		150	150		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.896			0.865			0.984			0.998	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1676	1581	0	1676	1526	0	1710	3306	0	1684	3329	0
Flt Permitted	0.724			0.749			0.118			0.127		
Satd. Flow (perm)	1278	1581	0	1322	1526	0	212	3306	0	225	3329	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9			45			17			2	
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		450			1673			507			990	
Travel Time (s)		8.8			32.6			9.9			19.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	0%	2%	0%	0%	1%	0%
Adj. Flow (vph)	8	4	9	458	5	45	13	1016	118	54	1178	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	8	13	0	458	50	0	13	1134	0	54	1194	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			20			20	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.09	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	48	48		48	48		48	48		48	48	
Trailing Detector (ft)	-2	-2		-2	-2		-2	-2		-2	-2	
Detector 1 Position(ft)	-2	-2		-2	-2		-2	-2		-2	-2	
Detector 1 Size(ft)	50	50		50	50		50	50		50	50	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	10.0	10.0		10.0	10.0		8.5	10.0		8.5	10.0	
Total Split (s)	41.0	41.0		41.0	41.0		8.6	40.4		8.6	40.4	
Total Split (%)	45.6%	45.6%		45.6%	45.6%		9.6%	44.9%		9.6%	44.9%	
Maximum Green (s)	35.5	35.5		35.5	35.5		3.1	34.9		3.1	34.9	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.5	-1.5		-1.5	-1.5		-1.5	-1.5		-1.5	-1.5	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag							Lead	Lead		Lag	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Act Effct Green (s)	34.8	34.8		34.8	34.8		40.3	40.3		45.5	45.5	
Actuated g/C Ratio	0.39	0.39		0.39	0.39		0.45	0.45		0.51	0.51	
v/c Ratio	0.02	0.02		0.90	0.08		0.07	0.76		0.29	0.71	
Control Delay	16.0	10.4		47.9	6.2		20.5	29.8		25.1	21.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	16.0	10.4		47.9	6.2		20.5	29.8		25.1	21.7	
LOS	B	B		D	A		C	C		C	C	
Approach Delay		12.5			43.8			29.7			21.8	
Approach LOS		B			D			C			C	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 7.3 (8%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.90	
Intersection Signal Delay: 28.6	Intersection LOS: C
Intersection Capacity Utilization 76.8%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 35: Middletown Rd & Gramercy Pl/Gramercy Pl Ext



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	4	8	421	5	41	12	935	109	50	1084	15
Future Volume (veh/h)	7	4	8	421	5	41	12	935	109	50	1084	15
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1772	1772	1772	1772	1772	1772	1800	1772	1772	1750	1736	1736
Adj Flow Rate, veh/h	8	4	9	458	5	45	13	1016	118	54	1178	16
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	0	2	2	0	1	1
Cap, veh/h	547	177	399	585	56	502	147	1229	143	260	1581	21
Arrive On Green	0.37	0.37	0.37	0.37	0.37	0.37	0.01	0.13	0.13	0.10	0.47	0.47
Sat Flow, veh/h	1355	485	1091	1401	152	1372	1714	3039	353	1666	3331	45
Grp Volume(v), veh/h	8	0	13	458	0	50	13	563	571	54	583	611
Grp Sat Flow(s),veh/h/ln	1355	0	1576	1401	0	1525	1714	1683	1708	1666	1649	1728
Q Serve(g_s), s	0.4	0.0	0.5	27.9	0.0	1.9	0.4	29.3	29.3	0.0	25.9	25.9
Cycle Q Clear(g_c), s	2.3	0.0	0.5	28.4	0.0	1.9	0.4	29.3	29.3	0.0	25.9	25.9
Prop In Lane	1.00		0.69	1.00		0.90	1.00		0.21	1.00		0.03
Lane Grp Cap(c), veh/h	547	0	577	585	0	558	147	681	691	260	783	820
V/C Ratio(X)	0.01	0.00	0.02	0.78	0.00	0.09	0.09	0.83	0.83	0.21	0.74	0.74
Avail Cap(c_a), veh/h	608	0	648	649	0	627	190	681	691	260	783	820
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.4	0.0	18.2	27.3	0.0	18.7	22.1	35.9	35.9	36.1	19.2	19.2
Incr Delay (d2), s/veh	0.0	0.0	0.0	5.6	0.0	0.1	0.3	11.0	10.9	0.4	6.4	6.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.2	0.0	0.3	14.8	0.0	1.2	0.3	21.5	21.8	1.9	15.7	16.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.5	0.0	18.3	33.0	0.0	18.8	22.4	46.9	46.9	36.5	25.6	25.3
LnGrp LOS	B	A	B	C	A	B	C	D	D	D	C	C
Approach Vol, veh/h		21			508			1147			1248	
Approach Delay, s/veh		18.7			31.6			46.6			25.9	
Approach LOS		B			C			D			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	12.7	40.4		36.9	6.3	46.7		36.9
Change Period (Y+Rc), s	5.5	5.5		5.5	5.5	5.5		5.5
Max Green Setting (Gmax), s	3.1	34.9		35.5	3.1	34.9		35.5
Max Q Clear Time (g_c+I1), s	2.0	31.3		4.3	2.4	27.9		30.4
Green Ext Time (p_c), s	0.0	1.8		0.0	0.0	3.1		1.0

Intersection Summary	
HCM 6th Ctrl Delay	35.0
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	400	82	30	35	76	93	107	301	70	198	80	312
Future Volume (vph)	400	82	30	35	76	93	107	301	70	198	80	312
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.992			0.938			0.980			0.929	
Flt Protected		0.962			0.991			0.989			0.984	
Satd. Flow (prot)	0	1619	0	0	1617	0	0	1745	0	0	1645	0
Flt Permitted		0.962			0.991			0.989			0.984	
Satd. Flow (perm)	0	1619	0	0	1617	0	0	1745	0	0	1645	0
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		2002			587			752			1016	
Travel Time (s)		39.0			11.4			14.6			19.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	7%	4%	0%	0%	2%	6%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	444	91	33	39	84	103	119	334	78	220	89	347
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	568	0	0	226	0	0	531	0	0	656	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Yield			Yield			Yield			Yield	

Intersection Summary	
Area Type:	Other
Control Type: Roundabout	
Intersection Capacity Utilization 109.5%	ICU Level of Service H
Analysis Period (min) 15	

Intersection	
Intersection Delay, s/veh	18.9
Intersection LOS	C

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	568	226	531	656
Demand Flow Rate, veh/h	603	234	531	656
Vehicles Circulating, veh/h	348	928	790	244
Vehicles Exiting, veh/h	552	393	161	918
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	13.4	14.4	35.8	11.5
Approach LOS	B	B	E	B

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	603	234	531	656
Cap Entry Lane, veh/h	968	536	616	1076
Entry HV Adj Factor	0.943	0.967	1.000	1.000
Flow Entry, veh/h	568	226	531	656
Cap Entry, veh/h	912	518	616	1076
V/C Ratio	0.623	0.437	0.861	0.610
Control Delay, s/veh	13.4	14.4	35.8	11.5
LOS	B	B	E	B
95th %tile Queue, veh	4	2	10	4

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	520	335	144	166	59	0	52	154	128	14	203	80
Future Volume (vph)	520	335	144	166	59	0	52	154	128	14	203	80
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	75		0	75		0	75		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.955						0.948			0.964	
Flt Protected	0.950			0.950				0.992			0.998	
Satd. Flow (prot)	1676	1685	0	1676	1765	0	0	1660	0	0	1698	0
Flt Permitted	0.524			0.466				0.897			0.975	
Satd. Flow (perm)	925	1685	0	822	1765	0	0	1501	0	0	1659	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		28						38			23	
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		605			877			325			770	
Travel Time (s)		11.8			17.1			6.3			15.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	578	372	160	184	66	0	58	171	142	16	226	89
Shared Lane Traffic (%)												
Lane Group Flow (vph)	578	532	0	184	66	0	0	371	0	0	331	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	48	48		48	48		48	48		48	48	
Trailing Detector (ft)	-2	-2		-2	-2		-2	-2		-2	-2	
Detector 1 Position(ft)	-2	-2		-2	-2		-2	-2		-2	-2	
Detector 1 Size(ft)	50	50		50	50		50	50		50	50	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Split (s)	8.5	10.0		8.5	10.0		10.0	10.0		10.0	10.0	
Total Split (s)	39.0	39.0		15.0	15.0		36.0	36.0		36.0	36.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (%)	43.3%	43.3%		16.7%	16.7%		40.0%	40.0%		40.0%	40.0%	
Maximum Green (s)	33.5	33.5		9.5	9.5		30.5	30.5		30.5	30.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.5	-1.5		-1.5	-1.5			-1.5			-1.5	
Total Lost Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Max	Max		Max	Max	
Act Effct Green (s)	45.3	30.5		21.5	12.3			32.2			32.2	
Actuated g/C Ratio	0.53	0.36		0.25	0.14			0.38			0.38	
v/c Ratio	0.75	0.86		0.58	0.26			0.63			0.52	
Control Delay	21.4	39.4		25.5	36.9			26.4			23.8	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	21.4	39.4		25.5	36.9			26.4			23.8	
LOS	C	D		C	D			C			C	
Approach Delay		30.0			28.5			26.4			23.8	
Approach LOS		C			C			C			C	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 85.5	
Natural Cycle: 55	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay: 28.2	Intersection LOS: C
Intersection Capacity Utilization 86.6%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 37: Cherry Dr & Hope Dr/Hope Drive Ext

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	520	335	144	166	59	0	52	154	128	14	203	80
Future Volume (veh/h)	520	335	144	166	59	0	52	154	128	14	203	80
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1772	1772	1772	1772	1772	1772	1772	1772	1772	1772	1772	1772
Adj Flow Rate, veh/h	578	372	160	184	66	0	58	171	142	16	226	89
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	798	417	179	348	285	0	115	301	228	58	445	169
Arrive On Green	0.32	0.35	0.35	0.13	0.16	0.00	0.38	0.38	0.38	0.38	0.38	0.38
Sat Flow, veh/h	1688	1175	506	1688	1772	0	176	798	604	37	1182	448
Grp Volume(v), veh/h	578	0	532	184	66	0	371	0	0	331	0	0
Grp Sat Flow(s),veh/h/ln	1688	0	1681	1688	1772	0	1579	0	0	1667	0	0
Q Serve(g_s), s	21.9	0.0	25.4	7.4	2.8	0.0	2.4	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	21.9	0.0	25.4	7.4	2.8	0.0	15.3	0.0	0.0	12.9	0.0	0.0
Prop In Lane	1.00		0.30	1.00		0.00	0.16		0.38	0.05		0.27
Lane Grp Cap(c), veh/h	798	0	597	348	285	0	644	0	0	673	0	0
V/C Ratio(X)	0.72	0.00	0.89	0.53	0.23	0.00	0.58	0.00	0.00	0.49	0.00	0.00
Avail Cap(c_a), veh/h	952	0	693	352	285	0	644	0	0	673	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	16.0	0.0	25.9	24.7	31.0	0.0	21.2	0.0	0.0	20.5	0.0	0.0
Incr Delay (d2), s/veh	2.2	0.0	12.6	1.4	0.4	0.0	3.7	0.0	0.0	2.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	12.6	0.0	17.1	5.3	2.1	0.0	10.3	0.0	0.0	9.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.3	0.0	38.4	26.2	31.4	0.0	24.9	0.0	0.0	23.1	0.0	0.0
LnGrp LOS	B	A	D	C	C	A	C	A	A	C	A	A
Approach Vol, veh/h		1110			250			371			331	
Approach Delay, s/veh		27.9			27.6			24.9			23.1	
Approach LOS		C			C			C			C	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		36.0	14.8	34.1		36.0	31.2	17.7				
Change Period (Y+Rc), s		5.5	5.5	5.5		5.5	5.5	5.5				
Max Green Setting (Gmax), s		30.5	9.5	33.5		30.5	33.5	9.5				
Max Q Clear Time (g_c+I1), s		17.3	9.4	27.4		14.9	23.9	4.8				
Green Ext Time (p_c), s		1.3	0.0	1.3		1.2	1.9	0.1				

Intersection Summary	
HCM 6th Ctrl Delay	26.6
HCM 6th LOS	C

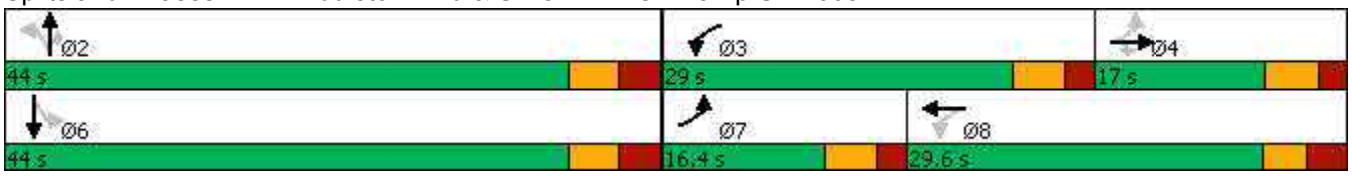
APPENDIX H
2028 PM INTERSECTION CAPACITY ANALYSIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	182	162	264	419	0	144	0	442	386	22	458	1
Future Volume (vph)	182	162	264	419	0	144	0	442	386	22	458	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	11	12	12	12
Grade (%)		0%			3%			4%			-1%	
Storage Length (ft)	230		150	150		0	0		0	0		0
Storage Lanes	1		1	1		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.850				0.850			
Flt Protected	0.950			0.950							0.998	
Satd. Flow (prot)	1693	1800	1530	1651	1507	0	0	1747	1421	0	1805	0
Flt Permitted	0.663			0.426							0.968	
Satd. Flow (perm)	1182	1800	1530	740	1507	0	0	1747	1421	0	1751	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			255		306				398			
Link Speed (mph)		35			45			35			25	
Link Distance (ft)		830			1331			2061			1362	
Travel Time (s)		16.2			20.2			40.1			37.1	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	0%	0%	2%	0%	0%	0%	1%	2%	0%	0%	0%
Adj. Flow (vph)	188	167	272	432	0	148	0	456	398	23	472	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	188	167	272	432	148	0	0	456	398	0	496	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.09	1.09	1.09	1.10	1.10	1.15	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	1	1	1		1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Main30	Right	Left	Main30	
Leading Detector (ft)	48	48	48	48	48		48	300	48	48	300	
Trailing Detector (ft)	-2	-2	-2	-2	-2		-2	0	-2	-2	0	
Detector 1 Position(ft)	-2	-2	-2	-2	-2		-2	0	-2	-2	0	
Detector 1 Size(ft)	50	50	50	50	50		50	0	50	50	0	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)								294			294	
Detector 2 Size(ft)								6			6	
Detector 2 Type								Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)								0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	Perm	pm+pt	NA			NA	Perm	Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4		4	8			2		2	6		
Detector Phase	7	4	4	3	8		2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	3.0	10.0	10.0	3.0	10.0		3.0	3.0	3.0	3.0	3.0	
Minimum Split (s)	12.5	15.8	15.8	8.5	15.8		30.2	30.2	30.2	30.2	30.2	
Total Split (s)	16.4	17.0	17.0	29.0	29.6		44.0	44.0	44.0	44.0	44.0	
Total Split (%)	18.2%	18.9%	18.9%	32.2%	32.9%		48.9%	48.9%	48.9%	48.9%	48.9%	
Maximum Green (s)	10.9	11.4	11.4	23.5	23.8		37.8	37.8	37.8	37.8	37.8	
Yellow Time (s)	3.5	3.6	3.6	3.5	3.0		3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.8		2.9	2.9	2.9	2.9	2.9	
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	-1.5			-1.5	-1.5		-1.5	
Total Lost Time (s)	4.0	4.1	4.1	4.0	4.3			4.7	4.7		4.7	
Lead/Lag	Lead	Lag	Lag	Lead	Lag							
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None		Min	Min	Min	Min	Min	
Act Effct Green (s)	26.6	12.8	12.8	33.2	20.7			31.7	31.7		31.7	
Actuated g/C Ratio	0.34	0.16	0.16	0.42	0.26			0.40	0.40		0.40	
v/c Ratio	0.37	0.57	0.59	0.78	0.24			0.65	0.49		0.70	
Control Delay	17.3	42.7	12.0	28.1	0.9			23.9	4.1		25.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0			0.0	0.0		0.0	
Total Delay	17.3	42.7	12.0	28.1	0.9			23.9	4.1		25.7	
LOS	B	D	B	C	A			C	A		C	
Approach Delay		21.8			21.1			14.7			25.7	
Approach LOS		C			C			B			C	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 78.3	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.78	
Intersection Signal Delay: 20.0	Intersection LOS: C
Intersection Capacity Utilization 88.6%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 1: Middletown Rd & SR 322 EB Off Ramp/SR 2003



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	182	162	264	419	0	144	0	442	386	22	458	1
Future Volume (veh/h)	182	162	264	419	0	144	0	442	386	22	458	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1786	1800	1800	1722	1750	1750	1697	1697	1683	1837	1837	1837
Adj Flow Rate, veh/h	188	167	0	432	0	148	0	456	398	23	472	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	0	0	2	0	0	1	1	2	0	0	0
Cap, veh/h	524	282		608	0	418	0	689	579	66	668	1
Arrive On Green	0.14	0.16	0.00	0.26	0.00	0.28	0.00	0.41	0.41	0.41	0.41	0.41
Sat Flow, veh/h	1701	1800	1525	1640	0	1483	0	1697	1426	36	1645	3
Grp Volume(v), veh/h	188	167	0	432	0	148	0	456	398	496	0	0
Grp Sat Flow(s),veh/h/ln	1701	1800	1525	1640	0	1483	0	1697	1426	1685	0	0
Q Serve(g_s), s	6.5	6.3	0.0	14.6	0.0	5.8	0.0	16.0	16.9	2.3	0.0	0.0
Cycle Q Clear(g_c), s	6.5	6.3	0.0	14.6	0.0	5.8	0.0	16.0	16.9	18.3	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.00		1.00	0.05		0.00
Lane Grp Cap(c), veh/h	524	282		608	0	418	0	689	579	736	0	0
V/C Ratio(X)	0.36	0.59		0.71	0.00	0.35	0.00	0.66	0.69	0.67	0.00	0.00
Avail Cap(c_a), veh/h	581	316		740	0	511	0	908	763	955	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	20.7	28.8	0.0	16.1	0.0	21.0	0.0	17.7	18.0	17.9	0.0	0.0
Incr Delay (d2), s/veh	0.4	2.4	0.0	2.5	0.0	0.5	0.0	1.1	1.7	1.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.4	5.0	0.0	8.6	0.0	3.4	0.0	9.8	8.7	10.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.1	31.2	0.0	18.6	0.0	21.6	0.0	18.8	19.6	19.1	0.0	0.0
LnGrp LOS	C	C		B	A	C	A	B	B	B	A	A
Approach Vol, veh/h		355	A		580			854			496	
Approach Delay, s/veh		25.8			19.4			19.2			19.1	
Approach LOS		C			B			B			B	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	34.5	23.1	15.8	34.5	13.9	25.0
Change Period (Y+Rc), s	* 6.2	5.5	* 5.8	* 6.2	5.5	* 5.8
Max Green Setting (Gmax), s	* 38	23.5	* 11	* 38	10.9	* 24
Max Q Clear Time (g_c+I1), s	18.9	16.6	8.3	20.3	8.5	7.8
Green Ext Time (p_c), s	8.4	1.0	0.1	8.0	0.1	0.4

Intersection Summary	
HCM 6th Ctrl Delay	20.3
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	15	891	199	0	1056
Future Volume (vph)	0	15	891	199	0	1056
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	10	12	12	12	12
Grade (%)	1%		-3%			3%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95
Frt	0.865		0.975			
Flt Protected						
Satd. Flow (prot)	1446	0	1753	0	0	3335
Flt Permitted						
Satd. Flow (perm)	1446	0	1753	0	0	3335
Link Speed (mph)	35		35			35
Link Distance (ft)	609		1026			507
Travel Time (s)	11.9		20.0			9.9
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	1%	0%	2%	0%	0%	1%
Adj. Flow (vph)	0	16	928	207	0	1100
Shared Lane Traffic (%)						
Lane Group Flow (vph)	16	0	1135	0	0	1100
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	10		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.18	1.18	1.05	1.05	1.09	1.09
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 72.3%	ICU Level of Service C
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	15	891	199	0	1056
Future Vol, veh/h	0	15	891	199	0	1056
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	1	-	-3	-	-	3
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	1	0	2	0	0	1
Mvmt Flow	0	16	928	207	0	1100

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1582	1032	0	0	-	-
Stage 1	1032	-	-	-	-	-
Stage 2	550	-	-	-	-	-
Critical Hdwy	6.815	6.3	-	-	-	-
Critical Hdwy Stg 1	5.615	-	-	-	-	-
Critical Hdwy Stg 2	6.015	-	-	-	-	-
Follow-up Hdwy	3.5095	3.3	-	-	-	-
Pot Cap-1 Maneuver	101	277	-	-	0	-
Stage 1	325	-	-	-	0	-
Stage 2	529	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	101	277	-	-	-	-
Mov Cap-2 Maneuver	101	-	-	-	-	-
Stage 1	325	-	-	-	-	-
Stage 2	529	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18.8	0	0
HCM LOS	C		

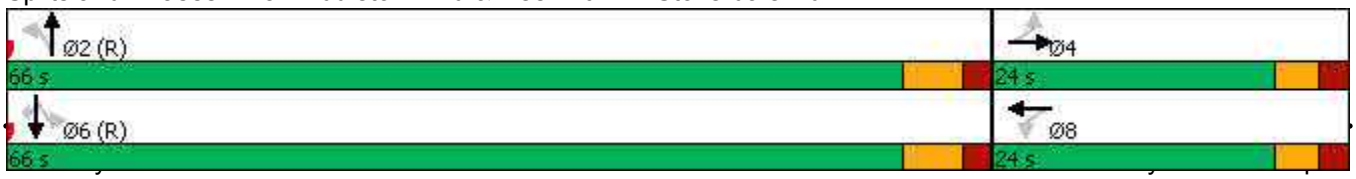
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	277	-
HCM Lane V/C Ratio	-	-	0.056	-
HCM Control Delay (s)	-	-	18.8	-
HCM Lane LOS	-	-	C	-
HCM 95th %tile Q(veh)	-	-	0.2	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	15	30	125	62	58	47	1004	31	34	989	148
Future Volume (vph)	105	15	30	125	62	58	47	1004	31	34	989	148
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	11	12	12	11	14	13
Grade (%)		3%			4%			-1%			-2%	
Storage Length (ft)	125		0	125		0	135		140	100		0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00				0.99							
Frt		0.900			0.927			0.996				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1684	1505	0	1676	1618	0	1661	1784	0	1670	1920	1597
Flt Permitted	0.585			0.726			0.161			0.137		
Satd. Flow (perm)	1035	1505	0	1281	1618	0	282	1784	0	241	1920	1597
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		32			49			4				157
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		1291			1010			1123			1026	
Travel Time (s)		35.2			27.5			21.9			20.0	
Confl. Peds. (#/hr)	1					1						
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	9%	0%	0%	0%	0%	1%	0%	0%	1%	0%
Adj. Flow (vph)	112	16	32	133	66	62	50	1068	33	36	1052	157
Shared Lane Traffic (%)												
Lane Group Flow (vph)	112	48	0	133	128	0	50	1101	0	36	1052	157
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.10	1.10	1.10	1.11	1.07	1.07	1.11	0.97	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	2		1	2	1
Detector Template												
Leading Detector (ft)	38	38		38	38		0	230		0	230	0
Trailing Detector (ft)	-2	-2		-2	-2		0	0		0	0	0
Detector 1 Position(ft)	-2	-2		-2	-2		0	0		0	0	0
Detector 1 Size(ft)	40	40		40	40		0	0		0	0	0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)								224			224	
Detector 2 Size(ft)								6			6	
Detector 2 Type								Cl+Ex			Cl+Ex	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)								0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0		16.0	16.0		16.0	16.0	16.0
Minimum Split (s)	24.0	24.0		24.0	24.0		24.0	24.0		24.0	24.0	24.0
Total Split (s)	24.0	24.0		24.0	24.0		66.0	66.0		66.0	66.0	66.0
Total Split (%)	26.7%	26.7%		26.7%	26.7%		73.3%	73.3%		73.3%	73.3%	73.3%
Maximum Green (s)	18.9	18.9		18.9	18.9		60.0	60.0		60.0	60.0	60.0
Yellow Time (s)	3.0	3.0		3.0	3.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.1	2.1		2.1	2.1		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-1.5	-1.5		-1.5	-1.5		-1.5	-1.5		-1.5	-1.5	-1.5
Total Lost Time (s)	3.6	3.6		3.6	3.6		4.5	4.5		4.5	4.5	4.5
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		6.0	6.0		6.0	6.0	6.0
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0		25.0	25.0		25.0	25.0	25.0
Time To Reduce (s)	0.0	0.0		0.0	0.0		15.0	15.0		15.0	15.0	15.0
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	C-Max
Act Effct Green (s)	15.7	15.7		15.7	15.7		66.2	66.2		66.2	66.2	66.2
Actuated g/C Ratio	0.17	0.17		0.17	0.17		0.74	0.74		0.74	0.74	0.74
v/c Ratio	0.62	0.17		0.60	0.40		0.24	0.84		0.20	0.75	0.13
Control Delay	48.8	16.0		44.7	23.3		10.8	17.5		6.1	9.7	0.6
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	48.8	16.0		44.7	23.3		10.8	17.5		6.1	9.7	0.6
LOS	D	B		D	C		B	B		A	A	A
Approach Delay		38.9			34.2			17.2			8.5	
Approach LOS		D			C			B			A	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay: 16.2	Intersection LOS: B
Intersection Capacity Utilization 78.8%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 3: Middletown Rd & Deer Run Dr/Stoverdale Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	105	15	30	125	62	58	47	1004	31	34	989	148
Future Volume (veh/h)	105	15	30	125	62	58	47	1004	31	34	989	148
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1750	1750	1750	1711	1711	1711	1837	1823	1823	1875	1935	1950
Adj Flow Rate, veh/h	112	16	32	133	66	62	50	1068	33	36	1052	157
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	1	1	0	1	0
Cap, veh/h	238	103	206	305	160	151	421	1253	39	225	1378	1176
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.71	0.71	0.71	1.00	1.00	1.00
Sat Flow, veh/h	1244	520	1040	1308	810	761	479	1759	54	542	1935	1652
Grp Volume(v), veh/h	112	0	48	133	0	128	50	0	1101	36	1052	157
Grp Sat Flow(s),veh/h/ln	1244	0	1560	1308	0	1571	479	0	1813	542	1935	1652
Q Serve(g_s), s	7.8	0.0	2.3	8.4	0.0	6.4	3.0	0.0	40.1	4.1	0.0	0.0
Cycle Q Clear(g_c), s	14.2	0.0	2.3	10.7	0.0	6.4	3.0	0.0	40.1	44.2	0.0	0.0
Prop In Lane	1.00		0.67	1.00		0.48	1.00		0.03	1.00		1.00
Lane Grp Cap(c), veh/h	238	0	309	305	0	311	421	0	1291	225	1378	1176
V/C Ratio(X)	0.47	0.00	0.16	0.44	0.00	0.41	0.12	0.00	0.85	0.16	0.76	0.13
Avail Cap(c_a), veh/h	274	0	353	343	0	356	421	0	1291	225	1378	1176
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.7	0.0	29.9	34.3	0.0	31.5	4.2	0.0	9.5	13.8	0.0	0.0
Incr Delay (d2), s/veh	1.4	0.0	0.2	1.0	0.0	0.9	0.6	0.0	7.3	1.5	4.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.4	0.0	1.6	5.0	0.0	4.5	0.5	0.0	20.3	1.0	2.8	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.2	0.0	30.1	35.3	0.0	32.4	4.7	0.0	16.8	15.3	4.1	0.2
LnGrp LOS	D	A	C	D	A	C	A	A	B	B	A	A
Approach Vol, veh/h		160			261			1151			1245	
Approach Delay, s/veh		36.4			33.9			16.2			3.9	
Approach LOS		D			C			B			A	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	68.6	21.4	68.6	21.4
Change Period (Y+Rc), s	6.0	5.1	6.0	5.1
Max Green Setting (Gmax), s	60.0	18.9	60.0	18.9
Max Q Clear Time (g_c+I1), s	42.1	16.2	2.0	12.7
Green Ext Time (p_c), s	16.7	0.1	45.2	0.5

Intersection Summary	
HCM 6th Ctrl Delay	13.6
HCM 6th LOS	B

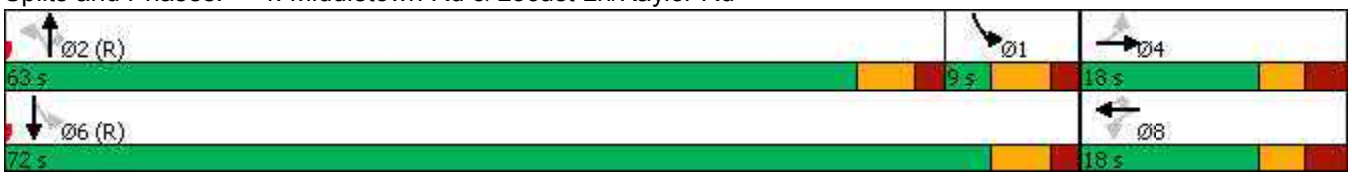
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	79	12	16	53	12	64	21	962	23	74	1085	11
Future Volume (vph)	79	12	16	53	12	64	21	962	23	74	1085	11
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	14	14	14	12	12	14	10	12	14	10	12	12
Grade (%)		0%			-3%			3%			-3%	
Storage Length (ft)	0		0	125		50	135		320	75		0
Storage Lanes	0		0	1		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.980				0.850			0.850		0.999	
Flt Protected		0.965		0.950			0.950			0.950		
Satd. Flow (prot)	0	1816	0	1736	1827	1656	1572	1755	1608	1620	1807	0
Flt Permitted		0.776		0.721			0.138			0.162		
Satd. Flow (perm)	0	1460	0	1317	1827	1656	228	1755	1608	276	1807	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8				109			109		2	
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		1378			1146			1358			921	
Travel Time (s)		37.6			31.3			26.5			17.9	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	1%	0%
Adj. Flow (vph)	82	13	17	55	13	67	22	1002	24	77	1130	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	112	0	55	13	67	22	1002	24	77	1141	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	1.05	1.05	0.97	1.19	1.09	1.01	1.15	1.05	1.05
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1	1	1	2	1	1	2	
Detector Template	Left							Main25	Right		Main25	
Leading Detector (ft)	48	38		38	38	38	38	250	48	38	250	
Trailing Detector (ft)	-2	-2		-2	-2	-2	-2	0	-2	-2	0	
Detector 1 Position(ft)	-2	-2		-2	-2	-2	-2	0	-2	-2	0	
Detector 1 Size(ft)	50	40		40	40	40	40	0	50	40	0	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)								244			244	
Detector 2 Size(ft)								6			6	
Detector 2 Type								Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)								0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8		8	2		2	6		
Detector Phase	4	4		8	8	8	2	2	2	1	6	
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0	3.0	15.0	15.0	15.0	3.0	15.0	
Minimum Split (s)	18.0	18.0		18.0	18.0	18.0	21.0	21.0	21.0	9.0	21.0	
Total Split (s)	18.0	18.0		18.0	18.0	18.0	63.0	63.0	63.0	9.0	72.0	
Total Split (%)	20.0%	20.0%		20.0%	20.0%	20.0%	70.0%	70.0%	70.0%	10.0%	80.0%	
Maximum Green (s)	12.0	12.0		12.0	12.0	12.0	57.0	57.0	57.0	3.0	66.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-1.5		-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	
Total Lost Time (s)		4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
Lead/Lag							Lead	Lead	Lead	Lag		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	6.0	6.0	6.0	3.0	6.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	4.0	4.0	4.0	3.0	4.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	30.0	30.0	30.0	0.0	30.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0	15.0	15.0	15.0	0.0	15.0	
Recall Mode	None	None		None	None	None	C-Max	C-Max	C-Max	None	C-Max	
Act Effct Green (s)		11.9		11.7	11.7	11.7	65.3	65.3	65.3	71.6	72.5	
Actuated g/C Ratio		0.13		0.13	0.13	0.13	0.73	0.73	0.73	0.80	0.81	
v/c Ratio		0.56		0.32	0.05	0.22	0.13	0.79	0.02	0.27	0.78	
Control Delay		44.7		39.9	33.6	4.0	8.5	17.5	0.0	8.6	12.1	
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay		44.7		39.9	33.6	4.0	8.5	17.5	0.0	8.6	12.1	
LOS		D		D	C	A	A	B	A	A	B	
Approach Delay		44.7			21.5			17.0			11.9	
Approach LOS		D			C			B			B	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.79
Intersection Signal Delay: 16.0 Intersection LOS: B
Intersection Capacity Utilization 85.4% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 4: Middletown Rd & Locust Ln/Kaylor Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	79	12	16	53	12	64	21	962	23	74	1085	11
Future Volume (veh/h)	79	12	16	53	12	64	21	962	23	74	1085	11
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1872	1872	1872	1912	1912	1988	1750	1736	1820	1912	1898	1898
Adj Flow Rate, veh/h	82	12	17	55	12	67	22	1002	24	77	1130	11
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	1	0	0	1	1
Cap, veh/h	187	22	25	254	219	193	238	1128	1002	315	1474	14
Arrive On Green	0.11	0.11	0.11	0.11	0.11	0.11	0.65	0.65	0.65	0.09	0.79	0.79
Sat Flow, veh/h	1027	192	220	1490	1912	1685	487	1736	1542	1821	1876	18
Grp Volume(v), veh/h	111	0	0	55	12	67	22	1002	24	77	0	1141
Grp Sat Flow(s),veh/h/ln	1439	0	0	1490	1912	1685	487	1736	1542	1821	0	1894
Q Serve(g_s), s	6.2	0.0	0.0	0.0	0.5	3.3	2.9	43.0	0.5	0.0	0.0	29.2
Cycle Q Clear(g_c), s	6.7	0.0	0.0	3.0	0.5	3.3	32.1	43.0	0.5	0.0	0.0	29.2
Prop In Lane	0.74		0.15	1.00		1.00	1.00		1.00	1.00		0.01
Lane Grp Cap(c), veh/h	234	0	0	254	219	193	238	1128	1002	315	0	1488
V/C Ratio(X)	0.47	0.00	0.00	0.22	0.05	0.35	0.09	0.89	0.02	0.24	0.00	0.77
Avail Cap(c_a), veh/h	286	0	0	307	287	253	238	1128	1002	315	0	1488
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	38.3	0.0	0.0	36.6	35.5	36.8	21.5	13.0	5.6	31.6	0.0	5.2
Incr Delay (d2), s/veh	1.5	0.0	0.0	0.4	0.1	1.1	0.8	10.5	0.0	0.4	0.0	3.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.4	0.0	0.0	2.1	0.4	2.5	0.7	23.3	0.3	2.7	0.0	12.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.8	0.0	0.0	37.0	35.6	37.8	22.2	23.5	5.6	32.0	0.0	9.0
LnGrp LOS	D	A	A	D	D	D	C	C	A	C	A	A
Approach Vol, veh/h		111			134			1048			1218	
Approach Delay, s/veh		39.8			37.3			23.1			10.5	
Approach LOS		D			D			C			B	

Timer - Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	12.2	63.0		14.8		75.2		14.8
Change Period (Y+Rc), s	6.0	6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s	6.0	57.0		12.0		66.0		12.0
Max Q Clear Time (g_c+I1), s	2.0	45.0		8.7		31.2		5.3
Green Ext Time (p_c), s	0.0	11.2		0.1		32.2		0.2

Intersection Summary	
HCM 6th Ctrl Delay	18.5
HCM 6th LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	145	33	56	28	324	19	229	22	59	257	0
Future Volume (vph)	55	145	33	56	28	324	19	229	22	59	257	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	10	10	10	10	10	10	10	10	10	10	10
Grade (%)		-1%			1%			-8%			11%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.981			0.893			0.989				
Flt Protected		0.988			0.993			0.996			0.991	
Satd. Flow (prot)	0	1626	0	0	1482	0	0	1699	0	0	1567	0
Flt Permitted		0.988			0.993			0.996			0.991	
Satd. Flow (perm)	0	1626	0	0	1482	0	0	1699	0	0	1567	0
Link Speed (mph)		35			30			35			35	
Link Distance (ft)		2048			1531			1852			607	
Travel Time (s)		39.9			34.8			36.1			11.8	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	1%	0%	0%	0%	0%	6%	1%	0%	2%	0%	0%
Adj. Flow (vph)	60	159	36	62	31	356	21	252	24	65	282	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	255	0	0	449	0	0	297	0	0	347	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.16	1.16	1.16	1.18	1.18	1.18	1.11	1.11	1.11	1.26	1.26	1.26
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 70.5%	ICU Level of Service C
Analysis Period (min) 15	

Intersection	
Intersection Delay, s/veh	28.3
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	55	145	33	56	28	324	19	229	22	59	257	0
Future Vol, veh/h	55	145	33	56	28	324	19	229	22	59	257	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	0	1	0	0	0	0	6	1	0	2	0	0
Mvmt Flow	60	159	36	62	31	356	21	252	24	65	282	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	19.8	36.6	23.2	28.3
HCM LOS	C	E	C	D

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	7%	24%	14%	19%
Vol Thru, %	85%	62%	7%	81%
Vol Right, %	8%	14%	79%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	270	233	408	316
LT Vol	19	55	56	59
Through Vol	229	145	28	257
RT Vol	22	33	324	0
Lane Flow Rate	297	256	448	347
Geometry Grp	1	1	1	1
Degree of Util (X)	0.633	0.548	0.845	0.728
Departure Headway (Hd)	7.677	7.708	6.783	7.544
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	469	466	534	479
Service Time	5.752	5.789	4.81	5.577
HCM Lane V/C Ratio	0.633	0.549	0.839	0.724
HCM Control Delay	23.2	19.8	36.6	28.3
HCM Lane LOS	C	C	E	D
HCM 95th-tile Q	4.3	3.2	8.8	5.9

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	139	52	44	150	356	366
Future Volume (vph)	139	52	44	150	356	366
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	10	11	11	11	11
Grade (%)	1%			-1%	1%	
Storage Length (ft)	0	0	0			200
Storage Lanes	1	0	0			1
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.963					0.850
Flt Protected	0.965			0.989		
Satd. Flow (prot)	1534	0	0	1703	1714	1472
Flt Permitted	0.965			0.989		
Satd. Flow (perm)	1534	0	0	1703	1714	1472
Link Speed (mph)	30			35	35	
Link Distance (ft)	796			2135	675	
Travel Time (s)	18.1			41.6	13.1	
Confl. Peds. (#/hr)			12			12
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	2%	0%	2%	1%	0%
Adj. Flow (vph)	143	54	45	155	367	377
Shared Lane Traffic (%)						
Lane Group Flow (vph)	197	0	0	200	367	377
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	10			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.18	1.18	1.11	1.11	1.13	1.13
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Stop	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 52.2%	ICU Level of Service A
Analysis Period (min) 15	

Intersection	
Intersection Delay, s/veh	12.2
Intersection LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	139	52	44	150	356	366
Future Vol, veh/h	139	52	44	150	356	366
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles, %	1	2	0	2	1	0
Mvmt Flow	143	54	45	155	367	377
Number of Lanes	1	0	0	1	1	1

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	2	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	11.4	10.6	12.8
HCM LOS	B	B	B

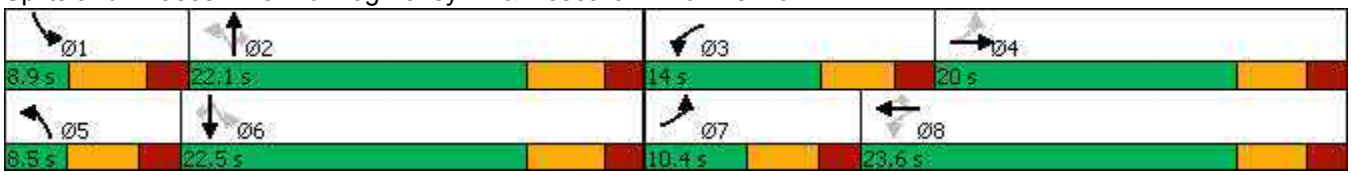
Lane	NBLn1	EBLn1	SBLn1	SBLn2
Vol Left, %	23%	73%	0%	0%
Vol Thru, %	77%	0%	100%	0%
Vol Right, %	0%	27%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	194	191	356	366
LT Vol	44	139	0	0
Through Vol	150	0	356	0
RT Vol	0	52	0	366
Lane Flow Rate	200	197	367	377
Geometry Grp	5	2	7	7
Degree of Util (X)	0.295	0.312	0.539	0.479
Departure Headway (Hd)	5.307	5.702	5.29	4.567
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	670	624	675	781
Service Time	3.395	3.792	3.062	2.338
HCM Lane V/C Ratio	0.299	0.316	0.544	0.483
HCM Control Delay	10.6	11.4	14.2	11.5
HCM Lane LOS	B	B	B	B
HCM 95th-tile Q	1.2	1.3	3.2	2.6

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	128	99	90	288	136	305	31	217	82	63	326	110
Future Volume (vph)	128	99	90	288	136	305	31	217	82	63	326	110
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Grade (%)		6%			-7%			-2%			2%	
Storage Length (ft)	100		0	250		0	190		270	185		175
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.928				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1642	1620	0	1770	1863	1584	1727	1782	1545	1660	1782	1485
Flt Permitted	0.668			0.356			0.448			0.548		
Satd. Flow (perm)	1155	1620	0	663	1863	1584	814	1782	1545	957	1782	1485
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		67				314			225			225
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		395			391			967			1702	
Travel Time (s)		10.8			10.7			18.8			33.2	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	0%	0%	0%	0%	0%	0%	2%	0%	2%	0%	2%
Adj. Flow (vph)	132	102	93	297	140	314	32	224	85	65	336	113
Shared Lane Traffic (%)												
Lane Group Flow (vph)	132	195	0	297	140	314	32	224	85	65	336	113
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.11	1.11	1.11	1.03	1.03	1.03	1.06	1.06	1.06	1.09	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1	1	1	2	2	1	2	2
Detector Template	Left	Thru		Left	Thru	Right	Left	Main25	Main25	Left	Main25	Main25
Leading Detector (ft)	48	48		48	48	48	48	250	250	48	250	250
Trailing Detector (ft)	-2	-2		-2	-2	-2	-2	0	0	-2	0	0
Detector 1 Position(ft)	-2	-2		-2	-2	-2	-2	0	0	-2	0	0
Detector 1 Size(ft)	50	50		50	50	50	50	0	0	50	0	0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)								244	244		244	244
Detector 2 Size(ft)								6	6		6	6
Detector 2 Type								Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)								0.0	0.0		0.0	0.0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8	2		2	6		6
Detector Phase	7	4		3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0	3.0	3.0	10.0	10.0	3.0	10.0	10.0
Minimum Split (s)	8.5	20.0		8.5	20.0	20.0	8.5	20.0	20.0	8.8	20.0	20.0
Total Split (s)	10.4	20.0		14.0	23.6	23.6	8.5	22.1	22.1	8.9	22.5	22.5
Total Split (%)	16.0%	30.8%		21.5%	36.3%	36.3%	13.1%	34.0%	34.0%	13.7%	34.6%	34.6%
Maximum Green (s)	4.9	14.6		8.5	18.2	18.2	3.0	16.3	16.3	3.1	16.7	16.7
Yellow Time (s)	3.5	3.4		3.5	3.4	3.4	3.5	3.8	3.8	3.8	3.8	3.8
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.5	-1.5		-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5
Total Lost Time (s)	4.0	3.9		4.0	3.9	3.9	4.0	4.3	4.3	4.3	4.3	4.3
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	6.0	6.0	3.0	6.0	6.0
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	25.0	25.0	0.0	25.0	25.0
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	13.0	13.0	0.0	13.0	13.0
Recall Mode	None	None		None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	16.0	11.7		22.1	14.9	14.9	20.4	17.8	17.8	21.0	19.5	19.5
Actuated g/C Ratio	0.30	0.22		0.41	0.28	0.28	0.38	0.33	0.33	0.39	0.36	0.36
v/c Ratio	0.33	0.48		0.61	0.27	0.47	0.08	0.38	0.13	0.15	0.52	0.17
Control Delay	13.2	18.7		17.3	19.0	5.2	11.5	19.7	0.4	12.1	20.4	0.5
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.2	18.7		17.3	19.0	5.2	11.5	19.7	0.4	12.1	20.4	0.5
LOS	B	B		B	B	A	B	B	A	B	C	A
Approach Delay		16.5			12.6			14.1			15.0	
Approach LOS		B			B			B			B	

Intersection Summary	
Area Type: Other	
Cycle Length: 65	
Actuated Cycle Length: 53.7	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.61	
Intersection Signal Delay: 14.2	Intersection LOS: B
Intersection Capacity Utilization 63.2%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 8: Bullfrog Valley Dr & Research Blvd/Life Lion Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	128	99	90	288	136	305	31	217	82	63	326	110
Future Volume (veh/h)	128	99	90	288	136	305	31	217	82	63	326	110
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1585	1599	1599	2061	2061	2061	1875	1846	1875	1750	1778	1750
Adj Flow Rate, veh/h	132	102	93	297	140	314	32	224	85	65	336	113
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	0	0	0	0	0	0	2	0	2	0	2
Cap, veh/h	470	149	136	569	517	438	340	488	420	416	513	428
Arrive On Green	0.12	0.19	0.19	0.17	0.25	0.25	0.05	0.26	0.26	0.07	0.29	0.29
Sat Flow, veh/h	1510	770	702	1963	2061	1746	1785	1846	1589	1666	1778	1483
Grp Volume(v), veh/h	132	0	195	297	140	314	32	224	85	65	336	113
Grp Sat Flow(s),veh/h/ln	1510	0	1473	1963	2061	1746	1785	1846	1589	1666	1778	1483
Q Serve(g_s), s	3.6	0.0	6.7	6.0	3.0	9.0	0.7	5.6	2.3	1.5	9.1	3.2
Cycle Q Clear(g_c), s	3.6	0.0	6.7	6.0	3.0	9.0	0.7	5.6	2.3	1.5	9.1	3.2
Prop In Lane	1.00		0.48	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	470	0	286	569	517	438	340	488	420	416	513	428
V/C Ratio(X)	0.28	0.00	0.68	0.52	0.27	0.72	0.09	0.46	0.20	0.16	0.65	0.26
Avail Cap(c_a), veh/h	471	0	433	588	742	629	401	600	517	444	591	493
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.3	0.0	20.5	12.8	16.5	18.7	13.7	16.9	15.7	13.0	17.1	15.0
Incr Delay (d2), s/veh	0.3	0.0	2.9	0.8	0.3	2.2	0.1	2.4	0.9	0.2	5.3	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.1	0.0	4.3	4.4	2.4	6.5	0.4	4.3	1.6	0.9	7.1	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.6	0.0	23.4	13.6	16.8	21.0	13.8	19.3	16.5	13.2	22.3	16.2
LnGrp LOS	B	A	C	B	B	C	B	B	B	B	C	B
Approach Vol, veh/h		327			751			341			514	
Approach Delay, s/veh		19.8			17.3			18.1			19.8	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	18.8	13.5	14.5	6.7	20.1	10.4	17.6
Change Period (Y+Rc), s	* 5.8	* 5.8	5.5	5.4	5.5	* 5.8	5.5	5.4
Max Green Setting (Gmax), s	* 3.1	* 16	8.5	14.6	3.0	* 17	4.9	18.2
Max Q Clear Time (g_c+I1), s	5.5	7.6	8.0	8.7	2.7	11.1	5.6	11.0
Green Ext Time (p_c), s	0.0	3.3	0.1	0.4	0.0	3.2	0.0	1.2

Intersection Summary	
HCM 6th Ctrl Delay	18.5
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

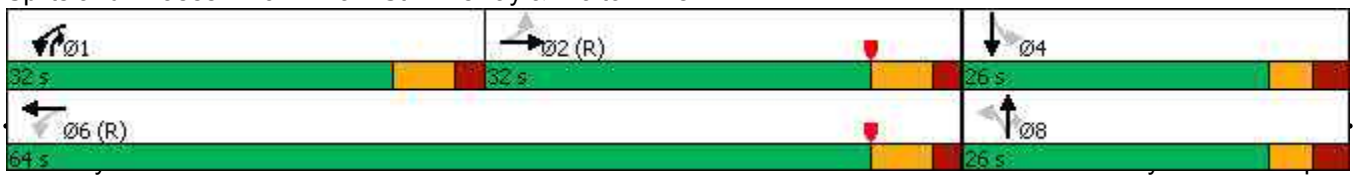
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	393	36	326	507	27	120	4	256	15	5	3
Future Volume (vph)	12	393	36	326	507	27	120	4	256	15	5	3
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	12	12	12	12	12	12	12	13	15	15	15
Grade (%)		-6%			0%			-2%			0%	
Storage Length (ft)	50		300	0		0	0		115	0		0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00				1.00							
Frt		0.987			0.992				0.850		0.983	
Flt Protected	0.950			0.950				0.954			0.968	
Satd. Flow (prot)	1644	3477	0	1693	1767	0	0	1734	1535	0	1884	0
Flt Permitted	0.456			0.430				0.715			0.806	
Satd. Flow (perm)	788	3477	0	766	1767	0	0	1300	1535	0	1569	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			6				186		3	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		689			599			643			403	
Travel Time (s)		13.4			11.7			17.5			11.0	
Confl. Peds. (#/hr)	1					1						
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	0%	1%	1%	0%	0%	0%	4%	0%	0%	0%
Adj. Flow (vph)	13	409	38	340	528	28	125	4	267	16	5	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	13	447	0	340	556	0	0	129	267	0	24	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		23			23			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.13	1.03	1.03	1.07	1.07	1.07	1.06	1.06	1.01	0.95	0.95	0.95
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	1	1	1	1	
Detector Template							Left			Left	Thru	
Leading Detector (ft)	0	220		38	220		48	38	38	48	48	
Trailing Detector (ft)	0	0		-2	0		-2	-2	-2	-2	-2	
Detector 1 Position(ft)	0	0		-2	0		-2	-2	-2	-2	-2	
Detector 1 Size(ft)	0	0		40	0		50	40	40	50	50	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		214			214							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	pm+ov	Perm	NA	
Protected Phases		2		1	6			8	1		4	
Permitted Phases	2			6			8		8	4		
Detector Phase	2	2		1	6		8	8	1	4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		3.0	10.0		3.0	3.0	3.0	3.0	3.0	
Minimum Split (s)	25.0	25.0		9.2	25.0		15.5	15.5	9.2	15.5	15.5	
Total Split (s)	32.0	32.0		32.0	64.0		26.0	26.0	32.0	26.0	26.0	
Total Split (%)	35.6%	35.6%		35.6%	71.1%		28.9%	28.9%	35.6%	28.9%	28.9%	
Maximum Green (s)	25.8	25.8		25.8	57.8		20.5	20.5	25.8	20.5	20.5	
Yellow Time (s)	4.2	4.2		4.2	4.2		3.0	3.0	4.2	3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.5	2.5	2.0	2.5	2.5	
Lost Time Adjust (s)	-1.5	-1.5		-1.5	-1.5			-1.5	-1.5		-1.5	
Total Lost Time (s)	4.7	4.7		4.7	4.7			4.0	4.7		4.0	
Lead/Lag	Lag	Lag		Lead					Lead			
Lead-Lag Optimize?	Yes	Yes		Yes					Yes			
Vehicle Extension (s)	5.0	5.0		3.0	5.0		3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)	2.0	2.0		3.0	2.0		3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	22.0	22.0		0.0	22.0		0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	10.0	10.0		0.0	10.0		0.0	0.0	0.0	0.0	0.0	
Recall Mode	C-Min	C-Min		None	C-Min		None	None	None	None	None	
Act Effct Green (s)	46.3	46.3		65.6	65.6			15.7	34.3		15.7	
Actuated g/C Ratio	0.51	0.51		0.73	0.73			0.17	0.38		0.17	
v/c Ratio	0.03	0.25		0.48	0.43			0.57	0.38		0.09	
Control Delay	15.8	14.2		7.3	6.7			43.0	6.7		26.6	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Delay	15.8	14.2		7.3	6.7			43.0	6.7		26.6	
LOS	B	B		A	A			D	A		C	
Approach Delay		14.2			6.9			18.5			26.6	
Approach LOS		B			A			B			C	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.57
Intersection Signal Delay: 11.7 Intersection LOS: B
Intersection Capacity Utilization 59.3% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 9: E Main St/Driveway & Walton Ave



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	393	36	326	507	27	120	4	256	15	5	3
Future Volume (veh/h)	12	393	36	326	507	27	120	4	256	15	5	3
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	2024	2024	2024	1786	1786	1786	1875	1875	1890	1872	1872	1872
Adj Flow Rate, veh/h	12	409	38	340	528	28	125	4	267	16	5	3
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	1	1	1	0	0	4	0	0	0
Cap, veh/h	602	1908	176	752	1206	64	340	10	504	158	46	20
Arrive On Green	0.54	0.54	0.54	0.13	0.72	0.72	0.19	0.19	0.19	0.19	0.19	0.19
Sat Flow, veh/h	973	3557	329	1701	1681	89	1406	52	1602	489	249	105
Grp Volume(v), veh/h	12	220	227	340	0	556	129	0	267	24	0	0
Grp Sat Flow(s),veh/h/ln	973	1922	1964	1701	0	1770	1458	0	1602	844	0	0
Q Serve(g_s), s	0.5	5.4	5.4	7.0	0.0	11.6	0.0	0.0	12.3	0.1	0.0	0.0
Cycle Q Clear(g_c), s	0.5	5.4	5.4	7.0	0.0	11.6	7.4	0.0	12.3	7.5	0.0	0.0
Prop In Lane	1.00		0.17	1.00		0.05	0.97		1.00	0.67		0.12
Lane Grp Cap(c), veh/h	602	1031	1053	752	0	1270	349	0	504	223	0	0
V/C Ratio(X)	0.02	0.21	0.22	0.45	0.00	0.44	0.37	0.00	0.53	0.11	0.00	0.00
Avail Cap(c_a), veh/h	602	1031	1053	1048	0	1270	438	0	598	301	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.57	0.00	0.57	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	9.8	10.9	10.9	6.0	0.0	5.2	32.8	0.0	25.4	30.5	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.5	0.5	0.2	0.0	0.6	0.7	0.0	0.9	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.2	4.0	4.2	3.6	0.0	5.7	4.6	0.0	8.3	0.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.9	11.4	11.4	6.2	0.0	5.9	33.5	0.0	26.2	30.7	0.0	0.0
LnGrp LOS	A	B	B	A	A	A	C	A	C	C	A	A
Approach Vol, veh/h		459			896			396			24	
Approach Delay, s/veh		11.4			6.0			28.6			30.7	
Approach LOS		B			A			C			C	

Timer - Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	16.3	53.0		20.7		69.3		20.7
Change Period (Y+Rc), s	6.2	6.2		5.5		6.2		5.5
Max Green Setting (Gmax), s	25.8	25.8		20.5		57.8		20.5
Max Q Clear Time (g_c+I1), s	9.0	7.4		9.5		13.6		14.3
Green Ext Time (p_c), s	1.1	6.6		0.0		14.4		0.9

Intersection Summary	
HCM 6th Ctrl Delay	12.8
HCM 6th LOS	B

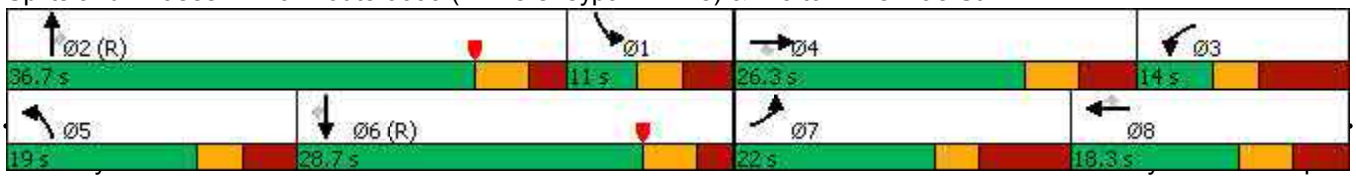
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	490	163	336	166	226	137	367	1118	156	105	790	532
Future Volume (vph)	490	163	336	166	226	137	367	1118	156	105	790	532
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		1%			2%			-1%			1%	
Storage Length (ft)	150		150	180		250	750		0	130		0
Storage Lanes	1		1	2		1	2		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	1.00	1.00	0.97	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	0.99		0.99	0.99		0.98			0.98	1.00		
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3159	1791	1522	3284	1782	1500	3301	3273	1507	1701	3304	1507
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3131	1791	1502	3267	1782	1469	3301	3273	1475	1699	3304	1507
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			346			310			267			502
Link Speed (mph)		35			25			45			45	
Link Distance (ft)		599			1652			760			1056	
Travel Time (s)		11.7			45.1			11.5			16.0	
Confl. Peds. (#/hr)	4		1	1		4			1	1		
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	0%	0%	0%	0%	1%	1%	5%	2%	0%	3%	1%
Adj. Flow (vph)	505	168	346	171	233	141	378	1153	161	108	814	548
Shared Lane Traffic (%)												
Lane Group Flow (vph)	505	168	346	171	233	141	378	1153	161	108	814	548
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.13	1.08	1.08	1.09	1.09	1.09	1.07	1.07	1.07	1.08	1.08	1.08
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	1	1	1	1	1	2	1	1	2	1
Detector Template							Left	Main25	Right	Left	Main25	Right
Leading Detector (ft)	38	38	0	38	38	0	48	250	48	48	250	48
Trailing Detector (ft)	-2	-2	0	-2	-2	0	-2	0	-2	-2	0	-2
Detector 1 Position(ft)	-2	-2	0	-2	-2	0	-2	0	-2	-2	0	-2
Detector 1 Size(ft)	40	40	0	40	40	0	50	0	50	50	0	50
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)								244			244	
Detector 2 Size(ft)								6			6	
Detector 2 Type								Cl+Ex			Cl+Ex	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)								0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	12.0	12.0	3.0	12.0	12.0
Minimum Split (s)	12.0	10.3	10.3	12.0	10.3	10.3	10.0	18.0	18.0	10.0	18.0	18.0
Total Split (s)	22.0	26.3	26.3	14.0	18.3	18.3	19.0	36.7	36.7	11.0	28.7	28.7
Total Split (%)	25.0%	29.9%	29.9%	15.9%	20.8%	20.8%	21.6%	41.7%	41.7%	12.5%	32.6%	32.6%
Maximum Green (s)	13.0	19.0	19.0	5.0	11.0	11.0	12.5	30.7	30.7	4.5	22.7	22.7
Yellow Time (s)	3.0	3.5	3.5	3.0	3.5	3.5	3.0	3.5	3.5	3.0	3.5	3.5
All-Red Time (s)	6.0	3.8	3.8	6.0	3.8	3.8	3.5	2.5	2.5	3.5	2.5	2.5
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5
Total Lost Time (s)	7.5	5.8	5.8	7.5	5.8	5.8	5.0	4.5	4.5	5.0	4.5	4.5
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	5.0	5.0	5.0	2.0	2.0	2.0
Minimum Gap (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.0	20.0	0.0	20.0	20.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	25.0	25.0	0.0	25.0	25.0
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)	14.5	14.1	14.1	12.9	12.5	12.5	14.0	32.2	32.2	6.0	24.2	24.2
Actuated g/C Ratio	0.16	0.16	0.16	0.15	0.14	0.14	0.16	0.37	0.37	0.07	0.28	0.28
v/c Ratio	0.97	0.59	0.65	0.36	0.92	0.30	0.72	0.96	0.23	0.94	0.90	0.70
Control Delay	71.2	41.9	9.9	37.8	79.0	1.6	43.9	47.1	0.7	113.2	45.0	9.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	71.2	41.9	9.9	37.8	79.0	1.6	43.9	47.1	0.7	113.2	45.0	9.5
LOS	E	D	A	D	E	A	D	D	A	F	D	A
Approach Delay		45.6			46.0			42.0			36.8	
Approach LOS		D			D			D			D	

Intersection Summary

Area Type: Other
Cycle Length: 88
Actuated Cycle Length: 88
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.97
Intersection Signal Delay: 41.6 Intersection LOS: D
Intersection Capacity Utilization 83.7% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 10: Route 0039 (W Hersheypark Drive) & Walton Ave/Mae St



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	490	163	336	166	226	137	367	1118	156	105	790	532
Future Volume (veh/h)	490	163	336	166	226	137	367	1118	156	105	790	532
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1780	1794	1794	1778	1778	1764	1823	1766	1809	1794	1752	1780
Adj Flow Rate, veh/h	505	168	0	171	233	0	378	1153	161	108	814	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	0	0	0	0	1	1	5	2	0	3	1
Cap, veh/h	542	236		640	253		508	1228	560	1133	2905	
Arrive On Green	0.16	0.13	0.00	0.19	0.14	0.00	0.15	0.37	0.37	0.66	0.87	0.00
Sat Flow, veh/h	3289	1794	1521	3284	1778	1495	3368	3356	1531	1709	3329	1509
Grp Volume(v), veh/h	505	168	0	171	233	0	378	1153	161	108	814	0
Grp Sat Flow(s),veh/h/ln	1645	1794	1521	1642	1778	1495	1684	1678	1531	1709	1665	1509
Q Serve(g_s), s	13.3	7.9	0.0	3.9	11.4	0.0	9.4	29.2	6.6	2.0	3.6	0.0
Cycle Q Clear(g_c), s	13.3	7.9	0.0	3.9	11.4	0.0	9.4	29.2	6.6	2.0	3.6	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	542	236		640	253		508	1228	560	1133	2905	
V/C Ratio(X)	0.93	0.71		0.27	0.92		0.74	0.94	0.29	0.10	0.28	
Avail Cap(c_a), veh/h	542	418		640	253		536	1228	560	1133	2905	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.96	0.96	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	36.3	36.6	0.0	30.1	37.3	0.0	35.7	27.0	19.8	5.3	0.9	0.0
Incr Delay (d2), s/veh	22.1	1.4	0.0	0.1	35.9	0.0	6.7	14.7	1.3	0.0	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	11.0	6.2	0.0	2.8	11.9	0.0	7.4	18.9	4.5	1.0	0.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.4	38.1	0.0	30.2	73.2	0.0	42.4	41.7	21.1	5.3	1.2	0.0
LnGrp LOS	E	D		C	E		D	D	C	A	A	
Approach Vol, veh/h		673	A		404	A		1692			922	A
Approach Delay, s/veh		53.3			55.0			39.9			1.7	
Approach LOS		D			D			D			A	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	64.3	36.7	24.6	17.4	18.3	82.7	22.0	20.0
Change Period (Y+Rc), s	6.5	6.0	* 9	7.3	6.5	* 6.5	9.0	* 9
Max Green Setting (Gmax), s	45	30.7	* 5	19.0	12.5	* 23	13.0	* 11
Max Q Clear Time (g_c+I1), s	40	31.2	5.9	9.9	11.4	5.6	15.3	13.4
Green Ext Time (p_c), s	0.0	0.0	0.0	0.2	0.3	7.2	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	34.4
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

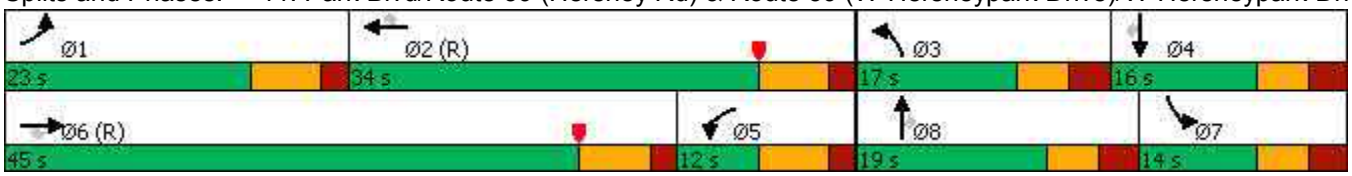
Unsignalized Delay for [EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	416	915	199	172	895	453	223	252	178	259	231	300
Future Volume (vph)	416	915	199	172	895	453	223	252	178	259	231	300
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Grade (%)		3%			-3%			1%			4%	
Storage Length (ft)	350		500	575		475	0		350	400		450
Storage Lanes	2		2	2		1	2		1	2		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.95	0.88	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3204	3239	2550	3207	3338	1522	3301	2269	1522	3156	3352	1428
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3204	3239	2550	3207	3338	1522	3301	2269	1522	3156	3352	1428
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			207			308			275			313
Link Speed (mph)		45			45			35			35	
Link Distance (ft)		1096			1663			1072			729	
Travel Time (s)		16.6			25.2			20.9			14.2	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	4%	4%	5%	4%	2%	0%	50%	0%	3%	0%	5%
Adj. Flow (vph)	433	953	207	179	932	472	232	263	185	270	241	313
Shared Lane Traffic (%)												
Lane Group Flow (vph)	433	953	207	179	932	472	232	263	185	270	241	313
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.05	1.05	1.05	1.08	1.08	1.08	1.10	1.10	1.10
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	1	1	1	1	1
Detector Template	Left	Main30	Right	Left	Main30	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	48	300	48	48	300	48	48	48	48	48	48	48
Trailing Detector (ft)	-2	0	-2	-2	0	-2	-2	-2	-2	-2	-2	-2
Detector 1 Position(ft)	-2	0	-2	-2	0	-2	-2	-2	-2	-2	-2	-2
Detector 1 Size(ft)	50	0	50	50	0	50	50	50	50	50	50	50
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		294			294							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases			6			2			8			4
Detector Phase	1	6	6	5	2	2	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	3.0	12.0	12.0	3.0	12.0	12.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Split (s)	9.7	18.5	18.5	9.7	18.5	18.5	10.0	10.0	10.0	9.2	10.0	10.0
Total Split (s)	23.0	45.0	45.0	12.0	34.0	34.0	17.0	19.0	19.0	14.0	16.0	16.0
Total Split (%)	25.6%	50.0%	50.0%	13.3%	37.8%	37.8%	18.9%	21.1%	21.1%	15.6%	17.8%	17.8%
Maximum Green (s)	16.5	38.5	38.5	5.5	27.5	27.5	10.8	12.8	12.8	7.8	9.8	9.8
Yellow Time (s)	4.7	4.7	4.7	4.7	4.7	4.7	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.8	1.8	1.8	1.8	1.8	1.8	2.7	2.7	2.7	2.7	2.7	2.7
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.7	4.7	4.7	4.7	4.7	4.7
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0	6.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.5	3.5	3.0	3.5	3.5	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	30.0	30.0	0.0	30.0	30.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	15.0	15.0	0.0	15.0	15.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	None
Act Effct Green (s)	17.0	40.4	40.4	7.0	30.3	30.3	11.7	13.9	13.9	9.3	11.5	11.5
Actuated g/C Ratio	0.19	0.45	0.45	0.08	0.34	0.34	0.13	0.15	0.15	0.10	0.13	0.13
v/c Ratio	0.72	0.66	0.16	0.72	0.83	0.66	0.54	0.75	0.40	0.83	0.56	0.69
Control Delay	41.4	22.2	2.6	43.9	24.2	9.6	41.5	50.8	3.2	61.7	42.6	13.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.4	22.2	2.6	43.9	24.2	9.6	41.5	50.8	3.2	61.7	42.6	13.2
LOS	D	C	A	D	C	A	D	D	A	E	D	B
Approach Delay		24.9			22.1			34.7			37.7	
Approach LOS		C			C			C			D	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 8 (9%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.83	
Intersection Signal Delay: 27.6	Intersection LOS: C
Intersection Capacity Utilization 70.0%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 11: Park Blvd/Route 39 (Hershey Rd) & Route 39 (W Hersheypark Drive)/W Hersheypark Drive



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	416	915	199	172	895	453	223	252	178	259	231	300
Future Volume (veh/h)	416	915	199	172	895	453	223	252	178	259	231	300
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1722	1694	1694	1841	1855	1883	1794	1092	1794	1669	1711	1641
Adj Flow Rate, veh/h	433	953	0	179	932	0	232	262	0	270	241	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	4	4	5	4	2	0	50	0	3	0	5
Cap, veh/h	557	1430		265	1224		360	330		319	499	
Arrive On Green	0.17	0.44	0.00	0.08	0.35	0.00	0.11	0.16	0.00	0.10	0.15	0.00
Sat Flow, veh/h	3181	3218	2526	3401	3524	1596	3315	2076	1521	3083	3250	1390
Grp Volume(v), veh/h	433	953	0	179	932	0	232	262	0	270	241	0
Grp Sat Flow(s),veh/h/ln	1591	1609	1263	1700	1762	1596	1658	1038	1521	1541	1625	1390
Q Serve(g_s), s	11.7	21.0	0.0	4.6	21.1	0.0	6.0	10.9	0.0	7.7	6.1	0.0
Cycle Q Clear(g_c), s	11.7	21.0	0.0	4.6	21.1	0.0	6.0	10.9	0.0	7.7	6.1	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	557	1430		265	1224		360	330		319	499	
V/C Ratio(X)	0.78	0.67		0.68	0.76		0.64	0.79		0.85	0.48	
Avail Cap(c_a), veh/h	636	1430		265	1224		453	330		319	499	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	35.5	19.7	0.0	40.4	26.1	0.0	38.4	36.4	0.0	39.7	34.8	0.0
Incr Delay (d2), s/veh	5.4	2.5	0.0	6.7	4.5	0.0	2.1	12.6	0.0	18.8	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	8.2	11.9	0.0	3.8	13.7	0.0	4.5	5.9	0.0	6.6	4.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.8	22.2	0.0	47.1	30.6	0.0	40.5	49.0	0.0	58.4	35.6	0.0
LnGrp LOS	D	C		D	C		D	D		E	D	
Approach Vol, veh/h		1386	A		1111	A		494	A		511	A
Approach Delay, s/veh		28.0			33.2			45.0			47.6	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.7	36.3	14.5	18.5	12.0	45.0	14.0	19.0
Change Period (Y+Rc), s	* 6.5	* 6.5	* 6.2	* 6.2	* 6.5	* 6.5	* 6.2	* 6.2
Max Green Setting (Gmax), s	* 17	* 28	* 11	* 9.8	* 5.5	* 39	* 7.8	* 13
Max Q Clear Time (g_c+I1), s	13.7	23.1	8.0	8.1	6.6	23.0	9.7	12.9
Green Ext Time (p_c), s	0.5	4.0	0.2	0.2	0.0	13.2	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	34.9
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

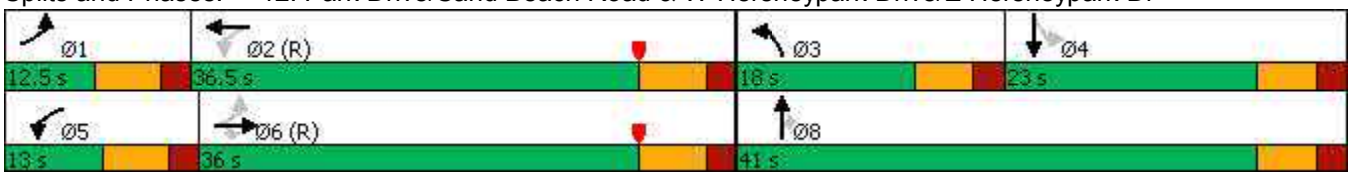
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	1319	265	162	791	27	408	131	217	61	158	89
Future Volume (vph)	36	1319	265	162	791	27	408	131	217	61	158	89
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	11	11	11	12	12	12
Grade (%)		2%			-2%			3%			-3%	
Storage Length (ft)	75		150	190		0	125		185	0		0
Storage Lanes	1		1	1		0	2		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.95	0.95	0.97	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.995				0.850		0.961	
Flt Protected	0.950			0.950			0.950				0.990	
Satd. Flow (prot)	1693	4769	1485	1661	3309	0	3097	1697	1401	0	1729	0
Flt Permitted	0.217			0.118			0.950				0.899	
Satd. Flow (perm)	387	4769	1485	206	3309	0	3097	1697	1401	0	1570	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			234		4				188		20	
Link Speed (mph)		45			45			35			35	
Link Distance (ft)		789			2028			659			1125	
Travel Time (s)		12.0			30.7			12.8			21.9	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	2%	2%	4%	4%	0%	2%	1%	4%	0%	1%	0%
Adj. Flow (vph)	38	1374	276	169	824	28	425	136	226	64	165	93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	38	1374	276	169	852	0	425	136	226	0	322	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			22			22	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.06	1.06	1.06	1.14	1.14	1.14	1.05	1.05	1.05
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	1	1	1	1	
Detector Template		Main30	Right		Main30					Left		
Leading Detector (ft)	35	300	48	35	300		30	30	30	48	35	
Trailing Detector (ft)	-5	0	-2	-5	0		-10	-10	-10	-2	-5	
Detector 1 Position(ft)	-5	0	-2	-5	0		-10	-10	-10	-2	-5	
Detector 1 Size(ft)	40	0	50	40	0		40	40	40	50	40	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		294			294							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Prot	NA	Perm	Perm	NA	
Protected Phases	1	6		5	2		3	8			4	
Permitted Phases	6		6	2					8	4		
Detector Phase	1	6	6	5	2		3	8	8	4	4	
Switch Phase												
Minimum Initial (s)	3.0	10.0	10.0	3.0	10.0		3.0	3.0	3.0	3.0	3.0	
Minimum Split (s)	12.5	16.5	16.5	12.5	16.5		13.0	10.0	10.0	13.0	13.0	
Total Split (s)	12.5	36.0	36.0	13.0	36.5		18.0	41.0	41.0	23.0	23.0	
Total Split (%)	13.9%	40.0%	40.0%	14.4%	40.6%		20.0%	45.6%	45.6%	25.6%	25.6%	
Maximum Green (s)	6.0	29.5	29.5	6.5	30.0		11.9	34.9	34.9	16.9	16.9	
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5		3.9	3.9	3.9	3.9	3.9	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.2	2.2	2.2	2.2	2.2	
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	-1.5		-1.5	-1.5	-1.5		-1.5	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		4.6	4.6	4.6		4.6	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes			Yes	Yes	
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0		3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	15.0	15.0	0.0	15.0		0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	30.0	30.0	0.0	30.0		0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	C-Max	C-Max	None	C-Max		None	None	None	None	None	
Act Effct Green (s)	38.4	31.0	31.0	41.3	36.5		13.4	36.4	36.4		18.4	
Actuated g/C Ratio	0.43	0.34	0.34	0.46	0.41		0.15	0.40	0.40		0.20	
v/c Ratio	0.14	0.84	0.42	0.76	0.63		0.92	0.20	0.33		0.96	
Control Delay	9.0	20.4	2.9	40.1	25.2		65.6	18.4	5.8		75.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	
Total Delay	9.0	20.4	2.9	40.1	25.2		65.6	18.4	5.8		75.0	
LOS	A	C	A	D	C		E	B	A		E	
Approach Delay		17.3			27.7			40.3			75.0	
Approach LOS		B			C			D			E	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow, Master Intersection
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.96
Intersection Signal Delay: 29.7 Intersection LOS: C
Intersection Capacity Utilization 82.7% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 12: Park Drive/Sand Beach Road & W Hersheypark Drive/E Hersheypark Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	1319	265	162	791	27	408	131	217	61	158	89
Future Volume (veh/h)	36	1319	265	162	791	27	408	131	217	61	158	89
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1778	1750	1750	1818	1818	1818	1722	1736	1694	1898	1898	1898
Adj Flow Rate, veh/h	38	1374	276	169	824	28	425	136	226	64	165	93
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	2	2	4	4	4	2	1	4	1	1	1
Cap, veh/h	280	1645	511	259	1332	45	474	702	580	101	183	96
Arrive On Green	0.04	0.34	0.34	0.09	0.39	0.39	0.15	0.40	0.40	0.20	0.20	0.20
Sat Flow, veh/h	1693	4776	1483	1731	3408	116	3181	1736	1435	258	896	469
Grp Volume(v), veh/h	38	1374	276	169	417	435	425	136	226	322	0	0
Grp Sat Flow(s),veh/h/ln	1693	1592	1483	1731	1727	1797	1591	1736	1435	1623	0	0
Q Serve(g_s), s	1.3	23.8	13.5	5.3	17.5	17.5	11.8	4.6	10.0	14.4	0.0	0.0
Cycle Q Clear(g_c), s	1.3	23.8	13.5	5.3	17.5	17.5	11.8	4.6	10.0	17.7	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.06	1.00		1.00	0.20		0.29
Lane Grp Cap(c), veh/h	280	1645	511	259	675	702	474	702	580	380	0	0
V/C Ratio(X)	0.14	0.84	0.54	0.65	0.62	0.62	0.90	0.19	0.39	0.85	0.00	0.00
Avail Cap(c_a), veh/h	349	1645	511	259	675	702	474	702	580	380	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	18.3	27.1	23.8	20.4	22.0	22.0	37.6	17.3	18.9	35.3	0.0	0.0
Incr Delay (d2), s/veh	0.2	5.2	4.1	5.8	4.2	4.1	19.6	0.1	0.4	16.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.9	13.9	8.6	4.2	11.6	12.0	9.7	3.2	5.8	13.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.6	32.3	27.8	26.2	26.2	26.1	57.2	17.5	19.4	51.6	0.0	0.0
LnGrp LOS	B	C	C	C	C	C	E	B	B	D	A	A
Approach Vol, veh/h		1688			1021			787			322	
Approach Delay, s/veh		31.3			26.2			39.5			51.6	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	8.8	40.2	18.0	23.0	13.0	36.0		41.0
Change Period (Y+Rc), s	6.5	6.5	* 6.1	* 6.1	6.5	6.5		* 6.1
Max Green Setting (Gmax), s	6.0	30.0	* 12	* 17	6.5	29.5		* 35
Max Q Clear Time (g_c+I1), s	3.3	20.0	14.3	19.7	7.8	26.3		12.5
Green Ext Time (p_c), s	0.0	8.3	0.0	0.0	0.0	3.1		1.2

Intersection Summary	
HCM 6th Ctrl Delay	33.3
HCM 6th LOS	C

Notes

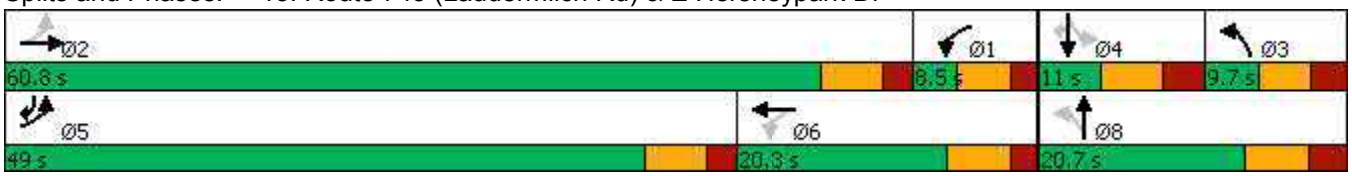
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	742	798	142	3	440	4	94	190	2	7	97	375
Future Volume (vph)	742	798	142	3	440	4	94	190	2	7	97	375
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	11	11	11	11	11	11
Grade (%)		2%			3%			6%			-6%	
Storage Length (ft)	265		0	150		0	250		0	150		230
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.977			0.999			0.999				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1660	3253	0	1684	3206	0	1603	1686	0	1703	1774	1493
Flt Permitted	0.213			0.290			0.691			0.580		
Satd. Flow (perm)	372	3253	0	514	3206	0	1166	1686	0	1039	1774	1493
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		43			1							198
Link Speed (mph)		45			45			35			35	
Link Distance (ft)		2621			1081			1569			722	
Travel Time (s)		39.7			16.4			30.6			14.1	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	2%	0%	0%	5%	0%	0%	0%	0%	0%	1%	2%
Adj. Flow (vph)	781	840	149	3	463	4	99	200	2	7	102	395
Shared Lane Traffic (%)												
Lane Group Flow (vph)	781	989	0	3	467	0	99	202	0	7	102	395
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.16	1.16	1.16	1.08	1.08	1.08
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	1		1	1	1
Detector Template	Left	Main30		Left	Main30		Left	Thru		Left	Thru	Right
Leading Detector (ft)	48	300		48	300		48	48		48	48	48
Trailing Detector (ft)	-2	0		-2	0		-2	-2		-2	-2	-2
Detector 1 Position(ft)	-2	0		-2	0		-2	-2		-2	-2	-2
Detector 1 Size(ft)	50	0		50	0		50	50		50	50	50
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		294			294							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		Perm	NA	pm+ov
Protected Phases	5	2		1	6		3	8			4	5
Permitted Phases	2			6			8			4		4
Detector Phase	5	2		1	6		3	8		4	4	5
Switch Phase												
Minimum Initial (s)	3.0	10.0		3.0	10.0		3.0	3.0		3.0	3.0	3.0
Minimum Split (s)	9.2	16.2		8.5	16.2		9.7	10.0		10.0	10.0	9.2
Total Split (s)	49.0	60.8		8.5	20.3		9.7	20.7		11.0	11.0	49.0
Total Split (%)	54.4%	67.6%		9.4%	22.6%		10.8%	23.0%		12.2%	12.2%	54.4%
Maximum Green (s)	42.8	54.6		3.0	14.1		3.7	13.8		4.1	4.1	42.8
Yellow Time (s)	4.2	4.2		3.5	4.2		3.5	4.2		4.2	4.2	4.2
All-Red Time (s)	2.0	2.0		2.0	2.0		2.5	2.7		2.7	2.7	2.0
Lost Time Adjust (s)	-1.5	-1.5		-1.5	-1.5		-1.5	-1.5		-1.5	-1.5	-1.5
Total Lost Time (s)	4.7	4.7		4.0	4.7		4.5	5.4		5.4	5.4	4.7
Lead/Lag	Lead	Lead		Lag	Lag		Lag			Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes			Yes	Yes	Yes
Vehicle Extension (s)	3.0	5.7		3.0	5.7		3.0	3.0		3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Time Before Reduce (s)	0.0	30.0		0.0	30.0		0.0	0.0		0.0	0.0	0.0
Time To Reduce (s)	0.0	15.0		0.0	15.0		0.0	0.0		0.0	0.0	0.0
Recall Mode	None	Min		None	Min		None	None		None	None	None
Act Effct Green (s)	60.3	60.3		18.2	15.7		16.3	14.4		6.9	6.9	50.2
Actuated g/C Ratio	0.70	0.70		0.21	0.18		0.19	0.17		0.08	0.08	0.58
v/c Ratio	0.89	0.43		0.02	0.80		0.40	0.72		0.09	0.72	0.42
Control Delay	29.6	6.6		31.0	46.8		38.8	51.0		42.4	72.4	4.6
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	29.6	6.6		31.0	46.8		38.8	51.0		42.4	72.4	4.6
LOS	C	A		C	D		D	D		D	E	A
Approach Delay		16.7			46.7			47.0			18.8	
Approach LOS		B			D			D			B	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 86.5	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay: 24.7	Intersection LOS: C
Intersection Capacity Utilization 80.9%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 13: Route 743 (Laudermilch Rd) & E Hersheypark Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	742	798	142	3	440	4	94	190	2	7	97	375
Future Volume (veh/h)	742	798	142	3	440	4	94	190	2	7	97	375
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1750	1750	1750	1750	1680	1680	1599	1599	1599	2024	2009	1995
Adj Flow Rate, veh/h	781	840	0	3	463	0	99	200	2	7	102	395
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	0	5	5	0	0	0	0	1	2
Cap, veh/h	897	1614		376	551		158	273	3	80	125	934
Arrive On Green	0.49	0.49	0.00	0.18	0.17	0.00	0.05	0.17	0.17	0.06	0.06	0.06
Sat Flow, veh/h	1666	3412	0	1666	3275	0	1523	1580	16	1348	2009	1691
Grp Volume(v), veh/h	781	840	0	3	463	0	99	0	202	7	102	395
Grp Sat Flow(s),veh/h/ln	1666	1662	0	1666	1596	0	1523	0	1596	1348	2009	1691
Q Serve(g_s), s	40.5	15.7	0.0	0.0	12.7	0.0	0.9	0.0	10.8	0.0	4.5	5.6
Cycle Q Clear(g_c), s	40.5	15.7	0.0	0.0	12.7	0.0	0.9	0.0	10.8	5.6	4.5	5.6
Prop In Lane	1.00		0.00	1.00		0.00	1.00		0.01	1.00		1.00
Lane Grp Cap(c), veh/h	897	1614		376	551		158	0	276	80	125	934
V/C Ratio(X)	0.87	0.52		0.01	0.84		0.63	0.00	0.73	0.09	0.82	0.42
Avail Cap(c_a), veh/h	897	2065		376	551		167	0	276	80	125	934
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.0	16.0	0.0	30.5	36.2	0.0	40.7	0.0	35.4	45.2	41.9	3.1
Incr Delay (d2), s/veh	9.3	0.8	0.0	0.0	13.0	0.0	6.7	0.0	9.5	0.5	33.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	22.4	9.2	0.0	0.1	9.5	0.0	4.2	0.0	8.4	0.3	6.0	4.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.3	16.8	0.0	30.5	49.1	0.0	47.4	0.0	44.9	45.6	75.1	3.4
LnGrp LOS	C	B		C	D		D	A	D	D	E	A
Approach Vol, veh/h		1621	A		466	A		301			504	
Approach Delay, s/veh		23.8			49.0			45.7			18.5	
Approach LOS		C			D			D			B	

Timer - Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	20.8	48.5	10.0	11.0	49.0	20.3		21.0
Change Period (Y+Rc), s	6.2	* 6.2	* 6.9	* 6.9	6.2	6.2		* 6.9
Max Green Setting (Gmax), s	30.0	* 55	* 3.7	* 4.1	42.8	14.1		* 14
Max Q Clear Time (g_c+I1), s	22.5	18.2	3.4	8.1	43.0	15.2		12.8
Green Ext Time (p_c), s	0.0	24.1	0.0	0.0	0.0	0.0		0.1

Intersection Summary	
HCM 6th Ctrl Delay	29.2
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

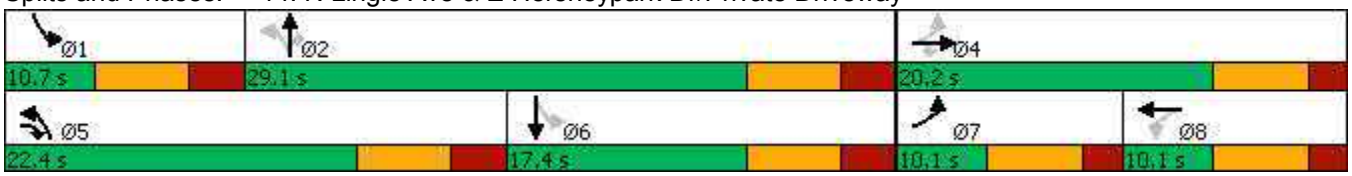
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	18	692	19	26	18	383	75	11	11	157	13
Future Volume (vph)	60	18	692	19	26	18	383	75	11	11	157	13
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	16	16	12	12	12	12	12	12
Grade (%)		1%			-3%			-6%			1%	
Storage Length (ft)	200		0	75		0	175		100	125		0
Storage Lanes	1		1	1		0	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.940				0.850		0.989	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1668	1060	1522	1653	1470	0	1727	1520	1126	851	1739	0
Flt Permitted	0.494						0.508			0.707		
Satd. Flow (perm)	867	1060	1522	1740	1470	0	923	1520	1126	633	1739	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			394		18				289		6	
Link Speed (mph)		45			25			35			35	
Link Distance (ft)		1844			617			1844			713	
Travel Time (s)		27.9			16.8			35.9			13.9	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	2%	69%	0%	5%	28%	39%	2%	22%	40%	100%	2%	0%
Adj. Flow (vph)	61	18	706	19	27	18	391	77	11	11	160	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	61	18	706	19	45	0	391	77	11	11	173	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.08	1.08	1.08	1.05	0.89	0.89	1.03	1.03	1.03	1.08	1.08	1.08
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	1	1	1		1	2	1	1	2	
Detector Template	Left		Right	Left			Left	Main20	Right	Left	Main20	
Leading Detector (ft)	48	48	48	48	48		48	200	48	48	200	
Trailing Detector (ft)	-2	-2	-2	-2	-2		-2	0	-2	-2	0	
Detector 1 Position(ft)	-2	-2	-2	-2	-2		-2	0	-2	-2	0	
Detector 1 Size(ft)	50	50	50	50	50		50	0	50	50	0	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)								194			194	
Detector 2 Size(ft)								6			6	
Detector 2 Type								Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)								0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	pm+ov	Perm	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	7	4	5		8		5	2		1	6	
Permitted Phases	4		4	8			2		2	6		
Detector Phase	7	4	5	8	8		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0	3.0	4.0	4.0		3.0	10.0	10.0	3.0	10.0	
Minimum Split (s)	10.1	10.1	10.7	10.1	10.1		10.7	16.7	16.7	10.7	16.7	
Total Split (s)	10.1	20.2	22.4	10.1	10.1		22.4	29.1	29.1	10.7	17.4	
Total Split (%)	16.8%	33.7%	37.3%	16.8%	16.8%		37.3%	48.5%	48.5%	17.8%	29.0%	
Maximum Green (s)	4.0	14.1	15.7	4.0	4.0		15.7	22.4	22.4	4.0	10.7	
Yellow Time (s)	4.3	4.3	4.2	4.3	4.3		4.2	4.2	4.2	4.2	4.2	
All-Red Time (s)	1.8	1.8	2.5	1.8	1.8		2.5	2.5	2.5	2.5	2.5	
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	-1.5		-1.5	-1.5	-1.5	-1.5	-1.5	
Total Lost Time (s)	4.6	4.6	5.2	4.6	4.6		5.2	5.2	5.2	5.2	5.2	
Lead/Lag	Lead		Lead	Lag	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes			Yes	Yes			Yes	Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	5.6	5.6	3.0	5.6	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	24.0	24.0	0.0	24.0	
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	12.0	12.0	0.0	12.0	
Recall Mode	None	None	None	None	None		None	Min	Min	None	Min	
Act Effct Green (s)	11.0	11.9	26.0	5.9	5.9		34.2	35.4	35.4	18.6	12.7	
Actuated g/C Ratio	0.22	0.24	0.52	0.12	0.12		0.69	0.71	0.71	0.37	0.25	
v/c Ratio	0.21	0.07	0.72	0.09	0.24		0.44	0.07	0.01	0.04	0.39	
Control Delay	19.0	17.7	7.8	26.3	21.8		7.5	8.1	0.0	8.4	22.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	19.0	17.7	7.8	26.3	21.8		7.5	8.1	0.0	8.4	22.1	
LOS	B	B	A	C	C		A	A	A	A	C	
Approach Delay		8.9			23.2			7.4			21.3	
Approach LOS		A			C			A			C	

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 49.9
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.72
Intersection Signal Delay: 10.5 Intersection LOS: B
Intersection Capacity Utilization 70.6% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 14: N Lingle Ave & E Hersheypark Dr/Private Driveway



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	18	692	19	26	18	383	75	11	11	157	13
Future Volume (veh/h)	60	18	692	19	26	18	383	75	11	11	157	13
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1766	826	1794	1841	1574	1574	1995	1711	1455	390	1766	1766
Adj Flow Rate, veh/h	61	18	706	19	27	18	391	77	11	11	160	13
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	69	0	5	28	28	2	22	40	100	2	2
Cap, veh/h	407	238	777	232	115	77	740	679	490	208	342	28
Arrive On Green	0.07	0.29	0.29	0.13	0.13	0.13	0.22	0.40	0.40	0.04	0.21	0.21
Sat Flow, veh/h	1682	826	1521	758	881	587	1900	1711	1233	372	1612	131
Grp Volume(v), veh/h	61	18	706	19	0	45	391	77	11	11	0	173
Grp Sat Flow(s),veh/h/ln	1682	826	1521	758	0	1468	1900	1711	1233	372	0	1743
Q Serve(g_s), s	1.5	0.9	15.6	1.2	0.0	1.5	7.3	1.5	0.3	1.2	0.0	4.7
Cycle Q Clear(g_c), s	1.5	0.9	15.6	1.2	0.0	1.5	7.3	1.5	0.3	1.2	0.0	4.7
Prop In Lane	1.00		1.00	1.00		0.40	1.00		1.00	1.00		0.08
Lane Grp Cap(c), veh/h	407	238	777	232	0	192	740	679	490	208	0	370
V/C Ratio(X)	0.15	0.08	0.91	0.08	0.00	0.23	0.53	0.11	0.02	0.05	0.00	0.47
Avail Cap(c_a), veh/h	456	238	777	232	0	192	920	755	544	232	0	392
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.0	14.0	12.1	21.0	0.0	21.1	9.8	10.3	9.9	15.7	0.0	18.7
Incr Delay (d2), s/veh	0.2	0.1	14.6	0.1	0.0	0.6	0.6	0.2	0.1	0.1	0.0	2.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.9	0.3	14.3	0.4	0.0	0.9	4.3	0.9	0.1	0.2	0.0	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.1	14.2	26.7	21.2	0.0	21.7	10.3	10.5	10.0	15.8	0.0	21.3
LnGrp LOS	B	B	C	C	A	C	B	B	A	B	A	C
Approach Vol, veh/h		785			64			479			184	
Approach Delay, s/veh		25.6			21.6			10.4			21.0	
Approach LOS		C			C			B			C	

Timer - Assigned Phs	1	2		4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.3	26.7		20.2	17.3	16.7	8.5	11.7
Change Period (Y+Rc), s	6.7	6.7		* 6.1	6.7	6.7	* 6.1	* 6.1
Max Green Setting (Gmax), s	4.0	22.4		* 14	15.7	10.7	* 4	* 4
Max Q Clear Time (g_c+I1), s	3.7	4.0		18.1	9.8	6.7	4.0	3.7
Green Ext Time (p_c), s	0.0	1.0		0.0	0.8	0.7	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	20.0
HCM 6th LOS	C

Notes

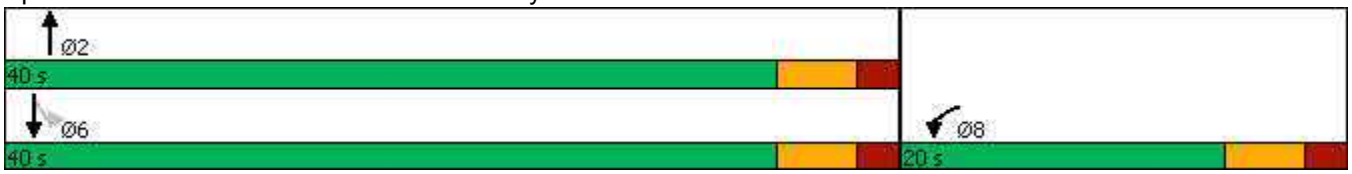
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	25	64	617	21	38	610
Future Volume (vph)	25	64	617	21	38	610
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	15	15	14	14	14	14
Grade (%)	1%		2%			-1%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.903		0.995			
Flt Protected	0.986					0.997
Satd. Flow (prot)	1734	0	1835	0	0	1854
Flt Permitted	0.986					0.949
Satd. Flow (perm)	1734	0	1835	0	0	1765
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	66		5			
Link Speed (mph)	25		35			35
Link Distance (ft)	2491		680			1197
Travel Time (s)	67.9		13.2			23.3
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	4%	0%	3%	5%	0%	4%
Adj. Flow (vph)	26	66	636	22	39	629
Shared Lane Traffic (%)						
Lane Group Flow (vph)	92	0	658	0	0	668
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	15		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	0.95	0.95	1.00	1.00	0.98	0.98
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1		2		1	2
Detector Template	Left		Thru		Left	Thru
Leading Detector (ft)	20		100		20	100
Trailing Detector (ft)	0		0		0	0
Detector 1 Position(ft)	0		0		0	0
Detector 1 Size(ft)	20		6		20	6
Detector 1 Type	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0		0.0	0.0
Detector 1 Queue (s)	0.0		0.0		0.0	0.0
Detector 1 Delay (s)	0.0		0.0		0.0	0.0
Detector 2 Position(ft)			94			94
Detector 2 Size(ft)			6			6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Detector Phase	8		2		6	6
Switch Phase						
Minimum Initial (s)	3.0		3.0		3.0	3.0
Minimum Split (s)	20.0		40.0		40.0	40.0
Total Split (s)	20.0		40.0		40.0	40.0
Total Split (%)	33.3%		66.7%		66.7%	66.7%
Maximum Green (s)	14.5		34.5		34.5	34.5
Yellow Time (s)	3.5		3.5		3.5	3.5
All-Red Time (s)	2.0		2.0		2.0	2.0
Lost Time Adjust (s)	-1.5		-1.5			-1.5
Total Lost Time (s)	4.0		4.0			4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Recall Mode	None		Min		Min	Min
Act Effct Green (s)	8.7		35.8			35.8
Actuated g/C Ratio	0.20		0.81			0.81
v/c Ratio	0.23		0.44			0.47
Control Delay	10.8		4.6			5.0
Queue Delay	0.0		0.0			0.0
Total Delay	10.8		4.6			5.0
LOS	B		A			A
Approach Delay	10.8		4.6			5.0
Approach LOS	B		A			A

Intersection Summary	
Area Type: Other	
Cycle Length: 60	
Actuated Cycle Length: 44.3	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.47	
Intersection Signal Delay: 5.2	Intersection LOS: A
Intersection Capacity Utilization 79.0%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 15: Park Ave & E. Derry Rd



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	25	64	617	21	38	610
Future Volume (veh/h)	25	64	617	21	38	610
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1866	1866	1805	1805	1852	1852
Adj Flow Rate, veh/h	26	66	636	22	39	629
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	3	3	4	4
Cap, veh/h	57	144	988	34	176	987
Arrive On Green	0.12	0.12	0.57	0.57	0.57	0.57
Sat Flow, veh/h	458	1164	1734	60	53	1731
Grp Volume(v), veh/h	93	0	0	658	668	0
Grp Sat Flow(s),veh/h/ln	1640	0	0	1794	1784	0
Q Serve(g_s), s	1.4	0.0	0.0	6.5	0.0	0.0
Cycle Q Clear(g_c), s	1.4	0.0	0.0	6.5	6.3	0.0
Prop In Lane	0.28	0.71		0.03	0.06	
Lane Grp Cap(c), veh/h	203	0	0	1022	1162	0
V/C Ratio(X)	0.46	0.00	0.00	0.64	0.57	0.00
Avail Cap(c_a), veh/h	1004	0	0	2473	2555	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	10.6	0.0	0.0	3.8	3.8	0.0
Incr Delay (d2), s/veh	1.6	0.0	0.0	0.7	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.8	0.0	0.0	0.4	0.3	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	12.2	0.0	0.0	4.5	4.2	0.0
LnGrp LOS	B	A	A	A	A	A
Approach Vol, veh/h	93		658			668
Approach Delay, s/veh	12.2		4.5			4.2
Approach LOS	B		A			A

Timer - Assigned Phs	2			6	8
Phs Duration (G+Y+Rc), s	18.9			18.9	7.2
Change Period (Y+Rc), s	5.5			5.5	5.5
Max Green Setting (Gmax), s	34.5			34.5	14.5
Max Q Clear Time (g_c+I1), s	8.5			8.3	3.4
Green Ext Time (p_c), s	4.7			5.0	0.2

Intersection Summary	
HCM 6th Ctrl Delay	4.9
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	283	0	0	0	200	10
Future Volume (vph)	283	0	0	0	200	10
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	13	13	12	12	12	12
Grade (%)	1%			0%	11%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.993	
Flt Protected					0.955	
Satd. Flow (prot)	1814	0	0	1800	1590	0
Flt Permitted					0.955	
Satd. Flow (perm)	1814	0	0	1800	1590	0
Link Speed (mph)	30			25	25	
Link Distance (ft)	1120			1174	602	
Travel Time (s)	25.5			32.0	16.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	0%	0%	0%	1%	10%
Adj. Flow (vph)	308	0	0	0	217	11
Shared Lane Traffic (%)						
Lane Group Flow (vph)	308	0	0	0	228	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.03	1.03	1.07	1.07	1.15	1.15
Turning Speed (mph)		9	15		15	9
Sign Control	Stop			Stop	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 34.7%	ICU Level of Service A
Analysis Period (min) 15	

Intersection	
Intersection Delay, s/veh	10.1
Intersection LOS	B

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	283	0	0	0	200	10
Future Vol, veh/h	283	0	0	0	200	10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	0	0	0	1	10
Mvmt Flow	308	0	0	0	217	11
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	10.3	0	9.9
HCM LOS	B	-	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	95%	0%	0%
Vol Thru, %	0%	100%	100%
Vol Right, %	5%	0%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	210	283	0
LT Vol	200	0	0
Through Vol	0	283	0
RT Vol	10	0	0
Lane Flow Rate	228	308	0
Geometry Grp	1	1	1
Degree of Util (X)	0.305	0.385	0
Departure Headway (Hd)	4.807	4.51	4.832
Convergence, Y/N	Yes	Yes	Yes
Cap	749	800	0
Service Time	2.837	2.534	2.872
HCM Lane V/C Ratio	0.304	0.385	0
HCM Control Delay	9.9	10.3	7.9
HCM Lane LOS	A	B	N
HCM 95th-tile Q	1.3	1.8	0

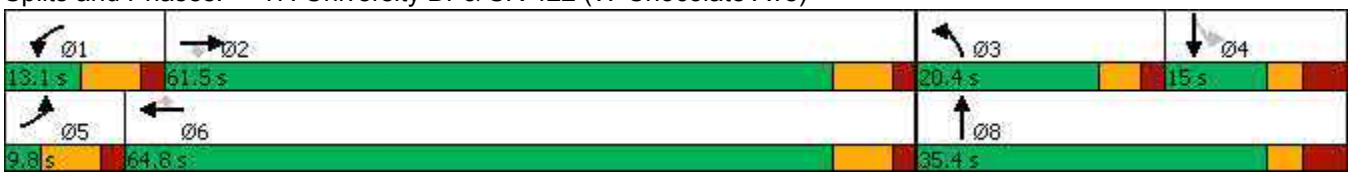
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	1355	133	92	1117	18	408	25	274	37	19	45
Future Volume (vph)	11	1355	133	92	1117	18	408	25	274	37	19	45
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	12	14	11	12	12	12	12	12	11	12	12
Grade (%)		1%			-1%			0%			1%	
Storage Length (ft)	210		225	240		225	200		0	0		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.863			0.894	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1645	3369	1608	1661	3403	1451	3285	1539	0	1645	1552	0
Flt Permitted	0.950			0.950			0.950			0.568		
Satd. Flow (perm)	1645	3369	1608	1661	3403	1451	3285	1539	0	983	1552	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			159			159		79			48	
Link Speed (mph)		50			50			25			25	
Link Distance (ft)		1997			877			940			239	
Travel Time (s)		27.2			12.0			25.6			6.5	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	1%	1%	0%	1%	6%	1%	0%	1%	0%	6%	2%
Adj. Flow (vph)	12	1441	141	98	1188	19	434	27	291	39	20	48
Shared Lane Traffic (%)												
Lane Group Flow (vph)	12	1441	141	98	1188	19	434	318	0	39	68	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.13	1.08	0.99	1.11	1.07	1.07	1.07	1.07	1.07	1.13	1.08	1.08
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	1		1	1	
Detector Template		Main35			Main35							
Leading Detector (ft)	38	350	0	38	350	0	38	38		38	38	
Trailing Detector (ft)	-2	0	0	-2	0	0	-2	-2		-2	-2	
Detector 1 Position(ft)	-2	0	0	-2	0	0	-2	-2		-2	-2	
Detector 1 Size(ft)	40	0	0	40	0	0	40	40		40	40	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		344			344							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Perm	NA	
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases			2			6				4		
Detector Phase	5	2	2	1	6	6	3	8		4	4	
Switch Phase												
Minimum Initial (s)	3.0	15.0	15.0	3.0	15.0	15.0	3.0	3.0		3.0	3.0	
Minimum Split (s)	9.8	21.8	21.8	9.8	21.8	21.8	8.5	15.0		15.0	15.0	
Total Split (s)	9.8	61.5	61.5	13.1	64.8	64.8	20.4	35.4		15.0	15.0	
Total Split (%)	8.9%	55.9%	55.9%	11.9%	58.9%	58.9%	18.5%	32.2%		13.6%	13.6%	
Maximum Green (s)	3.0	54.7	54.7	6.3	58.0	58.0	14.9	28.7		8.3	8.3	
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	4.8	3.5	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	3.7		3.7	3.7	
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5		-1.5	-1.5	
Total Lost Time (s)	5.3	5.3	5.3	5.3	5.3	5.3	4.0	5.2		5.2	5.2	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes			Yes	Yes	
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0	6.0	3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.5	3.5	3.0	3.5	3.5	3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	35.0	35.0	0.0	35.0	35.0	0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	18.0	18.0	0.0	18.0	18.0	0.0	0.0		0.0	0.0	
Recall Mode	None	Min	Min	None	Min	Min	None	None		None	None	
Act Effct Green (s)	4.5	56.4	56.4	7.8	67.6	67.6	16.4	26.7		9.1	9.1	
Actuated g/C Ratio	0.04	0.53	0.53	0.07	0.63	0.63	0.15	0.25		0.09	0.09	
v/c Ratio	0.17	0.81	0.15	0.81	0.55	0.02	0.86	0.72		0.47	0.39	
Control Delay	56.8	26.3	2.1	93.8	13.6	0.1	62.9	36.7		66.5	26.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	56.8	26.3	2.1	93.8	13.6	0.1	62.9	36.7		66.5	26.9	
LOS	E	C	A	F	B	A	E	D		E	C	
Approach Delay		24.4			19.4			51.8			41.4	
Approach LOS		C			B			D			D	

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 106.8
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.86
Intersection Signal Delay: 28.6 Intersection LOS: C
Intersection Capacity Utilization 85.0% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 17: University Dr & SR 422 (W Chocolate Ave)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	1355	133	92	1117	18	408	25	274	37	19	45
Future Volume (veh/h)	11	1355	133	92	1117	18	408	25	274	37	19	45
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1794	1780	1852	1837	1823	1752	1786	1800	1800	1794	1710	1710
Adj Flow Rate, veh/h	12	1441	141	98	1188	19	434	27	291	39	20	48
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	1	1	0	1	6	1	0	0	0	6	6
Cap, veh/h	38	1748	811	126	1962	841	501	35	375	147	34	82
Arrive On Green	0.02	0.52	0.52	0.07	0.57	0.57	0.15	0.26	0.26	0.08	0.08	0.08
Sat Flow, veh/h	1709	3383	1569	1750	3464	1485	3300	131	1414	1075	446	1071
Grp Volume(v), veh/h	12	1441	141	98	1188	19	434	0	318	39	0	68
Grp Sat Flow(s),veh/h/ln	1709	1691	1569	1750	1732	1485	1650	0	1545	1075	0	1517
Q Serve(g_s), s	0.7	38.8	5.2	5.9	24.5	0.6	13.9	0.0	20.6	3.8	0.0	4.7
Cycle Q Clear(g_c), s	0.7	38.8	5.2	5.9	24.5	0.6	13.9	0.0	20.6	3.9	0.0	4.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.92	1.00		0.71
Lane Grp Cap(c), veh/h	38	1748	811	126	1962	841	501	0	409	147	0	116
V/C Ratio(X)	0.32	0.82	0.17	0.78	0.61	0.02	0.87	0.00	0.78	0.27	0.00	0.59
Avail Cap(c_a), veh/h	71	1759	816	126	1962	841	501	0	432	162	0	138
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	52.0	22.0	13.9	49.3	15.5	10.3	44.8	0.0	36.8	48.0	0.0	48.3
Incr Delay (d2), s/veh	4.6	4.2	0.4	25.5	1.2	0.0	14.8	0.0	8.3	1.0	0.0	4.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.6	20.7	3.4	6.1	13.5	0.3	11.0	0.0	13.6	1.9	0.0	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.6	26.2	14.2	74.8	16.6	10.3	59.6	0.0	45.0	49.0	0.0	53.0
LnGrp LOS	E	C	B	E	B	B	E	A	D	D	A	D
Approach Vol, veh/h		1594			1305			752			107	
Approach Delay, s/veh		25.4			20.9			53.4			51.5	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	13.1	61.1	20.4	13.4	7.7	66.5		33.8
Change Period (Y+Rc), s	6.8	6.8	5.5	* 6.7	6.8	6.8		* 6.7
Max Green Setting (Gmax), s	6.3	54.7	14.9	* 8.3	3.0	58.0		* 29
Max Q Clear Time (g_c+I1), s	7.9	40.8	15.9	6.7	2.7	26.5		22.6
Green Ext Time (p_c), s	0.0	13.6	0.0	0.0	0.0	28.3		0.7

Intersection Summary	
HCM 6th Ctrl Delay	30.2
HCM 6th LOS	C

Notes

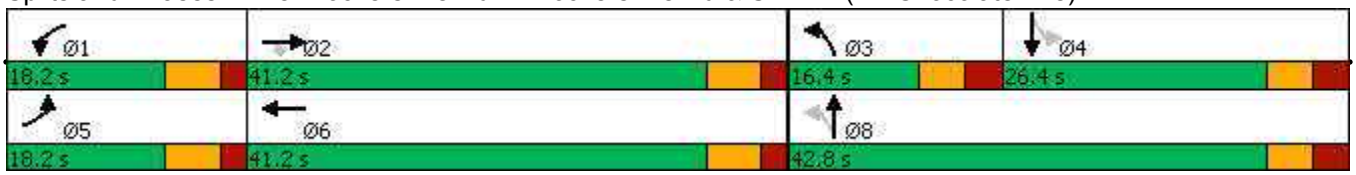
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	1183	428	128	900	14	326	130	97	36	143	10
Future Volume (vph)	49	1183	428	128	900	14	326	130	97	36	143	10
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	12	14	11	12	12	11	11	13	12	12	12
Grade (%)		-2%			2%			1%			-2%	
Storage Length (ft)	125		200	125		0	0		100	0		0
Storage Lanes	1		1	1		0	1		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor											1.00	
Frt			0.850		0.998			0.936			0.993	
Flt Protected	0.950			0.950			0.950				0.991	
Satd. Flow (prot)	1670	3386	1632	1604	3314	0	1628	1604	0	0	1774	0
Flt Permitted	0.950			0.950			0.387				0.887	
Satd. Flow (perm)	1670	3386	1632	1604	3314	0	663	1604	0	0	1588	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			339		2			42			2	
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		2885			1404			806			192	
Travel Time (s)		56.2			27.4			15.7			3.7	
Confl. Peds. (#/hr)							1					1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	2%	1%	2%	2%	0%	1%	1%	1%	0%	1%	0%
Adj. Flow (vph)	51	1220	441	132	928	14	336	134	100	37	147	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	51	1220	441	132	942	0	336	234	0	0	194	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.11	1.06	0.97	1.13	1.09	1.09	1.13	1.13	1.03	1.06	1.06	1.06
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	2	1	2		1	1		1	1	
Detector Template		Main25			Main25					Left		
Leading Detector (ft)	38	250	106	38	250		38	38		48	38	
Trailing Detector (ft)	-2	0	0	-2	0		-2	-2		-2	-2	
Detector 1 Position(ft)	-2	0	0	-2	0		-2	-2		-2	-2	
Detector 1 Size(ft)	40	0	0	40	0		40	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		244	100		244							
Detector 2 Size(ft)		6	6		6							
Detector 2 Type		Cl+Ex	Cl+Ex		Cl+Ex							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0	0.0		0.0							
Turn Type	Prot	NA	Perm	Prot	NA		pm+pt	NA		Perm	NA	
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases			2				8			4		
Detector Phase	5	2	2	1	6		3	8		4	4	
Switch Phase												
Minimum Initial (s)	3.0	15.0	15.0	3.0	15.0		3.0	3.0		3.0	3.0	
Minimum Split (s)	9.4	21.2	21.2	9.2	25.0		10.0	25.0		10.0	10.0	
Total Split (s)	18.2	41.2	41.2	18.2	41.2		16.4	42.8		26.4	26.4	
Total Split (%)	17.8%	40.3%	40.3%	17.8%	40.3%		16.0%	41.9%		25.8%	25.8%	
Maximum Green (s)	12.0	35.0	35.0	12.0	35.0		10.0	36.4		20.0	20.0	
Yellow Time (s)	4.2	4.2	4.2	4.2	4.2		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.9	2.9		2.9	2.9	
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	-1.5		-1.5	-1.5			-1.5	
Total Lost Time (s)	4.7	4.7	4.7	4.7	4.7		4.9	4.9			4.9	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes			Yes	Yes	
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.5	3.5	3.0	3.5		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	25.0	25.0	0.0	25.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	12.5	12.5	0.0	12.5		0.0	0.0		0.0	0.0	
Recall Mode	None	Min	Min	None	Min		None	None		None	None	
Walk Time (s)							2.0					
Flash Dont Walk (s)							1.0					
Pedestrian Calls (#/hr)							0					
Act Effct Green (s)	10.0	36.6	36.6	12.5	41.7		34.1	34.1			17.7	
Actuated g/C Ratio	0.10	0.38	0.38	0.13	0.43		0.35	0.35			0.18	
v/c Ratio	0.30	0.96	0.54	0.64	0.66		0.97	0.40			0.67	
Control Delay	45.8	48.8	8.8	56.5	27.2		72.3	21.7			49.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	
Total Delay	45.8	48.8	8.8	56.5	27.2		72.3	21.7			49.1	
LOS	D	D	A	E	C		E	C			D	
Approach Delay		38.4			30.8			51.5			49.1	
Approach LOS		D			C			D			D	

Intersection Summary	
Area Type: Other	
Cycle Length: 102.2	
Actuated Cycle Length: 97.6	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.97	
Intersection Signal Delay: 38.8	Intersection LOS: D
Intersection Capacity Utilization 87.8%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 18: Hockersville Rd/N. Hockersville Rd & SR 422 (W. Chocolate Ave)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	49	1183	428	128	900	14	326	130	97	36	143	10
Future Volume (veh/h)	49	1183	428	128	900	14	326	130	97	36	143	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1875	1846	1935	1750	1750	1750	1780	1780	1852	1860	1860	1860
Adj Flow Rate, veh/h	51	1220	441	132	928	14	336	134	100	37	147	10
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	2	1	2	2	2	1	1	1	1	1	1
Cap, veh/h	95	1404	656	187	1541	23	434	312	233	83	208	13
Arrive On Green	0.05	0.40	0.40	0.11	0.46	0.46	0.13	0.33	0.33	0.15	0.15	0.15
Sat Flow, veh/h	1785	3508	1640	1666	3352	51	1696	946	706	241	1383	88
Grp Volume(v), veh/h	51	1220	441	132	460	482	336	0	234	194	0	0
Grp Sat Flow(s),veh/h/ln	1785	1754	1640	1666	1662	1740	1696	0	1653	1712	0	0
Q Serve(g_s), s	2.5	29.1	20.1	7.0	18.8	18.8	11.5	0.0	10.1	6.4	0.0	0.0
Cycle Q Clear(g_c), s	2.5	29.1	20.1	7.0	18.8	18.8	11.5	0.0	10.1	9.8	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.03	1.00		0.43	0.19		0.05
Lane Grp Cap(c), veh/h	95	1404	656	187	764	800	434	0	546	304	0	0
V/C Ratio(X)	0.54	0.87	0.67	0.71	0.60	0.60	0.77	0.00	0.43	0.64	0.00	0.00
Avail Cap(c_a), veh/h	265	1407	657	247	764	800	434	0	688	448	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	42.0	25.1	22.4	38.9	18.4	18.4	29.1	0.0	23.8	36.9	0.0	0.0
Incr Delay (d2), s/veh	4.7	7.1	4.7	5.9	2.9	2.8	8.5	0.0	0.5	2.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.2	18.5	12.8	5.5	11.8	12.2	3.9	0.0	6.9	7.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.7	32.2	27.1	44.9	21.3	21.2	37.6	0.0	24.3	39.2	0.0	0.0
LnGrp LOS	D	C	C	D	C	C	D	A	C	D	A	A
Approach Vol, veh/h		1712			1074			570			194	
Approach Delay, s/veh		31.3			24.1			32.1			39.2	
Approach LOS		C			C			C			D	

Timer - Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	14.9	41.1	16.4	18.6	9.5	46.5		35.0
Change Period (Y+Rc), s	6.2	6.2	6.4	6.4	6.2	6.2		6.4
Max Green Setting (Gmax), s	12.0	35.0	10.0	20.0	12.0	35.0		36.4
Max Q Clear Time (g_c+I1), s	9.0	31.1	13.5	11.8	4.5	20.8		12.1
Green Ext Time (p_c), s	0.1	3.8	0.0	0.4	0.0	11.8		0.8

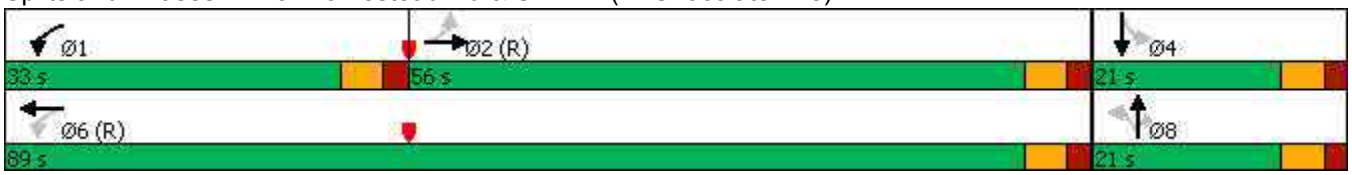
Intersection Summary	
HCM 6th Ctrl Delay	29.7
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	1288	97	379	973	6	50	12	245	84	78	39
Future Volume (vph)	11	1288	97	379	973	6	50	12	245	84	78	39
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	12	12	10	13	13	13	13	13	13	13	13
Grade (%)		-3%			3%			-1%			-2%	
Storage Length (ft)	200		0	575		0	0		150	0		0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.990			0.999				0.850		0.974	
Flt Protected	0.950			0.950				0.962			0.979	
Satd. Flow (prot)	1620	3398	0	1556	1812	0	0	1798	1573	0	1791	0
Flt Permitted	0.296			0.069				0.551			0.834	
Satd. Flow (perm)	505	3398	0	113	1812	0	0	1030	1573	0	1526	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)		10			1				255			
Link Speed (mph)		25			35			25			25	
Link Distance (ft)		592			1437			1120			398	
Travel Time (s)		16.1			28.0			30.5			10.9	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	1%	3%	1%	1%	0%	0%	0%	1%	0%	0%	0%
Adj. Flow (vph)	11	1342	101	395	1014	6	52	13	255	88	81	41
Shared Lane Traffic (%)												
Lane Group Flow (vph)	11	1443	0	395	1020	0	0	65	255	0	210	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.15	1.05	1.05	1.19	1.05	1.05	1.02	1.02	1.02	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	1	1	1	1	
Detector Template							Left	Thru	Right	Left	Thru	
Leading Detector (ft)	0	150		38	150		48	48	48	48	48	
Trailing Detector (ft)	0	0		-2	0		-2	-2	-2	-2	-2	
Detector 1 Position(ft)	0	0		-2	0		-2	-2	-2	-2	-2	
Detector 1 Size(ft)	0	0		40	0		50	50	50	50	50	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		144			144							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8		8	4		
Detector Phase	2	2		1	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Minimum Split (s)	10.0	10.0		8.5	10.0		10.0	10.0	10.0	10.0	10.0	
Total Split (s)	56.0	56.0		33.0	89.0		21.0	21.0	21.0	21.0	21.0	
Total Split (%)	50.9%	50.9%		30.0%	80.9%		19.1%	19.1%	19.1%	19.1%	19.1%	
Maximum Green (s)	50.5	50.5		27.5	83.5		15.5	15.5	15.5	15.5	15.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-1.5	-1.5		-1.5	-1.5			-1.5	-1.5		-1.5	
Total Lost Time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max		None	C-Max		None	None	None	None	None	
Act Effct Green (s)	54.1	54.1		85.0	85.0			17.0	17.0		17.0	
Actuated g/C Ratio	0.49	0.49		0.77	0.77			0.15	0.15		0.15	
v/c Ratio	0.04	0.86		0.90	0.73			0.41	0.56		0.89	
Control Delay	16.5	31.6		54.3	10.4			50.7	10.3		83.3	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Delay	16.5	31.6		54.3	10.4			50.7	10.3		83.3	
LOS	B	C		D	B			D	B		F	
Approach Delay		31.5			22.6			18.5			83.3	
Approach LOS		C			C			B			F	

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.90	
Intersection Signal Delay: 29.8	Intersection LOS: C
Intersection Capacity Utilization 91.4%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 19: Homestead Rd & SR 422 (E. Chocolate Ave)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	1288	97	379	973	6	50	12	245	84	78	39
Future Volume (veh/h)	11	1288	97	379	973	6	50	12	245	84	78	39
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1912	1898	1898	1736	1805	1805	1911	1911	1896	1950	1950	1950
Adj Flow Rate, veh/h	11	1342	101	395	1014	6	52	12	255	88	81	41
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	1	1	1	1	1	0	0	1	0	0	0
Cap, veh/h	350	1927	145	448	1385	8	178	35	248	110	74	33
Arrive On Green	0.57	0.57	0.57	0.17	0.77	0.77	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	596	3399	255	1653	1793	11	768	229	1607	409	476	215
Grp Volume(v), veh/h	11	710	733	395	0	1020	64	0	255	210	0	0
Grp Sat Flow(s),veh/h/ln	596	1803	1852	1653	0	1803	997	0	1607	1100	0	0
Q Serve(g_s), s	1.1	30.9	31.2	14.0	0.0	32.6	0.0	0.0	17.0	10.9	0.0	0.0
Cycle Q Clear(g_c), s	11.0	30.9	31.2	14.0	0.0	32.6	6.1	0.0	17.0	17.0	0.0	0.0
Prop In Lane	1.00		0.14	1.00		0.01	0.81		1.00	0.42		0.20
Lane Grp Cap(c), veh/h	350	1022	1049	448	0	1393	213	0	248	216	0	0
V/C Ratio(X)	0.03	0.69	0.70	0.88	0.00	0.73	0.30	0.00	1.03	0.97	0.00	0.00
Avail Cap(c_a), veh/h	350	1022	1049	604	0	1393	213	0	248	216	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	15.3	17.0	17.1	25.3	0.0	6.5	41.7	0.0	46.5	49.6	0.0	0.0
Incr Delay (d2), s/veh	0.2	3.9	3.9	11.3	0.0	3.4	0.8	0.0	64.3	52.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.3	19.5	20.1	16.9	0.0	15.6	2.9	0.0	16.9	13.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.5	20.9	21.0	36.5	0.0	10.0	42.5	0.0	110.8	102.1	0.0	0.0
LnGrp LOS	B	C	C	D	A	A	D	A	F	F	A	A
Approach Vol, veh/h		1454			1415			319			210	
Approach Delay, s/veh		20.9			17.4			97.1			102.1	
Approach LOS		C			B			F			F	

Timer - Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	22.7	66.3		21.0		89.0		21.0
Change Period (Y+Rc), s	5.5	5.5		5.5		5.5		5.5
Max Green Setting (Gmax), s	17.5	50.5		15.5		83.5		15.5
Max Q Clear Time (g_c+I1), s	16.0	33.2		19.0		34.6		19.0
Green Ext Time (p_c), s	1.1	12.4		0.0		16.6		0.0

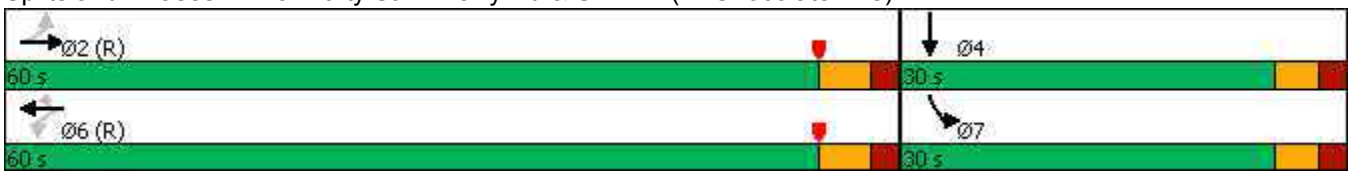
Intersection Summary	
HCM 6th Ctrl Delay	31.6
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1181	2	2	661	60	0	0	0	104	0	36
Future Volume (vph)	0	1181	2	2	661	60	0	0	0	104	0	36
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	11	11	13	12	12	12	10	10	10
Grade (%)		2%			3%			2%			2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850					0.965	
Flt Protected											0.964	
Satd. Flow (prot)	0	1747	0	0	1664	1557	0	0	0	0	1251	0
Flt Permitted					0.783						0.964	
Satd. Flow (perm)	0	1747	0	0	1303	1557	0	0	0	0	1251	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						63					30	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		4173			285			432			3474	
Travel Time (s)		81.3			5.6			11.8			94.7	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	2%	0%	0%	3%	0%	0%	0%	0%	1%	0%	88%
Adj. Flow (vph)	0	1230	2	2	689	63	0	0	0	108	0	38
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1232	0	0	691	63	0	0	0	0	146	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.14	1.14	1.05	1.09	1.09	1.09	1.19	1.19	1.19
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1				1	1	
Detector Template	Left	Main25		Left	Main25	Right				Left		
Leading Detector (ft)	48	250		48	250	48				48	45	
Trailing Detector (ft)	-2	0		-2	0	-2				-2	-5	
Detector 1 Position(ft)	-2	0		-2	0	-2				-2	-5	
Detector 1 Size(ft)	50	0		50	0	50				50	50	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex				Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0				0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0				0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0				0.0	0.0	
Detector 2 Position(ft)		244			244							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							
Turn Type		NA		Perm	NA	Perm				Prot	NA	
Protected Phases		2			6					7	4	
Permitted Phases	2			6		6						

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	2	2		6	6	6				7	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0				3.0	3.0	
Minimum Split (s)	15.5	15.5		15.5	15.5	15.5				8.0	10.0	
Total Split (s)	60.0	60.0		60.0	60.0	60.0				30.0	30.0	
Total Split (%)	66.7%	66.7%		66.7%	66.7%	66.7%				33.3%	33.3%	
Maximum Green (s)	54.5	54.5		54.5	54.5	54.5				25.0	25.0	
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5				3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0				2.0	2.0	
Lost Time Adjust (s)		-1.5			-1.5	-1.5					-1.5	
Total Lost Time (s)		4.0			4.0	4.0					3.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	6.0	6.0		6.0	6.0	6.0				3.0	3.0	
Minimum Gap (s)	5.0	5.0		5.0	5.0	5.0				3.0	3.0	
Time Before Reduce (s)	13.0	13.0		13.0	13.0	13.0				0.0	0.0	
Time To Reduce (s)	25.0	25.0		25.0	25.0	25.0				0.0	0.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max	C-Max				None	None	
Act Effct Green (s)		56.0			56.0	56.0					26.5	
Actuated g/C Ratio		0.62			0.62	0.62					0.29	
v/c Ratio		1.13			0.85	0.06					0.38	
Control Delay		91.7			27.4	2.3					23.2	
Queue Delay		0.0			0.0	0.0					0.0	
Total Delay		91.7			27.4	2.3					23.2	
LOS		F			C	A					C	
Approach Delay		91.7			25.3						23.2	
Approach LOS		F			C						C	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 2 (2%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.13	
Intersection Signal Delay: 63.5	Intersection LOS: E
Intersection Capacity Utilization 80.8%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 20: Yorty St/E. Derry Rd & SR 422 (E. Chocolate Ave)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1181	2	2	661	60	0	0	0	104	0	36
Future Volume (veh/h)	0	1181	2	2	661	60	0	0	0	104	0	36
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	1750	1750	1750	1708	1708	1820				1778	1778	1778
Adj Flow Rate, veh/h	0	1230	2	2	689	62				108	0	38
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96				0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	3	3	0				0	0	0
Cap, veh/h	0	1380	2	41	1348	1219				153	0	54
Arrive On Green	0.00	0.79	0.79	0.79	0.79	0.79				0.13	0.00	0.13
Sat Flow, veh/h	0	1746	3	1	1705	1542				1213	0	427
Grp Volume(v), veh/h	0	0	1232	691	0	62				146	0	0
Grp Sat Flow(s),veh/h/ln	0	0	1749	1706	0	1542				1640	0	0
Q Serve(g_s), s	0.0	0.0	44.9	0.0	0.0	0.8				7.7	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	44.9	12.8	0.0	0.8				7.7	0.0	0.0
Prop In Lane	0.00		0.00	0.00		1.00				0.74		0.26
Lane Grp Cap(c), veh/h	0	0	1383	1388	0	1219				207	0	0
V/C Ratio(X)	0.00	0.00	0.89	0.50	0.00	0.05				0.71	0.00	0.00
Avail Cap(c_a), veh/h	0	0	1383	1388	0	1219				483	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	1.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	6.7	3.3	0.0	2.1				37.7	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	9.0	1.3	0.0	0.1				4.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	0.0	18.1	5.3	0.0	3.4				6.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	15.7	4.6	0.0	2.1				42.1	0.0	0.0
LnGrp LOS	A	A	B	A	A	A				D	A	A
Approach Vol, veh/h		1232			753						146	
Approach Delay, s/veh		15.7			4.4						42.1	
Approach LOS		B			A						D	

Timer - Assigned Phs	2	4	6
Phs Duration (G+Y+Rc), s	75.1	14.9	75.1
Change Period (Y+Rc), s	5.5	5.0	5.5
Max Green Setting (Gmax), s	54.5	25.0	54.5
Max Q Clear Time (g_c+I1), s	46.9	9.7	14.8
Green Ext Time (p_c), s	7.5	0.4	23.9

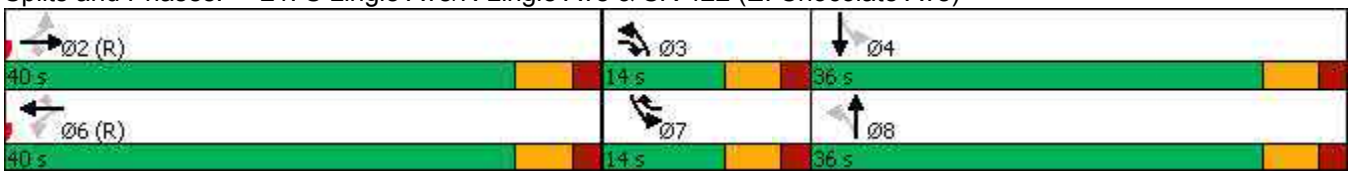
Intersection Summary	
HCM 6th Ctrl Delay	13.5
HCM 6th LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	615	465	21	424	138	223	229	23	230	506	26
Future Volume (vph)	18	615	465	21	424	138	223	229	23	230	506	26
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	13	11	11	13	12	14	14	12	14	14
Grade (%)		1%			-2%			-2%			-3%	
Storage Length (ft)	100		525	100		150	500		0	200		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00					0.95		1.00		1.00		
Frt			0.850			0.850		0.986			0.993	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1482	1714	1573	1670	1706	1521	1727	1908	0	1736	1931	0
Flt Permitted	0.330			0.138			0.134			0.475		
Satd. Flow (perm)	513	1714	1573	243	1706	1448	244	1908	0	866	1931	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			149			145		6			3	
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		768			1230			1254			1637	
Travel Time (s)		15.0			24.0			24.4			31.9	
Confl. Peds. (#/hr)	5					5			1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	11%	1%	0%	0%	3%	5%	0%	0%	0%	0%	0%	4%
Adj. Flow (vph)	19	647	489	22	446	145	235	241	24	242	533	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	19	647	489	22	446	145	235	265	0	242	560	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.13	1.13	1.03	1.11	1.11	1.01	1.06	0.97	0.97	1.05	0.97	0.97
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	1		1	1	
Detector Template	Left	Main25	Right	Left	Main25	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	48	250	48	48	250	48	48	48		48	48	
Trailing Detector (ft)	-2	0	-2	-2	0	-2	-2	-2		-2	-2	
Detector 1 Position(ft)	-2	0	-2	-2	0	-2	-2	-2		-2	-2	
Detector 1 Size(ft)	50	0	50	50	0	50	50	50		50	50	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		244			244							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	pm+pt	NA		pm+pt	NA	
Protected Phases		2	3		6	7	3	8		7	4	
Permitted Phases	2		2	6		6	8			4		
Detector Phase	2	2	3	6	6	7	3	8		7	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0	3.0	10.0	10.0	3.0	3.0	3.0		3.0	3.0	
Minimum Split (s)	15.9	15.9	14.0	15.9	15.9	14.0	14.0	10.0		14.0	10.0	
Total Split (s)	40.0	40.0	14.0	40.0	40.0	14.0	14.0	36.0		14.0	36.0	
Total Split (%)	44.4%	44.4%	15.6%	44.4%	44.4%	15.6%	15.6%	40.0%		15.6%	40.0%	
Maximum Green (s)	34.1	34.1	8.2	34.1	34.1	8.2	8.2	30.2		8.2	30.2	
Yellow Time (s)	3.9	3.9	3.8	3.9	3.9	3.8	3.8	3.8		3.8	3.8	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5		-1.5	-1.5	
Total Lost Time (s)	4.4	4.4	4.3	4.4	4.4	4.3	4.3	4.3		4.3	4.3	
Lead/Lag			Lead			Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?			Yes			Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	6.3	6.3	3.0	6.3	6.3	3.0	3.0	3.0		3.0	3.0	
Minimum Gap (s)	5.0	5.0	3.0	5.0	5.0	3.0	3.0	3.0		3.0	3.0	
Time Before Reduce (s)	13.0	13.0	0.0	13.0	13.0	0.0	0.0	0.0		0.0	0.0	
Time To Reduce (s)	25.0	25.0	0.0	25.0	25.0	0.0	0.0	0.0		0.0	0.0	
Recall Mode	C-Max	C-Max	None	C-Max	C-Max	None	None	None		None	None	
Walk Time (s)			5.0			5.0	5.0			5.0		
Flash Dont Walk (s)			3.0			3.0	3.0			3.0		
Pedestrian Calls (#/hr)			0			0	0			0		
Act Effct Green (s)	37.4	37.4	51.5	37.4	37.4	47.2	39.6	29.9		39.6	29.9	
Actuated g/C Ratio	0.42	0.42	0.57	0.42	0.42	0.52	0.44	0.33		0.44	0.33	
v/c Ratio	0.09	0.91	0.51	0.22	0.63	0.17	0.88	0.42		0.51	0.87	
Control Delay	11.5	23.9	12.1	25.1	26.4	2.3	52.3	24.5		17.8	43.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	11.5	23.9	12.1	25.1	26.4	2.3	52.3	24.5		17.8	43.6	
LOS	B	C	B	C	C	A	D	C		B	D	
Approach Delay		18.7			20.6			37.6			35.8	
Approach LOS		B			C			D			D	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay: 26.6	Intersection LOS: C
Intersection Capacity Utilization 87.8%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 21: S Lingle Ave/N Lingle Ave & SR 422 (E. Chocolate Ave)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	615	465	21	424	138	223	229	23	230	506	26
Future Volume (veh/h)	18	615	465	21	424	138	223	229	23	230	506	26
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1640	1780	1866	1875	1832	1876	1875	1950	1950	1912	1988	1988
Adj Flow Rate, veh/h	19	647	489	22	446	145	235	241	24	242	533	27
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	11	1	0	0	3	5	0	0	0	0	0	0
Cap, veh/h	266	763	844	133	785	848	317	557	55	529	599	30
Arrive On Green	0.43	0.43	0.43	0.43	0.43	0.43	0.11	0.32	0.32	0.11	0.32	0.32
Sat Flow, veh/h	763	1780	1572	524	1832	1580	1785	1744	174	1821	1876	95
Grp Volume(v), veh/h	19	647	489	22	446	145	235	0	265	242	0	560
Grp Sat Flow(s),veh/h/ln	763	1780	1572	524	1832	1580	1785	0	1918	1821	0	1971
Q Serve(g_s), s	1.7	29.4	18.8	3.5	16.6	4.2	7.8	0.0	9.8	7.9	0.0	24.3
Cycle Q Clear(g_c), s	18.3	29.4	18.8	32.9	16.6	4.2	7.8	0.0	9.8	7.9	0.0	24.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.09	1.00		0.05
Lane Grp Cap(c), veh/h	266	763	844	133	785	848	317	0	613	529	0	630
V/C Ratio(X)	0.07	0.85	0.58	0.16	0.57	0.17	0.74	0.00	0.43	0.46	0.00	0.89
Avail Cap(c_a), veh/h	266	763	844	133	785	848	317	0	676	529	0	694
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	26.4	23.1	14.1	37.9	19.4	10.7	21.2	0.0	24.2	17.7	0.0	29.1
Incr Delay (d2), s/veh	0.5	11.3	2.9	2.6	3.0	0.4	9.0	0.0	0.5	0.6	0.0	12.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.6	19.9	10.9	1.0	11.7	2.6	6.9	0.0	7.8	5.8	0.0	19.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.9	34.4	16.9	40.5	22.4	11.1	30.2	0.0	24.7	18.3	0.0	41.9
LnGrp LOS	C	C	B	D	C	B	C	A	C	B	A	D
Approach Vol, veh/h		1155			613			500			802	
Approach Delay, s/veh		26.9			20.4			27.3			34.8	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	43.0	14.0	33.0	43.0	14.0	33.0
Change Period (Y+Rc), s	5.9	* 5.8	* 5.8	5.9	* 5.8	* 5.8
Max Green Setting (Gmax), s	34.1	* 8.2	* 30	34.1	* 8.2	* 30
Max Q Clear Time (g_c+I1), s	31.4	9.8	26.3	34.9	9.9	11.8
Green Ext Time (p_c), s	2.5	0.0	0.9	0.0	0.0	0.9

Intersection Summary	
HCM 6th Ctrl Delay	27.7
HCM 6th LOS	C

Notes

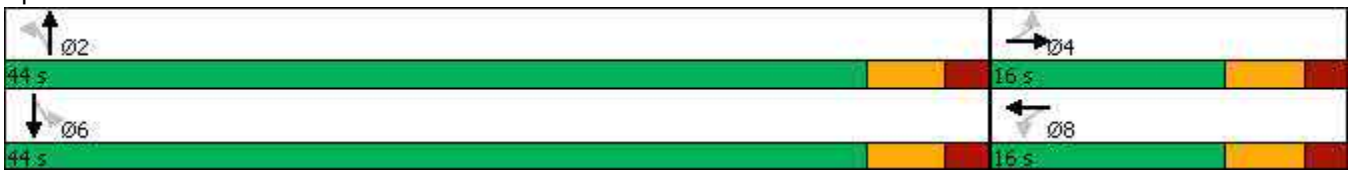
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	77	95	35	3	21	66	24	416	15	60	516	83
Future Volume (vph)	77	95	35	3	21	66	24	416	15	60	516	83
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	15	15	15	15	15	15	11	11	11	11	11	11
Grade (%)		-5%			9%			-1%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.977			0.900			0.996			0.983	
Flt Protected		0.982			0.998			0.997			0.995	
Satd. Flow (prot)	0	1909	0	0	1674	0	0	1705	0	0	1682	0
Flt Permitted		0.868			0.989			0.954			0.925	
Satd. Flow (perm)	0	1687	0	0	1659	0	0	1632	0	0	1564	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15			73			6			26	
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		525			421			813			806	
Travel Time (s)		14.3			11.5			15.8			15.7	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	4%	0%	3%	0%	0%	2%	0%	2%	0%	0%	2%	1%
Adj. Flow (vph)	85	104	38	3	23	73	26	457	16	66	567	91
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	227	0	0	99	0	0	499	0	0	724	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.92	0.92	0.92	1.01	1.01	1.01	1.11	1.11	1.11	1.11	1.11	1.11
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Split (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Total Split (s)	16.0	16.0		16.0	16.0		44.0	44.0		44.0	44.0	
Total Split (%)	26.7%	26.7%		26.7%	26.7%		73.3%	73.3%		73.3%	73.3%	
Maximum Green (s)	10.5	10.5		10.5	10.5		38.5	38.5		38.5	38.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-1.5			-1.5			-1.5			-1.5	
Total Lost Time (s)		4.0			4.0			4.0			4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Act Effct Green (s)		11.2			11.2			31.2			31.2	
Actuated g/C Ratio		0.22			0.22			0.62			0.62	
v/c Ratio		0.59			0.23			0.49			0.74	
Control Delay		25.5			9.9			7.2			12.2	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		25.5			9.9			7.2			12.2	
LOS		C			A			A			B	
Approach Delay		25.5			9.9			7.2			12.2	
Approach LOS		C			A			A			B	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 50.6	
Natural Cycle: 55	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.74	
Intersection Signal Delay: 12.4	Intersection LOS: B
Intersection Capacity Utilization 81.3%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 22: Hockersville Rd & W Areba Ave



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	77	95	35	3	21	66	24	416	15	60	516	83
Future Volume (veh/h)	77	95	35	3	21	66	24	416	15	60	516	83
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	2066	2066	2066	1402	1402	1402	1809	1809	1809	1809	1809	1809
Adj Flow Rate, veh/h	85	104	38	3	23	73	26	457	16	66	567	91
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	2	2	2	2	2	2
Cap, veh/h	267	195	65	107	64	192	128	938	32	162	784	120
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	0.57	0.57	0.57	0.57	0.57	0.57
Sat Flow, veh/h	615	927	310	20	305	912	40	1652	56	92	1381	212
Grp Volume(v), veh/h	227	0	0	99	0	0	499	0	0	724	0	0
Grp Sat Flow(s),veh/h/ln	1853	0	0	1236	0	0	1748	0	0	1685	0	0
Q Serve(g_s), s	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.5	0.0	0.0
Cycle Q Clear(g_c), s	3.8	0.0	0.0	2.5	0.0	0.0	6.0	0.0	0.0	11.2	0.0	0.0
Prop In Lane	0.37		0.17	0.03		0.74	0.05		0.03	0.09		0.13
Lane Grp Cap(c), veh/h	527	0	0	363	0	0	1097	0	0	1066	0	0
V/C Ratio(X)	0.43	0.00	0.00	0.27	0.00	0.00	0.45	0.00	0.00	0.68	0.00	0.00
Avail Cap(c_a), veh/h	745	0	0	514	0	0	2014	0	0	1954	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	12.7	0.0	0.0	12.2	0.0	0.0	4.7	0.0	0.0	5.7	0.0	0.0
Incr Delay (d2), s/veh	0.6	0.0	0.0	0.4	0.0	0.0	0.3	0.0	0.0	0.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.6	0.0	0.0	1.1	0.0	0.0	1.7	0.0	0.0	3.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.2	0.0	0.0	12.6	0.0	0.0	5.0	0.0	0.0	6.5	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	A	A	A	A	A	A
Approach Vol, veh/h		227			99			499			724	
Approach Delay, s/veh		13.2			12.6			5.0			6.5	
Approach LOS		B			B			A			A	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	24.4	11.6	24.4	11.6
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	38.5	10.5	38.5	10.5
Max Q Clear Time (g_c+I1), s	8.0	5.8	13.2	4.5
Green Ext Time (p_c), s	3.5	0.5	5.7	0.2

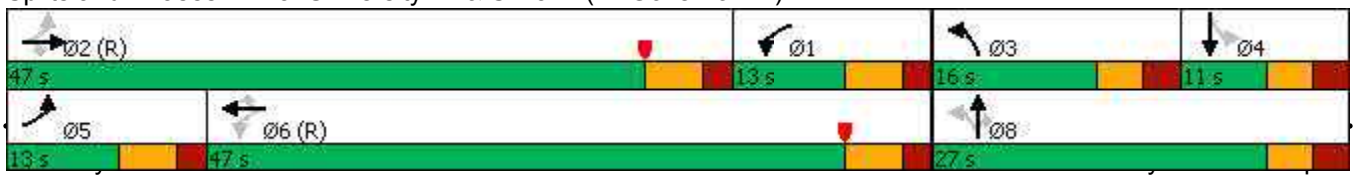
Intersection Summary	
HCM 6th Ctrl Delay	7.4
HCM 6th LOS	A

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	80	524	131	73	831	243	276	254	117	43	69	48
Future Volume (vph)	80	524	131	73	831	243	276	254	117	43	69	48
Ideal Flow (vphpl)	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Lane Width (ft)	12	12	12	12	13	11	14	12	14	12	12	12
Grade (%)		1%			-1%			-1%			-3%	
Storage Length (ft)	150		150	175		125	0		165	0		0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.97	1.00					0.98	0.98		
Frt			0.850			0.850			0.850		0.939	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1560	3058	1382	1575	1697	1349	1680	1658	1503	1591	1536	0
Flt Permitted	0.108			0.451			0.364			0.597		
Satd. Flow (perm)	177	3058	1343	745	1697	1349	644	1658	1474	982	1536	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			169			169			177		31	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		1532			974			928			672	
Travel Time (s)		29.8			19.0			25.3			18.3	
Confl. Peds. (#/hr)			8	8					7	7		
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	2%	1%	0%	1%	1%	0%	0%	0%	0%	4%	0%
Adj. Flow (vph)	82	540	135	75	857	251	285	262	121	44	71	49
Shared Lane Traffic (%)												
Lane Group Flow (vph)	82	540	135	75	857	251	285	262	121	44	120	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			14			14	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.20	1.20	1.20	1.19	1.14	1.24	1.10	1.19	1.10	1.17	1.17	1.17
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	1	1	1	1	
Detector Template		Main25	Right		Main25							
Leading Detector (ft)	38	250	48	38	250	0	38	38	38	38	38	
Trailing Detector (ft)	-2	0	-2	-2	0	0	-2	-2	-2	-2	-2	
Detector 1 Position(ft)	-2	0	-2	-2	0	0	-2	-2	-2	-2	-2	
Detector 1 Size(ft)	40	0	50	40	0	0	40	40	40	40	40	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		244			244							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases	2		2	6		6	8		8	4		
Detector Phase	5	2	2	1	6	6	3	8	8	4	4	
Switch Phase												
Minimum Initial (s)	3.0	10.0	10.0	3.0	10.0	10.0	3.0	3.0	3.0	3.0	3.0	
Minimum Split (s)	13.0	25.0	25.0	13.0	15.7	15.7	9.5	25.0	25.0	10.0	10.0	
Total Split (s)	13.0	47.0	47.0	13.0	47.0	47.0	16.0	27.0	27.0	11.0	11.0	
Total Split (%)	14.9%	54.0%	54.0%	14.9%	54.0%	54.0%	18.4%	31.0%	31.0%	12.6%	12.6%	
Maximum Green (s)	7.3	41.3	41.3	7.3	41.3	41.3	10.6	21.6	21.6	5.6	5.6	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.4	2.4	2.4	2.4	2.4	
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	
Total Lost Time (s)	4.2	4.2	4.2	4.2	4.2	4.2	3.9	3.9	3.9	3.9	3.9	
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag	Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes			Yes	Yes	
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0	6.0	3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	25.0	25.0	0.0	25.0	25.0	0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	13.0	13.0	0.0	13.0	13.0	0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	
Act Effct Green (s)	45.4	45.4	45.4	45.5	45.5	45.5	23.1	23.1	23.1	7.1	7.1	
Actuated g/C Ratio	0.52	0.52	0.52	0.52	0.52	0.52	0.27	0.27	0.27	0.08	0.08	
v/c Ratio	0.36	0.34	0.17	0.16	0.97	0.32	0.90	0.60	0.23	0.55	0.78	
Control Delay	16.5	13.6	1.6	12.8	39.1	5.2	62.7	34.4	2.4	65.4	63.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	16.5	13.6	1.6	12.8	39.1	5.2	62.7	34.4	2.4	65.4	63.5	
LOS	B	B	A	B	D	A	E	C	A	E	E	
Approach Delay		11.8			30.2			40.7			64.0	
Approach LOS		B			C			D			E	

Intersection Summary	
Area Type:	Other
Cycle Length: 87	
Actuated Cycle Length: 87	
Offset: 36 (41%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.97	
Intersection Signal Delay: 29.7	Intersection LOS: C
Intersection Capacity Utilization 94.3%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 23: University Dr & SR 322 (W Governor Dr)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	524	131	73	831	243	276	254	117	43	69	48
Future Volume (veh/h)	80	524	131	73	831	243	276	254	117	43	69	48
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	0.99		0.99	0.98		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1645	1619	1632	1684	1738	1671	1752	1684	1752	1752	1700	1700
Adj Flow Rate, veh/h	82	540	135	75	857	251	285	262	121	44	71	49
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	2	1	0	1	1	0	0	0	0	4	4
Cap, veh/h	361	1513	675	491	922	748	321	447	391	162	76	52
Arrive On Green	0.06	0.49	0.49	0.20	1.00	1.00	0.14	0.27	0.27	0.08	0.08	0.08
Sat Flow, veh/h	1567	3076	1372	1604	1738	1410	1668	1684	1473	974	926	639
Grp Volume(v), veh/h	82	540	135	75	857	251	285	262	121	44	0	120
Grp Sat Flow(s),veh/h/ln	1567	1538	1372	1604	1738	1410	1668	1684	1473	974	0	1565
Q Serve(g_s), s	2.6	9.4	2.3	0.0	0.0	0.0	12.1	11.8	5.7	3.8	0.0	6.6
Cycle Q Clear(g_c), s	2.6	9.4	2.3	0.0	0.0	0.0	12.1	11.8	5.7	3.8	0.0	6.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.41
Lane Grp Cap(c), veh/h	361	1513	675	491	922	748	321	447	391	162	0	128
V/C Ratio(X)	0.23	0.36	0.20	0.15	0.93	0.34	0.89	0.59	0.31	0.27	0.00	0.94
Avail Cap(c_a), veh/h	421	1513	675	491	922	748	321	447	391	162	0	128
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.39	0.39	0.39	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.1	13.6	2.8	13.3	0.0	0.0	31.2	27.8	25.6	38.4	0.0	39.7
Incr Delay (d2), s/veh	0.3	0.7	0.7	0.1	8.1	0.5	24.4	2.0	0.4	0.9	0.0	61.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.6	5.6	2.6	1.4	3.5	0.2	12.0	8.6	0.1	1.7	0.0	8.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.4	14.3	3.5	13.3	8.1	0.5	55.5	29.8	26.0	39.3	0.0	100.8
LnGrp LOS	B	B	A	B	A	A	E	C	C	D	A	F
Approach Vol, veh/h		757			1183			668			164	
Approach Delay, s/veh		12.3			6.8			40.1			84.3	
Approach LOS		B			A			D			F	

Timer - Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	13.0	47.0	16.0	11.0	9.7	50.3		27.0
Change Period (Y+Rc), s	* 5.7	* 5.7	5.4	5.4	* 5.7	* 5.7		5.4
Max Green Setting (Gmax), s	* 7.3	* 41	10.6	5.6	* 7.3	* 41		21.6
Max Q Clear Time (g_c+I1), s	2.0	11.4	14.1	8.6	4.6	2.0		13.8
Green Ext Time (p_c), s	0.1	15.5	0.0	0.0	0.0	26.7		0.9

Intersection Summary	
HCM 6th Ctrl Delay	20.9
HCM 6th LOS	C

Notes

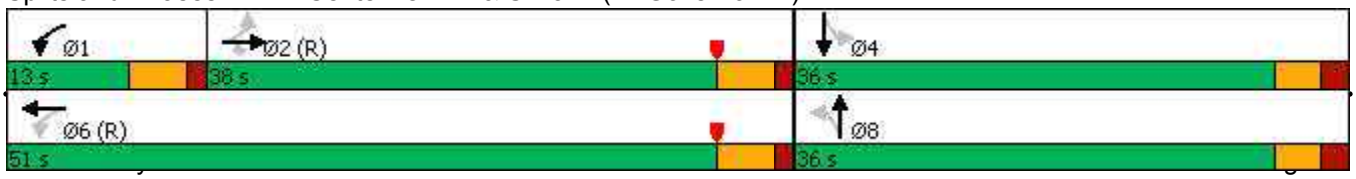
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	544	71	62	645	71	378	90	212	37	22	31
Future Volume (vph)	15	544	71	62	645	71	378	90	212	37	22	31
Ideal Flow (vphpl)	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Lane Width (ft)	12	14	12	12	12	12	12	12	14	16	16	16
Grade (%)		1%			-2%			1%			-1%	
Storage Length (ft)	130		0	165		0	150		350	0		0
Storage Lanes	1		1	1		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00		0.96	1.00	1.00		1.00	0.98			0.99	
Frt			0.850		0.985			0.895			0.954	
Flt Protected	0.950			0.950			0.950				0.980	
Satd. Flow (prot)	1560	1684	1329	1552	1595	0	1544	1434	0	0	1722	0
Flt Permitted	0.260			0.206			0.718				0.812	
Satd. Flow (perm)	426	1684	1279	335	1595	0	1164	1434	0	0	1423	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			88		10			154			32	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		974			2219			941			923	
Travel Time (s)		19.0			43.2			25.7			25.2	
Confl. Peds. (#/hr)	3		11	11		3	2		8	8		2
Confl. Bikes (#/hr)			4	4								
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	4%	5%	2%	3%	0%	1%	1%	0%	3%	0%	0%
Adj. Flow (vph)	15	561	73	64	665	73	390	93	219	38	23	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	15	561	73	64	738	0	390	312	0	0	93	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.20	1.11	1.20	1.18	1.18	1.18	1.20	1.20	1.11	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	1		1	1	
Detector Template		Main25	Right	Left	Main25		Left	Thru		Left	Thru	
Leading Detector (ft)	0	250	48	48	250		48	48		48	48	
Trailing Detector (ft)	0	0	-2	-2	0		-2	-2		-2	-2	
Detector 1 Position(ft)	0	0	-2	-2	0		-2	-2		-2	-2	
Detector 1 Size(ft)	0	0	50	50	0		50	50		50	50	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		244			244							
Detector 2 Size(ft)		6			6							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							
Turn Type	Perm	NA	Perm	pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2		2	6			8			4		
Detector Phase	2	2	2	1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	3.0	10.0		3.0	3.0		3.0	3.0	
Minimum Split (s)	25.0	25.0	25.0	13.0	25.0		25.0	25.0		25.0	25.0	
Total Split (s)	38.0	38.0	38.0	13.0	51.0		36.0	36.0		36.0	36.0	
Total Split (%)	43.7%	43.7%	43.7%	14.9%	58.6%		41.4%	41.4%		41.4%	41.4%	
Maximum Green (s)	32.9	32.9	32.9	7.9	45.9		31.1	31.1		31.1	31.1	
Yellow Time (s)	3.8	3.8	3.8	3.8	3.8		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.3	1.3	1.3	1.3	1.3		1.9	1.9		1.9	1.9	
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	-1.5		-1.5	-1.0			-1.0	
Total Lost Time (s)	3.6	3.6	3.6	3.6	3.6		3.4	3.9			3.9	
Lead/Lag	Lag	Lag	Lag	Lead								
Lead-Lag Optimize?	Yes	Yes	Yes	Yes								
Vehicle Extension (s)	6.0	6.0	6.0	3.0	6.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	25.0	25.0	25.0	0.0	25.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	13.0	13.0	13.0	0.0	13.0		0.0	0.0		0.0	0.0	
Recall Mode	C-Max	C-Max	C-Max	None	C-Max		None	None		None	None	
Act Effct Green (s)	38.5	38.5	38.5	48.5	48.5		31.5	31.0			31.0	
Actuated g/C Ratio	0.44	0.44	0.44	0.56	0.56		0.36	0.36			0.36	
v/c Ratio	0.08	0.75	0.12	0.21	0.83		0.93	0.51			0.18	
Control Delay	8.7	21.0	0.6	7.0	19.2		57.0	13.7			13.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	
Total Delay	8.7	21.0	0.6	7.0	19.2		57.0	13.7			13.8	
LOS	A	C	A	A	B		E	B			B	
Approach Delay		18.4			18.2			37.8			13.8	
Approach LOS		B			B			D			B	

Intersection Summary	
Area Type:	Other
Cycle Length: 87	
Actuated Cycle Length: 87	
Offset: 44.9 (52%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 24.2	Intersection LOS: C
Intersection Capacity Utilization 95.8%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 24: Centerview Dr & SR 322 (W Governor Dr)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	544	71	62	645	71	378	90	212	37	22	31
Future Volume (veh/h)	15	544	71	62	645	71	378	90	212	37	22	31
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.97	0.99		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1645	1657	1581	1692	1679	1679	1632	1632	1697	1752	1752	1752
Adj Flow Rate, veh/h	15	561	73	64	665	73	390	93	219	38	23	32
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	4	5	2	3	3	1	1	1	0	0	0
Cap, veh/h	199	750	585	431	807	89	448	158	372	163	99	107
Arrive On Green	0.90	0.90	0.90	0.05	0.54	0.54	0.37	0.37	0.37	0.37	0.37	0.37
Sat Flow, veh/h	667	1657	1292	1612	1481	163	1233	428	1009	285	268	290
Grp Volume(v), veh/h	15	561	73	64	0	738	390	0	312	93	0	0
Grp Sat Flow(s),veh/h/ln	667	1657	1292	1612	0	1643	1233	0	1437	843	0	0
Q Serve(g_s), s	1.3	8.7	0.5	1.7	0.0	32.3	16.0	0.0	15.2	1.4	0.0	0.0
Cycle Q Clear(g_c), s	25.6	8.7	0.5	1.7	0.0	32.3	32.6	0.0	15.2	16.6	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.10	1.00		0.70	0.41		0.34
Lane Grp Cap(c), veh/h	199	750	585	431	0	895	448	0	530	374	0	0
V/C Ratio(X)	0.08	0.75	0.12	0.15	0.00	0.82	0.87	0.00	0.59	0.25	0.00	0.00
Avail Cap(c_a), veh/h	199	750	585	523	0	895	448	0	530	374	0	0
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.95	0.95	0.95	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	11.8	2.7	2.3	10.9	0.0	16.4	30.2	0.0	22.1	20.1	0.0	0.0
Incr Delay (d2), s/veh	0.7	6.4	0.4	0.2	0.0	8.5	16.8	0.0	1.7	0.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.3	4.3	0.4	1.0	0.0	18.5	15.5	0.0	9.0	2.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.5	9.1	2.7	11.0	0.0	24.9	47.0	0.0	23.8	20.5	0.0	0.0
LnGrp LOS	B	A	A	B	A	C	D	A	C	C	A	A
Approach Vol, veh/h		649			802			702			93	
Approach Delay, s/veh		8.5			23.8			36.7			20.5	
Approach LOS		A			C			D			C	

Timer - Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	8.1	42.9		36.0		51.0		36.0
Change Period (Y+Rc), s	5.1	5.1		* 4.9		5.1		* 4.9
Max Green Setting (Gmax), s	7.9	32.9		* 31		45.9		* 31
Max Q Clear Time (g_c+I1), s	3.7	10.7		18.6		34.3		34.6
Green Ext Time (p_c), s	0.0	13.0		0.2		9.2		0.0

Intersection Summary	
HCM 6th Ctrl Delay	23.3
HCM 6th LOS	C

Notes

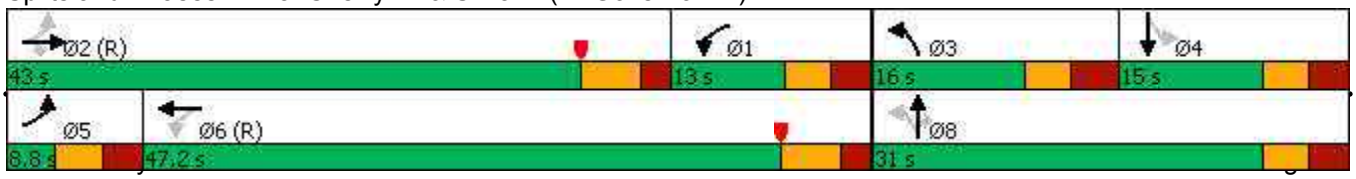
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	581	151	106	549	37	188	48	310	24	40	13
Future Volume (vph)	12	581	151	106	549	37	188	48	310	24	40	13
Ideal Flow (vphpl)	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Lane Width (ft)	10	12	14	10	14	14	10	11	12	10	12	12
Grade (%)		-3%			-2%			0%			1%	
Storage Length (ft)	100		200	205		0	100		75	75		0
Storage Lanes	1		1	1		0	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.98	1.00			1.00				0.99	
Frt			0.850		0.990				0.850		0.962	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1485	1626	1503	1435	1709	0	1449	1595	1402	1456	1502	0
Flt Permitted	0.202			0.279			0.460			0.724		
Satd. Flow (perm)	316	1626	1470	421	1709	0	699	1595	1402	1109	1502	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			184		6				323		14	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		1214			446			770			537	
Travel Time (s)		23.6			8.7			21.0			14.6	
Confl. Peds. (#/hr)			1	1			2					2
Confl. Bikes (#/hr)			1	1			2					2
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	3%	1%	3%	3%	3%	1%	0%	0%	0%	3%	8%
Adj. Flow (vph)	13	605	157	110	572	39	196	50	323	25	42	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	13	605	157	110	611	0	196	50	323	25	56	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.28	1.17	1.08	1.29	1.09	1.09	1.30	1.25	1.20	1.31	1.20	1.20
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	1	1	1	1	
Detector Template		Main25			Main25							
Leading Detector (ft)	38	250	38	38	250		38	38	38	38	38	
Trailing Detector (ft)	-2	0	-2	-2	0		-2	-2	-2	-2	-2	
Detector 1 Position(ft)	-2	0	-2	-2	0		-2	-2	-2	-2	-2	
Detector 1 Size(ft)	40	0	40	40	0		40	40	40	40	40	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		244			244							
Detector 2 Size(ft)		6			6							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases	2		2	6			8		8	4		
Detector Phase	5	2	2	1	6		3	8	8	4	4	
Switch Phase												
Minimum Initial (s)	3.0	10.0	10.0	3.0	10.0		3.0	3.0	3.0	3.0	3.0	
Minimum Split (s)	8.7	25.0	25.0	13.0	25.0		13.0	25.0	25.0	15.0	15.0	
Total Split (s)	8.8	43.0	43.0	13.0	47.2		16.0	31.0	31.0	15.0	15.0	
Total Split (%)	10.1%	49.4%	49.4%	14.9%	54.3%		18.4%	35.6%	35.6%	17.2%	17.2%	
Maximum Green (s)	3.1	37.1	37.1	7.3	41.3		9.9	25.3	25.3	9.3	9.3	
Yellow Time (s)	3.1	3.9	3.9	3.1	3.9		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.6	2.0	2.0	2.6	2.0		3.1	2.7	2.7	2.7	2.7	
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	-1.5		-1.5	-1.5	-1.5	-1.5	-1.5	
Total Lost Time (s)	4.2	4.4	4.4	4.2	4.4		4.6	4.2	4.2	4.2	4.2	
Lead/Lag	Lead	Lead	Lead	Lag	Lag		Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)	3.0	6.0	6.0	3.0	6.0		3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	12.5	12.5	0.0	12.5		0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	25.0	25.0	0.0	25.0		0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	C-Max	C-Max	None	C-Max		None	None	None	None	None	
Act Effct Green (s)	45.2	45.0	45.0	53.9	53.7		22.6	23.0	23.0	9.2	9.2	
Actuated g/C Ratio	0.52	0.52	0.52	0.62	0.62		0.26	0.26	0.26	0.11	0.11	
v/c Ratio	0.06	0.72	0.18	0.31	0.58		0.70	0.12	0.53	0.21	0.33	
Control Delay	6.3	15.7	0.7	10.9	13.0		40.9	22.9	6.4	39.4	33.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	6.3	15.7	0.7	10.9	13.0		40.9	22.9	6.4	39.4	33.6	
LOS	A	B	A	B	B		D	C	A	D	C	
Approach Delay		12.5			12.7			19.7			35.4	
Approach LOS		B			B			B			D	

Intersection Summary	
Area Type:	Other
Cycle Length: 87	
Actuated Cycle Length: 87	
Offset: 36.3 (42%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.72	
Intersection Signal Delay: 15.4	Intersection LOS: B
Intersection Capacity Utilization 71.3%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 25: Cherry Dr & SR 322 (W Governor Dr)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	581	151	106	549	37	188	48	310	24	40	13
Future Volume (veh/h)	12	581	151	106	549	37	188	48	310	24	40	13
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	0.99		0.98	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1752	1713	1809	1679	1746	1746	1637	1650	1650	1645	1606	1606
Adj Flow Rate, veh/h	12	605	157	110	572	39	196	50	323	25	42	14
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	3	1	3	3	3	1	0	0	0	3	3
Cap, veh/h	227	760	665	367	898	61	351	447	373	164	99	33
Arrive On Green	0.03	0.44	0.44	0.14	0.56	0.56	0.13	0.27	0.27	0.09	0.09	0.09
Sat Flow, veh/h	1669	1713	1499	1599	1614	110	1559	1650	1376	933	1140	380
Grp Volume(v), veh/h	12	605	157	110	0	611	196	50	323	25	0	56
Grp Sat Flow(s),veh/h/ln	1669	1713	1499	1599	0	1724	1559	1650	1376	933	0	1519
Q Serve(g_s), s	0.4	26.4	2.9	0.0	0.0	21.2	9.5	2.0	19.5	2.2	0.0	3.0
Cycle Q Clear(g_c), s	0.4	26.4	2.9	0.0	0.0	21.2	9.5	2.0	19.5	2.2	0.0	3.0
Prop In Lane	1.00		1.00	1.00		0.06	1.00		1.00	1.00		0.25
Lane Grp Cap(c), veh/h	227	760	665	367	0	959	351	447	373	164	0	132
V/C Ratio(X)	0.05	0.80	0.24	0.30	0.00	0.64	0.56	0.11	0.87	0.15	0.00	0.42
Avail Cap(c_a), veh/h	272	760	665	367	0	959	351	508	424	199	0	189
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	0.74	0.74	0.74	1.00	0.00	1.00
Uniform Delay (d), s/veh	18.0	20.8	4.0	29.8	0.0	13.3	28.8	23.9	30.2	37.3	0.0	37.7
Incr Delay (d2), s/veh	0.1	8.5	0.8	0.5	0.0	3.2	1.5	0.1	12.1	0.4	0.0	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.2	17.0	3.5	3.6	0.0	12.8	6.3	1.4	11.4	0.9	0.0	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.1	29.3	4.8	30.3	0.0	16.5	30.3	23.9	42.4	37.7	0.0	39.8
LnGrp LOS	B	C	A	C	A	B	C	C	D	D	A	D
Approach Vol, veh/h		774			721			569			81	
Approach Delay, s/veh		24.1			18.6			36.6			39.2	
Approach LOS		C			B			D			D	

Timer - Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	16.2	43.0	16.0	11.8	6.5	52.8		27.8
Change Period (Y+Rc), s	5.9	* 5.9	6.1	* 5.7	5.7	5.9		* 5.7
Max Green Setting (Gmax), s	7.3	* 37	9.9	* 9.3	3.1	41.3		* 25
Max Q Clear Time (g_c+I1), s	2.0	28.4	11.5	5.0	2.4	23.2		21.5
Green Ext Time (p_c), s	0.1	4.9	0.0	0.1	0.0	7.8		0.6

Intersection Summary	
HCM 6th Ctrl Delay	26.2
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

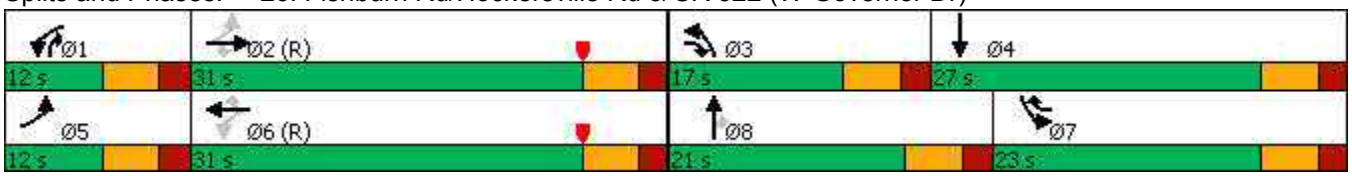
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	59	710	143	100	479	168	161	214	119	238	275	36
Future Volume (vph)	59	710	143	100	479	168	161	214	119	238	275	36
Ideal Flow (vphpl)	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Lane Width (ft)	11	12	14	11	12	14	11	11	13	11	12	12
Grade (%)		1%			0%			-1%			2%	
Storage Length (ft)	140		300	125		75	135		85	100		100
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850		0.983	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1508	3088	1474	1515	3014	1481	1508	1587	1456	1500	1578	0
Flt Permitted	0.404			0.216			0.950			0.950		
Satd. Flow (perm)	641	3088	1474	345	3014	1481	1508	1587	1456	1500	1578	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			146			171			121		7	
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		528			252			343			1393	
Travel Time (s)		10.3			4.9			6.7			27.1	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	1%	1%	0%	4%	1%	1%	1%	0%	0%	2%	0%
Adj. Flow (vph)	60	724	146	102	489	171	164	218	121	243	281	37
Shared Lane Traffic (%)												
Lane Group Flow (vph)	60	724	146	102	489	171	164	218	121	243	318	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.26	1.20	1.11	1.25	1.20	1.10	1.24	1.24	1.14	1.26	1.21	1.21
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	1	1	1	1	
Detector Template		Main25	Right	Left	Main25	Right						
Leading Detector (ft)	38	250	48	48	250	48	38	38	38	38	38	
Trailing Detector (ft)	-2	0	-2	-2	0	-2	-2	-2	-2	-2	-2	
Detector 1 Position(ft)	-2	0	-2	-2	0	-2	-2	-2	-2	-2	-2	
Detector 1 Size(ft)	40	0	50	50	0	50	40	40	40	40	40	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		244			244							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases	5	2	3	1	6	7	3	8	1	7	4	
Permitted Phases	2		2	6		6			8			
Detector Phase	5	2	3	1	6	7	3	8	1	7	4	
Switch Phase												
Minimum Initial (s)	3.0	10.0	3.0	3.0	10.0	3.0	3.0	3.0	3.0	3.0	3.0	
Minimum Split (s)	12.0	25.0	12.0	12.0	25.0	12.0	12.0	12.0	12.0	12.0	12.0	
Total Split (s)	12.0	31.0	17.0	12.0	31.0	23.0	17.0	21.0	12.0	23.0	27.0	
Total Split (%)	13.8%	35.6%	19.5%	13.8%	35.6%	26.4%	19.5%	24.1%	13.8%	26.4%	31.0%	
Maximum Green (s)	6.4	25.4	11.3	6.4	25.4	17.3	11.3	15.3	6.4	17.3	21.3	
Yellow Time (s)	3.6	3.6	3.7	3.6	3.6	3.7	3.7	3.7	3.6	3.7	3.7	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	
Total Lost Time (s)	4.1	4.1	4.2	4.1	4.1	4.2	4.2	4.2	4.1	4.2	4.2	
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	6.5	3.0	3.0	6.5	3.0	3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	25.0	0.0	0.0	25.0	0.0	0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	12.5	0.0	0.0	12.5	0.0	0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	C-Max	None	None	C-Max	None	None	None	None	None	None	
Act Effct Green (s)	36.5	28.7	45.3	37.4	31.1	49.8	12.4	15.9	23.8	18.0	21.4	
Actuated g/C Ratio	0.42	0.33	0.52	0.43	0.36	0.57	0.14	0.18	0.27	0.21	0.25	
v/c Ratio	0.17	0.71	0.17	0.40	0.45	0.19	0.76	0.75	0.25	0.79	0.81	
Control Delay	18.2	28.3	0.9	18.2	11.7	0.5	55.5	46.9	3.9	51.8	47.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	18.2	28.3	0.9	18.2	11.7	0.5	55.5	46.9	3.9	51.8	47.3	
LOS	B	C	A	B	B	A	E	D	A	D	D	
Approach Delay		23.4			10.0			39.3			49.2	
Approach LOS		C			B			D			D	

Intersection Summary

Area Type: Other
Cycle Length: 87
Actuated Cycle Length: 87
Offset: 33 (38%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.81
Intersection Signal Delay: 27.9 Intersection LOS: C
Intersection Capacity Utilization 72.3% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 26: Fishburn Rd/Hockersville Rd & SR 322 (W Governor Dr)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	59	710	143	100	479	168	161	214	119	238	275	36
Future Volume (veh/h)	59	710	143	100	479	168	161	214	119	238	275	36
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1645	1632	1697	1650	1599	1703	1671	1671	1752	1630	1604	1604
Adj Flow Rate, veh/h	60	724	146	102	489	171	164	218	121	243	281	37
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	1	1	0	4	1	1	1	0	0	2	2
Cap, veh/h	353	1109	716	296	1152	843	223	287	366	318	329	43
Arrive On Green	0.05	0.36	0.36	0.07	0.38	0.38	0.05	0.06	0.06	0.21	0.24	0.24
Sat Flow, veh/h	1567	3101	1438	1571	3037	1443	1592	1671	1484	1552	1388	183
Grp Volume(v), veh/h	60	724	146	102	489	171	164	218	121	243	0	318
Grp Sat Flow(s),veh/h/ln	1567	1550	1438	1571	1519	1443	1592	1671	1484	1552	0	1571
Q Serve(g_s), s	2.0	17.0	4.9	3.4	10.4	1.0	8.9	11.2	3.2	12.8	0.0	16.8
Cycle Q Clear(g_c), s	2.0	17.0	4.9	3.4	10.4	1.0	8.9	11.2	3.2	12.8	0.0	16.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.12
Lane Grp Cap(c), veh/h	353	1109	716	296	1152	843	223	287	366	318	0	372
V/C Ratio(X)	0.17	0.65	0.20	0.34	0.42	0.20	0.74	0.76	0.33	0.76	0.00	0.85
Avail Cap(c_a), veh/h	412	1109	716	321	1152	843	234	323	397	335	0	412
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.96	0.96	0.96	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.2	23.4	12.2	17.0	20.0	2.4	39.9	39.3	11.2	32.6	0.0	31.7
Incr Delay (d2), s/veh	0.2	3.0	0.6	0.7	1.1	0.5	10.6	8.6	0.5	9.5	0.0	14.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.3	10.4	2.9	2.2	6.6	0.9	7.6	9.4	2.6	9.3	0.0	12.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.4	26.4	12.9	17.7	21.1	2.9	50.5	47.9	11.7	42.1	0.0	46.5
LnGrp LOS	B	C	B	B	C	A	D	D	B	D	A	D
Approach Vol, veh/h		930			762			503			561	
Approach Delay, s/veh		23.6			16.6			40.0			44.6	
Approach LOS		C			B			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.6	35.2	16.4	24.8	8.7	37.1	22.0	19.2
Change Period (Y+Rc), s	5.6	5.6	* 5.7	* 5.7	5.6	5.6	* 5.7	* 5.7
Max Green Setting (Gmax), s	6.4	25.4	* 11	* 21	6.4	25.4	* 17	* 15
Max Q Clear Time (g_c+I1), s	5.4	19.0	10.9	18.8	4.0	12.4	14.8	13.2
Green Ext Time (p_c), s	0.0	5.4	0.0	0.3	0.0	8.6	0.2	0.3

Intersection Summary	
HCM 6th Ctrl Delay	29.0
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	6	215	0	1	2	198	16	0	4	10	9
Future Volume (vph)	17	6	215	0	1	2	198	16	0	4	10	9
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	13	13	15	15	12	11	12	11	12	12	12
Grade (%)		2%			-1%			-2%			0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.878			0.910						0.946	
Flt Protected		0.996						0.956			0.992	
Satd. Flow (prot)	0	1610	0	0	1811	0	0	1705	0	0	1689	0
Flt Permitted		0.996						0.956			0.992	
Satd. Flow (perm)	0	1610	0	0	1811	0	0	1705	0	0	1689	0
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		199			375			774			244	
Travel Time (s)		5.4			10.2			15.1			4.8	
Confl. Peds. (#/hr)			4	4			1					1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	2%	1%	0%	0%	0%	0%
Adj. Flow (vph)	18	6	229	0	1	2	211	17	0	4	11	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	253	0	0	3	0	0	228	0	0	25	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.04	1.04	0.94	0.94	1.07	1.11	1.06	1.11	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 48.2%	ICU Level of Service A
Analysis Period (min) 15	

Intersection	
Intersection Delay, s/veh	9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	17	6	215	0	1	2	198	16	0	4	10	9
Future Vol, veh/h	17	6	215	0	1	2	198	16	0	4	10	9
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	0	0	0	0	0	0	2	1	0	0	0	0
Mvmt Flow	18	6	229	0	1	2	211	17	0	4	11	10
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.6	7.4	9.7	7.7
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	93%	7%	0%	17%
Vol Thru, %	7%	3%	33%	43%
Vol Right, %	0%	90%	67%	39%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	214	238	3	23
LT Vol	198	17	0	4
Through Vol	16	6	1	10
RT Vol	0	215	2	9
Lane Flow Rate	228	253	3	24
Geometry Grp	1	1	1	1
Degree of Util (X)	0.298	0.281	0.004	0.031
Departure Headway (Hd)	4.708	3.993	4.379	4.507
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	767	901	816	793
Service Time	2.708	2.012	2.412	2.542
HCM Lane V/C Ratio	0.297	0.281	0.004	0.03
HCM Control Delay	9.7	8.6	7.4	7.7
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	1.3	1.2	0	0.1

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	102	315	98	385	397	114
Future Volume (vph)	102	315	98	385	397	114
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	14	14
Grade (%)	-1%			1%	-2%	
Storage Length (ft)	250	0	150			75
Storage Lanes	1	1	1			1
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1685	1538	1701	1773	1901	1648
Flt Permitted	0.950		0.511			
Satd. Flow (perm)	1685	1538	915	1773	1901	1648
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		318				101
Link Speed (mph)	35			35	35	
Link Distance (ft)	212			489	343	
Travel Time (s)	4.1			9.5	6.7	
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	2%	0%	0%	1%	2%	0%
Adj. Flow (vph)	103	318	99	389	401	115
Shared Lane Traffic (%)						
Lane Group Flow (vph)	103	318	99	389	401	115
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.07	1.07	1.08	1.08	0.97	0.97
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	1
Detector Template	Left	Right	Left	Thru	Thru	Right
Leading Detector (ft)	20	20	20	100	100	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	20	6	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	4			2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	2	2	6	6
Switch Phase						
Minimum Initial (s)	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	37.0	37.0	50.0	50.0	50.0	50.0
Total Split (%)	42.5%	42.5%	57.5%	57.5%	57.5%	57.5%
Maximum Green (s)	31.5	31.5	44.5	44.5	44.5	44.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	C-Min	C-Min	C-Min	C-Min
Act Effct Green (s)	12.4	12.4	66.6	66.6	66.6	66.6
Actuated g/C Ratio	0.14	0.14	0.77	0.77	0.77	0.77
v/c Ratio	0.43	0.65	0.14	0.29	0.28	0.09
Control Delay	38.7	10.6	3.8	4.1	1.8	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.5	0.0
Total Delay	38.7	10.6	3.8	4.1	2.3	0.2
LOS	D	B	A	A	A	A
Approach Delay	17.5			4.1	1.9	
Approach LOS	B			A	A	

Intersection Summary	
Area Type: Other	
Cycle Length: 87	
Actuated Cycle Length: 87	
Offset: 75 (86%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	
Natural Cycle: 40	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.65	
Intersection Signal Delay: 7.2	Intersection LOS: A
Intersection Capacity Utilization 49.3%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 28: Fishburn Rd & Sand Hill Rd

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	102	315	98	385	397	114
Future Volume (veh/h)	102	315	98	385	397	114
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1809	1837	1794	1780	1920	1950
Adj Flow Rate, veh/h	103	318	99	389	401	115
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	0	0	1	2	0
Cap, veh/h	425	384	518	1177	1269	1092
Arrive On Green	0.25	0.25	0.66	0.66	0.22	0.22
Sat Flow, veh/h	1723	1557	896	1780	1920	1652
Grp Volume(v), veh/h	103	318	99	389	401	115
Grp Sat Flow(s),veh/h/ln	1723	1557	896	1780	1920	1652
Q Serve(g_s), s	4.2	16.8	5.6	8.2	15.3	4.8
Cycle Q Clear(g_c), s	4.2	16.8	20.8	8.2	15.3	4.8
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	425	384	518	1177	1269	1092
V/C Ratio(X)	0.24	0.83	0.19	0.33	0.32	0.11
Avail Cap(c_a), veh/h	653	591	518	1177	1269	1092
HCM Platoon Ratio	1.00	1.00	1.00	1.00	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.80	0.80
Uniform Delay (d), s/veh	26.2	31.0	12.9	6.4	17.5	13.4
Incr Delay (d2), s/veh	0.3	5.8	0.8	0.8	0.5	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.0	10.9	2.1	5.0	12.0	3.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	26.5	36.8	13.7	7.1	18.0	13.6
LnGrp LOS	C	D	B	A	B	B
Approach Vol, veh/h	421			488	516	
Approach Delay, s/veh	34.3			8.5	17.0	
Approach LOS	C			A	B	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		61.5		25.5		61.5
Change Period (Y+Rc), s		5.5		5.5		5.5
Max Green Setting (Gmax), s		44.5		31.5		44.5
Max Q Clear Time (g_c+I1), s		22.8		18.8		17.3
Green Ext Time (p_c), s		2.8		1.2		2.9

Intersection Summary	
HCM 6th Ctrl Delay	19.2
HCM 6th LOS	B

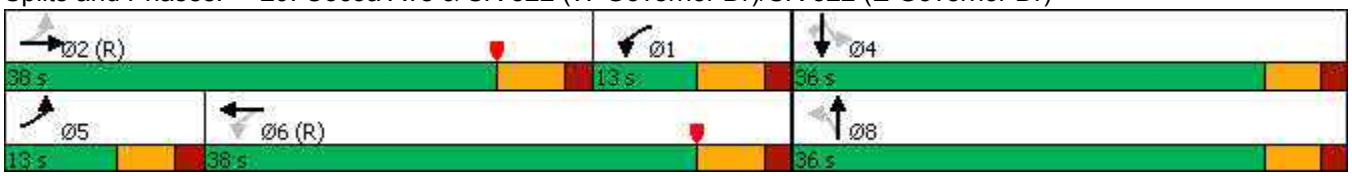
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	841	39	50	541	70	36	320	96	73	407	69
Future Volume (vph)	57	841	39	50	541	70	36	320	96	73	407	69
Ideal Flow (vphpl)	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Lane Width (ft)	10	15	15	11	13	13	11	13	13	11	12	15
Grade (%)		-2%			-3%			0%			0%	
Storage Length (ft)	175		0	80		0	75		0	75		150
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.993			0.983			0.965				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1449	3394	0	1538	3200	0	1429	1608	0	1500	1602	1498
Flt Permitted	0.275			0.299			0.260			0.249		
Satd. Flow (perm)	419	3394	0	484	3200	0	391	1608	0	393	1602	1498
Right Turn on Red			No			Yes			No			Yes
Satd. Flow (RTOR)					19							191
Link Speed (mph)		35			40			35			35	
Link Distance (ft)		1911			1234			997			1054	
Travel Time (s)		37.2			21.0			19.4			20.5	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	2%	0%	0%	1%	1%	6%	3%	0%	1%	3%	3%
Adj. Flow (vph)	59	876	41	52	564	73	38	333	100	76	424	72
Shared Lane Traffic (%)												
Lane Group Flow (vph)	59	917	0	52	637	0	38	433	0	76	424	72
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.29	1.05	1.05	1.23	1.13	1.13	1.25	1.15	1.15	1.25	1.20	1.06
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	1		1	1	1
Detector Template		Main25			Main25							
Leading Detector (ft)	38	250		38	250		38	38		38	38	0
Trailing Detector (ft)	-2	0		-2	0		-2	-2		-2	-2	0
Detector 1 Position(ft)	-2	0		-2	0		-2	-2		-2	-2	0
Detector 1 Size(ft)	40	0		40	0		40	40		40	40	0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		244			244							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6			8			4		4
Detector Phase	5	2		1	6		8	8		4	4	4
Switch Phase												
Minimum Initial (s)	3.0	10.0		3.0	10.0		3.0	3.0		3.0	3.0	3.0
Minimum Split (s)	13.0	25.0		13.0	25.0		20.0	20.0		20.0	20.0	20.0
Total Split (s)	13.0	38.0		13.0	38.0		36.0	36.0		36.0	36.0	36.0
Total Split (%)	14.9%	43.7%		14.9%	43.7%		41.4%	41.4%		41.4%	41.4%	41.4%
Maximum Green (s)	7.2	31.8		6.8	31.8		30.6	30.6		30.6	30.6	30.6
Yellow Time (s)	3.8	4.4		4.4	4.4		3.6	3.6		3.6	3.6	3.6
All-Red Time (s)	2.0	1.8		1.8	1.8		1.8	1.8		1.8	1.8	1.8
Lost Time Adjust (s)	-1.5	-1.5		-1.5	-1.5		-1.5	-1.5		-1.5	-1.5	-1.5
Total Lost Time (s)	4.3	4.7		4.7	4.7		3.9	3.9		3.9	3.9	3.9
Lead/Lag	Lead	Lead		Lag	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	5.5		3.0	5.5		3.0	3.0		3.0	3.0	3.0
Minimum Gap (s)	3.0	2.0		3.0	2.0		3.0	3.0		3.0	3.0	3.0
Time Before Reduce (s)	0.0	25.0		0.0	25.0		0.0	0.0		0.0	0.0	0.0
Time To Reduce (s)	0.0	12.5		0.0	12.5		0.0	0.0		0.0	0.0	0.0
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	None
Act Effct Green (s)	42.5	42.1		39.7	39.7		28.5	28.5		28.5	28.5	28.5
Actuated g/C Ratio	0.49	0.48		0.46	0.46		0.33	0.33		0.33	0.33	0.33
v/c Ratio	0.20	0.56		0.17	0.43		0.30	0.82		0.59	0.81	0.12
Control Delay	8.0	8.5		11.6	11.6		27.3	40.5		43.8	39.3	0.4
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	8.0	8.5		11.6	11.6		27.3	40.5		43.8	39.3	0.4
LOS	A	A		B	B		C	D		D	D	A
Approach Delay		8.5			11.6			39.5			35.0	
Approach LOS		A			B			D			D	

Intersection Summary

Area Type: Other
Cycle Length: 87
Actuated Cycle Length: 87
Offset: 74.8 (86%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.82
Intersection Signal Delay: 20.3 Intersection LOS: C
Intersection Capacity Utilization 76.8% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 29: Cocoa Ave & SR 322 (W Governor Dr)/SR 322 (E Governor Dr)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	57	841	39	50	541	70	36	320	96	73	407	69
Future Volume (veh/h)	57	841	39	50	541	70	36	320	96	73	407	69
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1692	1760	1760	1752	1809	1809	1573	1676	1676	1637	1611	1676
Adj Flow Rate, veh/h	59	876	41	52	564	73	38	333	100	76	424	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	0	1	1	6	3	3	1	3	3
Cap, veh/h	284	1245	58	325	1339	173	196	446	134	193	581	
Arrive On Green	0.05	0.38	0.38	0.10	0.44	0.44	0.36	0.36	0.36	0.36	0.36	0.00
Sat Flow, veh/h	1612	3252	152	1669	3061	395	855	1237	372	883	1611	1420
Grp Volume(v), veh/h	59	450	467	52	316	321	38	0	433	76	424	0
Grp Sat Flow(s),veh/h/ln	1612	1672	1733	1669	1719	1738	855	0	1609	883	1611	1420
Q Serve(g_s), s	2.1	19.8	19.8	0.0	11.0	11.1	3.5	0.0	20.5	7.2	19.9	0.0
Cycle Q Clear(g_c), s	2.1	19.8	19.8	0.0	11.0	11.1	23.4	0.0	20.5	27.6	19.9	0.0
Prop In Lane	1.00		0.09	1.00		0.23	1.00		0.23	1.00		1.00
Lane Grp Cap(c), veh/h	284	640	663	325	752	760	196	0	580	193	581	
V/C Ratio(X)	0.21	0.70	0.70	0.16	0.42	0.42	0.19	0.00	0.75	0.39	0.73	
Avail Cap(c_a), veh/h	359	640	663	325	752	760	203	0	594	201	595	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	19.8	22.7	22.7	29.1	16.9	16.9	34.3	0.0	24.3	36.4	24.1	0.0
Incr Delay (d2), s/veh	0.4	6.4	6.2	0.2	1.7	1.7	0.5	0.0	5.0	1.3	4.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.4	13.2	13.5	1.6	7.8	7.8	1.3	0.0	12.8	2.8	12.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.1	29.1	28.8	29.3	18.6	18.6	34.7	0.0	29.4	37.7	28.6	0.0
LnGrp LOS	C	C	C	C	B	B	C	A	C	D	C	
Approach Vol, veh/h		976			689			471			500	A
Approach Delay, s/veh		28.4			19.4			29.8			30.0	
Approach LOS		C			B			C			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.7	38.0		35.3	9.0	42.8		35.3
Change Period (Y+Rc), s	* 6.2	* 6.2		* 5.4	* 5.8	* 6.2		* 5.4
Max Green Setting (Gmax), s	* 6.8	* 32		* 31	* 7.2	* 32		* 31
Max Q Clear Time (g_c+I1), s	2.0	21.8		29.6	4.1	13.1		25.4
Green Ext Time (p_c), s	0.0	8.3		0.2	0.0	10.6		0.9

Intersection Summary	
HCM 6th Ctrl Delay	26.6
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

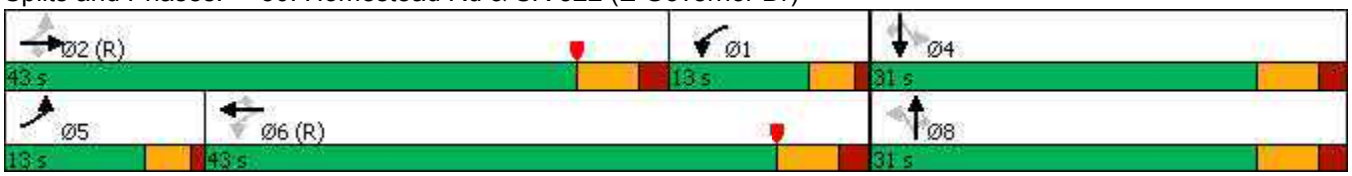
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	119	869	8	45	490	26	7	176	39	59	302	194
Future Volume (vph)	119	869	8	45	490	26	7	176	39	59	302	194
Ideal Flow (vphpl)	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Grade (%)		2%			2%			2%			2%	
Storage Length (ft)	125		100	100		100	100		100	110		200
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1552	3073	1388	1521	3073	1388	1552	1601	1388	1492	1601	1388
Flt Permitted	0.383			0.306			0.327			0.554		
Satd. Flow (perm)	626	3073	1388	490	3073	1388	534	1601	1388	870	1601	1388
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			113			88			163			209
Link Speed (mph)		40			40			35			35	
Link Distance (ft)		1219			3941			1026			2312	
Travel Time (s)		20.8			67.2			20.0			45.0	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	1%	0%	2%	1%	0%	0%	2%	0%	4%	2%	0%
Adj. Flow (vph)	128	934	9	48	527	28	8	189	42	63	325	209
Shared Lane Traffic (%)												
Lane Group Flow (vph)	128	934	9	48	527	28	8	189	42	63	325	209
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	1	1	1	1	1
Detector Template		Main25			Main25							
Leading Detector (ft)	38	250	38	38	250	38	38	38	38	38	38	38
Trailing Detector (ft)	-2	0	-2	-2	0	-2	-2	-2	-2	-2	-2	-2
Detector 1 Position(ft)	-2	0	-2	-2	0	-2	-2	-2	-2	-2	-2	-2
Detector 1 Size(ft)	40	0	40	40	0	40	40	40	40	40	40	40
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		244			244							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6		6	8		8	4		4
Detector Phase	5	2	2	1	6	6	8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	3.0	12.0	12.0	3.0	12.0	12.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Split (s)	13.0	29.0	29.0	13.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0
Total Split (s)	13.0	43.0	43.0	13.0	43.0	43.0	31.0	31.0	31.0	31.0	31.0	31.0
Total Split (%)	14.9%	49.4%	49.4%	14.9%	49.4%	49.4%	35.6%	35.6%	35.6%	35.6%	35.6%	35.6%
Maximum Green (s)	9.0	37.0	37.0	9.0	37.0	37.0	25.0	25.0	25.0	25.0	25.0	25.0
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5
Total Lost Time (s)	2.5	4.5	4.5	2.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0	6.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	28.0	28.0	0.0	28.0	28.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	14.0	14.0	0.0	14.0	14.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
Act Effct Green (s)	50.6	48.6	48.6	47.8	43.0	43.0	22.9	22.9	22.9	22.9	22.9	22.9
Actuated g/C Ratio	0.58	0.56	0.56	0.55	0.49	0.49	0.26	0.26	0.26	0.26	0.26	0.26
v/c Ratio	0.27	0.54	0.01	0.13	0.35	0.04	0.06	0.45	0.09	0.28	0.77	0.40
Control Delay	3.7	3.8	0.0	14.5	15.2	0.1	23.0	29.5	0.4	27.4	42.1	6.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	3.7	3.8	0.0	14.5	15.2	0.1	23.0	29.5	0.4	27.4	42.1	6.0
LOS	A	A	A	B	B	A	C	C	A	C	D	A
Approach Delay		3.7			14.5			24.2			27.9	
Approach LOS		A			B			C			C	

Intersection Summary	
Area Type:	Other
Cycle Length: 87	
Actuated Cycle Length: 87	
Offset: 33 (38%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.77	
Intersection Signal Delay: 14.0	Intersection LOS: B
Intersection Capacity Utilization 67.2%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 30: Homestead Rd & SR 322 (E Governor Dr)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	119	869	8	45	490	26	7	176	39	59	302	194
Future Volume (veh/h)	119	869	8	45	490	26	7	176	39	59	302	194
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1630	1617	1630	1604	1617	1630	1630	1604	1630	1578	1604	1630
Adj Flow Rate, veh/h	128	934	9	48	527	28	8	189	42	63	325	209
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	1	0	2	1	0	0	2	0	4	2	0
Cap, veh/h	381	1284	577	424	1629	732	127	396	341	233	396	341
Arrive On Green	0.09	0.42	0.42	0.18	0.53	0.53	0.25	0.25	0.25	0.25	0.25	0.25
Sat Flow, veh/h	1552	3072	1381	1527	3072	1381	800	1604	1381	1024	1604	1381
Grp Volume(v), veh/h	128	934	9	48	527	28	8	189	42	63	325	209
Grp Sat Flow(s),veh/h/ln	1552	1536	1381	1527	1536	1381	800	1604	1381	1024	1604	1381
Q Serve(g_s), s	4.6	22.1	0.3	0.0	8.5	0.8	0.8	8.8	2.1	4.9	16.6	11.7
Cycle Q Clear(g_c), s	4.6	22.1	0.3	0.0	8.5	0.8	17.5	8.8	2.1	13.6	16.6	11.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	381	1284	577	424	1629	732	127	396	341	233	396	341
V/C Ratio(X)	0.34	0.73	0.02	0.11	0.32	0.04	0.06	0.48	0.12	0.27	0.82	0.61
Avail Cap(c_a), veh/h	428	1359	611	424	1629	732	173	489	421	292	489	421
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.1	21.2	14.8	23.2	11.6	9.8	39.2	28.0	25.4	33.8	30.9	29.1
Incr Delay (d2), s/veh	0.5	3.6	0.0	0.1	0.5	0.1	0.2	0.9	0.2	0.6	8.9	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.8	12.4	0.2	1.3	4.8	0.4	0.3	6.0	1.2	2.2	11.5	7.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.6	24.8	14.9	23.3	12.1	9.9	39.4	28.8	25.6	34.4	39.8	30.8
LnGrp LOS	B	C	B	C	B	A	D	C	C	C	D	C
Approach Vol, veh/h		1071			603			239			597	
Approach Delay, s/veh		23.9			12.9			28.6			36.1	
Approach LOS		C			B			C			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	20.1	40.9		26.0	10.4	50.6		26.0
Change Period (Y+Rc), s	6.0	* 6		6.0	4.0	6.0		6.0
Max Green Setting (Gmax), s	9.0	* 37		25.0	9.0	37.0		25.0
Max Q Clear Time (g_c+I1), s	2.0	24.1		18.6	6.6	10.5		19.5
Green Ext Time (p_c), s	0.0	10.8		1.3	0.1	12.5		0.4

Intersection Summary	
HCM 6th Ctrl Delay	24.6
HCM 6th LOS	C

Notes

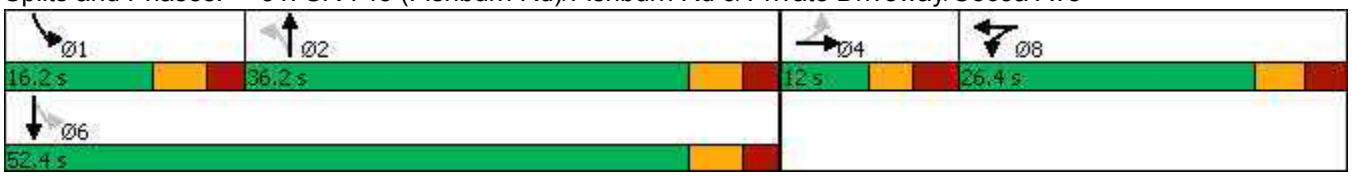
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	446	0	74	0	332	232	129	642	0
Future Volume (vph)	0	0	0	446	0	74	0	332	232	129	642	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	11	11	11	11	12
Grade (%)		0%			2%			1%			-1%	
Storage Length (ft)	0		0	200		0	0		0	75		0
Storage Lanes	0		0	1		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.850			0.944				
Flt Protected				0.950						0.950		
Satd. Flow (prot)	0	1800	0	1628	1443	0	0	1589	0	1613	1731	0
Flt Permitted				0.950						0.179		
Satd. Flow (perm)	0	1800	0	1628	1443	0	0	1589	0	304	1731	0
Right Turn on Red			Yes			No			No			Yes
Satd. Flow (RTOR)												
Link Speed (mph)		25			35			35			35	
Link Distance (ft)		169			1587			679			2277	
Travel Time (s)		4.6			30.9			13.2			44.4	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	0%	0%	4%	0%	5%	0%	2%	4%	3%	1%	0%
Adj. Flow (vph)	0	0	0	460	0	76	0	342	239	133	662	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	460	76	0	0	581	0	133	662	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.09	1.09	1.09	1.08	1.13	1.13	1.11	1.11	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	1		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left		
Leading Detector (ft)	48	48		48	48		48	48		48	225	
Trailing Detector (ft)	-2	-2		-2	-2		-2	-2		-2	0	
Detector 1 Position(ft)	-2	-2		-2	-2		-2	-2		-2	0	
Detector 1 Size(ft)	50	50		50	50		50	50		50	0	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)											219	
Detector 2 Size(ft)											6	
Detector 2 Type											Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)											0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type				Split	NA			NA		pm+pt	NA	
Protected Phases		4		8	8			2		1	6	
Permitted Phases	4						2			6		
Detector Phase	4	4		8	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	2.0	2.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Split (s)	12.0	12.0		18.0	18.0		20.0	20.0		9.2	40.0	
Total Split (s)	12.0	12.0		26.4	26.4		36.2	36.2		16.2	52.4	
Total Split (%)	13.2%	13.2%		29.1%	29.1%		39.9%	39.9%		17.8%	57.7%	
Maximum Green (s)	6.0	6.0		20.0	20.0		30.0	30.0		10.0	46.2	
Yellow Time (s)	3.0	3.0		3.4	3.4		3.7	3.7		3.7	3.7	
All-Red Time (s)	3.0	3.0		3.0	3.0		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)		-1.5		-1.5	-1.5			-1.5		-1.5	-1.5	
Total Lost Time (s)		4.5		4.9	4.9			4.7		4.7	4.7	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		6.0	6.0		3.0	6.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.5	3.5		3.0	3.5	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		23.0	23.0		0.0	23.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		12.0	12.0		0.0	12.0	
Recall Mode	None	None		Min	Min		Min	Min		Min	Min	
Act Effct Green (s)				21.5	21.5			31.5		46.0	46.0	
Actuated g/C Ratio				0.28	0.28			0.41		0.60	0.60	
v/c Ratio				1.01	0.19			0.90		0.38	0.64	
Control Delay				76.6	23.2			40.9		10.1	13.7	
Queue Delay				0.0	0.0			0.0		0.0	0.0	
Total Delay				76.6	23.2			40.9		10.1	13.7	
LOS				E	C			D		B	B	
Approach Delay					69.0			40.9			13.1	
Approach LOS					E			D			B	

Intersection Summary	
Area Type:	Other
Cycle Length: 90.8	
Actuated Cycle Length: 77.1	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.01	
Intersection Signal Delay: 37.2	Intersection LOS: D
Intersection Capacity Utilization 107.1%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 31: SR 743 (Fishburn Rd)/Fishburn Rd & Private Driveway/Cocoa Ave



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	446	0	74	0	332	232	129	642	0
Future Volume (veh/h)	0	0	0	446	0	74	0	332	232	129	642	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1722	1778	1778	1766	1766	1766	1795	1823	1823
Adj Flow Rate, veh/h	0	0	0	460	0	76	0	342	239	133	662	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	4	0	0	2	2	2	3	1	1
Cap, veh/h	0	3	0	493	0	453	0	395	276	328	1029	0
Arrive On Green	0.00	0.00	0.00	0.30	0.00	0.30	0.00	0.41	0.41	0.09	0.56	0.00
Sat Flow, veh/h	0	1800	0	1640	0	1507	0	968	677	1709	1823	0
Grp Volume(v), veh/h	0	0	0	460	0	76	0	0	581	133	662	0
Grp Sat Flow(s),veh/h/ln	0	1800	0	1640	0	1507	0	0	1645	1709	1823	0
Q Serve(g_s), s	0.0	0.0	0.0	19.5	0.0	2.7	0.0	0.0	23.1	2.9	17.7	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	19.5	0.0	2.7	0.0	0.0	23.1	2.9	17.7	0.0
Prop In Lane	0.00		0.00	1.00		1.00	0.00		0.41	1.00		0.00
Lane Grp Cap(c), veh/h	0	3	0	493	0	453	0	0	670	328	1029	0
V/C Ratio(X)	0.00	0.00	0.00	0.93	0.00	0.17	0.00	0.00	0.87	0.41	0.64	0.00
Avail Cap(c_a), veh/h	0	189	0	493	0	453	0	0	725	447	1217	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	24.3	0.0	18.4	0.0	0.0	19.4	13.9	10.6	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	24.8	0.0	0.2	0.0	0.0	13.1	0.8	2.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	0.0	0.0	15.5	0.0	1.6	0.0	0.0	15.5	1.7	10.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	0.0	49.0	0.0	18.6	0.0	0.0	32.5	14.7	13.1	0.0
LnGrp LOS	A	A	A	D	A	B	A	A	C	B	B	A
Approach Vol, veh/h		0			536			581			795	
Approach Delay, s/veh		0.0			44.7			32.5			13.4	
Approach LOS					D			C			B	

Timer - Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	11.2	33.8		0.0		45.0		26.4
Change Period (Y+Rc), s	* 6.2	* 6.2		6.0		* 6.2		6.4
Max Green Setting (Gmax), s	* 10	* 30		6.0		* 46		20.0
Max Q Clear Time (g_c+I1), s	4.9	25.1		0.0		19.7		21.5
Green Ext Time (p_c), s	0.2	2.5		0.0		15.9		0.0

Intersection Summary	
HCM 6th Ctrl Delay	28.0
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	44	56	45	501	990	91
Future Volume (vph)	44	56	45	501	990	91
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	15	15	12	12	12	12
Grade (%)	-4%			-2%	2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.924				0.989	
Flt Protected	0.979			0.996		
Satd. Flow (prot)	1827	0	0	1762	1729	0
Flt Permitted	0.979			0.996		
Satd. Flow (perm)	1827	0	0	1762	1729	0
Link Speed (mph)	25			35	35	
Link Distance (ft)	948			1033	614	
Travel Time (s)	25.9			20.1	12.0	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	0%	3%	2%	1%
Adj. Flow (vph)	47	60	48	533	1053	97
Shared Lane Traffic (%)						
Lane Group Flow (vph)	107	0	0	581	1150	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	15			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.92	0.92	1.06	1.06	1.09	1.09
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 80.1%	ICU Level of Service D
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	44	56	45	501	990	91
Future Vol, veh/h	44	56	45	501	990	91
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-4	-	-	-2	2	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	3	2	1
Mvmt Flow	47	60	48	533	1053	97

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1731	1102	1150	0	-	0
Stage 1	1102	-	-	-	-	-
Stage 2	629	-	-	-	-	-
Critical Hdwy	5.6	5.8	4.1	-	-	-
Critical Hdwy Stg 1	4.6	-	-	-	-	-
Critical Hdwy Stg 2	4.6	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	144	294	615	-	-	-
Stage 1	410	-	-	-	-	-
Stage 2	615	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	128	294	615	-	-	-
Mov Cap-2 Maneuver	128	-	-	-	-	-
Stage 1	364	-	-	-	-	-
Stage 2	615	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	24.3	0.9	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	615	-	291	-	-
HCM Lane V/C Ratio	0.078	-	0.366	-	-
HCM Control Delay (s)	11.3	0	24.3	-	-
HCM Lane LOS	B	A	C	-	-
HCM 95th %tile Q(veh)	0.3	-	1.6	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	378	74	213	328	143	78	236	154	125	254	33
Future Volume (vph)	29	378	74	213	328	143	78	236	154	125	254	33
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	12	12	10	12	12	13	13	13	10	13	13
Grade (%)		-1%			1%			-4%			3%	
Storage Length (ft)	60		0	140		0	150		0	175		0
Storage Lanes	1		0	1		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								0.99		1.00	1.00	
Frt		0.975			0.954			0.956			0.983	
Flt Protected	0.950			0.950				0.992		0.950		
Satd. Flow (prot)	1499	1764	0	1572	1709	0	0	1745	0	1526	1796	0
Flt Permitted	0.446			0.142				0.881		0.260		
Satd. Flow (perm)	704	1764	0	235	1709	0	0	1550	0	417	1796	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10			30			27			8	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		552			1053			474			481	
Travel Time (s)		15.1			28.7			12.9			13.1	
Confl. Peds. (#/hr)							1		4	4		1
Confl. Bikes (#/hr)							1					1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	7%	0%	0%	1%	0%	0%	3%	2%	2%	3%	0%	0%
Adj. Flow (vph)	30	394	77	222	342	149	81	246	160	130	265	34
Shared Lane Traffic (%)												
Lane Group Flow (vph)	30	471	0	222	491	0	0	487	0	130	299	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.16	1.07	1.07	1.18	1.08	1.08	1.00	1.00	1.00	1.19	1.05	1.05
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template							Left					
Leading Detector (ft)	35	35		35	35		48	35		35	35	
Trailing Detector (ft)	-5	-5		-5	-5		-2	-5		-5	-5	
Detector 1 Position(ft)	-5	-5		-5	-5		-2	-5		-5	-5	
Detector 1 Size(ft)	40	40		40	40		50	40		40	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		pm+pt	NA	
Protected Phases	5	2		1	6			8		7	4	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2			6			8			4		
Detector Phase	5	2		1	6		8	8		7	4	
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Split (s)	8.5	10.0		23.5	10.0		10.0	10.0		8.5	10.0	
Total Split (s)	8.6	27.7		23.5	42.6		30.0	30.0		8.8	38.8	
Total Split (%)	9.6%	30.8%		26.1%	47.3%		33.3%	33.3%		9.8%	43.1%	
Maximum Green (s)	3.1	22.2		18.0	37.1		24.7	24.7		3.5	33.5	
Yellow Time (s)	3.5	3.0		3.0	3.0		3.1	3.1		3.1	3.1	
All-Red Time (s)	2.0	2.5		2.5	2.5		2.2	2.2		2.2	2.2	
Lost Time Adjust (s)	-0.5	-0.5		-0.5	-0.5			-0.5		-0.5	-0.5	
Total Lost Time (s)	5.0	5.0		5.0	5.0			4.8		4.8	4.8	
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Act Effct Green (s)	26.3	22.7		41.3	38.0			25.2		34.1	34.1	
Actuated g/C Ratio	0.31	0.27		0.48	0.45			0.30		0.40	0.40	
v/c Ratio	0.12	0.99		0.68	0.63			1.02		0.60	0.41	
Control Delay	14.3	71.1		27.0	22.2			77.1		32.1	20.7	
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Delay	14.3	71.1		27.0	22.2			77.1		32.1	20.7	
LOS	B	E		C	C			E		C	C	
Approach Delay		67.7			23.7			77.1			24.2	
Approach LOS		E			C			E			C	

Intersection Summary	
Area Type: Other	
Cycle Length: 90	
Actuated Cycle Length: 85.2	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.02	
Intersection Signal Delay: 46.4	Intersection LOS: D
Intersection Capacity Utilization 98.5%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 33: S. Hanover St/N. Hanover St & W. Main St/E. Main St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	378	74	213	328	143	78	236	154	125	254	33
Future Volume (veh/h)	29	378	74	213	328	143	78	236	154	125	254	33
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1738	1837	1837	1780	1794	1794	1997	1997	1997	1708	1820	1820
Adj Flow Rate, veh/h	30	394	77	222	342	149	81	246	160	130	265	34
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	7	0	0	1	0	0	2	2	2	3	0	0
Cap, veh/h	254	418	82	330	449	196	121	281	171	326	647	83
Arrive On Green	0.03	0.28	0.29	0.13	0.38	0.39	0.31	0.30	0.31	0.05	0.41	0.42
Sat Flow, veh/h	1655	1493	292	1696	1185	516	229	932	568	1626	1575	202
Grp Volume(v), veh/h	30	0	471	222	0	491	487	0	0	130	0	299
Grp Sat Flow(s),veh/h/ln	1655	0	1785	1696	0	1701	1728	0	0	1626	0	1777
Q Serve(g_s), s	1.0	0.0	20.9	6.9	0.0	20.4	16.9	0.0	0.0	4.0	0.0	9.6
Cycle Q Clear(g_c), s	1.0	0.0	20.9	6.9	0.0	20.4	21.7	0.0	0.0	4.0	0.0	9.6
Prop In Lane	1.00		0.16	1.00		0.30	0.17		0.33	1.00		0.11
Lane Grp Cap(c), veh/h	254	0	500	330	0	645	595	0	0	326	0	730
V/C Ratio(X)	0.12	0.00	0.94	0.67	0.00	0.76	0.82	0.00	0.00	0.40	0.00	0.41
Avail Cap(c_a), veh/h	281	0	500	502	0	789	610	0	0	326	0	745
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	20.7	0.0	28.5	18.5	0.0	21.8	26.9	0.0	0.0	16.9	0.0	16.9
Incr Delay (d2), s/veh	0.2	0.0	26.5	2.4	0.0	3.5	8.4	0.0	0.0	0.8	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.7	0.0	18.1	5.0	0.0	13.1	15.1	0.0	0.0	3.0	0.0	7.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.9	0.0	54.9	20.9	0.0	25.3	35.4	0.0	0.0	17.6	0.0	17.3
LnGrp LOS	C	A	D	C	A	C	D	A	A	B	A	B
Approach Vol, veh/h		501			713			487			429	
Approach Delay, s/veh		52.9			23.9			35.4			17.4	
Approach LOS		D			C			D			B	

Timer - Assigned Phs	1	2		4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.3	27.7		38.1	7.2	35.7	8.8	29.3
Change Period (Y+Rc), s	5.5	5.5		* 5.3	5.5	5.5	* 5.3	* 5.3
Max Green Setting (Gmax), s	18.0	22.2		* 34	3.1	37.1	* 3.5	* 25
Max Q Clear Time (g_c+I1), s	9.4	22.9		11.6	3.5	22.4	6.5	23.7
Green Ext Time (p_c), s	0.5	0.0		1.0	0.0	1.7	0.0	0.2

Intersection Summary	
HCM 6th Ctrl Delay	32.0
HCM 6th LOS	C

Notes

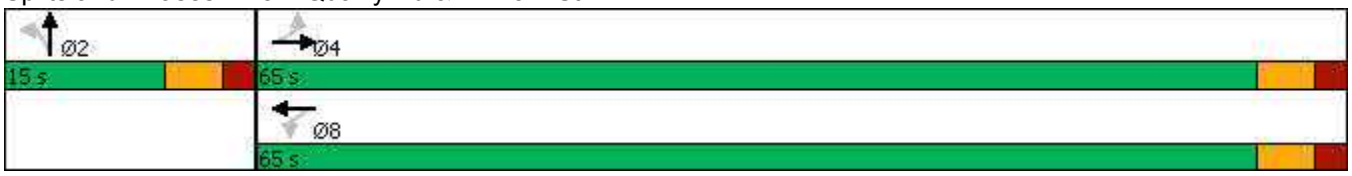
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	482	100	136	620	3	58	7	104	0	0	0
Future Volume (vph)	1	482	100	136	620	3	58	7	104	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	11	11	14	14	14	11	11	11
Grade (%)		1%			-1%			0%			-5%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								1.00				
Frt		0.977						0.917				
Flt Protected					0.991			0.983				
Satd. Flow (prot)	0	1675	0	0	1713	0	0	1720	0	0	0	0
Flt Permitted		0.999			0.799			0.983				
Satd. Flow (perm)	0	1673	0	0	1381	0	0	1716	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		39			1			83				
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		1053			1492			867			476	
Travel Time (s)		28.7			40.7			23.6			13.0	
Confl. Peds. (#/hr)							2					2
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	1%	1%	2%	1%	0%	0%	0%	1%	0%	0%	0%
Adj. Flow (vph)	1	530	110	149	681	3	64	8	114	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	641	0	0	833	0	0	186	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.13	1.13	1.13	1.11	1.11	1.11	0.99	0.99	0.99	1.08	1.08	1.08
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	1				
Detector Template	Left	Thru		Left	Thru		Left	Thru				
Leading Detector (ft)	48	48		48	48		48	48				
Trailing Detector (ft)	-2	-2		-2	-2		-2	-2				
Detector 1 Position(ft)	-2	-2		-2	-2		-2	-2				
Detector 1 Size(ft)	50	50		50	50		50	50				
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex				
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0				
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0				
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0				
Turn Type	Perm	NA		Perm	NA		Perm	NA				
Protected Phases		4			8			2				
Permitted Phases	4			8			2					
Detector Phase	4	4		8	8		2	2				
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0		3.0	3.0				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	10.0	10.0		10.0	10.0		10.0	10.0				
Total Split (s)	65.0	65.0		65.0	65.0		15.0	15.0				
Total Split (%)	81.3%	81.3%		81.3%	81.3%		18.8%	18.8%				
Maximum Green (s)	59.5	59.5		59.5	59.5		9.5	9.5				
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5				
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0				
Lost Time Adjust (s)		-1.5			-1.5			-1.5				
Total Lost Time (s)		4.0			4.0			4.0				
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0				
Recall Mode	None	None		None	None		Min	Min				
Act Effct Green (s)		43.7			43.7			10.0				
Actuated g/C Ratio		0.70			0.70			0.16				
v/c Ratio		0.54			0.86			0.54				
Control Delay		5.7			17.4			23.9				
Queue Delay		0.0			0.0			0.0				
Total Delay		5.7			17.4			23.9				
LOS		A			B			C				
Approach Delay		5.7			17.4			23.9				
Approach LOS		A			B			C				

Intersection Summary	
Area Type: Other	
Cycle Length: 80	
Actuated Cycle Length: 62.4	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay: 13.6	Intersection LOS: B
Intersection Capacity Utilization 103.0%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 34: Quarry Rd & E. Main St



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	482	100	136	620	3	58	7	104	0	0	0
Future Volume (veh/h)	1	482	100	136	620	3	58	7	104	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1780	1780	1780	1823	1823	1823	1872	1872	1872			
Adj Flow Rate, veh/h	1	530	110	149	681	3	64	8	114			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91			
Percent Heavy Veh, %	1	1	1	1	1	1	0	0	0			
Cap, veh/h	88	876	182	238	845	4	110	14	195			
Arrive On Green	0.61	0.61	0.61	0.61	0.61	0.61	0.19	0.19	0.19			
Sat Flow, veh/h	1	1430	296	221	1378	6	569	71	1014			
Grp Volume(v), veh/h	641	0	0	833	0	0	186	0	0			
Grp Sat Flow(s),veh/h/ln	1726	0	0	1604	0	0	1655	0	0			
Q Serve(g_s), s	0.0	0.0	0.0	6.4	0.0	0.0	4.2	0.0	0.0			
Cycle Q Clear(g_c), s	9.4	0.0	0.0	15.8	0.0	0.0	4.2	0.0	0.0			
Prop In Lane	0.00		0.17	0.18		0.00	0.34		0.61			
Lane Grp Cap(c), veh/h	1146	0	0	1086	0	0	319	0	0			
V/C Ratio(X)	0.56	0.00	0.00	0.77	0.00	0.00	0.58	0.00	0.00			
Avail Cap(c_a), veh/h	2645	0	0	2382	0	0	442	0	0			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	4.9	0.0	0.0	5.9	0.0	0.0	15.1	0.0	0.0			
Incr Delay (d2), s/veh	0.4	0.0	0.0	1.2	0.0	0.0	1.7	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(95%),veh/ln	3.5	0.0	0.0	5.5	0.0	0.0	2.8	0.0	0.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.3	0.0	0.0	7.0	0.0	0.0	16.8	0.0	0.0			
LnGrp LOS	A	A	A	A	A	A	B	A	A			
Approach Vol, veh/h		641			833			186				
Approach Delay, s/veh		5.3			7.0			16.8				
Approach LOS		A			A			B				

Timer - Assigned Phs	2	4	8
Phs Duration (G+Y+Rc), s	11.9	29.2	29.2
Change Period (Y+Rc), s	5.5	5.5	5.5
Max Green Setting (Gmax), s	9.5	59.5	59.5
Max Q Clear Time (g_c+I1), s	6.2	11.4	17.8
Green Ext Time (p_c), s	0.2	3.4	5.9

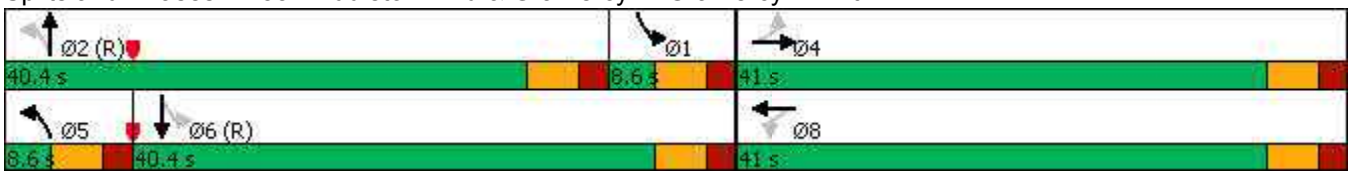
Intersection Summary	
HCM 6th Ctrl Delay	7.5
HCM 6th LOS	A

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	4	8	366	5	36	12	838	74	46	981	15
Future Volume (vph)	7	4	8	366	5	36	12	838	74	46	981	15
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Grade (%)		0%			0%			0%			3%	
Storage Length (ft)	0		0	350		0	150		150	150		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.896			0.867			0.988			0.998	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1676	1581	0	1676	1530	0	1710	3318	0	1684	3329	0
Flt Permitted	0.728			0.749			0.115			0.212		
Satd. Flow (perm)	1285	1581	0	1322	1530	0	207	3318	0	376	3329	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9			39			12			2	
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		450			1673			507			990	
Travel Time (s)		8.8			32.6			9.9			19.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	0%	2%	0%	0%	1%	0%
Adj. Flow (vph)	8	4	9	398	5	39	13	911	80	50	1066	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	8	13	0	398	44	0	13	991	0	50	1082	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			20			20	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.09	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	48	48		48	48		48	48		48	48	
Trailing Detector (ft)	-2	-2		-2	-2		-2	-2		-2	-2	
Detector 1 Position(ft)	-2	-2		-2	-2		-2	-2		-2	-2	
Detector 1 Size(ft)	50	50		50	50		50	50		50	50	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	10.0	10.0		10.0	10.0		8.5	10.0		8.5	10.0	
Total Split (s)	41.0	41.0		41.0	41.0		8.6	40.4		8.6	40.4	
Total Split (%)	45.6%	45.6%		45.6%	45.6%		9.6%	44.9%		9.6%	44.9%	
Maximum Green (s)	35.5	35.5		35.5	35.5		3.1	34.9		3.1	34.9	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.5	-1.5		-1.5	-1.5		-1.5	-1.5		-1.5	-1.5	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag							Lead	Lead		Lag	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Act Effct Green (s)	32.3	32.3		32.3	32.3		44.5	44.5		47.9	47.9	
Actuated g/C Ratio	0.36	0.36		0.36	0.36		0.49	0.49		0.53	0.53	
v/c Ratio	0.02	0.02		0.84	0.08		0.06	0.60		0.19	0.61	
Control Delay	16.1	10.5		42.4	6.7		20.1	23.5		17.9	18.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	16.1	10.5		42.4	6.7		20.1	23.5		17.9	18.1	
LOS	B	B		D	A		C	C		B	B	
Approach Delay		12.6			38.9			23.5			18.1	
Approach LOS		B			D			C			B	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay: 23.7	Intersection LOS: C
Intersection Capacity Utilization 70.5%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 35: Middletown Rd & Gramercy Pl/Gramercy Pl Ext



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	4	8	366	5	36	12	838	74	46	981	15
Future Volume (veh/h)	7	4	8	366	5	36	12	838	74	46	981	15
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1772	1772	1772	1772	1772	1772	1800	1772	1772	1750	1736	1736
Adj Flow Rate, veh/h	8	4	9	398	5	39	13	911	80	50	1066	16
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	0	2	2	0	1	1
Cap, veh/h	499	159	357	531	57	443	180	1266	111	354	1708	26
Arrive On Green	0.33	0.33	0.33	0.33	0.33	0.33	0.01	0.13	0.13	0.13	0.51	0.51
Sat Flow, veh/h	1362	485	1091	1401	174	1354	1714	3131	275	1666	3326	50
Grp Volume(v), veh/h	8	0	13	398	0	44	13	490	501	50	529	553
Grp Sat Flow(s),veh/h/ln	1362	0	1576	1401	0	1528	1714	1683	1722	1666	1649	1727
Q Serve(g_s), s	0.4	0.0	0.5	24.2	0.0	1.8	0.4	25.1	25.1	0.0	20.7	20.7
Cycle Q Clear(g_c), s	2.2	0.0	0.5	24.7	0.0	1.8	0.4	25.1	25.1	0.0	20.7	20.7
Prop In Lane	1.00		0.69	1.00		0.89	1.00		0.16	1.00		0.03
Lane Grp Cap(c), veh/h	499	0	516	531	0	500	180	681	697	354	847	887
V/C Ratio(X)	0.02	0.00	0.03	0.75	0.00	0.09	0.07	0.72	0.72	0.14	0.62	0.62
Avail Cap(c_a), veh/h	613	0	648	648	0	628	223	681	697	354	847	887
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.7	0.0	20.5	28.9	0.0	21.0	20.6	34.1	34.1	29.9	15.7	15.7
Incr Delay (d2), s/veh	0.0	0.0	0.0	3.9	0.0	0.1	0.2	6.5	6.3	0.2	3.5	3.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.2	0.0	0.3	13.0	0.0	1.1	0.3	18.2	18.5	1.6	12.4	12.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.7	0.0	20.6	32.8	0.0	21.0	20.8	40.5	40.4	30.1	19.1	19.0
LnGrp LOS	C	A	C	C	A	C	C	D	D	C	B	B
Approach Vol, veh/h		21			442			1004			1132	
Approach Delay, s/veh		21.0			31.6			40.2			19.5	
Approach LOS		C			C			D			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	16.1	40.4		33.5	6.3	50.2		33.5
Change Period (Y+Rc), s	5.5	5.5		5.5	5.5	5.5		5.5
Max Green Setting (Gmax), s	31	34.9		35.5	3.1	34.9		35.5
Max Q Clear Time (g_c+I1), s	20	27.1		4.2	2.4	22.7		26.7
Green Ext Time (p_c), s	0.0	2.7		0.0	0.0	3.8		1.2

Intersection Summary	
HCM 6th Ctrl Delay	29.6
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	365	85	92	68	111	107	47	267	13	168	194	403
Future Volume (vph)	365	85	92	68	111	107	47	267	13	168	194	403
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.977			0.949			0.995			0.929	
Flt Protected		0.967			0.988			0.993			0.989	
Satd. Flow (prot)	0	1614	0	0	1638	0	0	1778	0	0	1654	0
Flt Permitted		0.967			0.988			0.993			0.989	
Satd. Flow (perm)	0	1614	0	0	1638	0	0	1778	0	0	1654	0
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		2002			587			752			1016	
Travel Time (s)		39.0			11.4			14.6			19.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	7%	4%	0%	0%	2%	6%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	406	94	102	76	123	119	52	297	14	187	216	448
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	602	0	0	318	0	0	363	0	0	851	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Yield			Yield			Yield			Yield	

Intersection Summary	
Area Type:	Other
Control Type: Roundabout	
Intersection Capacity Utilization 127.4%	ICU Level of Service H
Analysis Period (min) 15	

Intersection	
Intersection Delay, s/veh	18.1
Intersection LOS	C

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	602	318	363	851
Demand Flow Rate, veh/h	634	327	363	851
Vehicles Circulating, veh/h	479	783	719	253
Vehicles Exiting, veh/h	625	299	394	857
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	20.3	15.1	14.5	19.2
Approach LOS	C	C	B	C

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	634	327	363	851
Cap Entry Lane, veh/h	847	621	663	1066
Entry HV Adj Factor	0.950	0.971	1.000	1.000
Flow Entry, veh/h	602	318	363	851
Cap Entry, veh/h	804	603	663	1066
V/C Ratio	0.749	0.527	0.548	0.798
Control Delay, s/veh	20.3	15.1	14.5	19.2
LOS	C	C	B	C
95th %tile Queue, veh	7	3	3	9

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	481	299	145	139	42	0	46	137	98	14	180	61
Future Volume (vph)	481	299	145	139	42	0	46	137	98	14	180	61
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	75		0	75		0	75		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.951						0.953			0.968	
Flt Protected	0.950			0.950				0.992			0.997	
Satd. Flow (prot)	1676	1678	0	1676	1765	0	0	1668	0	0	1703	0
Flt Permitted	0.496			0.483				0.914			0.974	
Satd. Flow (perm)	875	1678	0	852	1765	0	0	1537	0	0	1664	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		32						33			20	
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		605			877			325			770	
Travel Time (s)		11.8			17.1			6.3			15.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	534	332	161	154	47	0	51	152	109	16	200	68
Shared Lane Traffic (%)												
Lane Group Flow (vph)	534	493	0	154	47	0	0	312	0	0	284	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	48	48		48	48		48	48		48	48	
Trailing Detector (ft)	-2	-2		-2	-2		-2	-2		-2	-2	
Detector 1 Position(ft)	-2	-2		-2	-2		-2	-2		-2	-2	
Detector 1 Size(ft)	50	50		50	50		50	50		50	50	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Split (s)	8.5	10.0		8.5	10.0		10.0	10.0		10.0	10.0	
Total Split (s)	39.0	39.0		15.0	15.0		36.0	36.0		36.0	36.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (%)	43.3%	43.3%		16.7%	16.7%		40.0%	40.0%		40.0%	40.0%	
Maximum Green (s)	33.5	33.5		9.5	9.5		30.5	30.5		30.5	30.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.5	-1.5		-1.5	-1.5			-1.5			-1.5	
Total Lost Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Max	Max		Max	Max	
Act Effct Green (s)	43.1	28.4		18.7	11.3			32.2			32.2	
Actuated g/C Ratio	0.52	0.34		0.22	0.14			0.39			0.39	
v/c Ratio	0.70	0.83		0.52	0.20			0.51			0.43	
Control Delay	19.5	36.6		24.8	35.3			22.4			21.5	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	19.5	36.6		24.8	35.3			22.4			21.5	
LOS	B	D		C	D			C			C	
Approach Delay		27.7			27.3			22.4			21.5	
Approach LOS		C			C			C			C	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 83.4	
Natural Cycle: 45	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.83	
Intersection Signal Delay: 25.8	Intersection LOS: C
Intersection Capacity Utilization 76.0%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 37: Cherry Dr & Hope Dr/Hope Drive Ext

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	481	299	145	139	42	0	46	137	98	14	180	61
Future Volume (veh/h)	481	299	145	139	42	0	46	137	98	14	180	61
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1772	1772	1772	1772	1772	1772	1772	1772	1772	1772	1772	1772
Adj Flow Rate, veh/h	534	332	161	154	47	0	51	152	109	16	200	68
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	776	381	185	340	258	0	121	337	218	64	489	159
Arrive On Green	0.31	0.34	0.34	0.12	0.15	0.00	0.40	0.40	0.40	0.40	0.40	0.40
Sat Flow, veh/h	1688	1127	547	1688	1772	0	175	847	549	42	1232	401
Grp Volume(v), veh/h	534	0	493	154	47	0	312	0	0	284	0	0
Grp Sat Flow(s),veh/h/ln	1688	0	1674	1688	1772	0	1570	0	0	1675	0	0
Q Serve(g_s), s	19.4	0.0	22.3	6.0	1.9	0.0	1.6	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	19.4	0.0	22.3	6.0	1.9	0.0	11.3	0.0	0.0	9.7	0.0	0.0
Prop In Lane	1.00		0.33	1.00		0.00	0.16		0.35	0.06		0.24
Lane Grp Cap(c), veh/h	776	0	566	340	258	0	676	0	0	713	0	0
V/C Ratio(X)	0.69	0.00	0.87	0.45	0.18	0.00	0.46	0.00	0.00	0.40	0.00	0.00
Avail Cap(c_a), veh/h	989	0	727	376	258	0	676	0	0	713	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	16.2	0.0	25.0	24.5	30.2	0.0	18.0	0.0	0.0	17.6	0.0	0.0
Incr Delay (d2), s/veh	1.4	0.0	9.1	0.9	0.3	0.0	2.3	0.0	0.0	1.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	11.3	0.0	14.7	4.2	1.4	0.0	7.9	0.0	0.0	7.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.6	0.0	34.1	25.5	30.5	0.0	20.3	0.0	0.0	19.2	0.0	0.0
LnGrp LOS	B	A	C	C	C	A	C	A	A	B	A	A
Approach Vol, veh/h		1027			201			312			284	
Approach Delay, s/veh		25.5			26.7			20.3			19.2	
Approach LOS		C			C			C			B	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	36.0	13.3	31.3	36.0	28.8	15.7
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	30.5	9.5	33.5	30.5	33.5	9.5
Max Q Clear Time (g_c+I1), s	13.3	8.0	24.3	11.7	21.4	3.9
Green Ext Time (p_c), s	1.2	0.1	1.5	1.0	1.9	0.0

Intersection Summary	
HCM 6th Ctrl Delay	23.8
HCM 6th LOS	C

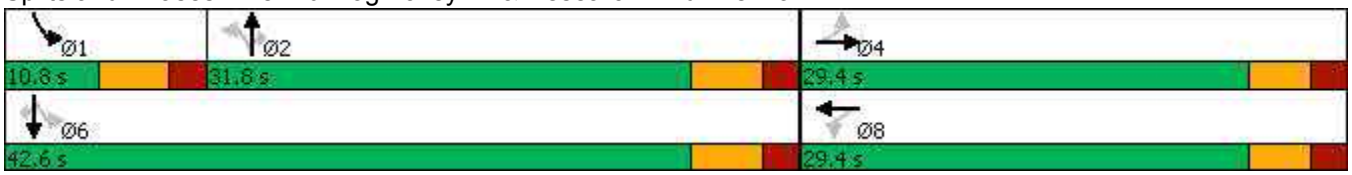
APPENDIX I
2038 AM INTERSECTION CAPACITY ANALYSIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	97	188	48	81	135	159	78	353	538	297	152	169
Future Volume (vph)	97	188	48	81	135	159	78	353	538	297	152	169
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Grade (%)		6%			-7%			-2%			2%	
Storage Length (ft)	100		0	250		0	190		270	185		175
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.969			0.919				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1626	1640	0	1686	1148	0	1693	1765	1545	1676	1497	1485
Flt Permitted	0.382			0.477			0.649			0.339		
Satd. Flow (perm)	654	1640	0	846	1148	0	1157	1765	1545	598	1497	1485
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		20			91				451			190
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		395			391			967			1702	
Travel Time (s)		10.8			10.7			18.8			33.2	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	2%	4%	0%	5%	100%	6%	2%	3%	0%	1%	19%	2%
Adj. Flow (vph)	109	211	54	91	152	179	88	397	604	334	171	190
Shared Lane Traffic (%)												
Lane Group Flow (vph)	109	265	0	91	331	0	88	397	604	334	171	190
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.11	1.11	1.11	1.03	1.03	1.03	1.06	1.06	1.06	1.09	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	2	2	1	2	2
Detector Template	Left	Thru		Left	Thru		Left	Main25	Main25	Left	Main25	Main25
Leading Detector (ft)	48	48		48	48		48	250	250	48	250	250
Trailing Detector (ft)	-2	-2		-2	-2		-2	0	0	-2	0	0
Detector 1 Position(ft)	-2	-2		-2	-2		-2	0	0	-2	0	0
Detector 1 Size(ft)	50	50		50	50		50	0	0	50	0	0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)								244	244		244	244
Detector 2 Size(ft)								6	6		6	6
Detector 2 Type								Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)								0.0	0.0		0.0	0.0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	pm+pt	NA	Perm

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		2	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0		10.0	10.0	10.0	3.0	10.0	10.0
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0	20.0	8.8	20.0	20.0
Total Split (s)	29.4	29.4		29.4	29.4		31.8	31.8	31.8	10.8	42.6	42.6
Total Split (%)	40.8%	40.8%		40.8%	40.8%		44.2%	44.2%	44.2%	15.0%	59.2%	59.2%
Maximum Green (s)	24.0	24.0		24.0	24.0		26.0	26.0	26.0	5.0	36.8	36.8
Yellow Time (s)	3.4	3.4		3.4	3.4		3.8	3.8	3.8	3.8	3.8	3.8
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.5	-1.5		-1.5	-1.5		-1.5	-1.5	-1.5	-1.5	-1.5	-1.5
Total Lost Time (s)	3.9	3.9		3.9	3.9		4.3	4.3	4.3	4.3	4.3	4.3
Lead/Lag							Lag	Lag	Lag	Lead		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		6.0	6.0	6.0	3.0	6.0	6.0
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0		25.0	25.0	25.0	0.0	25.0	25.0
Time To Reduce (s)	0.0	0.0		0.0	0.0		13.0	13.0	13.0	0.0	13.0	13.0
Recall Mode	None	None		None	None		Min	Min	Min	None	Min	Min
Act Effct Green (s)	20.1	20.1		20.1	20.1		26.7	26.7	26.7	37.6	37.6	37.6
Actuated g/C Ratio	0.30	0.30		0.30	0.30		0.40	0.40	0.40	0.57	0.57	0.57
v/c Ratio	0.55	0.52		0.35	0.80		0.19	0.56	0.68	0.75	0.20	0.20
Control Delay	30.6	21.1		22.0	31.3		15.7	20.0	9.2	23.4	8.9	2.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.6	21.1		22.0	31.3		15.7	20.0	9.2	23.4	8.9	2.1
LOS	C	C		C	C		B	B	A	C	A	A
Approach Delay		23.9			29.3			13.6			14.0	
Approach LOS		C			C			B			B	

Intersection Summary	
Area Type:	Other
Cycle Length: 72	
Actuated Cycle Length: 66	
Natural Cycle: 50	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.80	
Intersection Signal Delay: 17.8	Intersection LOS: B
Intersection Capacity Utilization 76.6%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 8: Bullfrog Valley Dr & Research Blvd/Life Lion Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	97	188	48	81	135	159	78	353	538	297	152	169
Future Volume (veh/h)	97	188	48	81	135	159	78	353	538	297	152	169
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1571	1543	1543	1990	639	639	1846	1832	1875	1764	1511	1750
Adj Flow Rate, veh/h	109	211	54	91	152	179	88	397	604	334	171	190
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	4	4	5	100	100	2	3	0	1	19	2
Cap, veh/h	100	420	107	368	95	111	506	700	607	370	804	789
Arrive On Green	0.35	0.35	0.35	0.35	0.35	0.35	0.38	0.38	0.38	0.09	0.53	0.53
Sat Flow, veh/h	930	1185	303	1251	267	315	1063	1832	1589	1680	1511	1483
Grp Volume(v), veh/h	109	0	265	91	0	331	88	397	604	334	171	190
Grp Sat Flow(s),veh/h/ln	930	0	1488	1251	0	582	1063	1832	1589	1680	1511	1483
Q Serve(g_s), s	0.0	0.0	10.1	4.4	0.0	25.5	4.0	12.3	27.3	6.5	4.3	5.0
Cycle Q Clear(g_c), s	25.5	0.0	10.1	14.5	0.0	25.5	4.0	12.3	27.3	6.5	4.3	5.0
Prop In Lane	1.00		0.20	1.00		0.54	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	100	0	527	368	0	206	506	700	607	370	804	789
V/C Ratio(X)	1.09	0.00	0.50	0.25	0.00	1.61	0.17	0.57	1.00	0.90	0.21	0.24
Avail Cap(c_a), veh/h	100	0	527	368	0	206	506	700	607	370	804	789
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.0	0.0	18.3	24.0	0.0	23.3	15.0	17.6	22.2	18.4	8.9	9.0
Incr Delay (d2), s/veh	116.4	0.0	0.8	0.3	0.0	293.9	0.6	2.7	35.4	24.6	0.5	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	8.9	0.0	6.1	2.4	0.0	34.2	1.8	9.0	21.3	9.2	2.4	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	152.4	0.0	19.0	24.3	0.0	317.1	15.6	20.3	57.6	43.1	9.4	9.6
LnGrp LOS	F	A	B	C	A	F	B	C	E	D	A	A
Approach Vol, veh/h		374			422			1089			695	
Approach Delay, s/veh		57.9			254.0			40.6			25.6	
Approach LOS		E			F			D			C	

Timer - Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	10.8	31.8		29.4		42.6		29.4
Change Period (Y+Rc), s	* 5.8	* 5.8		5.4		* 5.8		5.4
Max Green Setting (Gmax), s	* 5	* 26		24.0		* 37		24.0
Max Q Clear Time (g_c+I1), s	8.5	29.3		27.5		7.0		27.5
Green Ext Time (p_c), s	0.0	0.0		0.0		9.1		0.0

Intersection Summary	
HCM 6th Ctrl Delay	74.0
HCM 6th LOS	E

Notes

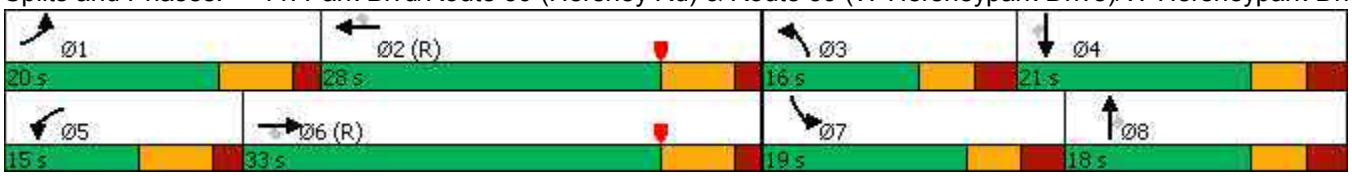
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	221	617	899	685	635	236	78	118	108	246	480	346
Future Volume (vph)	221	617	899	685	635	236	78	118	108	246	480	346
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Grade (%)		3%			-3%			1%			4%	
Storage Length (ft)	350		1000	575		400	0		350	400		450
Storage Lanes	2		1	2		1	2		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	1.00	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3172	3303	1477	3301	3370	1538	3301	1773	1522	1659	3352	1456
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3172	3303	1477	3301	3370	1538	3301	1773	1522	1659	3352	1456
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			369			241			208			353
Link Speed (mph)		45			45			35			35	
Link Distance (ft)		1096			1663			1072			729	
Travel Time (s)		16.6			25.2			20.9			14.2	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	3%	2%	2%	2%	3%	1%	0%	1%	0%	1%	0%	3%
Adj. Flow (vph)	226	630	917	699	648	241	80	120	110	251	490	353
Shared Lane Traffic (%)												
Lane Group Flow (vph)	226	630	917	699	648	241	80	120	110	251	490	353
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.05	1.05	1.05	1.08	1.08	1.08	1.10	1.10	1.10
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	1	1	1	1	1
Detector Template	Left	Main30	Right	Left	Main30	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	48	300	48	48	300	48	48	48	48	48	48	48
Trailing Detector (ft)	-2	0	-2	-2	0	-2	-2	-2	-2	-2	-2	-2
Detector 1 Position(ft)	-2	0	-2	-2	0	-2	-2	-2	-2	-2	-2	-2
Detector 1 Size(ft)	50	0	50	50	0	50	50	50	50	50	50	50
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		294			294							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases			6			2			8			4
Detector Phase	1	6	6	5	2	2	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	3.0	12.0	12.0	3.0	12.0	12.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Split (s)	9.7	18.5	18.5	9.7	18.5	18.5	10.0	10.0	10.0	9.2	10.0	10.0
Total Split (s)	20.0	33.0	33.0	15.0	28.0	28.0	16.0	18.0	18.0	19.0	21.0	21.0
Total Split (%)	23.5%	38.8%	38.8%	17.6%	32.9%	32.9%	18.8%	21.2%	21.2%	22.4%	24.7%	24.7%
Maximum Green (s)	13.5	26.5	26.5	8.5	21.5	21.5	9.8	11.8	11.8	12.8	14.8	14.8
Yellow Time (s)	4.7	4.7	4.7	4.7	4.7	4.7	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.8	1.8	1.8	1.8	1.8	1.8	2.7	2.7	2.7	2.7	2.7	2.7
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.7	4.7	4.7	4.7	4.7	4.7
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0	6.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.5	3.5	3.0	3.5	3.5	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	30.0	30.0	0.0	30.0	30.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	15.0	15.0	0.0	15.0	15.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	None
Act Effct Green (s)	12.7	29.6	29.6	10.0	26.9	26.9	9.0	11.7	11.7	14.3	19.3	19.3
Actuated g/C Ratio	0.15	0.35	0.35	0.12	0.32	0.32	0.11	0.14	0.14	0.17	0.23	0.23
v/c Ratio	0.48	0.55	1.22	1.80	0.61	0.37	0.23	0.49	0.28	0.90	0.64	0.59
Control Delay	36.3	24.9	128.0	390.3	15.0	4.3	35.9	40.7	1.8	70.4	35.2	8.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.3	24.9	128.0	390.3	15.0	4.3	35.9	40.7	1.8	70.4	35.2	8.0
LOS	D	C	F	F	B	A	D	D	A	E	D	A
Approach Delay		79.7			178.6			25.7			34.5	
Approach LOS		E			F			C			C	

Intersection Summary	
Area Type:	Other
Cycle Length: 85	
Actuated Cycle Length: 85	
Offset: 22 (26%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.80	
Intersection Signal Delay: 98.8	Intersection LOS: F
Intersection Capacity Utilization 105.6%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 11: Park Blvd/Route 39 (Hershey Rd) & Route 39 (W Hersheypark Drive)/W Hersheypark Drive



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	221	617	899	685	635	236	78	118	108	246	480	346
Future Volume (veh/h)	221	617	899	685	635	236	78	118	108	246	480	346
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1708	1722	1722	1883	1869	1898	1794	1780	1794	1697	1711	1669
Adj Flow Rate, veh/h	226	630	0	699	648	0	80	120	0	251	490	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	2	2	2	3	1	0	1	0	1	0	3
Cap, veh/h	360	1239		409	1358		217	191		272	682	
Arrive On Green	0.11	0.38	0.00	0.12	0.38	0.00	0.07	0.11	0.00	0.17	0.21	0.00
Sat Flow, veh/h	3155	3271	1459	3480	3551	1608	3315	1780	1521	1616	3250	1414
Grp Volume(v), veh/h	226	630	0	699	648	0	80	120	0	251	490	0
Grp Sat Flow(s),veh/h/ln	1578	1636	1459	1740	1776	1608	1658	1780	1521	1616	1625	1414
Q Serve(g_s), s	5.8	12.6	0.0	10.0	11.7	0.0	2.0	5.5	0.0	13.0	11.9	0.0
Cycle Q Clear(g_c), s	5.8	12.6	0.0	10.0	11.7	0.0	2.0	5.5	0.0	13.0	11.9	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	360	1239		409	1358		217	191		272	682	
V/C Ratio(X)	0.63	0.51		1.71	0.48		0.37	0.63		0.92	0.72	
Avail Cap(c_a), veh/h	557	1239		409	1358		441	279		272	682	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	35.9	20.3	0.0	37.5	19.8	0.0	38.0	36.3	0.0	34.8	31.2	0.0
Incr Delay (d2), s/veh	1.8	1.5	0.0	328.6	1.2	0.0	1.0	3.4	0.0	34.9	3.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.0	8.1	0.0	36.2	8.1	0.0	1.5	4.5	0.0	12.0	8.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.8	21.8	0.0	366.1	21.0	0.0	39.1	39.7	0.0	69.7	34.9	0.0
LnGrp LOS	D	C		F	C		D	D		E	C	
Approach Vol, veh/h		856	A		1347	A		200	A		741	A
Approach Delay, s/veh		26.0			200.1			39.5			46.7	
Approach LOS		C			F			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.7	37.5	10.3	22.5	15.0	37.2	19.0	13.8
Change Period (Y+Rc), s	* 6.5	* 6.5	* 6.2	* 6.2	* 6.5	* 6.5	* 6.2	* 6.2
Max Green Setting (Gmax), s	* 14	* 22	* 9.8	* 15	* 8.5	* 27	* 13	* 12
Max Q Clear Time (g_c+I1), s	7.8	13.7	4.0	13.9	12.0	14.6	15.0	7.5
Green Ext Time (p_c), s	0.4	5.8	0.1	0.2	0.0	8.2	0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	106.3
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

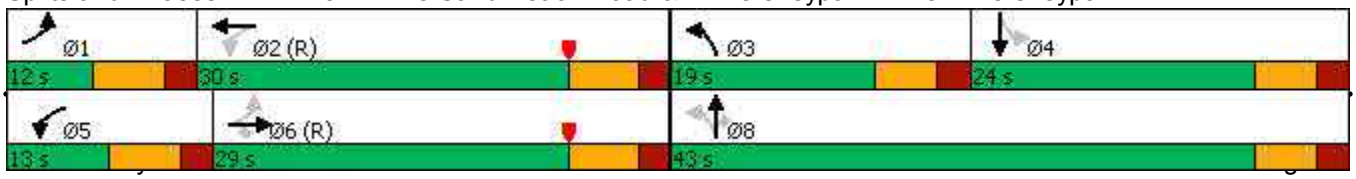
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	78	512	238	270	1223	47	263	136	121	25	137	37
Future Volume (vph)	78	512	238	270	1223	47	263	136	121	25	137	37
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	11	11	11	12	12	12
Grade (%)		2%			-2%			3%			-3%	
Storage Length (ft)	75		0	190		0	125		185	0		0
Storage Lanes	1		1	1		0	1		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.98						0.99		1.00	
Frt			0.850		0.994				0.850		0.975	
Flt Protected	0.950			0.950			0.950				0.994	
Satd. Flow (prot)	1582	3194	1429	1629	3363	0	1581	1664	1349	0	1663	0
Flt Permitted	0.149			0.307			0.355				0.942	
Satd. Flow (perm)	248	3194	1399	527	3363	0	591	1664	1332	0	1575	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			264		5				134		12	
Link Speed (mph)		45			45			35			35	
Link Distance (ft)		789			2028			659			1125	
Travel Time (s)		12.0			30.7			12.8			21.9	
Confl. Peds. (#/hr)									1	1		
Confl. Bikes (#/hr)			1	1								
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	7%	6%	6%	6%	2%	5%	3%	3%	8%	7%	6%	8%
Adj. Flow (vph)	87	569	264	300	1359	52	292	151	134	28	152	41
Shared Lane Traffic (%)												
Lane Group Flow (vph)	87	569	264	300	1411	0	292	151	134	0	221	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.06	1.06	1.06	1.14	1.14	1.14	1.05	1.05	1.05
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	1	1	1	1	
Detector Template		Main30	Right		Main30					Left		
Leading Detector (ft)	35	300	48	35	300		30	30	30	48	35	
Trailing Detector (ft)	-5	0	-2	-5	0		-10	-10	-10	-2	-5	
Detector 1 Position(ft)	-5	0	-2	-5	0		-10	-10	-10	-2	-5	
Detector 1 Size(ft)	40	0	50	40	0		40	40	40	50	40	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		294			294							
Detector 2 Size(ft)		6			6							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	Perm	NA	
Protected Phases	1	6		5	2		3	8			4	
Permitted Phases	6		6	2			8		8	4		
Detector Phase	1	6	6	5	2		3	8	8	4	4	
Switch Phase												
Minimum Initial (s)	3.0	10.0	10.0	3.0	10.0		3.0	3.0	3.0	3.0	3.0	
Minimum Split (s)	9.5	16.5	16.5	9.5	16.5		9.1	10.0	10.0	10.0	10.0	
Total Split (s)	12.0	29.0	29.0	13.0	30.0		19.0	43.0	43.0	24.0	24.0	
Total Split (%)	14.1%	34.1%	34.1%	15.3%	35.3%		22.4%	50.6%	50.6%	28.2%	28.2%	
Maximum Green (s)	5.5	22.5	22.5	6.5	23.5		12.9	36.9	36.9	17.9	17.9	
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5		3.9	3.9	3.9	3.9	3.9	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.2	2.2	2.2	2.2	2.2	
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	-1.5		-1.5	-1.5	-1.5		-1.5	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		4.6	4.6	4.6		4.6	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes			Yes	Yes	
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0		3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	15.0	15.0	0.0	15.0		0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	30.0	30.0	0.0	30.0		0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	C-Max	C-Max	None	C-Max		None	None	None	None	None	
Act Effct Green (s)	33.9	26.9	26.9	36.7	30.3		35.5	35.5	35.5		16.7	
Actuated g/C Ratio	0.40	0.32	0.32	0.43	0.36		0.42	0.42	0.42		0.20	
v/c Ratio	0.42	0.56	0.42	0.91	1.17		0.71	0.22	0.21		0.69	
Control Delay	31.2	44.0	20.7	52.9	116.5		27.7	16.0	3.6		41.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	
Total Delay	31.2	44.0	20.7	52.9	116.5		27.7	16.0	3.6		41.4	
LOS	C	D	C	D	F		C	B	A		D	
Approach Delay		36.1			105.4			19.0			41.4	
Approach LOS		D			F			B			D	

Intersection Summary

Area Type: Other
Cycle Length: 85
Actuated Cycle Length: 85
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow, Master Intersection
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.17
Intersection Signal Delay: 68.1 Intersection LOS: E
Intersection Capacity Utilization 84.6% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 12: Park Drive/Sand Beach Road & W Hersheypark Drive/E Hersheypark Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	78	512	238	270	1223	47	263	136	121	25	137	37
Future Volume (veh/h)	78	512	238	270	1223	47	263	136	121	25	137	37
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1679	1693	1693	1789	1846	1846	1708	1708	1637	1826	1826	1826
Adj Flow Rate, veh/h	87	569	264	300	1359	52	292	151	134	28	152	41
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	7	6	6	6	2	2	3	3	8	6	6	6
Cap, veh/h	201	1098	479	378	1248	48	503	671	545	72	208	53
Arrive On Green	0.07	0.34	0.34	0.09	0.36	0.36	0.17	0.39	0.39	0.17	0.17	0.17
Sat Flow, veh/h	1599	3218	1405	1704	3441	131	1626	1708	1387	141	1229	312
Grp Volume(v), veh/h	87	569	264	300	692	719	292	151	134	221	0	0
Grp Sat Flow(s),veh/h/ln	1599	1609	1405	1704	1754	1819	1626	1708	1387	1682	0	0
Q Serve(g_s), s	2.9	12.0	13.0	8.0	30.8	30.8	11.8	5.0	5.5	5.9	0.0	0.0
Cycle Q Clear(g_c), s	2.9	12.0	13.0	8.0	30.8	30.8	11.8	5.0	5.5	10.6	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.07	1.00		1.00	0.13		0.19
Lane Grp Cap(c), veh/h	201	1098	479	378	636	659	503	671	545	333	0	0
V/C Ratio(X)	0.43	0.52	0.55	0.79	1.09	1.09	0.58	0.23	0.25	0.66	0.00	0.00
Avail Cap(c_a), veh/h	216	1098	479	378	636	659	503	771	626	429	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	20.4	22.4	22.7	21.1	27.1	27.1	20.7	17.2	17.3	33.6	0.0	0.0
Incr Delay (d2), s/veh	1.5	1.8	4.5	11.1	61.9	62.4	1.7	0.2	0.2	2.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.8	7.9	8.0	8.3	31.9	33.1	7.9	3.4	3.1	7.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.9	24.2	27.2	32.2	89.0	89.5	22.3	17.3	17.6	36.1	0.0	0.0
LnGrp LOS	C	C	C	C	F	F	C	B	B	D	A	A
Approach Vol, veh/h		920			1711			577			221	
Approach Delay, s/veh		24.8			79.2			19.9			36.1	
Approach LOS		C			E			B			D	

Timer - Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	11.2	35.8	19.0	19.0	13.0	34.0		38.0
Change Period (Y+Rc), s	6.5	6.5	* 6.1	* 6.1	6.5	6.5		* 6.1
Max Green Setting (Gmax), s	5.5	23.5	* 13	* 18	6.5	22.5		* 37
Max Q Clear Time (g_c+I1), s	5.4	33.3	14.3	12.6	10.5	15.0		8.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.3	0.0	5.9		0.9

Intersection Summary	
HCM 6th Ctrl Delay	51.9
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	708	237	316	1158	93	57	74	189	6	2	5
Future Volume (vph)	36	708	237	316	1158	93	57	74	189	6	2	5
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	12	12	10	13	13	13	13	13	13	13	13
Grade (%)		-3%			3%			-1%			-2%	
Storage Length (ft)	200		0	575		0	0		150	0		0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99		1.00								
Frt		0.962			0.989				0.850		0.952	
Flt Protected	0.950			0.950				0.979			0.976	
Satd. Flow (prot)	1620	3156	0	1526	1795	0	0	1783	1513	0	1746	0
Flt Permitted	0.070			0.198				0.853			0.820	
Satd. Flow (perm)	119	3156	0	318	1795	0	0	1554	1513	0	1467	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)		67			12				175			
Link Speed (mph)		25			35			25			25	
Link Distance (ft)		592			1437			1120			398	
Travel Time (s)		16.1			28.0			30.5			10.9	
Confl. Peds. (#/hr)			1	1								
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	3%	12%	3%	1%	0%	6%	0%	5%	0%	0%	0%
Adj. Flow (vph)	39	770	258	343	1259	101	62	80	205	7	2	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	39	1028	0	343	1360	0	0	142	205	0	14	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.15	1.05	1.05	1.19	1.05	1.05	1.02	1.02	1.02	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	1	1	1	1	
Detector Template							Left	Thru	Right	Left	Thru	
Leading Detector (ft)	0	150		38	150		48	48	48	48	48	
Trailing Detector (ft)	0	0		-2	0		-2	-2	-2	-2	-2	
Detector 1 Position(ft)	0	0		-2	0		-2	-2	-2	-2	-2	
Detector 1 Size(ft)	0	0		40	0		50	50	50	50	50	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		144			144							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	pm+ov	Perm	NA	
Protected Phases		2		1	6			8	1		4	
Permitted Phases	2			6			8		8	4		
Detector Phase	2	2		1	6		8	8	1	4	4	
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Minimum Split (s)	10.0	10.0		9.7	10.0		10.1	10.1	9.7	10.0	10.0	
Total Split (s)	64.9	64.9		27.1	92.0		18.0	18.0	27.1	18.0	18.0	
Total Split (%)	59.0%	59.0%		24.6%	83.6%		16.4%	16.4%	24.6%	16.4%	16.4%	
Maximum Green (s)	59.5	59.5		20.4	85.3		10.9	10.9	20.4	11.2	11.2	
Yellow Time (s)	3.4	3.4		3.4	3.4		3.8	3.8	3.4	3.8	3.8	
All-Red Time (s)	2.0	2.0		3.3	3.3		3.3	3.3	3.3	3.0	3.0	
Lost Time Adjust (s)	-1.5	-1.5		-1.5	-1.5			-1.5	-1.5		-1.5	
Total Lost Time (s)	3.9	3.9		5.2	5.2			5.6	5.2		5.3	
Lead/Lag	Lag	Lag		Lead					Lead			
Lead-Lag Optimize?	Yes	Yes		Yes					Yes			
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max		None	C-Max		None	None	None	None	None	
Act Effct Green (s)	66.2	66.2		86.8	86.8			12.4	34.7		12.7	
Actuated g/C Ratio	0.60	0.60		0.79	0.79			0.11	0.32		0.12	
v/c Ratio	0.55	0.53		0.79	0.96			0.82	0.34		0.08	
Control Delay	50.4	13.9		23.1	27.4			81.4	7.3		44.8	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Delay	50.4	13.9		23.1	27.4			81.4	7.3		44.8	
LOS	D	B		C	C			F	A		D	
Approach Delay		15.2			26.5			37.6			44.8	
Approach LOS		B			C			D			D	

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.96	
Intersection Signal Delay: 24.0	Intersection LOS: C
Intersection Capacity Utilization 95.2%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 19: Homestead Rd & SR 422 (E. Chocolate Ave)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	708	237	316	1158	93	57	74	189	6	2	5
Future Volume (veh/h)	36	708	237	316	1158	93	57	74	189	6	2	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1912	1869	1869	1708	1805	1805	1911	1911	1837	1950	1950	1950
Adj Flow Rate, veh/h	39	770	258	343	1259	101	62	80	205	7	2	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	3	3	3	1	1	0	0	5	0	0	0
Cap, veh/h	243	1912	641	530	1428	115	119	107	314	66	26	24
Arrive On Green	0.73	0.73	0.73	0.09	0.87	0.87	0.12	0.12	0.12	0.12	0.12	0.12
Sat Flow, veh/h	432	2612	875	1626	1649	132	626	925	1557	145	225	206
Grp Volume(v), veh/h	39	523	505	343	0	1360	142	0	205	14	0	0
Grp Sat Flow(s),veh/h/ln	432	1776	1711	1626	0	1781	1551	0	1557	576	0	0
Q Serve(g_s), s	6.4	12.3	12.3	4.8	0.0	47.6	0.0	0.0	12.7	0.1	0.0	0.0
Cycle Q Clear(g_c), s	41.6	12.3	12.3	4.8	0.0	47.6	10.1	0.0	12.7	10.2	0.0	0.0
Prop In Lane	1.00		0.51	1.00		0.07	0.44		1.00	0.50		0.36
Lane Grp Cap(c), veh/h	243	1300	1253	530	0	1542	226	0	314	116	0	0
V/C Ratio(X)	0.16	0.40	0.40	0.65	0.00	0.88	0.63	0.00	0.65	0.12	0.00	0.00
Avail Cap(c_a), veh/h	243	1300	1253	714	0	1542	226	0	314	116	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	20.9	5.6	5.6	4.8	0.0	4.2	47.4	0.0	40.4	43.7	0.0	0.0
Incr Delay (d2), s/veh	1.4	0.9	1.0	1.3	0.0	7.6	5.4	0.0	4.8	0.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.4	7.9	7.7	2.3	0.0	13.9	7.5	0.0	9.4	0.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.3	6.5	6.6	6.1	0.0	11.8	52.8	0.0	45.1	44.1	0.0	0.0
LnGrp LOS	C	A	A	A	A	B	D	A	D	D	A	A
Approach Vol, veh/h		1067			1703			347			14	
Approach Delay, s/veh		7.1			10.7			48.3			44.1	
Approach LOS		A			B			D			D	

Timer - Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	14.6	86.1		18.3		100.7		18.3
Change Period (Y+Rc), s	* 6.7	* 6.7		* 7.1		* 6.7		7.1
Max Green Setting (Gmax), s	* 20	* 60		* 11		* 85		10.9
Max Q Clear Time (g_c+I1), s	6.8	14.3		12.2		49.6		14.7
Green Ext Time (p_c), s	1.0	13.6		0.0		25.3		0.0

Intersection Summary	
HCM 6th Ctrl Delay	13.8
HCM 6th LOS	B

Notes

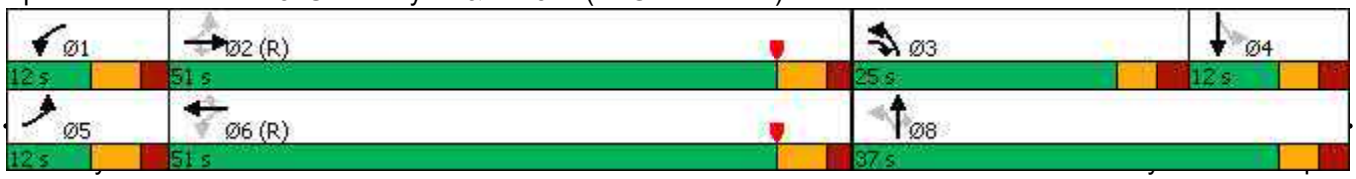
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	924	377	236	484	91	110	106	102	76	184	25
Future Volume (vph)	30	924	377	236	484	91	110	106	102	76	184	25
Ideal Flow (vphpl)	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Lane Width (ft)	12	12	12	12	13	11	14	12	14	12	12	12
Grade (%)		1%			-1%			-1%			-3%	
Storage Length (ft)	150		0	175		125	0		165	0		0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00		0.98	1.00		0.99	1.00		0.97	0.96	1.00	
Frt			0.850			0.850			0.850		0.982	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1560	1610	1395	1575	1664	1310	1680	1642	1489	1560	1610	0
Flt Permitted	0.375			0.070			0.333			0.683		
Satd. Flow (perm)	616	1610	1366	116	1664	1294	588	1642	1441	1074	1610	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			88			147			111		5	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		1532			974			928			672	
Travel Time (s)		29.8			19.0			25.3			18.3	
Confl. Peds. (#/hr)	1		2	2		1	2		8	8		2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	2%	0%	0%	3%	4%	0%	1%	1%	2%	2%	0%
Adj. Flow (vph)	33	1004	410	257	526	99	120	115	111	83	200	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	33	1004	410	257	526	99	120	115	111	83	227	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			14			14	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.20	1.20	1.20	1.19	1.14	1.24	1.10	1.19	1.10	1.17	1.17	1.17
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	1	1	1	1	
Detector Template		Main25	Right		Main25							
Leading Detector (ft)	38	250	48	38	250	0	38	38	38	38	38	
Trailing Detector (ft)	-2	0	-2	-2	0	0	-2	-2	-2	-2	-2	
Detector 1 Position(ft)	-2	0	-2	-2	0	0	-2	-2	-2	-2	-2	
Detector 1 Size(ft)	40	0	50	40	0	0	40	40	40	40	40	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		244			244							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	
Protected Phases	5	2	3	1	6		3	8			4	
Permitted Phases	2		2	6		6	8		8	4		
Detector Phase	5	2	3	1	6	6	3	8	8	4	4	
Switch Phase												
Minimum Initial (s)	3.0	10.0	3.0	3.0	10.0	10.0	3.0	3.0	3.0	3.0	3.0	
Minimum Split (s)	10.0	25.0	9.5	10.4	15.7	15.7	9.5	25.0	25.0	10.0	10.0	
Total Split (s)	12.0	51.0	25.0	12.0	51.0	51.0	25.0	37.0	37.0	12.0	12.0	
Total Split (%)	12.0%	51.0%	25.0%	12.0%	51.0%	51.0%	25.0%	37.0%	37.0%	12.0%	12.0%	
Maximum Green (s)	6.3	45.3	19.6	6.3	45.3	45.3	19.6	31.6	31.6	6.6	6.6	
Yellow Time (s)	3.7	3.7	3.0	3.7	3.7	3.7	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.4	2.0	2.0	2.0	2.4	2.4	2.4	2.4	2.4	
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	
Total Lost Time (s)	4.2	4.2	3.9	4.2	4.2	4.2	3.9	3.9	3.9	3.9	3.9	
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes			Yes	Yes	
Vehicle Extension (s)	3.0	6.0	3.0	3.0	6.0	6.0	3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	25.0	0.0	0.0	25.0	25.0	0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	13.0	0.0	0.0	13.0	13.0	0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	C-Max	None	None	C-Max	C-Max	None	None	None	None	None	
Act Effct Green (s)	62.2	54.7	68.2	64.1	59.5	59.5	25.2	25.2	25.2	8.1	8.1	
Actuated g/C Ratio	0.62	0.55	0.68	0.64	0.60	0.60	0.25	0.25	0.25	0.08	0.08	
v/c Ratio	0.07	1.14	0.43	1.37	0.53	0.12	0.41	0.28	0.25	0.97	1.68	
Control Delay	7.1	101.9	5.7	213.3	8.7	0.3	33.6	31.0	6.8	136.5	366.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	7.1	101.9	5.7	213.3	8.7	0.3	33.6	31.0	6.8	136.5	366.9	
LOS	A	F	A	F	A	A	C	C	A	F	F	
Approach Delay		72.5			67.4			24.1			305.2	
Approach LOS		E			E			C			F	

Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 60 (60%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.68	
Intersection Signal Delay: 89.5	Intersection LOS: F
Intersection Capacity Utilization 104.7%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 23: University Dr & SR 322 (W Governor Dr)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	924	377	236	484	91	110	106	102	76	184	25
Future Volume (veh/h)	30	924	377	236	484	91	110	106	102	76	184	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	0.96		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1645	1619	1645	1684	1711	1632	1752	1671	1738	1726	1726	1726
Adj Flow Rate, veh/h	33	1004	410	257	526	99	120	115	111	83	200	27
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	0	0	3	4	0	1	1	2	2	2
Cap, veh/h	525	943	945	197	1073	867	233	362	313	160	120	16
Arrive On Green	0.03	0.58	0.58	0.10	0.83	0.83	0.10	0.22	0.22	0.08	0.08	0.08
Sat Flow, veh/h	1567	1619	1392	1604	1711	1382	1668	1671	1446	1084	1479	200
Grp Volume(v), veh/h	33	1004	410	257	526	99	120	115	111	83	0	227
Grp Sat Flow(s),veh/h/ln	1567	1619	1392	1604	1711	1382	1668	1671	1446	1084	0	1678
Q Serve(g_s), s	0.8	58.2	13.4	7.8	8.6	1.3	6.2	5.8	6.5	7.6	0.0	8.1
Cycle Q Clear(g_c), s	0.8	58.2	13.4	7.8	8.6	1.3	6.2	5.8	6.5	7.6	0.0	8.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.12
Lane Grp Cap(c), veh/h	525	943	945	197	1073	867	233	362	313	160	0	136
V/C Ratio(X)	0.06	1.06	0.43	1.30	0.49	0.11	0.51	0.32	0.35	0.52	0.00	1.67
Avail Cap(c_a), veh/h	596	943	945	197	1073	867	424	553	479	160	0	136
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.44	0.44	0.44	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	7.6	20.9	7.3	31.7	3.8	3.2	35.2	32.9	33.2	45.7	0.0	46.0
Incr Delay (d2), s/veh	0.0	48.2	1.5	152.2	0.7	0.1	1.8	0.5	0.7	3.0	0.0	331.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.5	43.2	7.2	18.6	3.8	0.6	4.8	4.3	4.2	3.9	0.0	25.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.7	69.1	8.8	183.9	4.5	3.3	36.9	33.4	33.9	48.7	0.0	377.4
LnGrp LOS	A	F	A	F	A	A	D	C	C	D	A	F
Approach Vol, veh/h		1447			882			346			310	
Approach Delay, s/veh		50.6			56.7			34.8			289.4	
Approach LOS		D			E			C			F	

Timer - Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	12.0	62.4	13.6	12.0	7.5	66.9		25.6
Change Period (Y+Rc), s	* 5.7	* 5.7	5.4	5.4	* 5.7	* 5.7		5.4
Max Green Setting (Gmax), s	* 6.3	* 45	19.6	6.6	* 6.3	* 45		31.6
Max Q Clear Time (g_c+I1), s	9.8	60.2	8.2	10.1	2.8	10.6		8.5
Green Ext Time (p_c), s	0.0	0.0	0.3	0.0	0.0	14.1		0.8

Intersection Summary	
HCM 6th Ctrl Delay	75.3
HCM 6th LOS	E

Notes

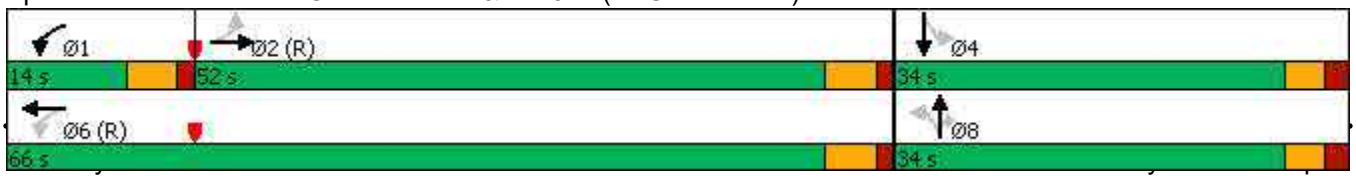
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	592	415	276	751	44	100	24	96	36	187	11
Future Volume (vph)	6	592	415	276	751	44	100	24	96	36	187	11
Ideal Flow (vphpl)	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Lane Width (ft)	12	14	12	12	12	12	12	12	14	16	16	16
Grade (%)		1%			-2%			1%			-1%	
Storage Length (ft)	130		0	165		0	0		350	0		0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	0.99		1.00	1.00				0.97		1.00	
Frt		0.938			0.992				0.850		0.994	
Flt Protected	0.950			0.950				0.961			0.992	
Satd. Flow (prot)	1560	1555	0	1583	1601	0	0	1511	1489	0	1853	0
Flt Permitted	0.234			0.068				0.411			0.932	
Satd. Flow (perm)	384	1555	0	113	1601	0	0	646	1439	0	1738	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		49			6				112		3	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		974			3440			941			923	
Travel Time (s)		19.0			67.0			25.7			25.2	
Confl. Peds. (#/hr)	1		1	1		1			8	8		
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	0%	8%	0%	0%	3%	5%	4%	6%	0%	0%	0%	0%
Adj. Flow (vph)	7	688	483	321	873	51	116	28	112	42	217	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	7	1171	0	321	924	0	0	144	112	0	272	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.20	1.11	1.20	1.18	1.18	1.18	1.20	1.20	1.11	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	1	1	1	1	
Detector Template		Main25		Left	Main25		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	0	250		48	250		48	48	48	48	48	
Trailing Detector (ft)	0	0		-2	0		-2	-2	-2	-2	-2	
Detector 1 Position(ft)	0	0		-2	0		-2	-2	-2	-2	-2	
Detector 1 Size(ft)	0	0		50	0		50	50	50	50	50	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		244			244							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8		8	4		
Detector Phase	2	2		1	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		3.0	10.0		3.0	3.0	3.0	3.0	3.0	
Minimum Split (s)	25.0	25.0		8.8	25.0		25.0	25.0	25.0	25.0	25.0	
Total Split (s)	52.0	52.0		14.0	66.0		34.0	34.0	34.0	34.0	34.0	
Total Split (%)	52.0%	52.0%		14.0%	66.0%		34.0%	34.0%	34.0%	34.0%	34.0%	
Maximum Green (s)	46.9	46.9		8.9	60.9		29.1	29.1	29.1	29.1	29.1	
Yellow Time (s)	3.8	3.8		3.8	3.8		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.3	1.3		1.3	1.3		1.9	1.9	1.9	1.9	1.9	
Lost Time Adjust (s)	-1.5	-1.5		-1.5	-1.5			-1.0	-1.0		-1.0	
Total Lost Time (s)	3.6	3.6		3.6	3.6			3.9	3.9		3.9	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	6.0	6.0		3.0	6.0		3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	25.0	25.0		0.0	25.0		0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	13.0	13.0		0.0	13.0		0.0	0.0	0.0	0.0	0.0	
Recall Mode	C-Max	C-Max		None	C-Max		None	None	None	None	None	
Act Effct Green (s)	54.9	54.9		68.9	68.9			23.6	23.6		23.6	
Actuated g/C Ratio	0.55	0.55		0.69	0.69			0.24	0.24		0.24	
v/c Ratio	0.03	1.34		1.40	0.84			0.95	0.26		0.66	
Control Delay	21.2	178.1		223.3	22.2			97.8	6.8		41.2	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Delay	21.2	178.1		223.3	22.2			97.8	6.8		41.2	
LOS	C	F		F	C			F	A		D	
Approach Delay		177.2			74.0			58.0			41.2	
Approach LOS		F			E			E			D	

Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 99 (99%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.40	
Intersection Signal Delay: 110.8	Intersection LOS: F
Intersection Capacity Utilization 118.3%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 24: Centerview Dr & SR 322 (W Governor Dr)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	592	415	276	751	44	100	24	96	36	187	11
Future Volume (veh/h)	6	592	415	276	751	44	100	24	96	36	187	11
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1645	1604	1542	1718	1679	1679	1568	1568	1711	1752	1752	1752
Adj Flow Rate, veh/h	7	688	483	321	873	51	116	28	112	42	217	13
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	0	8	8	0	3	3	6	6	0	0	0	0
Cap, veh/h	158	424	298	242	980	57	155	29	431	42	151	8
Arrive On Green	0.32	0.32	0.32	0.10	0.62	0.62	0.31	0.30	0.30	0.31	0.30	0.31
Sat Flow, veh/h	562	877	615	1636	1571	92	300	97	1430	0	501	25
Grp Volume(v), veh/h	7	0	1171	321	0	924	144	0	112	272	0	0
Grp Sat Flow(s),veh/h/ln	562	0	1492	1636	0	1663	397	0	1430	526	0	0
Q Serve(g_s), s	1.1	0.0	48.4	10.4	0.0	47.0	0.0	0.0	5.9	0.0	0.0	0.0
Cycle Q Clear(g_c), s	34.2	0.0	48.4	10.4	0.0	47.0	30.6	0.0	5.9	30.6	0.0	0.0
Prop In Lane	1.00		0.41	1.00		0.06	0.81		1.00	0.15		0.05
Lane Grp Cap(c), veh/h	158	0	722	242	0	1037	186	0	431	203	0	0
V/C Ratio(X)	0.04	0.00	1.62	1.33	0.00	0.89	0.77	0.00	0.26	1.34	0.00	0.00
Avail Cap(c_a), veh/h	158	0	722	242	0	1037	186	0	431	203	0	0
HCM Platoon Ratio	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.00	0.09	0.67	0.00	0.67	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	43.9	0.0	33.8	31.6	0.0	15.9	36.7	0.0	26.5	30.3	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	280.3	164.5	0.0	8.1	18.0	0.0	0.3	183.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.3	0.0	106.3	20.8	0.0	23.2	8.0	0.0	3.7	23.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.0	0.0	314.1	196.1	0.0	24.0	54.7	0.0	26.8	213.6	0.0	0.0
LnGrp LOS	D	A	F	F	A	C	D	A	C	F	A	A
Approach Vol, veh/h		1178			1245			256			272	
Approach Delay, s/veh		312.4			68.4			42.5			213.6	
Approach LOS		F			E			D			F	

Timer - Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	14.0	52.0		34.0		66.0		34.0
Change Period (Y+Rc), s	5.1	5.1		* 4.9		5.1		* 4.9
Max Green Setting (Gmax), s	8.9	46.9		* 29		60.9		* 29
Max Q Clear Time (g_c+I1), s	12.4	50.4		32.6		49.0		32.6
Green Ext Time (p_c), s	0.0	0.0		0.0		10.6		0.0

Intersection Summary	
HCM 6th Ctrl Delay	177.0
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

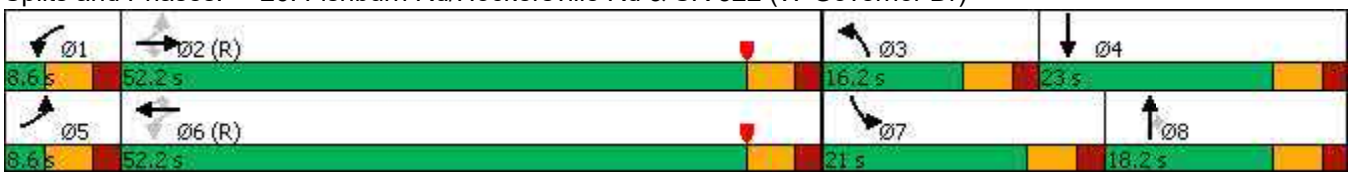
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	448	136	50	906	185	269	236	104	163	147	52
Future Volume (vph)	22	448	136	50	906	185	269	236	104	163	147	52
Ideal Flow (vphpl)	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Lane Width (ft)	11	12	14	11	12	14	11	11	13	11	12	12
Grade (%)		1%			0%			-1%			2%	
Storage Length (ft)	140		445	125		75	135		85	100		0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850		0.961	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1422	1549	1474	1416	1618	1452	1493	1512	1387	1485	1513	0
Flt Permitted	0.080			0.344			0.950			0.950		
Satd. Flow (perm)	120	1549	1474	513	1618	1452	1493	1512	1387	1485	1513	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			153			153			152		16	
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		974			252			343			1393	
Travel Time (s)		19.0			4.9			6.7			27.1	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	6%	6%	1%	7%	2%	3%	2%	6%	5%	1%	4%	3%
Adj. Flow (vph)	23	477	145	53	964	197	286	251	111	173	156	55
Shared Lane Traffic (%)												
Lane Group Flow (vph)	23	477	145	53	964	197	286	251	111	173	211	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.26	1.20	1.11	1.25	1.20	1.10	1.24	1.24	1.14	1.26	1.21	1.21
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	1	1	1	1	
Detector Template		Main25	Right	Left	Main25	Right						
Leading Detector (ft)	38	250	48	48	250	48	38	38	38	38	38	
Trailing Detector (ft)	-2	0	-2	-2	0	-2	-2	-2	-2	-2	-2	
Detector 1 Position(ft)	-2	0	-2	-2	0	-2	-2	-2	-2	-2	-2	
Detector 1 Size(ft)	40	0	50	50	0	50	40	40	40	40	40	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		244			244							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6			8			
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	
Switch Phase												
Minimum Initial (s)	3.0	10.0	10.0	3.0	10.0	10.0	3.0	3.0	3.0	3.0	3.0	
Minimum Split (s)	8.6	25.0	25.0	8.6	25.0	25.0	8.7	12.0	12.0	8.7	12.0	
Total Split (s)	8.6	52.2	52.2	8.6	52.2	52.2	16.2	18.2	18.2	21.0	23.0	
Total Split (%)	8.6%	52.2%	52.2%	8.6%	52.2%	52.2%	16.2%	18.2%	18.2%	21.0%	23.0%	
Maximum Green (s)	3.0	46.6	46.6	3.0	46.6	46.6	10.5	12.5	12.5	15.3	17.3	
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	3.6	3.7	3.7	3.7	3.7	3.7	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	
Total Lost Time (s)	4.1	4.1	4.1	4.1	4.1	4.1	4.2	4.2	4.2	4.2	4.2	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	6.5	6.5	3.0	6.5	6.5	3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	25.0	25.0	0.0	25.0	25.0	0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	12.5	12.5	0.0	12.5	12.5	0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	
Act Effct Green (s)	54.5	50.9	50.9	56.1	54.3	54.3	12.0	14.0	14.0	15.7	17.7	
Actuated g/C Ratio	0.54	0.51	0.51	0.56	0.54	0.54	0.12	0.14	0.14	0.16	0.18	
v/c Ratio	0.19	0.61	0.18	0.16	1.10	0.23	1.60	1.19	0.34	0.74	0.75	
Control Delay	8.0	20.1	3.0	20.3	82.9	14.5	325.0	161.7	5.6	59.8	53.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	8.0	20.1	3.0	20.3	82.9	14.5	325.0	161.7	5.6	59.8	53.4	
LOS	A	C	A	C	F	B	F	F	A	E	D	
Approach Delay		15.8			69.1			207.1			56.3	
Approach LOS		B			E			F			E	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow, Master Intersection
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.60
Intersection Signal Delay: 86.4 Intersection LOS: F
Intersection Capacity Utilization 95.0% ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 26: Fishburn Rd/Hockersville Rd & SR 322 (W Governor Dr)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	448	136	50	906	185	269	236	104	163	147	52
Future Volume (veh/h)	22	448	136	50	906	185	269	236	104	163	147	52
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1568	1568	1697	1560	1624	1676	1658	1606	1684	1617	1578	1578
Adj Flow Rate, veh/h	23	477	145	53	964	197	286	251	111	173	156	55
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	6	6	1	7	2	3	2	6	5	1	4	4
Cap, veh/h	116	783	718	290	834	730	189	237	211	221	191	67
Arrive On Green	0.01	0.16	0.16	0.04	0.51	0.51	0.12	0.15	0.15	0.14	0.17	0.17
Sat Flow, veh/h	1493	1568	1438	1486	1624	1420	1579	1606	1427	1540	1114	393
Grp Volume(v), veh/h	23	477	145	53	964	197	286	251	111	173	0	211
Grp Sat Flow(s),veh/h/ln	1493	1568	1438	1486	1624	1420	1579	1606	1427	1540	0	1507
Q Serve(g_s), s	0.7	28.2	8.7	1.7	51.4	7.8	12.0	14.8	7.2	10.8	0.0	13.5
Cycle Q Clear(g_c), s	0.7	28.2	8.7	1.7	51.4	7.8	12.0	14.8	7.2	10.8	0.0	13.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.26
Lane Grp Cap(c), veh/h	116	783	718	290	834	730	189	237	211	221	0	258
V/C Ratio(X)	0.20	0.61	0.20	0.18	1.16	0.27	1.51	1.06	0.53	0.78	0.00	0.82
Avail Cap(c_a), veh/h	139	783	718	292	834	730	189	237	211	259	0	283
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.58	0.58	0.58	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	24.2	32.7	24.5	15.1	24.3	13.7	44.0	42.6	39.4	41.3	0.0	39.9
Incr Delay (d2), s/veh	0.5	2.1	0.4	0.3	83.4	0.9	254.5	74.9	2.4	12.5	0.0	15.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.5	16.6	5.4	1.0	52.6	4.6	28.8	16.4	4.7	8.4	0.0	10.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.7	34.8	24.9	15.4	107.7	14.6	298.5	117.5	41.8	53.8	0.0	55.7
LnGrp LOS	C	C	C	B	F	B	F	F	D	D	A	E
Approach Vol, veh/h		645			1214			648			384	
Approach Delay, s/veh		32.2			88.6			184.4			54.9	
Approach LOS		C			F			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.4	54.0	16.2	21.3	7.0	55.5	18.6	19.0
Change Period (Y+Rc), s	5.6	5.6	* 5.7	* 5.7	5.6	5.6	* 5.7	* 5.7
Max Green Setting (Gmax), s	3.0	46.6	* 11	* 17	3.0	46.6	* 15	* 13
Max Q Clear Time (g_c+I1), s	3.7	30.2	14.0	15.5	2.7	53.4	12.8	16.8
Green Ext Time (p_c), s	0.0	10.1	0.0	0.1	0.0	0.0	0.1	0.0

Intersection Summary	
HCM 6th Ctrl Delay	93.0
HCM 6th LOS	F

Notes

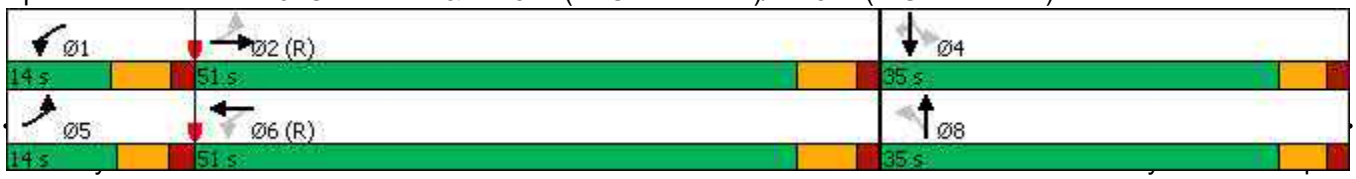
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	37	537	37	59	973	39	14	298	27	28	197	40
Future Volume (vph)	37	537	37	59	973	39	14	298	27	28	197	40
Ideal Flow (vphpl)	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Lane Width (ft)	10	15	15	11	13	13	11	13	13	11	12	15
Grade (%)		-2%			-3%			0%			0%	
Storage Length (ft)	175		0	80		0	75		0	75		150
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00				1.00			1.00		1.00		
Frt		0.990			0.994			0.988				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1478	1734	0	1493	1669	0	1139	1584	0	1390	1486	1543
Flt Permitted	0.076			0.266			0.497			0.282		
Satd. Flow (perm)	118	1734	0	418	1669	0	596	1584	0	412	1486	1543
Right Turn on Red			No			Yes			No			Yes
Satd. Flow (RTOR)					3							103
Link Speed (mph)		35			40			35			35	
Link Distance (ft)		1911			1234			997			1054	
Travel Time (s)		37.2			21.0			19.4			20.5	
Confl. Peds. (#/hr)	1					1			2	2		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	5%	0%	3%	3%	3%	33%	6%	8%	9%	11%	0%
Adj. Flow (vph)	39	565	39	62	1024	41	15	314	28	29	207	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	39	604	0	62	1065	0	15	342	0	29	207	42
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.29	1.05	1.05	1.23	1.13	1.13	1.25	1.15	1.15	1.25	1.20	1.06
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	1		1	1	1
Detector Template		Main25			Main25							
Leading Detector (ft)	38	250		38	250		38	38		38	38	0
Trailing Detector (ft)	-2	0		-2	0		-2	-2		-2	-2	0
Detector 1 Position(ft)	-2	0		-2	0		-2	-2		-2	-2	0
Detector 1 Size(ft)	40	0		40	0		40	40		40	40	0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		244			244							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6			8			4		4
Detector Phase	5	2		1	6		8	8		4	4	4
Switch Phase												
Minimum Initial (s)	3.0	10.0		3.0	10.0		3.0	3.0		3.0	3.0	3.0
Minimum Split (s)	9.4	25.0		9.4	25.0		20.0	20.0		20.0	20.0	20.0
Total Split (s)	14.0	51.0		14.0	51.0		35.0	35.0		35.0	35.0	35.0
Total Split (%)	14.0%	51.0%		14.0%	51.0%		35.0%	35.0%		35.0%	35.0%	35.0%
Maximum Green (s)	8.2	44.8		7.8	44.8		29.6	29.6		29.6	29.6	29.6
Yellow Time (s)	3.8	4.4		4.4	4.4		3.6	3.6		3.6	3.6	3.6
All-Red Time (s)	2.0	1.8		1.8	1.8		1.8	1.8		1.8	1.8	1.8
Lost Time Adjust (s)	-1.5	-1.5		-1.5	-1.5		-1.5	-1.5		-1.5	-1.5	-1.5
Total Lost Time (s)	4.3	4.7		4.7	4.7		3.9	3.9		3.9	3.9	3.9
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	5.5		3.0	5.5		3.0	3.0		3.0	3.0	3.0
Minimum Gap (s)	3.0	2.0		3.0	2.0		3.0	3.0		3.0	3.0	3.0
Time Before Reduce (s)	0.0	25.0		0.0	25.0		0.0	0.0		0.0	0.0	0.0
Time To Reduce (s)	0.0	12.5		0.0	12.5		0.0	0.0		0.0	0.0	0.0
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	None
Act Effct Green (s)	60.8	53.7		62.1	56.7		26.9	26.9		26.9	26.9	26.9
Actuated g/C Ratio	0.61	0.54		0.62	0.57		0.27	0.27		0.27	0.27	0.27
v/c Ratio	0.21	0.65		0.18	1.13		0.09	0.80		0.26	0.52	0.09
Control Delay	16.7	32.3		9.1	95.0		26.8	48.5		33.6	35.1	0.3
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	16.7	32.3		9.1	95.0		26.8	48.5		33.6	35.1	0.3
LOS	B	C		A	F		C	D		C	D	A
Approach Delay		31.4			90.2			47.6			29.7	
Approach LOS		C			F			D			C	

Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 55 (55%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.13	
Intersection Signal Delay: 61.2	Intersection LOS: E
Intersection Capacity Utilization 95.6%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 29: Cocoa Ave & SR 322 (W Governor Dr)/SR 322 (E Governor Dr)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	537	37	59	973	39	14	298	27	28	197	40
Future Volume (veh/h)	37	537	37	59	973	39	14	298	27	28	197	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1718	1719	1719	1713	1782	1782	1225	1636	1636	1534	1508	1716
Adj Flow Rate, veh/h	39	565	39	62	1024	41	15	314	28	29	207	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	5	5	3	3	3	33	6	6	9	11	0
Cap, veh/h	129	883	61	389	968	39	194	395	35	134	403	
Arrive On Green	0.03	0.56	0.56	0.04	0.57	0.57	0.27	0.27	0.27	0.27	0.27	0.00
Sat Flow, veh/h	1636	1590	110	1632	1701	68	811	1479	132	898	1508	1454
Grp Volume(v), veh/h	39	0	604	62	0	1065	15	0	342	29	207	0
Grp Sat Flow(s),veh/h/ln	1636	0	1699	1632	0	1770	811	0	1611	898	1508	1454
Q Serve(g_s), s	1.0	0.0	24.5	1.6	0.0	56.9	1.6	0.0	19.7	3.1	11.7	0.0
Cycle Q Clear(g_c), s	1.0	0.0	24.5	1.6	0.0	56.9	13.3	0.0	19.7	22.9	11.7	0.0
Prop In Lane	1.00		0.06	1.00		0.04	1.00		0.08	1.00		1.00
Lane Grp Cap(c), veh/h	129	0	944	389	0	1007	194	0	430	134	403	
V/C Ratio(X)	0.30	0.00	0.64	0.16	0.00	1.06	0.08	0.00	0.79	0.22	0.51	
Avail Cap(c_a), veh/h	231	0	944	468	0	1007	230	0	501	174	469	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	24.0	0.0	15.3	11.6	0.0	21.5	36.8	0.0	34.1	44.7	31.1	0.0
Incr Delay (d2), s/veh	1.3	0.0	3.3	0.2	0.0	44.9	0.2	0.0	7.5	0.8	1.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.9	0.0	14.6	0.9	0.0	44.1	0.6	0.0	13.1	1.3	7.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.3	0.0	18.7	11.8	0.0	66.5	36.9	0.0	41.6	45.5	32.2	0.0
LnGrp LOS	C	A	B	B	A	F	D	A	D	D	C	
Approach Vol, veh/h		643			1127			357			236	A
Approach Delay, s/veh		19.1			63.4			41.4			33.8	
Approach LOS		B			E			D			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.2	60.2		30.6	7.8	61.6		30.6
Change Period (Y+Rc), s	* 6.2	* 6.2		* 5.4	* 5.8	* 6.2		* 5.4
Max Green Setting (Gmax), s	* 7.8	* 45		* 30	* 8.2	* 45		* 30
Max Q Clear Time (g_c+I1), s	3.6	26.5		24.9	3.0	58.9		21.7
Green Ext Time (p_c), s	0.0	11.0		0.3	0.0	0.0		0.8

Intersection Summary	
HCM 6th Ctrl Delay	45.1
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	169	513	11	20	925	75	9	392	40	18	118	184
Future Volume (vph)	169	513	11	20	925	75	9	392	40	18	118	184
Ideal Flow (vphpl)	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Grade (%)		2%			2%			2%			2%	
Storage Length (ft)	125		100	100		100	100		100	110		200
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1492	1571	1388	1349	1586	1375	1552	1571	1262	1386	1433	1262
Flt Permitted	0.065			0.371			0.613			0.151		
Satd. Flow (perm)	102	1571	1388	527	1586	1375	1001	1571	1262	220	1433	1235
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			72			72			72			214
Link Speed (mph)		40			40			35			35	
Link Distance (ft)		1219			3941			1026			2312	
Travel Time (s)		20.8			67.2			20.0			45.0	
Confl. Bikes (#/hr)							1					1
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	4%	4%	0%	15%	3%	1%	0%	4%	10%	12%	14%	10%
Adj. Flow (vph)	197	597	13	23	1076	87	10	456	47	21	137	214
Shared Lane Traffic (%)												
Lane Group Flow (vph)	197	597	13	23	1076	87	10	456	47	21	137	214
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	1	1	1	1	1
Detector Template		Main25			Main25							
Leading Detector (ft)	38	250	38	38	250	38	38	38	38	38	38	38
Trailing Detector (ft)	-2	0	-2	-2	0	-2	-2	-2	-2	-2	-2	-2
Detector 1 Position(ft)	-2	0	-2	-2	0	-2	-2	-2	-2	-2	-2	-2
Detector 1 Size(ft)	40	0	40	40	0	40	40	40	40	40	40	40
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		244			244							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0							
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6		6	8		8	4		4
Detector Phase	5	2	2	1	6	6	8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	3.0	12.0	12.0	3.0	12.0	12.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Split (s)	8.5	29.0	29.0	8.5	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0
Total Split (s)	14.0	61.0	61.0	14.0	61.0	61.0	31.0	31.0	31.0	31.0	31.0	31.0
Total Split (%)	13.2%	57.5%	57.5%	13.2%	57.5%	57.5%	29.2%	29.2%	29.2%	29.2%	29.2%	29.2%
Maximum Green (s)	10.0	55.0	55.0	10.0	55.0	55.0	25.0	25.0	25.0	25.0	25.0	25.0
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5
Total Lost Time (s)	2.5	4.5	4.5	2.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0	6.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	28.0	28.0	0.0	28.0	28.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	14.0	14.0	0.0	14.0	14.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	Min	Min	None	Min	Min	None	None	None	None	None	None
Act Effct Green (s)	72.5	66.2	66.2	66.2	56.5	56.5	26.5	26.5	26.5	26.5	26.5	26.5
Actuated g/C Ratio	0.68	0.62	0.62	0.62	0.53	0.53	0.25	0.25	0.25	0.25	0.25	0.25
v/c Ratio	0.90	0.61	0.01	0.06	1.27	0.11	0.04	1.16	0.13	0.38	0.38	0.46
Control Delay	66.2	16.6	0.0	5.9	157.6	4.3	30.9	135.0	4.0	55.7	36.8	7.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.2	16.6	0.0	5.9	157.6	4.3	30.9	135.0	4.0	55.7	36.8	7.9
LOS	E	B	A	A	F	A	C	F	A	E	D	A
Approach Delay		28.5			143.4			121.0			21.2	
Approach LOS		C			F			F			C	

Intersection Summary	
Area Type:	Other
Cycle Length: 106	
Actuated Cycle Length: 106	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.27	
Intersection Signal Delay: 91.4	Intersection LOS: F
Intersection Capacity Utilization 101.4%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 30: Homestead Rd & SR 322 (E Governor Dr)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	169	513	11	20	925	75	9	392	40	18	118	184
Future Volume (veh/h)	169	513	11	20	925	75	9	392	40	18	118	184
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1578	1578	1630	1436	1591	1617	1630	1578	1501	1475	1449	1501
Adj Flow Rate, veh/h	197	597	13	23	1076	87	10	456	47	21	137	214
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	4	4	0	15	3	1	0	4	10	12	14	10
Cap, veh/h	231	968	847	355	848	730	231	395	311	68	362	311
Arrive On Green	0.11	0.61	0.61	0.03	0.53	0.53	0.25	0.25	0.25	0.25	0.25	0.25
Sat Flow, veh/h	1503	1578	1381	1368	1591	1370	947	1578	1245	746	1449	1245
Grp Volume(v), veh/h	197	597	13	23	1076	87	10	456	47	21	137	214
Grp Sat Flow(s),veh/h/ln	1503	1578	1381	1368	1591	1370	947	1578	1245	746	1449	1245
Q Serve(g_s), s	8.7	24.9	0.4	0.8	56.5	3.4	0.9	26.5	3.1	0.0	8.3	16.5
Cycle Q Clear(g_c), s	8.7	24.9	0.4	0.8	56.5	3.4	9.2	26.5	3.1	26.5	8.3	16.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	231	968	847	355	848	730	231	395	311	68	362	311
V/C Ratio(X)	0.85	0.62	0.02	0.06	1.27	0.12	0.04	1.16	0.15	0.31	0.38	0.69
Avail Cap(c_a), veh/h	231	968	847	465	848	730	231	395	311	68	362	311
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.1	12.7	8.0	11.7	24.8	12.3	36.7	39.8	31.0	53.0	32.9	36.0
Incr Delay (d2), s/veh	25.2	2.5	0.0	0.1	130.3	0.3	0.1	95.1	0.2	2.5	0.7	6.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	7.5	13.1	0.2	0.4	72.5	1.8	0.4	30.1	1.7	1.1	5.3	9.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.3	15.2	8.0	11.8	155.0	12.6	36.8	134.8	31.2	55.5	33.6	42.2
LnGrp LOS	E	B	A	B	F	B	D	F	C	E	C	D
Approach Vol, veh/h		807			1186			513			372	
Approach Delay, s/veh		25.4			141.8			123.4			39.8	
Approach LOS		C			F			F			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.5	69.5		31.0	14.0	61.0		31.0
Change Period (Y+Rc), s	4.0	6.0		6.0	4.0	6.0		6.0
Max Green Setting (Gmax), s	1.0	55.0		25.0	10.0	55.0		25.0
Max Q Clear Time (g_c+I1), s	2.8	26.9		28.5	10.7	58.5		28.5
Green Ext Time (p_c), s	0.0	15.3		0.0	0.0	0.0		0.0

Intersection Summary	
HCM 6th Ctrl Delay	92.7
HCM 6th LOS	F

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	406	137	30	50	121	136	107	323	87	248	87	317
Future Volume (vph)	406	137	30	50	121	136	107	323	87	248	87	317
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.993			0.940			0.977			0.934	
Flt Protected		0.966			0.992			0.990			0.981	
Satd. Flow (prot)	0	1630	0	0	1623	0	0	1741	0	0	1649	0
Flt Permitted		0.966			0.992			0.990			0.981	
Satd. Flow (perm)	0	1630	0	0	1623	0	0	1741	0	0	1649	0
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		2002			587			752			1016	
Travel Time (s)		39.0			11.4			14.6			19.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	7%	4%	0%	0%	2%	6%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	451	152	33	56	134	151	119	359	97	276	97	352
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	636	0	0	341	0	0	575	0	0	725	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Yield			Stop			Yield			Yield	

Intersection Summary	
Area Type:	Other
Control Type: Roundabout	
Intersection Capacity Utilization 131.9%	ICU Level of Service H
Analysis Period (min) 15	

Intersection	
Intersection Delay, s/veh	35.5
Intersection LOS	E

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	636	341	575	725
Demand Flow Rate, veh/h	674	353	575	725
Vehicles Circulating, veh/h	429	961	917	312
Vehicles Exiting, veh/h	608	531	186	1002
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	20.1	24.6	83.6	15.9
Approach LOS	C	C	F	C

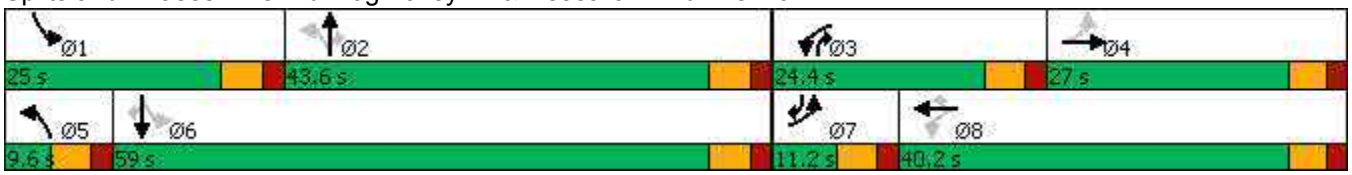
Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	674	353	575	725
Cap Entry Lane, veh/h	891	518	542	1004
Entry HV Adj Factor	0.944	0.967	1.000	1.000
Flow Entry, veh/h	636	341	575	725
Cap Entry, veh/h	841	501	542	1004
V/C Ratio	0.757	0.682	1.062	0.722
Control Delay, s/veh	20.1	24.6	83.6	15.9
LOS	C	C	F	C
95th %tile Queue, veh	7	5	17	7

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	97	188	48	82	135	159	78	356	539	297	154	169
Future Volume (vph)	97	188	48	82	135	159	78	356	539	297	154	169
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Grade (%)		6%			-7%			-2%			2%	
Storage Length (ft)	100		0	250		0	190		270	185		175
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.969				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1626	1640	0	1686	931	1494	1693	1765	1545	1676	1497	1485
Flt Permitted	0.660			0.246			0.648			0.248		
Satd. Flow (perm)	1130	1640	0	436	931	1494	1155	1765	1545	438	1497	1485
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10				179			242			190
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		395			391			967			1702	
Travel Time (s)		10.8			10.7			18.8			33.2	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	2%	4%	0%	5%	100%	6%	2%	3%	0%	1%	19%	2%
Adj. Flow (vph)	109	211	54	92	152	179	88	400	606	334	173	190
Shared Lane Traffic (%)												
Lane Group Flow (vph)	109	265	0	92	152	179	88	400	606	334	173	190
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.11	1.11	1.11	1.03	1.03	1.03	1.06	1.06	1.06	1.09	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1	1	1	2	2	1	2	2
Detector Template	Left	Thru		Left	Thru	Right	Left	Main25	Main25	Left	Main25	Main25
Leading Detector (ft)	48	48		48	48	48	48	250	250	48	250	250
Trailing Detector (ft)	-2	-2		-2	-2	-2	-2	0	0	-2	0	0
Detector 1 Position(ft)	-2	-2		-2	-2	-2	-2	0	0	-2	0	0
Detector 1 Size(ft)	50	50		50	50	50	50	0	0	50	0	0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)								244	244		244	244
Detector 2 Size(ft)								6	6		6	6
Detector 2 Type								Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)								0.0	0.0		0.0	0.0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	7	4		3	8		5	2	3	1	6	7
Permitted Phases	4			8		8	2		2	6		6
Detector Phase	7	4		3	8	8	5	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0	3.0	3.0	10.0	3.0	3.0	10.0	3.0
Minimum Split (s)	8.5	20.0		8.5	20.0	20.0	8.5	20.0	8.5	8.8	20.0	8.5
Total Split (s)	11.2	27.0		24.4	40.2	40.2	9.6	43.6	24.4	25.0	59.0	11.2
Total Split (%)	9.3%	22.5%		20.3%	33.5%	33.5%	8.0%	36.3%	20.3%	20.8%	49.2%	9.3%
Maximum Green (s)	5.7	21.6		18.9	34.8	34.8	4.1	37.8	18.9	19.2	53.2	5.7
Yellow Time (s)	3.5	3.4		3.5	3.4	3.4	3.5	3.8	3.5	3.8	3.8	3.5
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.5	-1.5		-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5
Total Lost Time (s)	4.0	3.9		4.0	3.9	3.9	4.0	4.3	4.0	4.3	4.3	4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	6.0	3.0	3.0	6.0	3.0
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	25.0	0.0	0.0	25.0	0.0
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	13.0	0.0	0.0	13.0	0.0
Recall Mode	None	None		None	None	None	None	Min	None	None	Min	None
Act Effct Green (s)	28.3	21.0		40.1	29.1	29.1	38.9	32.8	52.7	55.5	48.3	60.1
Actuated g/C Ratio	0.27	0.20		0.38	0.28	0.28	0.37	0.31	0.50	0.53	0.46	0.57
v/c Ratio	0.32	0.79		0.26	0.59	0.33	0.19	0.72	0.67	0.75	0.25	0.20
Control Delay	27.4	57.9		24.5	44.4	6.4	15.7	41.6	15.5	26.5	20.1	2.4
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.4	57.9		24.5	44.4	6.4	15.7	41.6	15.5	26.5	20.1	2.4
LOS	C	E		C	D	A	B	D	B	C	C	A
Approach Delay		49.0			24.0			25.0			18.3	
Approach LOS		D			C			C			B	

Intersection Summary	
Area Type: Other	
Cycle Length: 120	
Actuated Cycle Length: 104.6	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay: 26.5	Intersection LOS: C
Intersection Capacity Utilization 76.4%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 8: Bullfrog Valley Dr & Research Blvd/Life Lion Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	97	188	48	82	135	159	78	356	539	297	154	169
Future Volume (veh/h)	97	188	48	82	135	159	78	356	539	297	154	169
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1571	1543	1543	1990	639	1976	1846	1832	1875	1764	1511	1750
Adj Flow Rate, veh/h	109	211	54	92	152	179	88	400	606	334	173	190
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	4	4	5	100	6	2	3	0	1	19	2
Cap, veh/h	203	320	82	329	172	450	539	660	675	425	703	788
Arrive On Green	0.07	0.27	0.27	0.06	0.27	0.27	0.05	0.36	0.36	0.15	0.47	0.47
Sat Flow, veh/h	1496	1185	303	1895	639	1674	1758	1832	1589	1680	1511	1483
Grp Volume(v), veh/h	109	0	265	92	152	179	88	400	606	334	173	190
Grp Sat Flow(s),veh/h/ln	1496	0	1488	1895	639	1674	1758	1832	1589	1680	1511	1483
Q Serve(g_s), s	5.7	0.0	17.2	3.7	24.9	9.5	3.4	19.5	38.7	12.7	7.5	7.5
Cycle Q Clear(g_c), s	5.7	0.0	17.2	3.7	24.9	9.5	3.4	19.5	38.7	12.7	7.5	7.5
Prop In Lane	1.00		0.20	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	203	0	402	329	172	450	539	660	675	425	703	788
V/C Ratio(X)	0.54	0.00	0.66	0.28	0.88	0.40	0.16	0.61	0.90	0.79	0.25	0.24
Avail Cap(c_a), veh/h	203	0	402	561	213	557	539	660	675	486	758	842
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.2	0.0	35.3	26.9	38.2	32.6	19.9	28.5	29.1	19.7	17.6	13.7
Incr Delay (d2), s/veh	2.8	0.0	3.9	0.5	28.7	0.6	0.1	3.4	16.4	7.4	0.7	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.0	0.0	10.9	3.1	9.0	7.2	2.5	13.9	24.4	9.3	4.8	4.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.0	0.0	39.2	27.4	66.9	33.2	20.0	31.9	45.6	27.1	18.3	14.3
LnGrp LOS	C	A	D	C	E	C	B	C	D	C	B	B
Approach Vol, veh/h		374			423			1094			697	
Approach Delay, s/veh		37.1			44.0			38.5			21.4	
Approach LOS		D			D			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.0	43.6	11.1	33.4	9.6	55.0	11.2	33.2
Change Period (Y+Rc), s	* 5.8	* 5.8	5.5	5.4	5.5	* 5.8	5.5	5.4
Max Green Setting (Gmax), s	* 19	* 38	18.9	21.6	4.1	* 53	5.7	34.8
Max Q Clear Time (g_c+I1), s	14.7	40.7	5.7	19.2	5.4	9.5	7.7	26.9
Green Ext Time (p_c), s	0.6	0.0	0.2	0.2	0.0	10.8	0.0	0.9

Intersection Summary	
HCM 6th Ctrl Delay	34.6
HCM 6th LOS	C

Notes

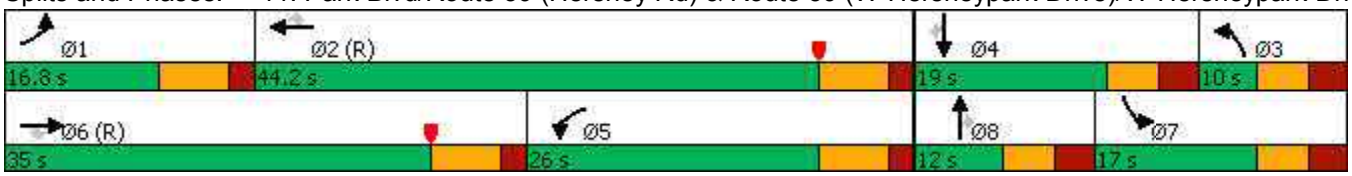
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	213	652	289	269	725	236	39	108	61	276	312	456
Future Volume (vph)	213	652	289	269	725	236	39	108	61	276	312	456
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Grade (%)		3%			-3%			1%			4%	
Storage Length (ft)	350		500	575		475	0		350	400		450
Storage Lanes	2		1	2		1	2		1	2		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.91	0.88	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3172	4745	2600	3301	4842	1538	3301	3369	1522	3219	3352	1456
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3172	4745	2600	3301	4842	1538	3301	3369	1522	3219	3352	1456
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			295			268			350			365
Link Speed (mph)		45			45			35			35	
Link Distance (ft)		1096			1663			1072			729	
Travel Time (s)		16.6			25.2			20.9			14.2	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	3%	2%	2%	2%	3%	1%	0%	1%	0%	1%	0%	3%
Adj. Flow (vph)	217	665	295	274	740	241	40	110	62	282	318	465
Shared Lane Traffic (%)												
Lane Group Flow (vph)	217	665	295	274	740	241	40	110	62	282	318	465
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.05	1.05	1.05	1.08	1.08	1.08	1.10	1.10	1.10
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	1	1	1	1	1
Detector Template	Left	Main30	Right	Left	Main30	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	48	300	48	48	300	48	48	48	48	48	48	48
Trailing Detector (ft)	-2	0	-2	-2	0	-2	-2	-2	-2	-2	-2	-2
Detector 1 Position(ft)	-2	0	-2	-2	0	-2	-2	-2	-2	-2	-2	-2
Detector 1 Size(ft)	50	0	50	50	0	50	50	50	50	50	50	50
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		294			294							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases			6			2			8			4
Detector Phase	1	6	6	5	2	2	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	3.0	12.0	12.0	3.0	12.0	12.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Split (s)	9.7	18.5	18.5	9.7	18.5	18.5	10.0	10.0	10.0	9.2	10.0	10.0
Total Split (s)	16.8	35.0	35.0	26.0	44.2	44.2	10.0	12.0	12.0	17.0	19.0	19.0
Total Split (%)	18.7%	38.9%	38.9%	28.9%	49.1%	49.1%	11.1%	13.3%	13.3%	18.9%	21.1%	21.1%
Maximum Green (s)	10.3	28.5	28.5	19.5	37.7	37.7	3.8	5.8	5.8	10.8	12.8	12.8
Yellow Time (s)	4.7	4.7	4.7	4.7	4.7	4.7	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.8	1.8	1.8	1.8	1.8	1.8	2.7	2.7	2.7	2.7	2.7	2.7
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.7	4.7	4.7	4.7	4.7	4.7
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag	Lag	Lead	Lead	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0	6.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.5	3.5	3.0	3.5	3.5	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	30.0	30.0	0.0	30.0	30.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	15.0	15.0	0.0	15.0	15.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	None
Act Effct Green (s)	11.4	32.6	32.6	21.0	42.2	42.2	5.3	7.3	7.3	12.1	15.7	15.7
Actuated g/C Ratio	0.13	0.36	0.36	0.23	0.47	0.47	0.06	0.08	0.08	0.13	0.17	0.17
v/c Ratio	0.54	0.39	0.26	0.36	0.33	0.28	0.21	0.40	0.14	0.65	0.54	0.84
Control Delay	42.3	23.0	3.4	15.9	3.2	1.3	43.1	44.0	0.7	44.6	38.0	24.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.3	23.0	3.4	15.9	3.2	1.3	43.1	44.0	0.7	44.6	38.0	24.0
LOS	D	C	A	B	A	A	D	D	A	D	D	C
Approach Delay		21.6			5.6			31.1			33.7	
Approach LOS		C			A			C			C	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 75 (83%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay: 20.2	Intersection LOS: C
Intersection Capacity Utilization 59.9%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 11: Park Blvd/Route 39 (Hershey Rd) & Route 39 (W Hersheypark Drive)/W Hersheypark Drive



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	213	652	289	269	725	236	39	108	61	276	312	456
Future Volume (veh/h)	213	652	289	269	725	236	39	108	61	276	312	456
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1708	1722	1722	1883	1869	1898	1794	1780	1794	1697	1711	1669
Adj Flow Rate, veh/h	217	665	0	274	740	0	40	110	0	282	318	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	2	2	2	3	1	0	1	0	1	0	3
Cap, veh/h	336	1567		884	2453		202	238		397	442	
Arrive On Green	0.11	0.33	0.00	0.25	0.48	0.00	0.06	0.07	0.00	0.13	0.14	0.00
Sat Flow, veh/h	3155	4700	2568	3480	5103	1608	3315	3383	1521	3135	3250	1414
Grp Volume(v), veh/h	217	665	0	274	740	0	40	110	0	282	318	0
Grp Sat Flow(s),veh/h/ln	1578	1567	1284	1740	1701	1608	1658	1691	1521	1567	1625	1414
Q Serve(g_s), s	5.9	9.9	0.0	5.7	7.9	0.0	1.0	2.8	0.0	7.8	8.4	0.0
Cycle Q Clear(g_c), s	5.9	9.9	0.0	5.7	7.9	0.0	1.0	2.8	0.0	7.8	8.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	336	1567		884	2453		202	238		397	442	
V/C Ratio(X)	0.65	0.42		0.31	0.30		0.20	0.46		0.71	0.72	
Avail Cap(c_a), veh/h	414	1567		884	2453		202	274		428	516	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	38.6	23.3	0.0	27.2	14.2	0.0	40.2	40.2	0.0	37.7	37.2	0.0
Incr Delay (d2), s/veh	2.4	0.8	0.0	0.2	0.3	0.0	0.5	1.4	0.0	5.0	4.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.1	6.3	0.0	4.1	5.0	0.0	0.8	2.1	0.0	5.7	6.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.0	24.1	0.0	27.4	14.5	0.0	40.6	41.6	0.0	42.7	41.2	0.0
LnGrp LOS	D	C		C	B		D	D		D	D	
Approach Vol, veh/h		882	A		1014	A		150	A		600	A
Approach Delay, s/veh		28.3			18.0			41.3			41.9	
Approach LOS		C			B			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.6	48.3	10.2	17.0	27.9	35.0	16.1	11.0
Change Period (Y+Rc), s	* 6.5	* 6.5	* 6.2	* 6.2	* 6.5	* 6.5	* 6.2	* 6.2
Max Green Setting (Gmax), s	* 10	* 38	* 3.8	* 13	* 20	* 29	* 11	* 5.8
Max Q Clear Time (g_c+I1), s	7.9	9.9	3.0	10.4	7.7	11.9	9.8	4.8
Green Ext Time (p_c), s	0.2	18.0	0.0	0.3	0.9	11.2	0.1	0.0

Intersection Summary	
HCM 6th Ctrl Delay	28.2
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

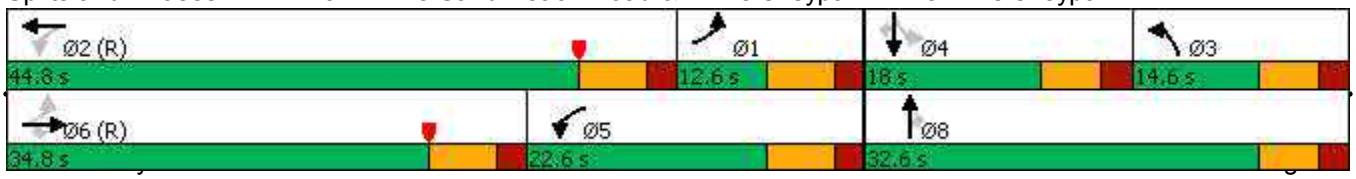
Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	78	512	238	270	1223	47	263	136	121	25	137	37
Future Volume (vph)	78	512	238	270	1223	47	263	136	121	25	137	37
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	11	11	11	12	12	12
Grade (%)		2%			-2%			3%			-3%	
Storage Length (ft)	75		150	190		0	125		185	0		150
Storage Lanes	1		1	1		0	2		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	0.91	0.97	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.98						0.99		1.00	
Frt			0.850		0.994				0.850			0.850
Flt Protected	0.950			0.950			0.950				0.992	
Satd. Flow (prot)	1582	4589	1429	1629	4831	0	3067	1664	1349	0	1707	1438
Flt Permitted	0.130			0.395			0.950				0.921	
Satd. Flow (perm)	217	4589	1399	677	4831	0	3067	1664	1331	0	1585	1438
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			269		8				200			274
Link Speed (mph)		45			45			35			35	
Link Distance (ft)		789			2028			659			1125	
Travel Time (s)		12.0			30.7			12.8			21.9	
Confl. Peds. (#/hr)									1	1		
Confl. Bikes (#/hr)			1	1								
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	7%	6%	6%	6%	2%	5%	3%	3%	8%	7%	6%	8%
Adj. Flow (vph)	87	569	264	300	1359	52	292	151	134	28	152	41
Shared Lane Traffic (%)												
Lane Group Flow (vph)	87	569	264	300	1411	0	292	151	134	0	180	41
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			22			22	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.06	1.06	1.06	1.14	1.14	1.14	1.05	1.05	1.05
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	1	1	1	1	1
Detector Template		Main30	Right		Main30					Left		Right
Leading Detector (ft)	35	300	48	35	300		30	30	30	48	35	48
Trailing Detector (ft)	-5	0	-2	-5	0		-10	-10	-10	-2	-5	-2
Detector 1 Position(ft)	-5	0	-2	-5	0		-10	-10	-10	-2	-5	-2
Detector 1 Size(ft)	40	0	50	40	0		40	40	40	50	40	50
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		294			294							
Detector 2 Size(ft)		6			6							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Prot	NA	Perm	Perm	NA	Perm
Protected Phases	1	6		5	2		3	8			4	
Permitted Phases	6		6	2					8	4		4
Detector Phase	1	6	6	5	2		3	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	3.0	10.0	10.0	3.0	10.0		3.0	3.0	3.0	3.0	3.0	3.0
Minimum Split (s)	12.5	16.5	16.5	12.5	16.5		12.5	10.0	10.0	12.5	12.5	12.5
Total Split (s)	12.6	34.8	34.8	22.6	44.8		14.6	32.6	32.6	18.0	18.0	18.0
Total Split (%)	14.0%	38.7%	38.7%	25.1%	49.8%		16.2%	36.2%	36.2%	20.0%	20.0%	20.0%
Maximum Green (s)	6.1	28.3	28.3	16.1	38.3		8.5	26.5	26.5	11.9	11.9	11.9
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5		3.9	3.9	3.9	3.9	3.9	3.9
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.2	2.2	2.2	2.2	2.2	2.2
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	-1.5		-1.5	-1.5	-1.5		-1.5	-1.5
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		4.6	4.6	4.6		4.6	4.6
Lead/Lag	Lag	Lead	Lead	Lag	Lead		Lag			Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes			Yes	Yes	Yes
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0		3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	15.0	15.0	0.0	15.0		0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	30.0	30.0	0.0	30.0		0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	C-Max	C-Max	None	C-Max		None	None	None	None	None	None
Act Effct Green (s)	39.8	32.2	32.2	52.7	42.7		10.0	27.7	27.7		13.1	13.1
Actuated g/C Ratio	0.44	0.36	0.36	0.59	0.47		0.11	0.31	0.31		0.15	0.15
v/c Ratio	0.42	0.35	0.39	0.54	0.62		0.86	0.30	0.24		0.79	0.09
Control Delay	34.7	12.3	8.4	15.2	13.6		64.2	25.6	2.0		61.8	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Total Delay	34.7	12.3	8.4	15.2	13.6		64.2	25.6	2.0		61.8	0.4
LOS	C	B	A	B	B		E	C	A		E	A
Approach Delay		13.3			13.8			39.6			50.4	
Approach LOS		B			B			D			D	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 88 (98%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay: 20.4	Intersection LOS: C
Intersection Capacity Utilization 63.6%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 12: Park Drive/Sand Beach Road & W Hersheypark Drive/E Hersheypark Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	78	512	238	270	1223	47	263	136	121	25	137	37
Future Volume (veh/h)	78	512	238	270	1223	47	263	136	121	25	137	37
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1679	1693	1693	1789	1846	1846	1708	1708	1637	1826	1826	1798
Adj Flow Rate, veh/h	87	569	264	300	1359	52	292	151	134	28	152	41
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	7	6	6	6	2	2	3	3	8	6	6	8
Cap, veh/h	259	1531	465	542	2201	84	351	531	431	66	189	226
Arrive On Green	0.08	0.33	0.33	0.20	0.44	0.44	0.11	0.31	0.31	0.15	0.15	0.15
Sat Flow, veh/h	1599	4623	1405	1704	4976	190	3155	1708	1386	133	1269	1521
Grp Volume(v), veh/h	87	569	264	300	918	493	292	151	134	180	0	41
Grp Sat Flow(s),veh/h/ln	1599	1541	1405	1704	1680	1807	1578	1708	1386	1403	0	1521
Q Serve(g_s), s	0.0	8.4	13.9	2.1	18.9	18.9	8.2	6.0	6.6	5.1	0.0	2.1
Cycle Q Clear(g_c), s	0.0	8.4	13.9	2.1	18.9	18.9	8.2	6.0	6.6	11.7	0.0	2.1
Prop In Lane	1.00		1.00	1.00		0.11	1.00		1.00	0.16		1.00
Lane Grp Cap(c), veh/h	259	1531	465	542	1486	799	351	531	431	255	0	226
V/C Ratio(X)	0.34	0.37	0.57	0.55	0.62	0.62	0.83	0.28	0.31	0.71	0.00	0.18
Avail Cap(c_a), veh/h	259	1531	465	542	1486	799	351	531	431	255	0	226
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	35.0	23.0	24.8	25.5	19.3	19.3	39.2	23.4	23.6	37.5	0.0	33.5
Incr Delay (d2), s/veh	0.8	0.7	5.0	1.2	1.9	3.6	15.6	0.3	0.4	8.6	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.1	5.3	8.5	8.9	11.3	12.4	6.9	4.3	3.9	7.8	0.0	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.7	23.7	29.7	26.8	21.2	22.8	54.8	23.7	24.0	46.1	0.0	33.9
LnGrp LOS	D	C	C	C	C	C	D	C	C	D	A	C
Approach Vol, veh/h		920			1711			577			221	
Approach Delay, s/veh		26.5			22.6			39.5			43.8	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	12.6	44.8	14.6	18.0	22.6	34.8		32.6
Change Period (Y+Rc), s	6.5	6.5	* 6.1	* 6.1	6.5	6.5		* 6.1
Max Green Setting (Gmax), s	6.1	38.3	* 8.5	* 12	16.1	28.3		* 27
Max Q Clear Time (g_c+I1), s	2.5	21.4	10.7	13.7	4.6	15.9		9.1
Green Ext Time (p_c), s	0.1	16.1	0.0	0.0	0.8	9.1		0.8

Intersection Summary	
HCM 6th Ctrl Delay	27.9
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	708	237	316	1158	93	57	74	189	6	2	5
Future Volume (vph)	36	708	237	316	1158	93	57	74	189	6	2	5
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	12	12	10	13	13	13	13	13	13	13	13
Grade (%)		-3%			3%			-1%			-2%	
Storage Length (ft)	200		0	575		0	0		0	0		0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99		1.00								
Frt		0.962			0.989				0.850		0.952	
Flt Protected	0.950			0.950				0.979			0.976	
Satd. Flow (prot)	1620	3156	0	1526	1795	0	0	1783	1513	0	1746	0
Flt Permitted	0.087			0.211				0.853			0.742	
Satd. Flow (perm)	148	3156	0	339	1795	0	0	1554	1513	0	1327	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)		64			12				186			
Link Speed (mph)		25			35			25			25	
Link Distance (ft)		592			1437			1120			398	
Travel Time (s)		16.1			28.0			30.5			10.9	
Confl. Peds. (#/hr)			1	1								
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	3%	12%	3%	1%	0%	6%	0%	5%	0%	0%	0%
Adj. Flow (vph)	39	770	258	343	1259	101	62	80	205	7	2	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	39	1028	0	343	1360	0	0	142	205	0	14	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.15	1.05	1.05	1.19	1.05	1.05	1.02	1.02	1.02	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	1	1	1	1	
Detector Template							Left	Thru	Right	Left	Thru	
Leading Detector (ft)	0	150		38	150		48	48	48	48	48	
Trailing Detector (ft)	0	0		-2	0		-2	-2	-2	-2	-2	
Detector 1 Position(ft)	0	0		-2	0		-2	-2	-2	-2	-2	
Detector 1 Size(ft)	0	0		40	0		50	50	50	50	50	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		144			144							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	pm+ov	Perm	NA	
Protected Phases		2		1	6			8	1		4	
Permitted Phases	2			6			8		8	4		
Detector Phase	2	2		1	6		8	8	1	4	4	
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Minimum Split (s)	10.0	10.0		9.8	10.0		10.0	10.0	9.8	10.0	10.0	
Total Split (s)	73.9	73.9		28.1	102.0		18.0	18.0	28.1	18.0	18.0	
Total Split (%)	61.6%	61.6%		23.4%	85.0%		15.0%	15.0%	23.4%	15.0%	15.0%	
Maximum Green (s)	67.2	67.2		21.4	95.3		11.2	11.2	21.4	11.2	11.2	
Yellow Time (s)	3.4	3.4		3.4	3.4		3.8	3.8	3.4	3.8	3.8	
All-Red Time (s)	3.3	3.3		3.3	3.3		3.0	3.0	3.3	3.0	3.0	
Lost Time Adjust (s)	-1.5	-1.5		-1.5	-1.5			-1.5	-1.5		-1.5	
Total Lost Time (s)	5.2	5.2		5.2	5.2			5.3	5.2		5.3	
Lead/Lag	Lag	Lag		Lead					Lead			
Lead-Lag Optimize?	Yes	Yes		Yes					Yes			
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max		None	C-Max		None	None	None	None	None	
Act Effct Green (s)	74.8	74.8		96.8	96.8			12.7	34.8		12.7	
Actuated g/C Ratio	0.62	0.62		0.81	0.81			0.11	0.29		0.11	
v/c Ratio	0.42	0.52		0.78	0.94			0.87	0.36		0.10	
Control Delay	32.0	13.4		21.1	23.5			95.3	7.3		50.5	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Delay	32.0	13.4		21.1	23.5			95.3	7.3		50.5	
LOS	C	B		C	C			F	A		D	
Approach Delay		14.1			23.0			43.3			50.5	
Approach LOS		B			C			D			D	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.94	
Intersection Signal Delay: 22.3	Intersection LOS: C
Intersection Capacity Utilization 95.9%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 19: Homestead Rd & SR 422 (E. Chocolate Ave)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	708	237	316	1158	93	57	74	189	6	2	5
Future Volume (veh/h)	36	708	237	316	1158	93	57	74	189	6	2	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1912	1869	1869	1708	1805	1805	1911	1911	1837	1950	1950	1950
Adj Flow Rate, veh/h	39	770	258	343	1259	101	62	80	205	7	2	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	3	3	3	1	1	0	0	5	0	0	0
Cap, veh/h	139	1742	584	496	1330	107	107	92	315	51	21	15
Arrive On Green	0.67	0.67	0.67	0.10	0.81	0.81	0.11	0.11	0.11	0.11	0.11	0.11
Sat Flow, veh/h	432	2612	875	1626	1649	132	608	866	1557	60	200	145
Grp Volume(v), veh/h	39	523	505	343	0	1360	142	0	205	14	0	0
Grp Sat Flow(s),veh/h/ln	432	1776	1711	1626	0	1781	1474	0	1557	406	0	0
Q Serve(g_s), s	9.7	16.7	16.7	7.1	0.0	74.9	0.0	0.0	12.7	0.1	0.0	0.0
Cycle Q Clear(g_c), s	67.9	16.7	16.7	7.1	0.0	74.9	11.6	0.0	12.7	11.7	0.0	0.0
Prop In Lane	1.00		0.51	1.00		0.07	0.44		1.00	0.50		0.36
Lane Grp Cap(c), veh/h	139	1184	1141	496	0	1437	199	0	315	88	0	0
V/C Ratio(X)	0.28	0.44	0.44	0.69	0.00	0.95	0.71	0.00	0.65	0.16	0.00	0.00
Avail Cap(c_a), veh/h	139	1184	1141	649	0	1437	199	0	315	88	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	44.1	9.4	9.4	7.8	0.0	9.5	53.1	0.0	44.0	48.7	0.0	0.0
Incr Delay (d2), s/veh	5.0	1.2	1.2	2.1	0.0	14.0	11.4	0.0	4.7	0.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.2	10.9	10.6	4.2	0.0	32.9	8.5	0.0	10.1	0.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.1	10.6	10.7	9.9	0.0	23.5	64.5	0.0	48.7	49.6	0.0	0.0
LnGrp LOS	D	B	B	A	A	C	E	A	D	D	A	A
Approach Vol, veh/h		1067			1703			347			14	
Approach Delay, s/veh		12.1			20.8			55.2			49.6	
Approach LOS		B			C			E			D	

Timer - Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	16.8	85.2		18.0		102.0		18.0
Change Period (Y+Rc), s	* 6.7	* 6.7		* 6.8		* 6.7		* 6.8
Max Green Setting (Gmax), s	* 21	* 67		* 11		* 95		* 11
Max Q Clear Time (g_c+I1), s	9.1	18.7		13.7		76.9		14.7
Green Ext Time (p_c), s	1.0	13.9		0.0		14.9		0.0

Intersection Summary	
HCM 6th Ctrl Delay	21.7
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	925	377	236	484	91	110	106	102	76	184	25
Future Volume (vph)	30	925	377	236	484	91	110	106	102	76	184	25
Ideal Flow (vphpl)	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Lane Width (ft)	12	12	12	12	13	11	14	12	14	12	12	12
Grade (%)		1%			-1%			-1%			-3%	
Storage Length (ft)	150		150	175		125	0		165	0		0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00		0.98	1.00		0.99	1.00		0.98	0.99	1.00	
Frt			0.850			0.850			0.850		0.982	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1560	3058	1395	1575	3161	1310	1680	1642	1489	1560	1613	0
Flt Permitted	0.308			0.191			0.386			0.683		
Satd. Flow (perm)	505	3058	1364	317	3161	1293	682	1642	1456	1115	1613	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			348			165			238		7	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		1532			974			928			672	
Travel Time (s)		29.8			19.0			25.3			18.3	
Confl. Peds. (#/hr)	1		2	2		1	2		8	8		2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	2%	0%	0%	3%	4%	0%	1%	1%	2%	2%	0%
Adj. Flow (vph)	33	1005	410	257	526	99	120	115	111	83	200	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	33	1005	410	257	526	99	120	115	111	83	227	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			14			14	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.20	1.20	1.20	1.19	1.14	1.24	1.10	1.19	1.10	1.17	1.17	1.17
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	1	1	1	1	
Detector Template		Main25	Right		Main25							
Leading Detector (ft)	38	250	48	38	250	0	38	38	38	38	38	
Trailing Detector (ft)	-2	0	-2	-2	0	0	-2	-2	-2	-2	-2	
Detector 1 Position(ft)	-2	0	-2	-2	0	0	-2	-2	-2	-2	-2	
Detector 1 Size(ft)	40	0	50	40	0	0	40	40	40	40	40	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		244			244							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	
Switch Phase												
Minimum Initial (s)	3.0	10.0	10.0	3.0	10.0	10.0	3.0	3.0	3.0	3.0	3.0	
Minimum Split (s)	13.0	25.0	25.0	13.0	15.7	15.7	13.0	25.0	25.0	13.0	13.0	
Total Split (s)	13.0	38.0	38.0	14.0	39.0	39.0	13.0	25.0	25.0	13.0	25.0	
Total Split (%)	14.4%	42.2%	42.2%	15.6%	43.3%	43.3%	14.4%	27.8%	27.8%	14.4%	27.8%	
Maximum Green (s)	7.3	32.3	32.3	8.3	33.3	33.3	7.6	19.6	19.6	7.5	19.6	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.0	3.0	3.0	3.5	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.4	2.4	2.4	2.0	2.4	
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	
Total Lost Time (s)	4.2	4.2	4.2	4.2	4.2	4.2	3.9	3.9	3.9	4.0	3.9	
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0	6.0	3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	25.0	25.0	0.0	25.0	25.0	0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	13.0	13.0	0.0	13.0	13.0	0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	
Act Effct Green (s)	37.1	37.1	37.1	43.4	43.4	43.4	27.7	20.4	20.4	26.6	18.0	
Actuated g/C Ratio	0.41	0.41	0.41	0.48	0.48	0.48	0.31	0.23	0.23	0.30	0.20	
v/c Ratio	0.11	0.80	0.54	0.89	0.35	0.14	0.39	0.31	0.22	0.22	0.69	
Control Delay	18.5	30.1	6.9	55.7	12.2	0.4	23.9	31.9	1.0	21.1	43.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	18.5	30.1	6.9	55.7	12.2	0.4	23.9	31.9	1.0	21.1	43.5	
LOS	B	C	A	E	B	A	C	C	A	C	D	
Approach Delay		23.3			23.6			19.2			37.5	
Approach LOS		C			C			B			D	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 21 (23%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay: 24.4	Intersection LOS: C
Intersection Capacity Utilization 78.1%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 23: University Dr & SR 322 (W Governor Dr)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	925	377	236	484	91	110	106	102	76	184	25
Future Volume (veh/h)	30	925	377	236	484	91	110	106	102	76	184	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.99		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1645	1619	1645	1684	1711	1632	1752	1671	1738	1726	1726	1726
Adj Flow Rate, veh/h	33	1005	410	257	526	99	120	115	111	83	200	27
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	0	0	3	4	0	1	1	2	2	2
Cap, veh/h	355	1155	522	381	1687	717	283	320	278	344	256	34
Arrive On Green	0.04	0.38	0.38	0.36	1.00	1.00	0.09	0.19	0.19	0.07	0.17	0.17
Sat Flow, veh/h	1567	3076	1390	1604	3251	1381	1668	1671	1454	1644	1486	201
Grp Volume(v), veh/h	33	1005	410	257	526	99	120	115	111	83	0	227
Grp Sat Flow(s),veh/h/ln	1567	1538	1390	1604	1625	1381	1668	1671	1454	1644	0	1687
Q Serve(g_s), s	1.3	27.3	15.4	6.0	0.0	0.0	5.1	5.4	3.8	3.6	0.0	11.6
Cycle Q Clear(g_c), s	1.3	27.3	15.4	6.0	0.0	0.0	5.1	5.4	3.8	3.6	0.0	11.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.12
Lane Grp Cap(c), veh/h	355	1155	522	381	1687	717	283	320	278	344	0	290
V/C Ratio(X)	0.09	0.87	0.79	0.67	0.31	0.14	0.42	0.36	0.40	0.24	0.00	0.78
Avail Cap(c_a), veh/h	450	1155	522	381	1687	717	298	392	341	391	0	395
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.87	0.87	0.87	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.4	26.1	10.7	24.3	0.0	0.0	27.1	31.6	12.4	27.2	0.0	35.7
Incr Delay (d2), s/veh	0.1	9.0	11.3	4.0	0.4	0.3	1.0	0.7	0.9	0.4	0.0	6.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.8	16.2	10.0	7.2	0.2	0.1	3.8	4.0	3.8	2.6	0.0	9.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.5	35.1	22.0	28.4	0.4	0.3	28.1	32.3	13.3	27.6	0.0	42.6
LnGrp LOS	B	D	C	C	A	A	C	C	B	C	A	D
Approach Vol, veh/h		1448			882			346			310	
Approach Delay, s/veh		31.0			8.6			24.8			38.6	
Approach LOS		C			A			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.4	38.0	12.2	19.4	7.5	50.9	10.4	21.1
Change Period (Y+Rc), s	* 5.7	* 5.7	5.4	5.4	* 5.7	* 5.7	5.5	5.4
Max Green Setting (Gmax), s	* 33	* 32	7.6	19.6	* 7.3	* 33	7.5	19.6
Max Q Clear Time (g_c+I1), s	8.0	29.3	7.1	13.6	3.3	2.0	5.6	7.4
Green Ext Time (p_c), s	0.0	2.9	0.0	0.4	0.0	12.7	0.0	0.6

Intersection Summary	
HCM 6th Ctrl Delay	24.4
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

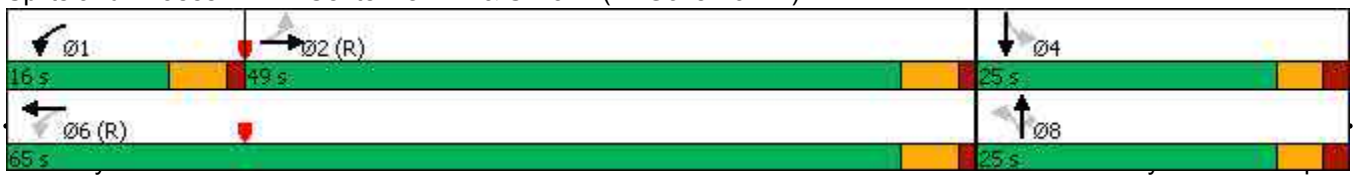
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	592	415	276	751	44	100	24	96	36	187	11
Future Volume (vph)	6	592	415	276	751	44	100	24	96	36	187	11
Ideal Flow (vphpl)	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Lane Width (ft)	12	14	12	12	12	12	12	12	14	16	16	16
Grade (%)		1%			-2%			1%			-1%	
Storage Length (ft)	130		0	165		0	150		350	0		0
Storage Lanes	1		0	1		0	1		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	0.99		1.00	1.00				0.98		1.00	
Frt		0.938			0.992				0.850		0.994	
Flt Protected	0.950			0.950			0.950				0.992	
Satd. Flow (prot)	1560	2955	0	1583	3043	0	1500	1549	1489	0	1853	0
Flt Permitted	0.309			0.135			0.368				0.951	
Satd. Flow (perm)	507	2955	0	225	3043	0	581	1549	1456	0	1774	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		266			15				112		3	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		974			2832			941			923	
Travel Time (s)		19.0			55.2			25.7			25.2	
Confl. Peds. (#/hr)	1		1	1		1			8	8		
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	0%	8%	0%	0%	3%	5%	4%	6%	0%	0%	0%	0%
Adj. Flow (vph)	7	688	483	321	873	51	116	28	112	42	217	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	7	1171	0	321	924	0	116	28	112	0	272	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.20	1.11	1.20	1.18	1.18	1.18	1.20	1.20	1.11	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	1	1	1	1	
Detector Template		Main25		Left	Main25		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	0	250		48	250		48	48	48	48	48	
Trailing Detector (ft)	0	0		-2	0		-2	-2	-2	-2	-2	
Detector 1 Position(ft)	0	0		-2	0		-2	-2	-2	-2	-2	
Detector 1 Size(ft)	0	0		50	0		50	50	50	50	50	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		244			244							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8		8	4		
Detector Phase	2	2		1	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		3.0	10.0		3.0	3.0	3.0	3.0	3.0	
Minimum Split (s)	25.0	25.0		13.0	25.0		25.0	25.0	25.0	25.0	25.0	
Total Split (s)	49.0	49.0		16.0	65.0		25.0	25.0	25.0	25.0	25.0	
Total Split (%)	54.4%	54.4%		17.8%	72.2%		27.8%	27.8%	27.8%	27.8%	27.8%	
Maximum Green (s)	43.9	43.9		10.9	59.9		20.1	20.1	20.1	20.1	20.1	
Yellow Time (s)	3.8	3.8		3.8	3.8		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.3	1.3		1.3	1.3		1.9	1.9	1.9	1.9	1.9	
Lost Time Adjust (s)	-1.5	-1.5		-1.5	-1.5		-1.5	-1.0	-1.0		-1.0	
Total Lost Time (s)	3.6	3.6		3.6	3.6		3.4	3.9	3.9		3.9	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	6.0	6.0		3.0	6.0		3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	25.0	25.0		0.0	25.0		0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	13.0	13.0		0.0	13.0		0.0	0.0	0.0	0.0	0.0	
Recall Mode	C-Max	C-Max		None	C-Max		None	None	None	None	None	
Act Effct Green (s)	47.1	47.1		63.1	63.1		19.9	19.4	19.4		19.4	
Actuated g/C Ratio	0.52	0.52		0.70	0.70		0.22	0.22	0.22		0.22	
v/c Ratio	0.03	0.70		0.93	0.43		0.91	0.08	0.28		0.71	
Control Delay	2.7	4.5		56.3	4.1		93.9	27.8	7.7		42.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0		0.0	
Total Delay	2.7	4.5		56.3	4.1		93.9	27.8	7.7		42.7	
LOS	A	A		E	A		F	C	A		D	
Approach Delay		4.5			17.5			49.0			42.7	
Approach LOS		A			B			D			D	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 86 (96%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.93
Intersection Signal Delay: 17.4 Intersection LOS: B
Intersection Capacity Utilization 85.9% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 24: Centerview Dr & SR 322 (W Governor Dr)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	592	415	276	751	44	100	24	96	36	187	11
Future Volume (veh/h)	6	592	415	276	751	44	100	24	96	36	187	11
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.99		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1645	1604	1542	1718	1679	1679	1593	1568	1711	1752	1752	1752
Adj Flow Rate, veh/h	7	688	483	321	873	51	116	28	112	42	217	13
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	0	8	8	0	3	3	4	6	0	0	0	0
Cap, veh/h	383	924	645	526	2140	125	234	342	313	86	305	17
Arrive On Green	1.00	1.00	1.00	0.12	0.70	0.70	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	562	1713	1197	1636	3063	179	1029	1568	1434	181	1399	79
Grp Volume(v), veh/h	7	611	560	321	455	469	116	28	112	272	0	0
Grp Sat Flow(s),veh/h/ln	562	1523	1387	1636	1595	1647	1029	1568	1434	1658	0	0
Q Serve(g_s), s	0.0	0.0	0.0	7.0	10.8	10.8	2.8	1.3	6.0	7.9	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	7.0	10.8	10.8	16.4	1.3	6.0	13.6	0.0	0.0
Prop In Lane	1.00		0.86	1.00		0.11	1.00		1.00	0.15		0.05
Lane Grp Cap(c), veh/h	383	821	748	526	1114	1150	234	342	313	417	0	0
V/C Ratio(X)	0.02	0.74	0.75	0.61	0.41	0.41	0.50	0.08	0.36	0.65	0.00	0.00
Avail Cap(c_a), veh/h	383	821	748	556	1114	1150	250	368	336	444	0	0
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.64	0.64	0.64	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	5.8	5.7	5.7	34.4	28.0	29.8	32.7	0.0	0.0
Incr Delay (d2), s/veh	0.1	4.0	4.4	1.8	1.1	1.1	1.6	0.1	0.7	3.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	1.6	1.7	3.9	5.7	5.9	4.6	0.9	3.8	9.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.1	4.0	4.4	7.6	6.8	6.8	36.1	28.1	30.5	35.8	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	D	C	C	D	A	A
Approach Vol, veh/h		1178			1245			256			272	
Approach Delay, s/veh		4.1			7.0			32.8			35.8	
Approach LOS		A			A			C			D	

Timer - Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	14.4	52.1		23.5		66.5		23.5
Change Period (Y+Rc), s	5.1	5.1		* 4.9		5.1		* 4.9
Max Green Setting (Gmax), s	10.9	43.9		* 20		59.9		* 20
Max Q Clear Time (g_c+I1), s	9.0	2.0		15.6		12.8		18.4
Green Ext Time (p_c), s	0.3	34.9		0.4		31.0		0.2

Intersection Summary	
HCM 6th Ctrl Delay	10.8
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

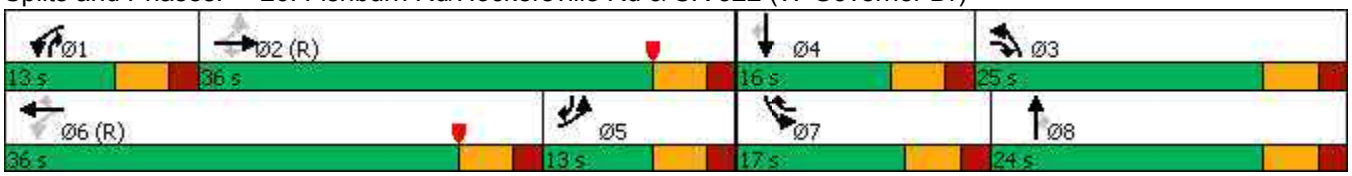
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	448	136	50	906	185	269	236	104	163	147	52
Future Volume (vph)	22	448	136	50	906	185	269	236	104	163	147	52
Ideal Flow (vphpl)	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Lane Width (ft)	11	12	14	11	12	14	11	11	13	11	12	12
Grade (%)		1%			0%			-1%			2%	
Storage Length (ft)	140		300	125		75	135		85	100		100
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1422	2943	1474	1416	3074	1452	1493	1512	1387	1485	1571	1348
Flt Permitted	0.227			0.319			0.950			0.950		
Satd. Flow (perm)	340	2943	1474	476	3074	1452	1493	1512	1387	1485	1571	1348
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			145			123			168			168
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		547			252			343			1393	
Travel Time (s)		10.7			4.9			6.7			27.1	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	6%	6%	1%	7%	2%	3%	2%	6%	5%	1%	4%	3%
Adj. Flow (vph)	23	477	145	53	964	197	286	251	111	173	156	55
Shared Lane Traffic (%)												
Lane Group Flow (vph)	23	477	145	53	964	197	286	251	111	173	156	55
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.26	1.20	1.11	1.25	1.20	1.10	1.24	1.24	1.14	1.26	1.21	1.21
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	1	1	1	1	1
Detector Template		Main25	Right	Left	Main25	Right						Right
Leading Detector (ft)	38	250	48	48	250	48	38	38	38	38	38	48
Trailing Detector (ft)	-2	0	-2	-2	0	-2	-2	-2	-2	-2	-2	-2
Detector 1 Position(ft)	-2	0	-2	-2	0	-2	-2	-2	-2	-2	-2	-2
Detector 1 Size(ft)	40	0	50	50	0	50	40	40	40	40	40	50
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		244			244							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8	1	7	4	5
Permitted Phases	2		2	6		6			8			4
Detector Phase	5	2	3	1	6	7	3	8	1	7	4	5
Switch Phase												
Minimum Initial (s)	3.0	10.0	3.0	3.0	10.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Split (s)	13.0	25.0	13.0	13.0	25.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0
Total Split (s)	13.0	36.0	25.0	13.0	36.0	17.0	25.0	24.0	13.0	17.0	16.0	13.0
Total Split (%)	14.4%	40.0%	27.8%	14.4%	40.0%	18.9%	27.8%	26.7%	14.4%	18.9%	17.8%	14.4%
Maximum Green (s)	7.4	30.4	19.3	7.4	30.4	11.3	19.3	18.3	7.4	11.3	10.3	7.4
Yellow Time (s)	3.6	3.6	3.7	3.6	3.6	3.7	3.7	3.7	3.6	3.7	3.7	3.6
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5
Total Lost Time (s)	4.1	4.1	4.2	4.1	4.1	4.2	4.2	4.2	4.1	4.2	4.2	4.1
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	6.5	3.0	3.0	6.5	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	25.0	0.0	0.0	25.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	12.5	0.0	0.0	12.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	C-Max	None	None	C-Max	None	None	None	None	None	None	None
Act Effct Green (s)	35.5	35.5	56.3	35.4	35.4	48.8	20.1	19.0	31.6	12.7	11.6	23.5
Actuated g/C Ratio	0.39	0.39	0.63	0.39	0.39	0.54	0.22	0.21	0.35	0.14	0.13	0.26
v/c Ratio	0.10	0.41	0.15	0.19	0.80	0.23	0.86	0.79	0.19	0.82	0.77	0.12
Control Delay	11.9	11.7	0.4	5.8	14.9	1.1	54.9	48.4	1.4	69.1	64.0	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.9	11.7	0.4	5.8	14.9	1.1	54.9	48.4	1.4	69.1	64.0	0.5
LOS	B	B	A	A	B	A	D	D	A	E	E	A
Approach Delay		9.1			12.3			43.2			57.2	
Approach LOS		A			B			D			E	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 22 (24%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.86
Intersection Signal Delay: 24.5 Intersection LOS: C
Intersection Capacity Utilization 72.1% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 26: Fishburn Rd/Hockersville Rd & SR 322 (W Governor Dr)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	448	136	50	906	185	269	236	104	163	147	52
Future Volume (veh/h)	22	448	136	50	906	185	269	236	104	163	147	52
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1568	1568	1697	1560	1624	1676	1658	1606	1684	1617	1578	1591
Adj Flow Rate, veh/h	23	477	145	53	964	197	286	251	111	173	156	55
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	6	6	1	7	2	3	2	6	5	1	4	3
Cap, veh/h	255	1234	911	259	1094	705	346	334	370	219	207	327
Arrive On Green	0.11	0.41	0.41	0.05	0.35	0.35	0.07	0.07	0.07	0.14	0.13	0.13
Sat Flow, veh/h	1493	2979	1438	1486	3086	1420	1579	1606	1427	1540	1578	1348
Grp Volume(v), veh/h	23	477	145	53	964	197	286	251	111	173	156	55
Grp Sat Flow(s),veh/h/ln	1493	1489	1438	1486	1543	1420	1579	1606	1427	1540	1578	1348
Q Serve(g_s), s	0.0	10.1	0.8	2.2	26.4	3.4	16.1	13.8	6.3	9.8	8.6	0.0
Cycle Q Clear(g_c), s	0.0	10.1	0.8	2.2	26.4	3.4	16.1	13.8	6.3	9.8	8.6	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	255	1234	911	259	1094	705	346	334	370	219	207	327
V/C Ratio(X)	0.09	0.39	0.16	0.20	0.88	0.28	0.83	0.75	0.30	0.79	0.75	0.17
Avail Cap(c_a), veh/h	255	1234	911	330	1094	705	365	353	387	219	207	327
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.1	18.4	1.6	21.8	27.3	4.0	40.1	39.6	31.8	37.3	37.7	26.9
Incr Delay (d2), s/veh	0.2	0.9	0.4	0.4	10.2	1.0	13.4	7.9	0.4	17.5	14.5	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.8	6.2	0.7	1.4	16.1	2.6	12.6	10.7	4.1	8.2	7.3	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.3	19.3	2.0	22.1	37.5	5.0	53.4	47.6	32.2	54.8	52.2	27.2
LnGrp LOS	D	B	A	C	D	A	D	D	C	D	D	C
Approach Vol, veh/h		645			1214			648			384	
Approach Delay, s/veh		16.0			31.6			47.5			49.8	
Approach LOS		B			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.7	41.4	23.9	16.0	14.1	36.0	17.0	22.9
Change Period (Y+Rc), s	5.6	5.6	* 5.7	* 5.7	5.6	5.6	* 5.7	* 5.7
Max Green Setting (Gmax), s	7.4	30.4	* 19	* 10	7.4	30.4	* 11	* 18
Max Q Clear Time (g_c+I1), s	4.2	12.1	18.1	10.6	2.0	28.4	11.8	15.8
Green Ext Time (p_c), s	0.0	10.8	0.1	0.0	0.0	1.9	0.0	0.3

Intersection Summary	
HCM 6th Ctrl Delay	34.1
HCM 6th LOS	C

Notes

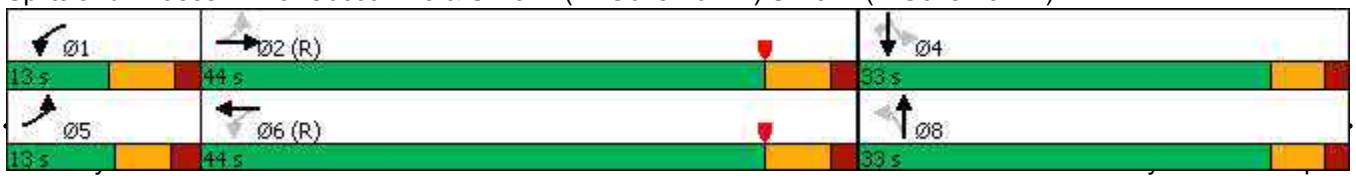
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	37	537	37	59	973	39	14	298	27	28	197	40
Future Volume (vph)	37	537	37	59	973	39	14	298	27	28	197	40
Ideal Flow (vphpl)	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Lane Width (ft)	10	15	15	11	13	13	11	13	13	11	12	15
Grade (%)		-2%			-3%			0%			0%	
Storage Length (ft)	175		0	80		0	75		0	75		150
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00				1.00			1.00		1.00		
Frt		0.990			0.994			0.988				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1478	3294	0	1493	3171	0	1139	1585	0	1390	1486	1543
Flt Permitted	0.188			0.364			0.514			0.303		
Satd. Flow (perm)	292	3294	0	572	3171	0	616	1585	0	443	1486	1543
Right Turn on Red			No			Yes			No			Yes
Satd. Flow (RTOR)					6							114
Link Speed (mph)		35			40			35			35	
Link Distance (ft)		1911			1234			997			1054	
Travel Time (s)		37.2			21.0			19.4			20.5	
Confl. Peds. (#/hr)	1					1			2	2		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	5%	0%	3%	3%	3%	33%	6%	8%	9%	11%	0%
Adj. Flow (vph)	39	565	39	62	1024	41	15	314	28	29	207	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	39	604	0	62	1065	0	15	342	0	29	207	42
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.29	1.05	1.05	1.23	1.13	1.13	1.25	1.15	1.15	1.25	1.20	1.06
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	1		1	1	1
Detector Template		Main25			Main25							
Leading Detector (ft)	38	250		38	250		38	38		38	38	0
Trailing Detector (ft)	-2	0		-2	0		-2	-2		-2	-2	0
Detector 1 Position(ft)	-2	0		-2	0		-2	-2		-2	-2	0
Detector 1 Size(ft)	40	0		40	0		40	40		40	40	0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		244			244							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6			8			4		4
Detector Phase	5	2		1	6		8	8		4	4	4
Switch Phase												
Minimum Initial (s)	3.0	10.0		3.0	10.0		3.0	3.0		3.0	3.0	3.0
Minimum Split (s)	13.0	25.0		13.0	25.0		20.0	20.0		20.0	20.0	20.0
Total Split (s)	13.0	44.0		13.0	44.0		33.0	33.0		33.0	33.0	33.0
Total Split (%)	14.4%	48.9%		14.4%	48.9%		36.7%	36.7%		36.7%	36.7%	36.7%
Maximum Green (s)	7.2	37.8		6.8	37.8		27.6	27.6		27.6	27.6	27.6
Yellow Time (s)	3.8	4.4		4.4	4.4		3.6	3.6		3.6	3.6	3.6
All-Red Time (s)	2.0	1.8		1.8	1.8		1.8	1.8		1.8	1.8	1.8
Lost Time Adjust (s)	-1.5	-1.5		-1.5	-1.5		-1.5	-1.5		-1.5	-1.5	-1.5
Total Lost Time (s)	4.3	4.7		4.7	4.7		3.9	3.9		3.9	3.9	3.9
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	5.5		3.0	5.5		3.0	3.0		3.0	3.0	3.0
Minimum Gap (s)	3.0	2.0		3.0	2.0		3.0	3.0		3.0	3.0	3.0
Time Before Reduce (s)	0.0	25.0		0.0	25.0		0.0	0.0		0.0	0.0	0.0
Time To Reduce (s)	0.0	12.5		0.0	12.5		0.0	0.0		0.0	0.0	0.0
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	None
Act Effct Green (s)	53.1	46.1		53.8	48.8		25.0	25.0		25.0	25.0	25.0
Actuated g/C Ratio	0.59	0.51		0.60	0.54		0.28	0.28		0.28	0.28	0.28
v/c Ratio	0.14	0.36		0.15	0.62		0.09	0.78		0.24	0.50	0.08
Control Delay	8.6	12.5		2.0	4.0		23.3	42.3		28.7	31.0	0.3
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	8.6	12.5		2.0	4.0		23.3	42.3		28.7	31.0	0.3
LOS	A	B		A	A		C	D		C	C	A
Approach Delay		12.3			3.9			41.5			26.1	
Approach LOS		B			A			D			C	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 72 (80%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.78	
Intersection Signal Delay: 14.3	Intersection LOS: B
Intersection Capacity Utilization 73.2%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 29: Cocoa Ave & SR 322 (W Governor Dr)/SR 322 (E Governor Dr)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	537	37	59	973	39	14	298	27	28	197	40
Future Volume (veh/h)	37	537	37	59	973	39	14	298	27	28	197	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1718	1719	1719	1713	1782	1782	1225	1636	1636	1534	1508	1716
Adj Flow Rate, veh/h	39	565	39	62	1024	41	15	314	28	29	207	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	5	5	3	3	3	33	6	6	9	11	0
Cap, veh/h	320	1657	114	497	1821	73	205	400	36	146	408	
Arrive On Green	0.04	0.53	0.53	0.05	0.55	0.55	0.27	0.27	0.27	0.27	0.27	0.00
Sat Flow, veh/h	1636	3100	214	1632	3318	133	811	1480	132	898	1508	1454
Grp Volume(v), veh/h	39	297	307	62	522	543	15	0	342	29	207	0
Grp Sat Flow(s),veh/h/ln	1636	1633	1681	1632	1693	1758	811	0	1612	898	1508	1454
Q Serve(g_s), s	0.9	9.3	9.4	1.5	18.1	18.1	1.4	0.0	17.7	2.8	10.4	0.0
Cycle Q Clear(g_c), s	0.9	9.3	9.4	1.5	18.1	18.1	11.9	0.0	17.7	20.5	10.4	0.0
Prop In Lane	1.00		0.13	1.00		0.08	1.00		0.08	1.00		1.00
Lane Grp Cap(c), veh/h	320	873	898	497	929	965	205	0	436	146	408	
V/C Ratio(X)	0.12	0.34	0.34	0.12	0.56	0.56	0.07	0.00	0.78	0.20	0.51	
Avail Cap(c_a), veh/h	417	873	898	570	929	965	248	0	521	194	488	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	10.2	11.9	11.9	8.7	13.2	13.2	32.8	0.0	30.4	39.9	27.8	0.0
Incr Delay (d2), s/veh	0.2	1.1	1.0	0.1	2.5	2.4	0.1	0.0	6.5	0.7	1.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.6	6.1	6.2	0.9	10.9	11.2	0.5	0.0	11.8	1.1	6.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.3	13.0	13.0	8.8	15.7	15.6	32.9	0.0	36.9	40.5	28.7	0.0
LnGrp LOS	B	B	B	A	B	B	C	A	D	D	C	
Approach Vol, veh/h		643			1127			357			236	A
Approach Delay, s/veh		12.8			15.3			36.8			30.2	
Approach LOS		B			B			D			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.0	52.8		28.2	7.7	54.1		28.2
Change Period (Y+Rc), s	* 6.2	* 6.2		* 5.4	* 5.8	* 6.2		* 5.4
Max Green Setting (Gmax), s	* 6.8	* 38		* 28	* 7.2	* 38		* 28
Max Q Clear Time (g_c+I1), s	3.5	11.4		22.5	2.9	20.1		19.7
Green Ext Time (p_c), s	0.0	13.1		0.4	0.0	14.7		0.8

Intersection Summary	
HCM 6th Ctrl Delay	19.3
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

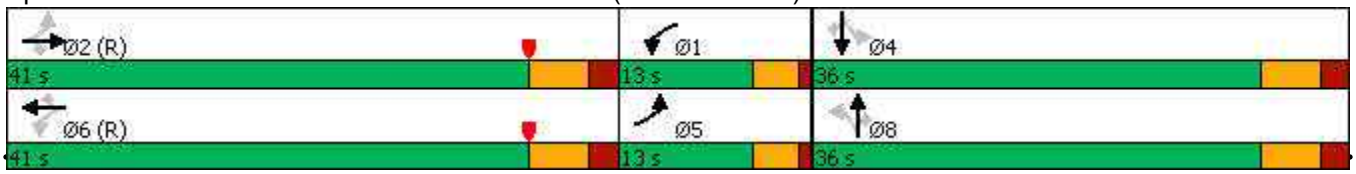
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	169	513	11	20	925	75	9	392	40	18	118	184
Future Volume (vph)	169	513	11	20	925	75	9	392	40	18	118	184
Ideal Flow (vphpl)	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Grade (%)		2%			2%			2%			2%	
Storage Length (ft)	125		100	100		100	100		100	110		200
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												0.99
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1492	2984	1388	1349	3013	1375	1552	1571	1262	1386	1433	1262
Flt Permitted	0.132			0.364			0.659			0.231		
Satd. Flow (perm)	207	2984	1388	517	3013	1375	1076	1571	1262	337	1433	1246
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			85			85			85			214
Link Speed (mph)		40			40			35			35	
Link Distance (ft)		1219			3941			1026			2312	
Travel Time (s)		20.8			67.2			20.0			45.0	
Confl. Bikes (#/hr)							1					1
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	4%	4%	0%	15%	3%	1%	0%	4%	10%	12%	14%	10%
Adj. Flow (vph)	197	597	13	23	1076	87	10	456	47	21	137	214
Shared Lane Traffic (%)												
Lane Group Flow (vph)	197	597	13	23	1076	87	10	456	47	21	137	214
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	1	1	1	1	1
Detector Template		Main25			Main25							
Leading Detector (ft)	38	250	38	38	250	38	38	38	38	38	38	38
Trailing Detector (ft)	-2	0	-2	-2	0	-2	-2	-2	-2	-2	-2	-2
Detector 1 Position(ft)	-2	0	-2	-2	0	-2	-2	-2	-2	-2	-2	-2
Detector 1 Size(ft)	40	0	40	40	0	40	40	40	40	40	40	40
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		244			244							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0							
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6		6	8		8	4		4
Detector Phase	5	2	2	1	6	6	8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	3.0	12.0	12.0	3.0	12.0	12.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Split (s)	13.0	29.0	29.0	13.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0
Total Split (s)	13.0	41.0	41.0	13.0	41.0	41.0	36.0	36.0	36.0	36.0	36.0	36.0
Total Split (%)	14.4%	45.6%	45.6%	14.4%	45.6%	45.6%	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%
Maximum Green (s)	9.0	35.0	35.0	9.0	35.0	35.0	30.0	30.0	30.0	30.0	30.0	30.0
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5
Total Lost Time (s)	2.5	4.5	4.5	2.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0	6.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	28.0	28.0	0.0	28.0	28.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	14.0	14.0	0.0	14.0	14.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
Act Effct Green (s)	52.3	46.1	46.1	44.8	38.3	38.3	29.7	29.7	29.7	29.7	29.7	29.7
Actuated g/C Ratio	0.58	0.51	0.51	0.50	0.43	0.43	0.33	0.33	0.33	0.33	0.33	0.33
v/c Ratio	0.73	0.39	0.02	0.07	0.84	0.14	0.03	0.88	0.10	0.19	0.29	0.39
Control Delay	39.0	7.6	0.0	10.8	31.2	4.8	19.7	48.3	1.9	25.7	23.6	5.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.0	7.6	0.0	10.8	31.2	4.8	19.7	48.3	1.9	25.7	23.6	5.3
LOS	D	A	A	B	C	A	B	D	A	C	C	A
Approach Delay		15.2			28.8			43.5			13.2	
Approach LOS		B			C			D			B	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 25 (28%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay: 25.6	Intersection LOS: C
Intersection Capacity Utilization 74.8%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 30: Homestead Rd & SR 322 (E Governor Dr)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	169	513	11	20	925	75	9	392	40	18	118	184
Future Volume (veh/h)	169	513	11	20	925	75	9	392	40	18	118	184
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1578	1578	1630	1436	1591	1617	1630	1578	1501	1475	1449	1501
Adj Flow Rate, veh/h	197	597	13	23	1076	87	10	456	47	21	137	214
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	4	4	0	15	3	1	0	4	10	12	14	10
Cap, veh/h	277	972	448	445	1219	553	334	533	424	131	489	424
Arrive On Green	0.13	0.32	0.32	0.21	0.40	0.40	0.34	0.34	0.34	0.34	0.34	0.34
Sat Flow, veh/h	1503	2998	1381	1368	3023	1370	947	1578	1256	746	1449	1256
Grp Volume(v), veh/h	197	597	13	23	1076	87	10	456	47	21	137	214
Grp Sat Flow(s),veh/h/ln	1503	1499	1381	1368	1511	1370	947	1578	1256	746	1449	1256
Q Serve(g_s), s	6.3	15.1	0.6	0.0	29.7	3.6	0.7	24.2	2.3	2.4	6.2	12.2
Cycle Q Clear(g_c), s	6.3	15.1	0.6	0.0	29.7	3.6	6.9	24.2	2.3	26.7	6.2	12.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	277	972	448	445	1219	553	334	533	424	131	489	424
V/C Ratio(X)	0.71	0.61	0.03	0.05	0.88	0.16	0.03	0.86	0.11	0.16	0.28	0.50
Avail Cap(c_a), veh/h	277	1216	560	445	1226	556	346	552	440	140	507	440
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.4	25.7	20.7	21.1	24.9	17.1	24.3	27.8	20.5	40.2	21.8	23.8
Incr Delay (d2), s/veh	8.2	2.9	0.1	0.0	9.4	0.6	0.0	12.3	0.1	0.6	0.3	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	8.0	9.3	0.3	0.6	16.7	2.1	0.3	15.8	1.2	0.8	3.7	6.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.6	28.6	20.9	21.1	34.3	17.7	24.4	40.0	20.6	40.8	22.1	24.7
LnGrp LOS	D	C	C	C	C	B	C	D	C	D	C	C
Approach Vol, veh/h		807			1186			513			372	
Approach Delay, s/veh		32.1			32.8			38.0			24.7	
Approach LOS		C			C			D			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	21.4	33.7		34.9	14.3	40.8		34.9
Change Period (Y+Rc), s	4.0	6.0		6.0	4.0	6.0		6.0
Max Green Setting (Gmax), s	9.0	35.0		30.0	9.0	35.0		30.0
Max Q Clear Time (g_c+I1), s	2.0	17.1		28.7	8.3	31.7		26.2
Green Ext Time (p_c), s	0.0	10.6		0.2	0.0	3.1		0.8

Intersection Summary	
HCM 6th Ctrl Delay	32.5
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	412	137	32	50	121	136	109	328	87	248	90	321
Future Volume (vph)	412	137	32	50	121	136	109	328	87	248	90	321
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Frt		0.992			0.940			0.975			0.934	
Flt Protected		0.966			0.992			0.990			0.982	
Satd. Flow (prot)	0	1629	0	0	1623	0	0	3301	0	0	1651	0
Flt Permitted		0.966			0.992			0.990			0.982	
Satd. Flow (perm)	0	1629	0	0	1623	0	0	3301	0	0	1651	0
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		2002			587			752			1016	
Travel Time (s)		39.0			11.4			14.6			19.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	7%	4%	0%	0%	2%	6%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	458	152	36	56	134	151	121	364	97	276	100	357
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	646	0	0	341	0	0	582	0	0	733	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Yield			Yield			Yield			Yield	

Intersection Summary	
Area Type:	Other
Control Type: Roundabout	
Intersection Capacity Utilization 121.6%	ICU Level of Service H
Analysis Period (min) 15	

Intersection	
Intersection Delay, s/veh	18.3
Intersection LOS	C

Approach	EB	WB	NB	SB
Entry Lanes	1	1	2	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	646	341	582	733
Demand Flow Rate, veh/h	684	353	582	733
Vehicles Circulating, veh/h	432	975	924	314
Vehicles Exiting, veh/h	258	531	192	1014
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	20.9	25.5	25.0	7.2
Approach LOS	C	D	D	A

Lane	Left	Left	Left	Right	Left	Bypass
Designated Moves	LTR	LTR	LT	R	LT	R
Assumed Moves	LTR	LTR	LT	R	LT	R
RT Channelized						Yield
Lane Util	1.000	1.000	0.833	0.167	1.000	
Follow-Up Headway, s	2.609	2.609	2.535	2.535	2.609	
Critical Headway, s	4.976	4.976	4.544	4.544	4.976	357
Entry Flow, veh/h	684	353	485	97	376	1061
Cap Entry Lane, veh/h	888	510	612	612	1002	1.000
Entry HV Adj Factor	0.944	0.967	1.000	1.000	1.000	357
Flow Entry, veh/h	646	341	485	97	376	1061
Cap Entry, veh/h	839	494	612	612	1002	0.337
V/C Ratio	0.770	0.692	0.792	0.158	0.375	6.8
Control Delay, s/veh	20.9	25.5	28.5	7.8	7.6	A
LOS	C	D	D	A	A	1
95th %tile Queue, veh	8	5	8	1	2	

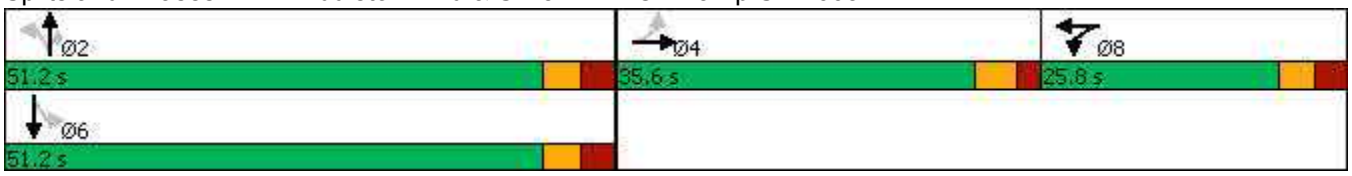
APPENDIX J
2038 PM INTERSECTION CAPACITY ANALYSIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	193	207	281	467	0	208	0	521	434	28	535	1
Future Volume (vph)	193	207	281	467	0	208	0	521	434	28	535	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	11	12	12	12
Grade (%)		0%			3%			4%			-1%	
Storage Length (ft)	230		0	0		0	0		200	0		0
Storage Lanes	1		0	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.914			0.958				0.850			
Flt Protected	0.950				0.967						0.998	
Satd. Flow (prot)	1693	1645	0	0	1620	0	0	1747	1421	0	1805	0
Flt Permitted	0.692				0.967						0.795	
Satd. Flow (perm)	1233	1645	0	0	1620	0	0	1747	1421	0	1438	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		60			85				408			
Link Speed (mph)		35			45			35			25	
Link Distance (ft)		830			1331			2061			1362	
Travel Time (s)		16.2			20.2			40.1			37.1	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	0%	0%	2%	0%	0%	0%	1%	2%	0%	0%	0%
Adj. Flow (vph)	199	213	290	481	0	214	0	537	447	29	552	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	199	503	0	0	695	0	0	537	447	0	582	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.09	1.09	1.09	1.10	1.10	1.15	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Main30	Right	Left	Main30	
Leading Detector (ft)	48	48		48	48		48	300	48	48	300	
Trailing Detector (ft)	-2	-2		-2	-2		-2	0	-2	-2	0	
Detector 1 Position(ft)	-2	-2		-2	-2		-2	0	-2	-2	0	
Detector 1 Size(ft)	50	50		50	50		50	0	50	50	0	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)								294			294	
Detector 2 Size(ft)								6			6	
Detector 2 Type								Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)								0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Split	NA			NA	Perm	Perm	NA	
Protected Phases		4		8	8			2			6	
Permitted Phases	4						2		2	6		
Detector Phase	4	4		8	8		2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		3.0	3.0	3.0	3.0	3.0	
Minimum Split (s)	15.8	15.8		15.8	15.8		30.2	30.2	30.2	30.2	30.2	
Total Split (s)	35.6	35.6		25.8	25.8		51.2	51.2	51.2	51.2	51.2	
Total Split (%)	31.6%	31.6%		22.9%	22.9%		45.5%	45.5%	45.5%	45.5%	45.5%	
Maximum Green (s)	30.0	30.0		20.0	20.0		45.0	45.0	45.0	45.0	45.0	
Yellow Time (s)	3.6	3.6		3.0	3.0		3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	2.0	2.0		2.8	2.8		2.9	2.9	2.9	2.9	2.9	
Lost Time Adjust (s)	-1.5	-1.5			-1.5			-1.5	-1.5		-1.5	
Total Lost Time (s)	4.1	4.1			4.3			4.7	4.7		4.7	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None		Min	Min	Min	Min	Min	
Act Effct Green (s)	31.5	31.5			21.5			46.5	46.5		46.5	
Actuated g/C Ratio	0.28	0.28			0.19			0.41	0.41		0.41	
v/c Ratio	0.58	1.00			1.84			0.74	0.54		0.98	
Control Delay	42.7	76.7			412.9			35.7	5.9		66.3	
Queue Delay	0.0	0.0			0.0			0.0	0.0		0.0	
Total Delay	42.7	76.7			412.9			35.7	5.9		66.3	
LOS	D	E			F			D	A		E	
Approach Delay		67.1			412.9			22.2			66.3	
Approach LOS		E			F			C			E	

Intersection Summary	
Area Type:	Other
Cycle Length: 112.6	
Actuated Cycle Length: 112.6	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.84	
Intersection Signal Delay: 133.1	Intersection LOS: F
Intersection Capacity Utilization 135.2%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 1: Middletown Rd & SR 322 EB Off Ramp/SR 2003



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	193	207	281	467	0	208	0	521	434	28	535	1
Future Volume (veh/h)	193	207	281	467	0	208	0	521	434	28	535	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1786	1800	1800	1750	1750	1750	1697	1697	1683	1837	1837	1837
Adj Flow Rate, veh/h	199	213	290	481	0	214	0	537	447	29	552	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	0	0	0	0	0	1	1	2	0	0	0
Cap, veh/h	476	193	263	212	0	94	0	701	589	45	516	1
Arrive On Green	0.28	0.28	0.28	0.19	0.00	0.19	0.00	0.41	0.41	0.41	0.41	0.41
Sat Flow, veh/h	1701	691	940	1111	0	494	0	1697	1426	28	1250	2
Grp Volume(v), veh/h	199	0	503	695	0	0	0	537	447	582	0	0
Grp Sat Flow(s),veh/h/ln	1701	0	1631	1605	0	0	0	1697	1426	1281	0	0
Q Serve(g_s), s	10.7	0.0	31.5	21.5	0.0	0.0	0.0	30.6	30.2	15.9	0.0	0.0
Cycle Q Clear(g_c), s	10.7	0.0	31.5	21.5	0.0	0.0	0.0	30.6	30.2	46.5	0.0	0.0
Prop In Lane	1.00		0.58	0.69		0.31	0.00		1.00	0.05		0.00
Lane Grp Cap(c), veh/h	476	0	456	307	0	0	0	701	589	563	0	0
V/C Ratio(X)	0.42	0.00	1.10	2.27	0.00	0.00	0.00	0.77	0.76	1.03	0.00	0.00
Avail Cap(c_a), veh/h	476	0	456	307	0	0	0	701	589	563	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	33.1	0.0	40.6	45.6	0.0	0.0	0.0	28.4	28.3	33.4	0.0	0.0
Incr Delay (d2), s/veh	0.6	0.0	73.0	580.7	0.0	0.0	0.0	5.1	5.7	47.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	7.9	0.0	30.9	90.9	0.0	0.0	0.0	18.9	16.3	31.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.7	0.0	113.5	626.2	0.0	0.0	0.0	33.5	34.0	80.5	0.0	0.0
LnGrp LOS	C	A	F	F	A	A	A	C	C	F	A	A
Approach Vol, veh/h		702			695			984			582	
Approach Delay, s/veh		90.9			626.2			33.7			80.5	
Approach LOS		F			F			C			F	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	51.2	35.6	51.2	25.8
Change Period (Y+Rc), s	* 6.2	5.6	* 6.2	5.8
Max Green Setting (Gmax), s	* 45	30.0	* 45	20.0
Max Q Clear Time (g_c+I1), s	32.6	33.5	48.5	23.5
Green Ext Time (p_c), s	7.4	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	195.4
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	16	1054	222	0	1225
Future Volume (vph)	0	16	1054	222	0	1225
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	10	12	12	12	12
Grade (%)	1%		-3%			3%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.865		0.977			
Flt Protected						
Satd. Flow (prot)	1446	0	1756	0	0	1755
Flt Permitted						
Satd. Flow (perm)	1446	0	1756	0	0	1755
Link Speed (mph)	35		35			35
Link Distance (ft)	609		1026			507
Travel Time (s)	11.9		20.0			9.9
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	1%	0%	2%	0%	0%	1%
Adj. Flow (vph)	0	17	1098	231	0	1276
Shared Lane Traffic (%)						
Lane Group Flow (vph)	17	0	1329	0	0	1276
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	10		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.18	1.18	1.05	1.05	1.09	1.09
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 82.8%	ICU Level of Service E
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	16	1054	222	0	1225
Future Vol, veh/h	0	16	1054	222	0	1225
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	1	-	-3	-	-	3
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	1	0	2	0	0	1
Mvmt Flow	0	17	1098	231	0	1276

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2490	1214	0	0	1329	0
Stage 1	1214	-	-	-	-	-
Stage 2	1276	-	-	-	-	-
Critical Hdwy	6.61	6.3	-	-	4.1	-
Critical Hdwy Stg 1	5.61	-	-	-	-	-
Critical Hdwy Stg 2	5.61	-	-	-	-	-
Follow-up Hdwy	3.509	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	28	216	-	-	526	-
Stage 1	264	-	-	-	-	-
Stage 2	245	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	28	216	-	-	526	-
Mov Cap-2 Maneuver	28	-	-	-	-	-
Stage 1	264	-	-	-	-	-
Stage 2	245	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	23.1	0	0
HCM LOS	C		

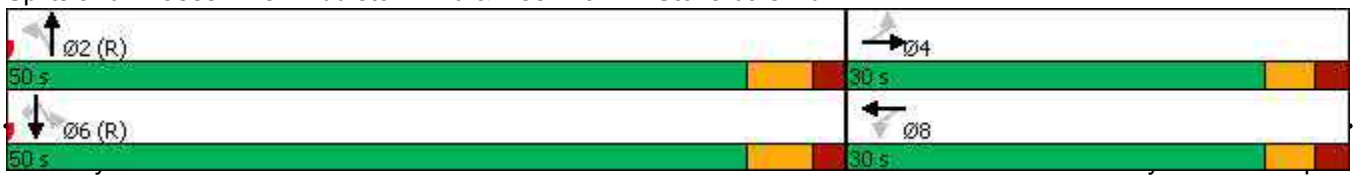
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	216	526	-
HCM Lane V/C Ratio	-	-	0.077	-	-
HCM Control Delay (s)	-	-	23.1	0	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	112	15	32	126	62	59	50	1176	32	35	1155	157
Future Volume (vph)	112	15	32	126	62	59	50	1176	32	35	1155	157
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	11	12	12	11	14	13
Grade (%)		3%			4%			-1%			-2%	
Storage Length (ft)	125		0	125		0	135		140	100		200
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00				0.99							
Frt		0.898			0.927			0.996				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1684	1500	0	1676	1618	0	1661	1784	0	1670	1920	1597
Flt Permitted	0.613			0.724			0.071			0.071		
Satd. Flow (perm)	1085	1500	0	1277	1618	0	124	1784	0	125	1920	1597
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		34			57			3				128
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		1291			1010			1123			1026	
Travel Time (s)		35.2			27.5			21.9			20.0	
Confl. Peds. (#/hr)	1					1						
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	9%	0%	0%	0%	0%	1%	0%	0%	1%	0%
Adj. Flow (vph)	119	16	34	134	66	63	53	1251	34	37	1229	167
Shared Lane Traffic (%)												
Lane Group Flow (vph)	119	50	0	134	129	0	53	1285	0	37	1229	167
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.10	1.10	1.10	1.11	1.07	1.07	1.11	0.97	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	2		1	2	1
Detector Template												
Leading Detector (ft)	38	38		38	38		0	230		0	230	0
Trailing Detector (ft)	-2	-2		-2	-2		0	0		0	0	0
Detector 1 Position(ft)	-2	-2		-2	-2		0	0		0	0	0
Detector 1 Size(ft)	40	40		40	40		0	0		0	0	0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)								224			224	
Detector 2 Size(ft)								6			6	
Detector 2 Type								Cl+Ex			Cl+Ex	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)								0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0		16.0	16.0		16.0	16.0	16.0
Minimum Split (s)	24.0	24.0		24.0	24.0		24.0	24.0		24.0	24.0	24.0
Total Split (s)	30.0	30.0		30.0	30.0		50.0	50.0		50.0	50.0	50.0
Total Split (%)	37.5%	37.5%		37.5%	37.5%		62.5%	62.5%		62.5%	62.5%	62.5%
Maximum Green (s)	24.9	24.9		24.9	24.9		44.0	44.0		44.0	44.0	44.0
Yellow Time (s)	3.0	3.0		3.0	3.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.1	2.1		2.1	2.1		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-1.5	-1.5		-1.5	-1.5		-1.5	-1.5		-1.5	-1.5	-1.5
Total Lost Time (s)	3.6	3.6		3.6	3.6		4.5	4.5		4.5	4.5	4.5
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		6.0	6.0		6.0	6.0	6.0
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0		25.0	25.0		25.0	25.0	25.0
Time To Reduce (s)	0.0	0.0		0.0	0.0		15.0	15.0		15.0	15.0	15.0
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	C-Max
Act Effct Green (s)	15.3	15.3		15.3	15.3		56.6	56.6		56.6	56.6	56.6
Actuated g/C Ratio	0.19	0.19		0.19	0.19		0.71	0.71		0.71	0.71	0.71
v/c Ratio	0.57	0.16		0.55	0.36		0.61	1.02		0.42	0.90	0.14
Control Delay	39.6	13.3		36.9	18.2		21.4	29.3		26.4	23.0	2.0
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	39.6	13.3		36.9	18.2		21.4	29.3		26.4	23.0	2.0
LOS	D	B		D	B		C	C		C	C	A
Approach Delay		31.8			27.7			29.0			20.6	
Approach LOS		C			C			C			C	

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 33 (41%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.02	
Intersection Signal Delay: 25.3	Intersection LOS: C
Intersection Capacity Utilization 91.7%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 3: Middletown Rd & Deer Run Dr/Stoverdale Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	112	15	32	126	62	59	50	1176	32	35	1155	157
Future Volume (veh/h)	112	15	32	126	62	59	50	1176	32	35	1155	157
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1750	1750	1750	1711	1711	1711	1837	1823	1823	1875	1935	1950
Adj Flow Rate, veh/h	119	16	34	134	66	63	53	1251	34	37	1229	167
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	1	1	0	1	0
Cap, veh/h	264	105	223	331	169	161	148	1216	33	90	1332	1137
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	0.69	0.69	0.69	0.69	0.69	0.69
Sat Flow, veh/h	1243	498	1058	1305	804	767	401	1766	48	455	1935	1652
Grp Volume(v), veh/h	119	0	50	134	0	129	53	0	1285	37	1229	167
Grp Sat Flow(s),veh/h/ln	1243	0	1556	1305	0	1571	401	0	1814	455	1935	1652
Q Serve(g_s), s	7.3	0.0	2.1	7.5	0.0	5.7	10.4	0.0	55.1	0.0	43.4	2.8
Cycle Q Clear(g_c), s	12.9	0.0	2.1	9.6	0.0	5.7	53.9	0.0	55.1	55.1	43.4	2.8
Prop In Lane	1.00		0.68	1.00		0.49	1.00		0.03	1.00		1.00
Lane Grp Cap(c), veh/h	264	0	328	331	0	331	148	0	1249	90	1332	1137
V/C Ratio(X)	0.45	0.00	0.15	0.41	0.00	0.39	0.36	0.00	1.03	0.41	0.92	0.15
Avail Cap(c_a), veh/h	412	0	514	487	0	518	148	0	1249	90	1332	1137
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.7	0.0	25.8	29.7	0.0	27.2	33.7	0.0	12.5	40.0	10.7	4.3
Incr Delay (d2), s/veh	1.2	0.0	0.2	0.8	0.0	0.8	6.6	0.0	33.2	13.3	12.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.1	0.0	1.4	4.3	0.0	3.9	2.2	0.0	36.2	1.9	24.2	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.9	0.0	26.0	30.5	0.0	27.9	40.3	0.0	45.7	53.3	22.7	4.6
LnGrp LOS	C	A	C	C	A	C	D	A	F	D	C	A
Approach Vol, veh/h		169			263			1338			1433	
Approach Delay, s/veh		31.6			29.2			45.4			21.4	
Approach LOS		C			C			D			C	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	59.6	20.4	59.6	20.4
Change Period (Y+Rc), s	6.0	5.1	6.0	5.1
Max Green Setting (Gmax), s	44.0	24.9	44.0	24.9
Max Q Clear Time (g_c+I1), s	57.1	14.9	45.4	11.6
Green Ext Time (p_c), s	0.0	0.4	0.0	0.8

Intersection Summary	
HCM 6th Ctrl Delay	32.6
HCM 6th LOS	C

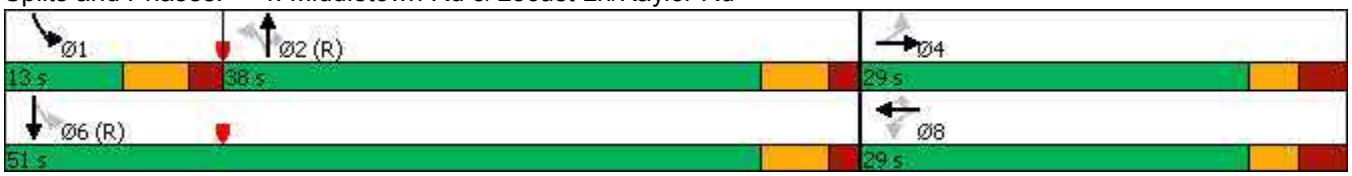
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	79	12	18	55	12	67	23	1130	25	77	1252	11
Future Volume (vph)	79	12	18	55	12	67	23	1130	25	77	1252	11
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	14	14	14	12	12	14	10	12	14	10	12	12
Grade (%)		0%			-3%			3%			-3%	
Storage Length (ft)	0		0	125		50	135		320	75		0
Storage Lanes	0		0	1		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.977				0.850			0.850		0.999	
Flt Protected		0.965		0.950			0.950			0.950		
Satd. Flow (prot)	0	1810	0	1736	1827	1656	1572	1755	1608	1620	1807	0
Flt Permitted		0.779		0.718			0.083			0.076		
Satd. Flow (perm)	0	1461	0	1312	1827	1656	137	1755	1608	130	1807	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		13				123			123		1	
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		1378			1146			1358			921	
Travel Time (s)		37.6			31.3			26.5			17.9	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	1%	0%
Adj. Flow (vph)	82	13	19	57	13	70	24	1177	26	80	1304	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	114	0	57	13	70	24	1177	26	80	1315	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	1.05	1.05	0.97	1.19	1.09	1.01	1.15	1.05	1.05
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1	1	1	2	1	1	2	
Detector Template	Left							Main25	Right		Main25	
Leading Detector (ft)	48	38		38	38	38	38	250	48	38	250	
Trailing Detector (ft)	-2	-2		-2	-2	-2	-2	0	-2	-2	0	
Detector 1 Position(ft)	-2	-2		-2	-2	-2	-2	0	-2	-2	0	
Detector 1 Size(ft)	50	40		40	40	40	40	0	50	40	0	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)								244			244	
Detector 2 Size(ft)								6			6	
Detector 2 Type								Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)								0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8		8	2		2	6		
Detector Phase	4	4		8	8	8	2	2	2	1	6	
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0	3.0	15.0	15.0	15.0	3.0	15.0	
Minimum Split (s)	18.0	18.0		18.0	18.0	18.0	21.0	21.0	21.0	9.0	21.0	
Total Split (s)	29.0	29.0		29.0	29.0	29.0	38.0	38.0	38.0	13.0	51.0	
Total Split (%)	36.3%	36.3%		36.3%	36.3%	36.3%	47.5%	47.5%	47.5%	16.3%	63.8%	
Maximum Green (s)	23.0	23.0		23.0	23.0	23.0	32.0	32.0	32.0	7.0	45.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-1.5		-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	
Total Lost Time (s)		4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
Lead/Lag							Lag	Lag	Lag	Lead		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	6.0	6.0	6.0	3.0	6.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	4.0	4.0	4.0	3.0	4.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	30.0	30.0	30.0	0.0	30.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0	15.0	15.0	15.0	0.0	15.0	
Recall Mode	None	None		None	None	None	C-Max	C-Max	C-Max	None	C-Max	
Act Effct Green (s)		12.4		12.3	12.3	12.3	51.8	51.8	51.8	61.0	61.9	
Actuated g/C Ratio		0.16		0.15	0.15	0.15	0.65	0.65	0.65	0.76	0.77	
v/c Ratio		0.48		0.28	0.05	0.20	0.27	1.04	0.02	0.32	0.94	
Control Delay		33.2		32.0	26.8	2.6	21.7	58.7	0.0	12.3	17.1	
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay		33.2		32.0	26.8	2.6	21.7	58.7	0.0	12.3	17.1	
LOS		C		C	C	A	C	E	A	B	B	
Approach Delay		33.2			16.8			56.7			16.8	
Approach LOS		C			B			E			B	

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green, Master Intersection
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.04
Intersection Signal Delay: 34.5 Intersection LOS: C
Intersection Capacity Utilization 90.9% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 4: Middletown Rd & Locust Ln/Kaylor Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	79	12	18	55	12	67	23	1130	25	77	1252	11
Future Volume (veh/h)	79	12	18	55	12	67	23	1130	25	77	1252	11
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1872	1872	1872	1912	1912	1988	1750	1736	1820	1912	1898	1898
Adj Flow Rate, veh/h	82	12	19	57	12	70	24	1177	26	80	1304	11
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	1	0	0	1	1
Cap, veh/h	200	24	30	277	231	204	188	1146	1018	181	1440	12
Arrive On Green	0.12	0.12	0.12	0.12	0.12	0.12	0.66	0.66	0.66	0.05	0.77	0.77
Sat Flow, veh/h	1011	200	245	1487	1912	1685	413	1736	1542	1821	1879	16
Grp Volume(v), veh/h	113	0	0	57	12	70	24	1177	26	80	0	1315
Grp Sat Flow(s),veh/h/ln	1457	0	0	1487	1912	1685	413	1736	1542	1821	0	1895
Q Serve(g_s), s	5.5	0.0	0.0	0.0	0.4	3.0	3.8	52.8	0.5	1.0	0.0	42.4
Cycle Q Clear(g_c), s	5.9	0.0	0.0	2.6	0.4	3.0	37.6	52.8	0.5	1.0	0.0	42.4
Prop In Lane	0.73		0.17	1.00		1.00	1.00		1.00	1.00		0.01
Lane Grp Cap(c), veh/h	254	0	0	277	231	204	188	1146	1018	181	0	1452
V/C Ratio(X)	0.44	0.00	0.00	0.21	0.05	0.34	0.13	1.03	0.03	0.44	0.00	0.91
Avail Cap(c_a), veh/h	525	0	0	552	585	516	188	1146	1018	283	0	1452
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	33.5	0.0	0.0	32.1	31.1	32.2	24.7	13.6	4.7	21.7	0.0	7.1
Incr Delay (d2), s/veh	1.2	0.0	0.0	0.4	0.1	1.0	1.4	33.8	0.0	1.7	0.0	9.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.9	0.0	0.0	1.8	0.4	2.3	0.8	35.0	0.2	1.9	0.0	18.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.7	0.0	0.0	32.4	31.2	33.2	26.1	47.4	4.8	23.4	0.0	16.8
LnGrp LOS	C	A	A	C	C	C	C	F	A	C	A	B
Approach Vol, veh/h		113			139			1227			1395	
Approach Delay, s/veh		34.7			32.7			46.1			17.2	
Approach LOS		C			C			D			B	

Timer - Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	8.5	57.3		14.2		65.8		14.2
Change Period (Y+Rc), s	6.0	6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s	7.0	32.0		23.0		45.0		23.0
Max Q Clear Time (g_c+I1), s	3.0	54.8		7.9		44.4		5.0
Green Ext Time (p_c), s	0.1	0.0		0.3		0.6		0.4

Intersection Summary	
HCM 6th Ctrl Delay	31.0
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	59	163	35	69	27	350	20	257	29	82	294	0
Future Volume (vph)	59	163	35	69	27	350	20	257	29	82	294	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	10	10	10	10	10	10	10	10	10	10	10
Grade (%)		-1%			1%			-8%			11%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.982			0.894			0.987				
Flt Protected		0.989			0.992			0.997			0.989	
Satd. Flow (prot)	0	1629	0	0	1482	0	0	1698	0	0	1563	0
Flt Permitted		0.989			0.992			0.997			0.989	
Satd. Flow (perm)	0	1629	0	0	1482	0	0	1698	0	0	1563	0
Link Speed (mph)		35			30			35			35	
Link Distance (ft)		2048			1531			1852			607	
Travel Time (s)		39.9			34.8			36.1			11.8	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	1%	0%	0%	0%	0%	6%	1%	0%	2%	0%	0%
Adj. Flow (vph)	65	179	38	76	30	385	22	282	32	90	323	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	282	0	0	491	0	0	336	0	0	413	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.16	1.16	1.16	1.18	1.18	1.18	1.11	1.11	1.11	1.26	1.26	1.26
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 82.4%	ICU Level of Service E
Analysis Period (min) 15	

Intersection	
Intersection Delay, s/veh	66
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	59	163	35	69	27	350	20	257	29	82	294	0
Future Vol, veh/h	59	163	35	69	27	350	20	257	29	82	294	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	0	1	0	0	0	0	6	1	0	2	0	0
Mvmt Flow	65	179	38	76	30	385	22	282	32	90	323	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	32.2	98.2	43.4	69.3
HCM LOS	D	F	E	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	7%	23%	15%	22%
Vol Thru, %	84%	63%	6%	78%
Vol Right, %	9%	14%	78%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	306	257	446	376
LT Vol	20	59	69	82
Through Vol	257	163	27	294
RT Vol	29	35	350	0
Lane Flow Rate	336	282	490	413
Geometry Grp	1	1	1	1
Degree of Util (X)	0.824	0.706	1.092	0.976
Departure Headway (Hd)	9.251	9.442	8.024	8.913
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	393	387	451	409
Service Time	7.251	7.442	6.101	6.913
HCM Lane V/C Ratio	0.855	0.729	1.086	1.01
HCM Control Delay	43.4	32.2	98.2	69.3
HCM Lane LOS	E	D	F	F
HCM 95th-tile Q	7.5	5.2	16.3	11.6

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	162	68	57	197	428	394
Future Volume (vph)	162	68	57	197	428	394
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	10	11	11	11	11
Grade (%)	1%			-1%	1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.960				0.935	
Flt Protected	0.966			0.989		
Satd. Flow (prot)	1530	0	0	1703	1610	0
Flt Permitted	0.966			0.989		
Satd. Flow (perm)	1530	0	0	1703	1610	0
Link Speed (mph)	30			35	35	
Link Distance (ft)	796			2135	675	
Travel Time (s)	18.1			41.6	13.1	
Confl. Peds. (#/hr)			12			12
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	2%	0%	2%	1%	0%
Adj. Flow (vph)	167	70	59	203	441	406
Shared Lane Traffic (%)						
Lane Group Flow (vph)	237	0	0	262	847	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	10			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.18	1.18	1.11	1.11	1.13	1.13
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Stop	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 83.7%	ICU Level of Service E
Analysis Period (min) 15	

Intersection	
Intersection Delay, s/veh	66.9
Intersection LOS	F

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	162	68	57	197	428	394
Future Vol, veh/h	162	68	57	197	428	394
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles, %	1	2	0	2	1	0
Mvmt Flow	167	70	59	203	441	406
Number of Lanes	1	0	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	14.1	12.9	98.3
HCM LOS	B	B	F

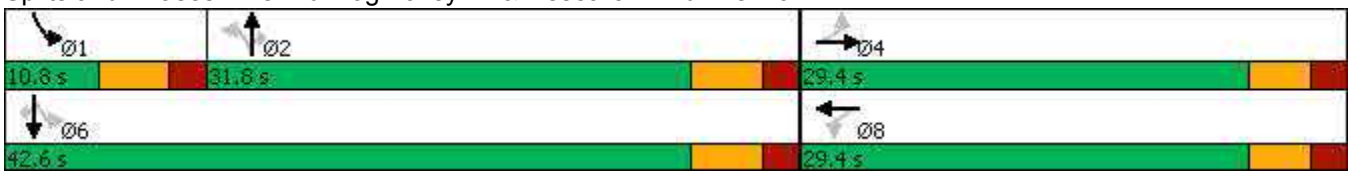
Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	22%	70%	0%
Vol Thru, %	78%	0%	52%
Vol Right, %	0%	30%	48%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	254	230	822
LT Vol	57	162	0
Through Vol	197	0	428
RT Vol	0	68	394
Lane Flow Rate	262	237	847
Geometry Grp	1	1	1
Degree of Util (X)	0.408	0.409	1.14
Departure Headway (Hd)	5.9	6.585	4.844
Convergence, Y/N	Yes	Yes	Yes
Cap	615	550	754
Service Time	3.9	4.585	2.844
HCM Lane V/C Ratio	0.426	0.431	1.123
HCM Control Delay	12.9	14.1	98.3
HCM Lane LOS	B	B	F
HCM 95th-tile Q	2	2	25.5

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	162	163	102	317	219	328	43	259	99	76	388	144
Future Volume (vph)	162	163	102	317	219	328	43	259	99	76	388	144
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Grade (%)		6%			-7%			-2%			2%	
Storage Length (ft)	100		0	250		0	190		270	185		175
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.942			0.910				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1642	1645	0	1770	1695	0	1727	1782	1545	1660	1782	1485
Flt Permitted	0.206			0.519			0.526			0.421		
Satd. Flow (perm)	356	1645	0	967	1695	0	956	1782	1545	736	1782	1485
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		48			116				124			148
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		395			391			967			1702	
Travel Time (s)		10.8			10.7			18.8			33.2	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	0%	0%	0%	0%	0%	0%	2%	0%	2%	0%	2%
Adj. Flow (vph)	167	168	105	327	226	338	44	267	102	78	400	148
Shared Lane Traffic (%)												
Lane Group Flow (vph)	167	273	0	327	564	0	44	267	102	78	400	148
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.11	1.11	1.11	1.03	1.03	1.03	1.06	1.06	1.06	1.09	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	2	2	1	2	2
Detector Template	Left	Thru		Left	Thru		Left	Main25	Main25	Left	Main25	Main25
Leading Detector (ft)	48	48		48	48		48	250	250	48	250	250
Trailing Detector (ft)	-2	-2		-2	-2		-2	0	0	-2	0	0
Detector 1 Position(ft)	-2	-2		-2	-2		-2	0	0	-2	0	0
Detector 1 Size(ft)	50	50		50	50		50	0	0	50	0	0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)								244	244		244	244
Detector 2 Size(ft)								6	6		6	6
Detector 2 Type								Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)								0.0	0.0		0.0	0.0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	pm+pt	NA	Perm

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		2	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0		10.0	10.0	10.0	3.0	10.0	10.0
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0	20.0	8.8	20.0	20.0
Total Split (s)	29.4	29.4		29.4	29.4		31.8	31.8	31.8	10.8	42.6	42.6
Total Split (%)	40.8%	40.8%		40.8%	40.8%		44.2%	44.2%	44.2%	15.0%	59.2%	59.2%
Maximum Green (s)	24.0	24.0		24.0	24.0		26.0	26.0	26.0	5.0	36.8	36.8
Yellow Time (s)	3.4	3.4		3.4	3.4		3.8	3.8	3.8	3.8	3.8	3.8
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.5	-1.5		-1.5	-1.5		-1.5	-1.5	-1.5	-1.5	-1.5	-1.5
Total Lost Time (s)	3.9	3.9		3.9	3.9		4.3	4.3	4.3	4.3	4.3	4.3
Lead/Lag							Lag	Lag	Lag	Lead		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		6.0	6.0	6.0	3.0	6.0	6.0
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0		25.0	25.0	25.0	0.0	25.0	25.0
Time To Reduce (s)	0.0	0.0		0.0	0.0		13.0	13.0	13.0	0.0	13.0	13.0
Recall Mode	None	None		None	None		Min	Min	Min	None	Min	Min
Act Effct Green (s)	26.0	26.0		26.0	26.0		21.7	21.7	21.7	29.9	29.9	29.9
Actuated g/C Ratio	0.40	0.40		0.40	0.40		0.34	0.34	0.34	0.47	0.47	0.47
v/c Ratio	1.17	0.39		0.84	0.75		0.14	0.44	0.17	0.18	0.48	0.19
Control Delay	155.1	15.1		42.9	23.0		16.3	19.6	3.1	9.7	13.4	2.4
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	155.1	15.1		42.9	23.0		16.3	19.6	3.1	9.7	13.4	2.4
LOS	F	B		D	C		B	B	A	A	B	A
Approach Delay		68.2			30.3			15.2			10.3	
Approach LOS		E			C			B			B	

Intersection Summary	
Area Type:	Other
Cycle Length: 72	
Actuated Cycle Length: 64.2	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.17	
Intersection Signal Delay: 29.4	Intersection LOS: C
Intersection Capacity Utilization 86.6%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 8: Bullfrog Valley Dr & Research Blvd/Life Lion Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	162	163	102	317	219	328	43	259	99	76	388	144
Future Volume (veh/h)	162	163	102	317	219	328	43	259	99	76	388	144
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1585	1599	1599	2061	2061	2061	1875	1846	1875	1750	1778	1750
Adj Flow Rate, veh/h	167	168	105	327	226	338	44	267	102	78	400	148
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	0	0	0	0	0	0	2	0	2	0	2
Cap, veh/h	253	392	245	502	317	474	370	545	469	414	778	649
Arrive On Green	0.43	0.43	0.43	0.43	0.43	0.43	0.30	0.30	0.30	0.07	0.44	0.44
Sat Flow, veh/h	757	920	575	1287	745	1115	909	1846	1589	1666	1778	1483
Grp Volume(v), veh/h	167	0	273	327	0	564	44	267	102	78	400	148
Grp Sat Flow(s),veh/h/ln	757	0	1496	1287	0	1860	909	1846	1589	1666	1778	1483
Q Serve(g_s), s	10.5	0.0	7.7	14.4	0.0	15.0	2.2	7.1	2.9	1.8	9.8	3.7
Cycle Q Clear(g_c), s	25.5	0.0	7.7	22.1	0.0	15.0	3.4	7.1	2.9	1.8	9.8	3.7
Prop In Lane	1.00		0.38	1.00		0.60	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	253	0	636	502	0	791	370	545	469	414	778	649
V/C Ratio(X)	0.66	0.00	0.43	0.65	0.00	0.71	0.12	0.49	0.22	0.19	0.51	0.23
Avail Cap(c_a), veh/h	253	0	636	502	0	791	518	847	729	477	1136	947
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.8	0.0	12.1	19.9	0.0	14.2	16.6	17.4	15.9	12.1	12.2	10.5
Incr Delay (d2), s/veh	6.2	0.0	0.5	3.0	0.0	3.0	0.5	2.5	0.8	0.2	1.9	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.0	0.0	4.3	7.8	0.0	10.4	0.8	5.5	1.9	1.1	6.5	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.0	0.0	12.6	22.8	0.0	17.2	17.1	19.9	16.8	12.3	14.1	11.2
LnGrp LOS	C	A	B	C	A	B	B	B	B	B	B	B
Approach Vol, veh/h		440			891			413			626	
Approach Delay, s/veh		19.9			19.3			18.8			13.2	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	8.6	22.0		29.4		30.5		29.4
Change Period (Y+Rc), s	* 5.8	* 5.8		5.4		* 5.8		5.4
Max Green Setting (Gmax), s	* 5	* 26		24.0		* 37		24.0
Max Q Clear Time (g_c+I1), s	3.8	9.1		27.5		11.8		24.1
Green Ext Time (p_c), s	0.0	7.0		0.0		12.6		0.0

Intersection Summary	
HCM 6th Ctrl Delay	17.7
HCM 6th LOS	B

Notes

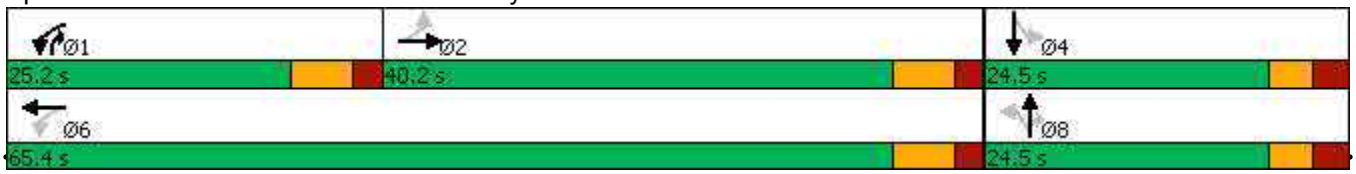
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	454	57	384	575	28	160	5	353	16	6	3
Future Volume (vph)	12	454	57	384	575	28	160	5	353	16	6	3
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	12	12	12	12	12	12	12	13	15	15	15
Grade (%)		-6%			0%			-2%			0%	
Storage Length (ft)	50		300	150		0	0		115	0		0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00				1.00							
Frt		0.983			0.993				0.850		0.984	
Flt Protected	0.950			0.950				0.954			0.968	
Satd. Flow (prot)	1644	3463	0	1693	1769	0	0	1734	1535	0	1886	0
Flt Permitted	0.427			0.319				0.713			0.802	
Satd. Flow (perm)	738	3463	0	569	1769	0	0	1296	1535	0	1563	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		18			6				228		3	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		689			599			643			403	
Travel Time (s)		13.4			11.7			17.5			11.0	
Confl. Peds. (#/hr)	1					1						
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	0%	1%	1%	0%	0%	0%	4%	0%	0%	0%
Adj. Flow (vph)	13	473	59	400	599	29	167	5	368	17	6	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	13	532	0	400	628	0	0	172	368	0	26	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.13	1.03	1.03	1.07	1.07	1.07	1.06	1.06	1.01	0.95	0.95	0.95
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	1	1	1	1	
Detector Template							Left			Left	Thru	
Leading Detector (ft)	0	220		38	220		48	38	38	48	48	
Trailing Detector (ft)	0	0		-2	0		-2	-2	-2	-2	-2	
Detector 1 Position(ft)	0	0		-2	0		-2	-2	-2	-2	-2	
Detector 1 Size(ft)	0	0		40	0		50	40	40	50	50	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		214			214							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	pm+ov	Perm	NA	
Protected Phases		2		1	6			8	1		4	
Permitted Phases	2			6			8		8	4		
Detector Phase	2	2		1	6		8	8	1	4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		3.0	10.0		3.0	3.0	3.0	3.0	3.0	
Minimum Split (s)	25.0	25.0		9.2	25.0		15.5	15.5	9.2	15.5	15.5	
Total Split (s)	40.2	40.2		25.2	65.4		24.5	24.5	25.2	24.5	24.5	
Total Split (%)	44.7%	44.7%		28.0%	72.7%		27.3%	27.3%	28.0%	27.3%	27.3%	
Maximum Green (s)	34.0	34.0		19.0	59.2		19.0	19.0	19.0	19.0	19.0	
Yellow Time (s)	4.2	4.2		4.2	4.2		3.0	3.0	4.2	3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.5	2.5	2.0	2.5	2.5	
Lost Time Adjust (s)	-1.5	-1.5		-1.5	-1.5			-1.5	-1.5		-1.5	
Total Lost Time (s)	4.7	4.7		4.7	4.7			4.0	4.7		4.0	
Lead/Lag	Lag	Lag		Lead					Lead			
Lead-Lag Optimize?	Yes	Yes		Yes					Yes			
Vehicle Extension (s)	5.0	5.0		3.0	5.0		3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)	2.0	2.0		3.0	2.0		3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	22.0	22.0		0.0	22.0		0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	10.0	10.0		0.0	10.0		0.0	0.0	0.0	0.0	0.0	
Recall Mode	Min	Min		None	Min		None	None	None	None	None	
Act Effct Green (s)	22.9	22.9		43.9	43.9			15.6	35.9		15.6	
Actuated g/C Ratio	0.33	0.33		0.64	0.64			0.23	0.52		0.23	
v/c Ratio	0.05	0.46		0.64	0.55			0.59	0.40		0.07	
Control Delay	18.1	19.4		11.1	9.2			35.3	5.7		22.9	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Delay	18.1	19.4		11.1	9.3			35.3	5.7		22.9	
LOS	B	B		B	A			D	A		C	
Approach Delay		19.3			10.0			15.1			22.9	
Approach LOS		B			A			B			C	

Intersection Summary	
Area Type: Other	
Cycle Length: 89.9	
Actuated Cycle Length: 68.6	
Natural Cycle: 55	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.64	
Intersection Signal Delay: 13.8	Intersection LOS: B
Intersection Capacity Utilization 66.7%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 9: E Main St/Driveway & Walton Ave



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	454	57	384	575	28	160	5	353	16	6	3
Future Volume (veh/h)	12	454	57	384	575	28	160	5	353	16	6	3
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	2024	2024	2024	1786	1786	1786	1875	1875	1890	1872	1872	1872
Adj Flow Rate, veh/h	12	473	59	400	599	29	167	5	368	17	6	3
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	1	1	1	0	0	4	0	0	0
Cap, veh/h	415	1118	139	664	1032	50	471	12	725	217	70	25
Arrive On Green	0.32	0.32	0.32	0.21	0.61	0.61	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	910	3441	427	1701	1689	82	1445	51	1602	483	287	100
Grp Volume(v), veh/h	12	263	269	400	0	628	172	0	368	26	0	0
Grp Sat Flow(s),veh/h/ln	910	1922	1946	1701	0	1771	1495	0	1602	871	0	0
Q Serve(g_s), s	0.5	6.5	6.5	8.0	0.0	12.9	0.0	0.0	9.8	0.1	0.0	0.0
Cycle Q Clear(g_c), s	0.5	6.5	6.5	8.0	0.0	12.9	5.9	0.0	9.8	6.0	0.0	0.0
Prop In Lane	1.00		0.22	1.00		0.05	0.97		1.00	0.65		0.12
Lane Grp Cap(c), veh/h	415	624	632	664	0	1082	483	0	725	312	0	0
V/C Ratio(X)	0.03	0.42	0.43	0.60	0.00	0.58	0.36	0.00	0.51	0.08	0.00	0.00
Avail Cap(c_a), veh/h	656	1133	1147	889	0	1784	627	0	879	430	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	13.9	15.9	15.9	8.5	0.0	7.1	19.4	0.0	11.7	17.6	0.0	0.0
Incr Delay (d2), s/veh	0.1	1.0	1.0	0.9	0.0	1.1	0.4	0.0	0.6	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.2	4.8	4.9	4.2	0.0	6.5	3.6	0.0	5.8	0.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.0	16.9	16.9	9.4	0.0	8.1	19.9	0.0	12.3	17.8	0.0	0.0
LnGrp LOS	B	B	B	A	A	A	B	A	B	B	A	A
Approach Vol, veh/h		544			1028			540			26	
Approach Delay, s/veh		16.8			8.6			14.7			17.8	
Approach LOS		B			A			B			B	

Timer - Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	17.2	24.3		18.7		41.5		18.7
Change Period (Y+Rc), s	6.2	6.2		5.5		6.2		5.5
Max Green Setting (Gmax), s	19.0	34.0		19.0		59.2		19.0
Max Q Clear Time (g_c+I1), s	10.0	8.5		8.0		14.9		11.8
Green Ext Time (p_c), s	1.0	9.6		0.0		17.0		1.4

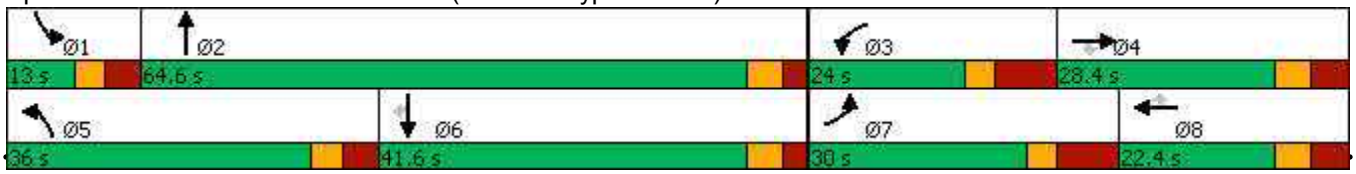
Intersection Summary	
HCM 6th Ctrl Delay	12.3
HCM 6th LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	592	178	404	173	234	143	428	1302	164	110	930	614
Future Volume (vph)	592	178	404	173	234	143	428	1302	164	110	930	614
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		1%			2%			-1%			1%	
Storage Length (ft)	150		150	180		250	750		0	130		320
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	0.99		0.99	1.00		0.98		1.00		1.00		
Frt			0.850			0.850		0.983				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3159	1791	1522	1693	1782	1500	1702	3220	0	1701	3304	1507
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3133	1791	1502	1690	1782	1468	1702	3220	0	1700	3304	1507
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			381			210		14				371
Link Speed (mph)		35			25			45			45	
Link Distance (ft)		599			1652			760			1056	
Travel Time (s)		11.7			45.1			11.5			16.0	
Confl. Peds. (#/hr)	4		1	1		4			1	1		
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	0%	0%	0%	0%	1%	1%	5%	2%	0%	3%	1%
Adj. Flow (vph)	610	184	416	178	241	147	441	1342	169	113	959	633
Shared Lane Traffic (%)												
Lane Group Flow (vph)	610	184	416	178	241	147	441	1511	0	113	959	633
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		23			23			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.13	1.08	1.08	1.09	1.09	1.09	1.07	1.07	1.07	1.08	1.08	1.08
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	1	1	1	1	1	2		1	2	1
Detector Template							Left	Main25		Left	Main25	Right
Leading Detector (ft)	38	38	0	38	38	0	48	250		48	250	48
Trailing Detector (ft)	-2	-2	0	-2	-2	0	-2	0		-2	0	-2
Detector 1 Position(ft)	-2	-2	0	-2	-2	0	-2	0		-2	0	-2
Detector 1 Size(ft)	40	40	0	40	40	0	50	0		50	0	50
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)								244			244	
Detector 2 Size(ft)								6			6	
Detector 2 Type								Cl+Ex			Cl+Ex	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)								0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Detector Phase	7	4	4	3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	12.0		3.0	12.0	12.0
Minimum Split (s)	12.0	10.3	10.3	12.0	10.3	10.3	10.0	18.0		10.0	18.0	18.0
Total Split (s)	30.0	28.4	28.4	24.0	22.4	22.4	36.0	64.6		13.0	41.6	41.6
Total Split (%)	23.1%	21.8%	21.8%	18.5%	17.2%	17.2%	27.7%	49.7%		10.0%	32.0%	32.0%
Maximum Green (s)	21.0	21.1	21.1	15.0	15.1	15.1	29.5	58.6		6.5	35.6	35.6
Yellow Time (s)	3.0	3.5	3.5	3.0	3.5	3.5	3.0	3.5		3.0	3.5	3.5
All-Red Time (s)	6.0	3.8	3.8	6.0	3.8	3.8	3.5	2.5		3.5	2.5	2.5
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5		-1.5	-1.5	-1.5
Total Lost Time (s)	7.5	5.8	5.8	7.5	5.8	5.8	5.0	4.5		5.0	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	5.0	5.0		2.0	2.0	2.0
Minimum Gap (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.0		0.0	20.0	20.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	25.0		0.0	25.0	25.0
Recall Mode	None	None	None	None	None	None	None	Min		None	Min	Min
Act Effct Green (s)	22.5	23.1	23.1	16.0	16.6	16.6	31.0	60.1		8.0	37.1	37.1
Actuated g/C Ratio	0.17	0.18	0.18	0.12	0.13	0.13	0.24	0.46		0.06	0.29	0.29
v/c Ratio	1.12	0.58	0.72	0.86	1.06	0.40	1.09	1.01		1.09	1.02	0.91
Control Delay	123.5	57.5	14.7	89.9	130.3	4.5	116.9	60.3		169.1	79.7	36.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	123.5	57.5	14.7	89.9	130.3	4.5	116.9	60.3		169.1	79.7	36.9
LOS	F	E	B	F	F	A	F	E		F	E	D
Approach Delay		76.0			84.9			73.1			69.8	
Approach LOS		E			F			E			E	

Intersection Summary	
Area Type: Other	
Cycle Length: 130	
Actuated Cycle Length: 130	
Natural Cycle: 140	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.12	
Intersection Signal Delay: 73.9	Intersection LOS: E
Intersection Capacity Utilization 100.6%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 10: Route 0039 (W Hersheypark Drive) & Walton Ave/Mae St



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	592	178	404	173	234	143	428	1302	164	110	930	614
Future Volume (veh/h)	592	178	404	173	234	143	428	1302	164	110	930	614
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1780	1794	1794	1778	1778	1764	1823	1766	1766	1794	1752	1780
Adj Flow Rate, veh/h	610	184	0	178	241	0	441	1342	169	113	959	633
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	0	0	0	0	1	1	5	5	0	3	1
Cap, veh/h	569	312		215	227		414	1387	174	105	950	430
Arrive On Green	0.17	0.17	0.00	0.13	0.13	0.00	0.24	0.46	0.46	0.06	0.29	0.29
Sat Flow, veh/h	3289	1794	1521	1693	1778	1495	1736	3001	375	1709	3329	1506
Grp Volume(v), veh/h	610	184	0	178	241	0	441	746	765	113	959	633
Grp Sat Flow(s),veh/h/ln	1645	1794	1521	1693	1778	1495	1736	1678	1698	1709	1665	1506
Q Serve(g_s), s	22.5	12.3	0.0	13.3	16.6	0.0	31.0	56.0	57.2	8.0	37.1	37.1
Cycle Q Clear(g_c), s	22.5	12.3	0.0	13.3	16.6	0.0	31.0	56.0	57.2	8.0	37.1	37.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.22	1.00		1.00
Lane Grp Cap(c), veh/h	569	312		215	227		414	776	785	105	950	430
V/C Ratio(X)	1.07	0.59		0.83	1.06		1.07	0.96	0.97	1.07	1.01	1.47
Avail Cap(c_a), veh/h	569	312		215	227		414	776	785	105	950	430
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.8	49.4	0.0	55.4	56.7	0.0	49.5	33.9	34.2	61.0	46.5	46.5
Incr Delay (d2), s/veh	58.3	2.0	0.0	21.6	77.0	0.0	62.6	23.7	25.9	109.3	31.5	225.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	20.6	9.5	0.0	11.4	18.6	0.0	28.6	34.9	36.3	11.0	26.2	62.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	112.0	51.4	0.0	77.0	133.7	0.0	112.1	57.6	60.1	170.3	78.0	271.5
LnGrp LOS	F	D		E	F		F	E	E	F	F	F
Approach Vol, veh/h		794	A		419	A		1952			1705	
Approach Delay, s/veh		98.0			109.6			70.9			155.9	
Approach LOS		F			F			E			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	64.6	24.0	28.4	36.0	41.6	30.0	22.4
Change Period (Y+Rc), s	6.5	6.0	9.0	* 7.3	6.5	6.0	9.0	* 7.3
Max Green Setting (Gmax), s	6.5	58.6	15.0	* 21	29.5	35.6	21.0	* 15
Max Q Clear Time (g_c+I1), s	10.0	59.2	15.3	14.3	33.0	39.1	24.5	18.6
Green Ext Time (p_c), s	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	108.4
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

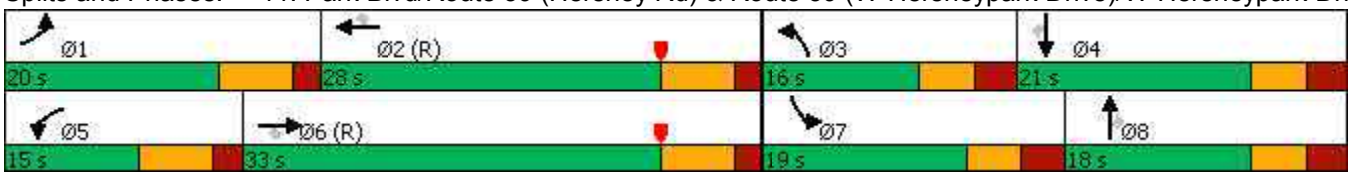
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	499	1074	211	175	1023	489	232	261	183	290	238	363
Future Volume (vph)	499	1074	211	175	1023	489	232	261	183	290	238	363
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Grade (%)		3%			-3%			1%			4%	
Storage Length (ft)	350		1000	575		400	0		350	400		450
Storage Lanes	2		1	2		1	2		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	1.00	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3204	3239	1449	3207	3338	1522	3301	1194	1522	1627	3352	1428
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3204	3239	1449	3207	3338	1522	3301	1194	1522	1627	3352	1428
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			220			403			208			259
Link Speed (mph)		45			45			35			35	
Link Distance (ft)		1096			1663			1072			729	
Travel Time (s)		16.6			25.2			20.9			14.2	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	4%	4%	5%	4%	2%	0%	50%	0%	3%	0%	5%
Adj. Flow (vph)	520	1119	220	182	1066	509	242	272	191	302	248	378
Shared Lane Traffic (%)												
Lane Group Flow (vph)	520	1119	220	182	1066	509	242	272	191	302	248	378
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.05	1.05	1.05	1.08	1.08	1.08	1.10	1.10	1.10
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	1	1	1	1	1
Detector Template	Left	Main30	Right	Left	Main30	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	48	300	48	48	300	48	48	48	48	48	48	48
Trailing Detector (ft)	-2	0	-2	-2	0	-2	-2	-2	-2	-2	-2	-2
Detector 1 Position(ft)	-2	0	-2	-2	0	-2	-2	-2	-2	-2	-2	-2
Detector 1 Size(ft)	50	0	50	50	0	50	50	50	50	50	50	50
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		294			294							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases			6			2			8			4
Detector Phase	1	6	6	5	2	2	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	3.0	12.0	12.0	3.0	12.0	12.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Split (s)	9.7	18.5	18.5	9.7	18.5	18.5	10.0	10.0	10.0	9.2	10.0	10.0
Total Split (s)	20.0	33.0	33.0	15.0	28.0	28.0	16.0	18.0	18.0	19.0	21.0	21.0
Total Split (%)	23.5%	38.8%	38.8%	17.6%	32.9%	32.9%	18.8%	21.2%	21.2%	22.4%	24.7%	24.7%
Maximum Green (s)	13.5	26.5	26.5	8.5	21.5	21.5	9.8	11.8	11.8	12.8	14.8	14.8
Yellow Time (s)	4.7	4.7	4.7	4.7	4.7	4.7	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.8	1.8	1.8	1.8	1.8	1.8	2.7	2.7	2.7	2.7	2.7	2.7
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.7	4.7	4.7	4.7	4.7	4.7
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0	6.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.5	3.5	3.0	3.5	3.5	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	30.0	30.0	0.0	30.0	30.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	15.0	15.0	0.0	15.0	15.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	None
Act Effct Green (s)	15.0	28.2	28.2	9.8	23.0	23.0	11.0	13.3	13.3	14.3	16.6	16.6
Actuated g/C Ratio	0.18	0.33	0.33	0.12	0.27	0.27	0.13	0.16	0.16	0.17	0.20	0.20
v/c Ratio	0.92	1.04	0.35	0.49	1.18	0.72	0.57	1.46	0.46	1.11	0.38	0.78
Control Delay	58.5	68.3	4.9	43.3	115.3	9.4	40.4	265.4	8.0	121.8	31.9	23.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.5	68.3	4.9	43.3	115.3	9.4	40.4	265.4	8.0	121.8	31.9	23.4
LOS	E	E	A	D	F	A	D	F	A	F	C	C
Approach Delay		58.1			77.2			118.4			57.7	
Approach LOS		E			E			F			E	

Intersection Summary	
Area Type:	Other
Cycle Length: 85	
Actuated Cycle Length: 85	
Offset: 22 (26%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.46	
Intersection Signal Delay: 72.5	Intersection LOS: E
Intersection Capacity Utilization 92.5%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 11: Park Blvd/Route 39 (Hershey Rd) & Route 39 (W Hersheypark Drive)/W Hersheypark Drive



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	499	1074	211	175	1023	489	232	261	183	290	238	363
Future Volume (veh/h)	499	1074	211	175	1023	489	232	261	183	290	238	363
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1722	1694	1694	1841	1855	1883	1794	1092	1794	1669	1711	1641
Adj Flow Rate, veh/h	520	1119	0	182	1066	0	242	272	0	302	248	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	4	4	5	4	2	0	50	0	3	0	5
Cap, veh/h	561	1139		316	954		375	171		267	688	
Arrive On Green	0.18	0.35	0.00	0.09	0.27	0.00	0.11	0.16	0.00	0.17	0.21	0.00
Sat Flow, veh/h	3181	3218	1435	3401	3524	1596	3315	1092	1521	1589	3250	1390
Grp Volume(v), veh/h	520	1119	0	182	1066	0	242	272	0	302	248	0
Grp Sat Flow(s),veh/h/ln	1591	1609	1435	1700	1762	1596	1658	1092	1521	1589	1625	1390
Q Serve(g_s), s	13.7	29.3	0.0	4.4	23.0	0.0	5.9	13.3	0.0	14.3	5.5	0.0
Cycle Q Clear(g_c), s	13.7	29.3	0.0	4.4	23.0	0.0	5.9	13.3	0.0	14.3	5.5	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	561	1139		316	954		375	171		267	688	
V/C Ratio(X)	0.93	0.98		0.58	1.12		0.64	1.59		1.13	0.36	
Avail Cap(c_a), veh/h	561	1139		400	954		441	171		267	688	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	34.5	27.2	0.0	36.9	31.0	0.0	36.1	35.8	0.0	35.3	28.6	0.0
Incr Delay (d2), s/veh	21.6	22.7	0.0	1.7	67.2	0.0	2.5	291.9	0.0	94.5	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	10.8	19.7	0.0	3.2	26.4	0.0	4.4	28.5	0.0	19.1	3.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.0	49.9	0.0	38.6	98.2	0.0	38.6	327.8	0.0	129.9	28.9	0.0
LnGrp LOS	E	D		D	F		D	F		F	C	
Approach Vol, veh/h		1639	A		1248	A		514	A		550	A
Approach Delay, s/veh		51.9			89.5			191.6			84.4	
Approach LOS		D			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.0	28.0	14.3	22.7	12.9	35.1	19.0	18.0
Change Period (Y+Rc), s	* 6.5	* 6.5	* 6.2	* 6.2	* 6.5	* 6.5	* 6.2	* 6.2
Max Green Setting (Gmax), s	* 14	* 22	* 9.8	* 15	* 8.5	* 27	* 13	* 12
Max Q Clear Time (g_c+I1), s	15.7	25.0	7.9	7.5	6.4	31.3	16.3	15.3
Green Ext Time (p_c), s	0.0	0.0	0.2	0.6	0.1	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	86.4
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

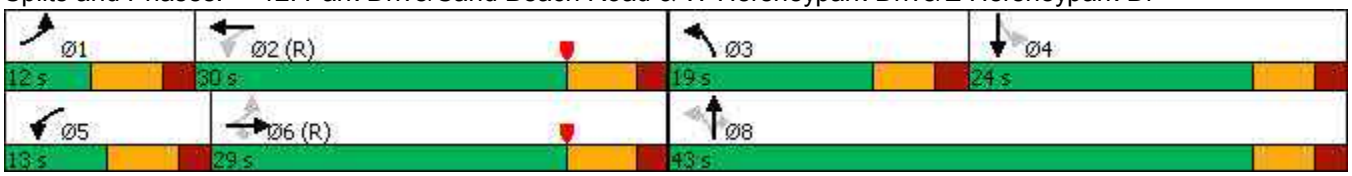
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	1492	295	183	905	29	443	139	246	66	166	92
Future Volume (vph)	38	1492	295	183	905	29	443	139	246	66	166	92
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	11	11	11	12	12	12
Grade (%)		2%			-2%			3%			-3%	
Storage Length (ft)	75		0	190		0	125		185	0		0
Storage Lanes	1		1	1		0	1		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.995				0.850		0.962	
Flt Protected	0.950			0.950			0.950				0.990	
Satd. Flow (prot)	1693	3319	1485	1661	3309	0	1596	1697	1401	0	1731	0
Flt Permitted	0.166			0.147			0.309				0.896	
Satd. Flow (perm)	296	3319	1485	257	3309	0	519	1697	1401	0	1567	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			244		4				215		22	
Link Speed (mph)		45			45			35			35	
Link Distance (ft)		789			2028			659			1125	
Travel Time (s)		12.0			30.7			12.8			21.9	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	2%	2%	4%	4%	0%	2%	1%	4%	0%	1%	0%
Adj. Flow (vph)	40	1554	307	191	943	30	461	145	256	69	173	96
Shared Lane Traffic (%)												
Lane Group Flow (vph)	40	1554	307	191	973	0	461	145	256	0	338	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.06	1.06	1.06	1.14	1.14	1.14	1.05	1.05	1.05
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	1	1	1	1	
Detector Template		Main30	Right		Main30					Left		
Leading Detector (ft)	35	300	48	35	300		30	30	30	48	35	
Trailing Detector (ft)	-5	0	-2	-5	0		-10	-10	-10	-2	-5	
Detector 1 Position(ft)	-5	0	-2	-5	0		-10	-10	-10	-2	-5	
Detector 1 Size(ft)	40	0	50	40	0		40	40	40	50	40	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		294			294							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	Perm	NA	
Protected Phases	1	6		5	2		3	8			4	
Permitted Phases	6		6	2			8		8	4		
Detector Phase	1	6	6	5	2		3	8	8	4	4	
Switch Phase												
Minimum Initial (s)	3.0	10.0	10.0	3.0	10.0		3.0	3.0	3.0	3.0	3.0	
Minimum Split (s)	9.5	16.5	16.5	9.5	16.5		9.1	10.0	10.0	10.0	10.0	
Total Split (s)	12.0	29.0	29.0	13.0	30.0		19.0	43.0	43.0	24.0	24.0	
Total Split (%)	14.1%	34.1%	34.1%	15.3%	35.3%		22.4%	50.6%	50.6%	28.2%	28.2%	
Maximum Green (s)	5.5	22.5	22.5	6.5	23.5		12.9	36.9	36.9	17.9	17.9	
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5		3.9	3.9	3.9	3.9	3.9	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.2	2.2	2.2	2.2	2.2	
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	-1.5		-1.5	-1.5	-1.5		-1.5	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		4.6	4.6	4.6		4.6	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes			Yes	Yes	
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0		3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	15.0	15.0	0.0	15.0		0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	30.0	30.0	0.0	30.0		0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	C-Max	C-Max	None	C-Max		None	None	None	None	None	
Act Effct Green (s)	31.1	24.1	24.1	34.7	29.9		38.3	38.3	38.3		19.3	
Actuated g/C Ratio	0.37	0.28	0.28	0.41	0.35		0.45	0.45	0.45		0.23	
v/c Ratio	0.18	1.65	0.52	0.81	0.83		1.11	0.19	0.34		0.91	
Control Delay	23.0	325.1	21.2	44.8	35.1		99.7	14.8	4.7		60.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	
Total Delay	23.0	325.1	21.2	44.8	35.1		99.7	14.8	4.7		60.7	
LOS	C	F	C	D	D		F	B	A		E	
Approach Delay		269.7			36.7			57.2			60.7	
Approach LOS		F			D			E			E	

Intersection Summary

Area Type: Other
Cycle Length: 85
Actuated Cycle Length: 85
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow, Master Intersection
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.65
Intersection Signal Delay: 146.6 Intersection LOS: F
Intersection Capacity Utilization 115.1% ICU Level of Service H
Analysis Period (min) 15

Splits and Phases: 12: Park Drive/Sand Beach Road & W Hersheypark Drive/E Hersheypark Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	38	1492	295	183	905	29	443	139	246	66	166	92
Future Volume (veh/h)	38	1492	295	183	905	29	443	139	246	66	166	92
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1778	1750	1750	1818	1818	1818	1722	1736	1694	1898	1898	1898
Adj Flow Rate, veh/h	40	1554	307	191	943	30	461	145	256	69	173	96
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	2	2	4	4	4	2	1	4	1	1	1
Cap, veh/h	206	939	419	248	1130	36	508	784	648	110	203	104
Arrive On Green	0.05	0.28	0.28	0.09	0.33	0.33	0.17	0.45	0.45	0.23	0.23	0.23
Sat Flow, veh/h	1693	3324	1483	1731	3416	109	1640	1736	1435	260	890	456
Grp Volume(v), veh/h	40	1554	307	191	477	496	461	145	256	338	0	0
Grp Sat Flow(s),veh/h/ln	1693	1662	1483	1731	1727	1798	1640	1736	1435	1607	0	0
Q Serve(g_s), s	1.4	24.0	15.9	6.4	21.7	21.7	14.4	4.2	10.1	13.8	0.0	0.0
Cycle Q Clear(g_c), s	1.4	24.0	15.9	6.4	21.7	21.7	14.4	4.2	10.1	17.4	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.06	1.00		1.00	0.20		0.28
Lane Grp Cap(c), veh/h	206	939	419	248	571	595	508	784	648	418	0	0
V/C Ratio(X)	0.19	1.66	0.73	0.77	0.83	0.83	0.91	0.18	0.39	0.81	0.00	0.00
Avail Cap(c_a), veh/h	268	939	419	248	571	595	508	784	648	418	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	21.6	30.5	27.6	21.3	26.3	26.3	21.9	13.9	15.5	31.8	0.0	0.0
Incr Delay (d2), s/veh	0.5	299.8	10.8	13.9	13.4	13.0	20.2	0.1	0.4	11.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.0	74.7	10.6	5.8	15.4	15.8	7.3	2.8	5.6	12.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.1	330.3	38.4	35.2	39.7	39.3	42.1	14.1	15.9	43.1	0.0	0.0
LnGrp LOS	C	F	D	D	D	D	D	B	B	D	A	A
Approach Vol, veh/h		1901			1164			862			338	
Approach Delay, s/veh		276.7			38.8			29.6			43.1	
Approach LOS		F			D			C			D	

Timer - Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	8.9	33.1	19.0	24.0	13.0	29.0		43.0
Change Period (Y+Rc), s	6.5	6.5	* 6.1	* 6.1	6.5	6.5		* 6.1
Max Green Setting (Gmax), s	5.5	23.5	* 13	* 18	6.5	22.5		* 37
Max Q Clear Time (g_c+I1), s	3.9	24.2	16.9	19.4	8.9	26.5		12.6
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0		1.4

Intersection Summary	
HCM 6th Ctrl Delay	143.3
HCM 6th LOS	F

Notes

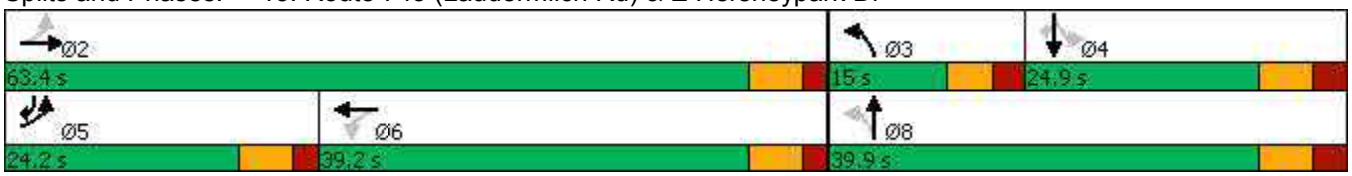
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	798	937	152	3	525	6	102	202	3	9	103	409
Future Volume (vph)	798	937	152	3	525	6	102	202	3	9	103	409
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	11	11	11	11	11	11
Grade (%)		2%			3%			6%			-6%	
Storage Length (ft)	265		0	150		0	250		0	150		230
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.979			0.998			0.998				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1660	3259	0	1684	3204	0	1603	1684	0	1703	1774	1493
Flt Permitted	0.296			0.248			0.515			0.623		
Satd. Flow (perm)	517	3259	0	440	3204	0	869	1684	0	1117	1774	1493
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		29			1			1				226
Link Speed (mph)		45			45			35			35	
Link Distance (ft)		2621			1081			1569			722	
Travel Time (s)		39.7			16.4			30.6			14.1	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	2%	0%	0%	5%	0%	0%	0%	0%	0%	1%	2%
Adj. Flow (vph)	840	986	160	3	553	6	107	213	3	9	108	431
Shared Lane Traffic (%)												
Lane Group Flow (vph)	840	1146	0	3	559	0	107	216	0	9	108	431
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.16	1.16	1.16	1.08	1.08	1.08
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	1		1	1	1
Detector Template	Left	Main30		Left	Main30		Left	Thru		Left	Thru	Right
Leading Detector (ft)	48	300		48	300		48	48		48	48	48
Trailing Detector (ft)	-2	0		-2	0		-2	-2		-2	-2	-2
Detector 1 Position(ft)	-2	0		-2	0		-2	-2		-2	-2	-2
Detector 1 Size(ft)	50	0		50	0		50	50		50	50	50
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		294			294							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA		Perm	NA	pm+ov
Protected Phases	5	2			6		3	8			4	5
Permitted Phases	2			6			8			4		4
Detector Phase	5	2		6	6		3	8		4	4	5
Switch Phase												
Minimum Initial (s)	3.0	10.0		10.0	10.0		3.0	3.0		3.0	3.0	3.0
Minimum Split (s)	9.2	16.2		16.2	16.2		9.7	10.0		10.0	10.0	9.2
Total Split (s)	24.2	63.4		39.2	39.2		15.0	39.9		24.9	24.9	24.2
Total Split (%)	23.4%	61.4%		37.9%	37.9%		14.5%	38.6%		24.1%	24.1%	23.4%
Maximum Green (s)	18.0	57.2		33.0	33.0		9.0	33.0		18.0	18.0	18.0
Yellow Time (s)	4.2	4.2		4.2	4.2		3.5	4.2		4.2	4.2	4.2
All-Red Time (s)	2.0	2.0		2.0	2.0		2.5	2.7		2.7	2.7	2.0
Lost Time Adjust (s)	-1.5	-1.5		-1.5	-1.5		-1.5	-1.5		-1.5	-1.5	-1.5
Total Lost Time (s)	4.7	4.7		4.7	4.7		4.5	5.4		5.4	5.4	4.7
Lead/Lag	Lead			Lag	Lag		Lead			Lag	Lag	Lead
Lead-Lag Optimize?	Yes			Yes	Yes		Yes			Yes	Yes	Yes
Vehicle Extension (s)	3.0	5.7		5.7	5.7		3.0	3.0		3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Time Before Reduce (s)	0.0	30.0		30.0	30.0		0.0	0.0		0.0	0.0	0.0
Time To Reduce (s)	0.0	15.0		15.0	15.0		0.0	0.0		0.0	0.0	0.0
Recall Mode	None	Min		Min	Min		None	None		None	None	None
Act Effct Green (s)	56.0	56.0		31.1	31.1		25.5	24.6		13.4	13.4	39.0
Actuated g/C Ratio	0.62	0.62		0.34	0.34		0.28	0.27		0.15	0.15	0.43
v/c Ratio	1.48	0.57		0.02	0.51		0.33	0.47		0.05	0.41	0.56
Control Delay	242.3	12.4		22.3	26.3		28.2	31.4		36.7	43.1	13.4
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	242.3	12.4		22.3	26.3		28.2	31.4		36.7	43.1	13.4
LOS	F	B		C	C		C	C		D	D	B
Approach Delay		109.6			26.3			30.3			19.6	
Approach LOS		F			C			C			B	

Intersection Summary	
Area Type:	Other
Cycle Length: 103.3	
Actuated Cycle Length: 91	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.48	
Intersection Signal Delay: 74.0	Intersection LOS: E
Intersection Capacity Utilization 87.2%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 13: Route 743 (Laudermilch Rd) & E Hersheypark Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	798	937	152	3	525	6	102	202	3	9	103	409
Future Volume (veh/h)	798	937	152	3	525	6	102	202	3	9	103	409
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1750	1750	1750	1750	1680	1680	1599	1599	1599	2024	2009	1995
Adj Flow Rate, veh/h	840	986	0	3	553	0	107	213	3	9	108	431
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	0	5	5	0	0	0	0	1	2
Cap, veh/h	543	1825		241	932		339	541	8	352	416	700
Arrive On Green	0.21	0.55	0.00	0.29	0.29	0.00	0.09	0.34	0.34	0.21	0.21	0.21
Sat Flow, veh/h	1666	3412	0	564	3275	0	1523	1573	22	1331	2009	1691
Grp Volume(v), veh/h	840	986	0	3	553	0	107	0	216	9	108	431
Grp Sat Flow(s),veh/h/ln	1666	1662	0	564	1596	0	1523	0	1595	1331	2009	1691
Q Serve(g_s), s	19.5	17.9	0.0	0.4	14.0	0.0	4.8	0.0	9.7	0.5	4.2	18.9
Cycle Q Clear(g_c), s	19.5	17.9	0.0	0.4	14.0	0.0	4.8	0.0	9.7	0.5	4.2	18.9
Prop In Lane	1.00		0.00	1.00		0.00	1.00		0.01	1.00		1.00
Lane Grp Cap(c), veh/h	543	1825		241	932		339	0	549	352	416	700
V/C Ratio(X)	1.55	0.54		0.01	0.59		0.32	0.00	0.39	0.03	0.26	0.62
Avail Cap(c_a), veh/h	543	2070		283	1168		373	0	584	352	416	700
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.3	13.6	0.0	23.7	28.6	0.0	23.5	0.0	23.5	29.8	31.3	21.7
Incr Delay (d2), s/veh	255.8	0.8	0.0	0.1	1.9	0.0	0.5	0.0	0.5	0.0	0.3	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	68.9	10.0	0.0	0.1	9.0	0.0	3.1	0.0	6.5	0.3	3.7	11.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	276.1	14.4	0.0	23.8	30.4	0.0	24.1	0.0	23.9	29.9	31.7	23.4
LnGrp LOS	F	B		C	C		C	A	C	C	C	C
Approach Vol, veh/h		1826	A		556	A		323			548	
Approach Delay, s/veh		134.8			30.4			24.0			25.1	
Approach LOS		F			C			C			C	

Timer - Assigned Phs	2	3	4	5	6	8
Phs Duration (G+Y+Rc), s	56.4	12.9	24.9	24.2	32.2	37.8
Change Period (Y+Rc), s	6.2	6.0	* 6.9	6.2	6.2	* 6.9
Max Green Setting (Gmax), s	57.2	9.0	* 18	18.0	33.0	* 33
Max Q Clear Time (g_c+I1), s	20.4	7.3	21.4	22.0	16.5	11.7
Green Ext Time (p_c), s	27.7	0.0	0.0	0.0	9.5	0.7

Intersection Summary	
HCM 6th Ctrl Delay	87.5
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

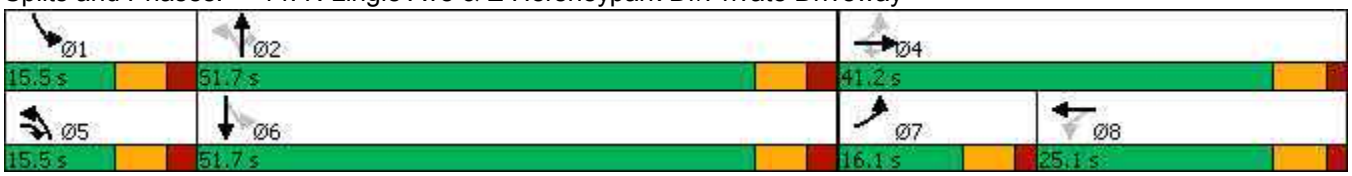
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	61	18	793	22	26	18	448	87	13	11	177	13
Future Volume (vph)	61	18	793	22	26	18	448	87	13	11	177	13
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	16	16	12	12	12	12	12	12
Grade (%)		1%			-3%			-6%			1%	
Storage Length (ft)	200		0	75		0	175		100	125		0
Storage Lanes	1		1	1		0	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.940				0.850		0.990	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1668	1060	1522	1653	1470	0	1727	1520	1126	851	1741	0
Flt Permitted	0.404			0.755			0.521			0.699		
Satd. Flow (perm)	709	1060	1522	1314	1470	0	947	1520	1126	626	1741	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			636		18				160		4	
Link Speed (mph)		45			25			35			35	
Link Distance (ft)		1844			617			1844			713	
Travel Time (s)		27.9			16.8			35.9			13.9	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	2%	69%	0%	5%	28%	39%	2%	22%	40%	100%	2%	0%
Adj. Flow (vph)	62	18	809	22	27	18	457	89	13	11	181	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	62	18	809	22	45	0	457	89	13	11	194	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.08	1.08	1.08	1.05	0.89	0.89	1.03	1.03	1.03	1.08	1.08	1.08
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	1	1	1		1	2	1	1	2	
Detector Template	Left		Right	Left			Left	Main20	Right	Left	Main20	
Leading Detector (ft)	48	48	48	48	48		48	200	48	48	200	
Trailing Detector (ft)	-2	-2	-2	-2	-2		-2	0	-2	-2	0	
Detector 1 Position(ft)	-2	-2	-2	-2	-2		-2	0	-2	-2	0	
Detector 1 Size(ft)	50	50	50	50	50		50	0	50	50	0	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)								194			194	
Detector 2 Size(ft)								6			6	
Detector 2 Type								Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)								0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	pm+ov	Perm	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	7	4	5		8		5	2		1	6	
Permitted Phases	4		4	8			2		2	6		
Detector Phase	7	4	5	8	8		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0	3.0	4.0	4.0		3.0	10.0	10.0	3.0	10.0	
Minimum Split (s)	10.1	10.1	10.7	10.1	10.1		10.7	16.7	16.7	10.7	16.7	
Total Split (s)	16.1	41.2	15.5	25.1	25.1		15.5	51.7	51.7	15.5	51.7	
Total Split (%)	14.9%	38.0%	14.3%	23.2%	23.2%		14.3%	47.7%	47.7%	14.3%	47.7%	
Maximum Green (s)	10.0	35.1	8.8	19.0	19.0		8.8	45.0	45.0	8.8	45.0	
Yellow Time (s)	4.3	4.3	4.2	4.3	4.3		4.2	4.2	4.2	4.2	4.2	
All-Red Time (s)	1.8	1.8	2.5	1.8	1.8		2.5	2.5	2.5	2.5	2.5	
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	-1.5		-1.5	-1.5	-1.5	-1.5	-1.5	
Total Lost Time (s)	4.6	4.6	5.2	4.6	4.6		5.2	5.2	5.2	5.2	5.2	
Lead/Lag	Lead		Lead	Lag	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes			Yes	Yes			Yes	Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	5.6	5.6	3.0	5.6	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	24.0	24.0	0.0	24.0	
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	12.0	12.0	0.0	12.0	
Recall Mode	None	None	None	None	None		None	Min	Min	None	Min	
Act Effct Green (s)	16.7	16.4	25.6	9.2	9.2		34.2	36.1	36.1	25.6	17.2	
Actuated g/C Ratio	0.31	0.30	0.47	0.17	0.17		0.63	0.66	0.66	0.47	0.32	
v/c Ratio	0.16	0.06	0.77	0.10	0.17		0.60	0.09	0.02	0.03	0.35	
Control Delay	15.7	15.3	7.9	27.8	20.9		16.2	12.5	0.0	9.7	20.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	15.7	15.3	7.9	27.8	20.9		16.2	12.5	0.0	9.7	20.4	
LOS	B	B	A	C	C		B	B	A	A	C	
Approach Delay		8.6			23.2			15.2			19.8	
Approach LOS		A			C			B			B	

Intersection Summary

Area Type: Other
Cycle Length: 108.4
Actuated Cycle Length: 54.5
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.77
Intersection Signal Delay: 12.7 Intersection LOS: B
Intersection Capacity Utilization 78.3% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 14: N Lingle Ave & E Hersheypark Dr/Private Driveway



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	61	18	793	22	26	18	448	87	13	11	177	13
Future Volume (veh/h)	61	18	793	22	26	18	448	87	13	11	177	13
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1766	826	1794	1841	1574	1574	1995	1711	1455	390	1766	1766
Adj Flow Rate, veh/h	62	18	809	22	27	18	457	89	13	11	181	13
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	69	0	5	28	28	2	22	40	100	2	2
Cap, veh/h	658	392	926	339	314	209	485	511	369	161	320	23
Arrive On Green	0.06	0.48	0.48	0.36	0.36	0.36	0.13	0.30	0.30	0.03	0.20	0.20
Sat Flow, veh/h	1682	826	1521	688	881	587	1900	1711	1233	372	1628	117
Grp Volume(v), veh/h	62	18	809	22	0	45	457	89	13	11	0	194
Grp Sat Flow(s),veh/h/ln	1682	826	1521	688	0	1468	1900	1711	1233	372	0	1745
Q Serve(g_s), s	1.6	0.9	34.3	1.6	0.0	1.6	10.3	3.0	0.6	1.8	0.0	7.7
Cycle Q Clear(g_c), s	1.6	0.9	34.3	1.6	0.0	1.6	10.3	3.0	0.6	1.8	0.0	7.7
Prop In Lane	1.00		1.00	1.00		0.40	1.00		1.00	1.00		0.07
Lane Grp Cap(c), veh/h	658	392	926	339	0	523	485	511	369	161	0	343
V/C Ratio(X)	0.09	0.05	0.87	0.06	0.00	0.09	0.94	0.17	0.04	0.07	0.00	0.57
Avail Cap(c_a), veh/h	809	392	926	339	0	523	485	1033	744	199	0	1053
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	12.3	10.9	12.6	16.5	0.0	16.5	24.7	20.0	19.1	23.7	0.0	28.0
Incr Delay (d2), s/veh	0.1	0.0	9.3	0.1	0.0	0.1	27.1	0.5	0.1	0.2	0.0	4.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.0	0.3	18.0	0.5	0.0	0.9	10.8	2.1	0.3	0.3	0.0	6.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.3	10.9	21.9	16.6	0.0	16.6	51.8	20.4	19.2	23.8	0.0	32.2
LnGrp LOS	B	B	C	B	A	B	D	C	B	C	A	C
Approach Vol, veh/h		889			67			559			205	
Approach Delay, s/veh		21.0			16.6			46.0			31.7	
Approach LOS		C			B			D			C	

Timer - Assigned Phs	1	2		4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.6	28.2		41.2	15.5	20.3	9.2	32.0
Change Period (Y+Rc), s	6.7	6.7		* 6.1	6.7	6.7	* 6.1	* 6.1
Max Green Setting (Gmax), s	8.8	45.0		* 35	8.8	45.0	* 10	* 19
Max Q Clear Time (g_c+I1), s	4.3	5.5		36.8	12.8	9.7	4.1	4.1
Green Ext Time (p_c), s	0.0	1.8		0.0	0.0	3.9	0.1	0.2

Intersection Summary	
HCM 6th Ctrl Delay	30.2
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	25	66	682	21	39	670
Future Volume (vph)	25	66	682	21	39	670
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	15	15	14	14	14	14
Grade (%)	1%		2%			-1%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.902		0.996			
Flt Protected	0.986					0.997
Satd. Flow (prot)	1733	0	1837	0	0	1854
Flt Permitted	0.986					0.997
Satd. Flow (perm)	1733	0	1837	0	0	1854
Link Speed (mph)	25		35			35
Link Distance (ft)	2491		680			1197
Travel Time (s)	67.9		13.2			23.3
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	4%	0%	3%	5%	0%	4%
Adj. Flow (vph)	26	68	703	22	40	691
Shared Lane Traffic (%)						
Lane Group Flow (vph)	94	0	725	0	0	731
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	15		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	0.95	0.95	1.00	1.00	0.98	0.98
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Stop			Stop

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 83.3%		ICU Level of Service E	
Analysis Period (min) 15			

Intersection	
Intersection Delay, s/veh	59.7
Intersection LOS	F

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	25	66	682	21	39	670
Future Vol, veh/h	25	66	682	21	39	670
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles, %	4	0	3	5	0	4
Mvmt Flow	26	68	703	22	40	691
Number of Lanes	1	0	1	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	11.3	62.3	63.3
HCM LOS	B	F	F

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	27%	6%
Vol Thru, %	97%	0%	94%
Vol Right, %	3%	73%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	703	91	709
LT Vol	0	25	39
Through Vol	682	0	670
RT Vol	21	66	0
Lane Flow Rate	725	94	731
Geometry Grp	1	1	1
Degree of Util (X)	1.022	0.173	1.026
Departure Headway (Hd)	5.204	6.861	5.178
Convergence, Y/N	Yes	Yes	Yes
Cap	703	526	709
Service Time	3.204	4.861	3.178
HCM Lane V/C Ratio	1.031	0.179	1.031
HCM Control Delay	62.3	11.3	63.3
HCM Lane LOS	F	B	F
HCM 95th-tile Q	17.3	0.6	17.5

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	311	0	0	0	210	10
Future Volume (vph)	311	0	0	0	210	10
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	13	13	12	12	12	12
Grade (%)	1%			0%	11%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.994	
Flt Protected					0.954	
Satd. Flow (prot)	1814	0	0	1800	1591	0
Flt Permitted					0.954	
Satd. Flow (perm)	1814	0	0	1800	1591	0
Link Speed (mph)	30			25	25	
Link Distance (ft)	1120			1174	602	
Travel Time (s)	25.5			32.0	16.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	0%	0%	0%	1%	10%
Adj. Flow (vph)	338	0	0	0	228	11
Shared Lane Traffic (%)						
Lane Group Flow (vph)	338	0	0	0	239	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.03	1.03	1.07	1.07	1.15	1.15
Turning Speed (mph)		9	15		15	9
Sign Control	Stop			Stop	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 36.9%	ICU Level of Service A
Analysis Period (min) 15	

Intersection	
Intersection Delay, s/veh	10.7
Intersection LOS	B

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	311	0	0	0	210	10
Future Vol, veh/h	311	0	0	0	210	10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	0	0	0	1	10
Mvmt Flow	338	0	0	0	228	11
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	10.9	0	10.3
HCM LOS	B	-	B

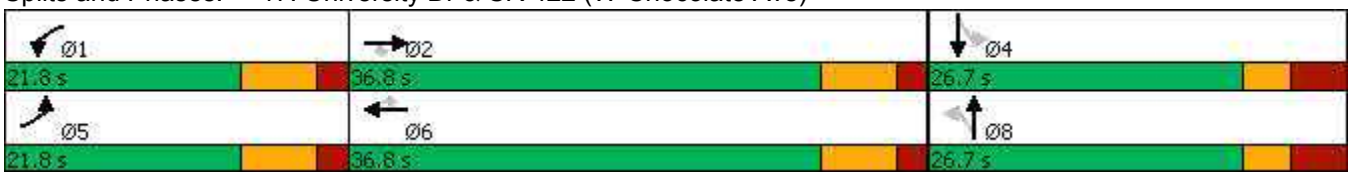
Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	95%	0%	0%
Vol Thru, %	0%	100%	100%
Vol Right, %	5%	0%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	220	311	0
LT Vol	210	0	0
Through Vol	0	311	0
RT Vol	10	0	0
Lane Flow Rate	239	338	0
Geometry Grp	1	1	1
Degree of Util (X)	0.325	0.427	0
Departure Headway (Hd)	4.886	4.544	4.906
Convergence, Y/N	Yes	Yes	Yes
Cap	734	791	0
Service Time	2.921	2.573	2.956
HCM Lane V/C Ratio	0.326	0.427	0
HCM Control Delay	10.3	10.9	8
HCM Lane LOS	B	B	N
HCM 95th-tile Q	1.4	2.2	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	1542	150	103	1285	18	436	26	293	37	19	45
Future Volume (vph)	11	1542	150	103	1285	18	436	26	293	37	19	45
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	12	14	11	12	12	12	12	12	11	12	12
Grade (%)		1%			-1%			0%			1%	
Storage Length (ft)	210		225	240		225	0		0	0		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.862			0.894	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1645	3369	1608	1661	3403	1451	1693	1537	0	1645	1552	0
Flt Permitted	0.950			0.950			0.713			0.319		
Satd. Flow (perm)	1645	3369	1608	1661	3403	1451	1271	1537	0	552	1552	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			134			134		312			48	
Link Speed (mph)		50			50			25			25	
Link Distance (ft)		1997			877			940			239	
Travel Time (s)		27.2			12.0			25.6			6.5	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	1%	1%	0%	1%	6%	1%	0%	1%	0%	6%	2%
Adj. Flow (vph)	12	1640	160	110	1367	19	464	28	312	39	20	48
Shared Lane Traffic (%)												
Lane Group Flow (vph)	12	1640	160	110	1367	19	464	340	0	39	68	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.13	1.08	0.99	1.11	1.07	1.07	1.07	1.07	1.07	1.13	1.08	1.08
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	1		1	1	
Detector Template		Main35			Main35							
Leading Detector (ft)	38	350	0	38	350	0	38	38		38	38	
Trailing Detector (ft)	-2	0	0	-2	0	0	-2	-2		-2	-2	
Detector 1 Position(ft)	-2	0	0	-2	0	0	-2	-2		-2	-2	
Detector 1 Size(ft)	40	0	0	40	0	0	40	40		40	40	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		344			344							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2			6	8			4		
Detector Phase	5	2	2	1	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)	3.0	15.0	15.0	3.0	15.0	15.0	3.0	3.0		3.0	3.0	
Minimum Split (s)	9.8	21.8	21.8	9.8	21.8	21.8	15.0	15.0		15.0	15.0	
Total Split (s)	21.8	36.8	36.8	21.8	36.8	36.8	26.7	26.7		26.7	26.7	
Total Split (%)	25.6%	43.1%	43.1%	25.6%	43.1%	43.1%	31.3%	31.3%		31.3%	31.3%	
Maximum Green (s)	15.0	30.0	30.0	15.0	30.0	30.0	20.0	20.0		20.0	20.0	
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	4.8	3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	3.7	3.7		3.7	3.7	
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5		-1.5	-1.5	
Total Lost Time (s)	5.3	5.3	5.3	5.3	5.3	5.3	5.2	5.2		5.2	5.2	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0	6.0	3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.5	3.5	3.0	3.5	3.5	3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	35.0	35.0	0.0	35.0	35.0	0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	18.0	18.0	0.0	18.0	18.0	0.0	0.0		0.0	0.0	
Recall Mode	None	Min	Min	None	Min	Min	None	None		None	None	
Act Effct Green (s)	7.7	31.8	31.8	12.0	43.3	43.3	21.7	21.7		21.7	21.7	
Actuated g/C Ratio	0.10	0.41	0.41	0.15	0.55	0.55	0.28	0.28		0.28	0.28	
v/c Ratio	0.07	1.20	0.22	0.43	0.73	0.02	1.32	0.52		0.25	0.15	
Control Delay	35.4	121.8	5.8	36.6	17.0	0.1	190.1	7.7		30.1	11.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	35.4	121.8	5.8	36.6	17.0	0.1	190.1	7.7		30.1	11.9	
LOS	D	F	A	D	B	A	F	A		C	B	
Approach Delay		111.0			18.2			113.0			18.6	
Approach LOS		F			B			F			B	

Intersection Summary	
Area Type:	Other
Cycle Length: 85.3	
Actuated Cycle Length: 78.3	
Natural Cycle: 130	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.32	
Intersection Signal Delay: 76.1	Intersection LOS: E
Intersection Capacity Utilization 96.6%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 17: University Dr & SR 422 (W Chocolate Ave)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	1542	150	103	1285	18	436	26	293	37	19	45
Future Volume (veh/h)	11	1542	150	103	1285	18	436	26	293	37	19	45
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1794	1780	1852	1837	1823	1752	1786	1800	1800	1794	1710	1710
Adj Flow Rate, veh/h	12	1640	160	110	1367	19	464	28	312	39	20	48
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	1	1	0	1	6	1	0	0	0	6	6
Cap, veh/h	49	1394	647	174	1675	718	427	36	399	177	126	301
Arrive On Green	0.03	0.41	0.41	0.10	0.48	0.48	0.28	0.28	0.28	0.28	0.28	0.28
Sat Flow, veh/h	1709	3383	1569	1750	3464	1485	1344	127	1418	1054	446	1071
Grp Volume(v), veh/h	12	1640	160	110	1367	19	464	0	340	39	0	68
Grp Sat Flow(s),veh/h/ln	1709	1691	1569	1750	1732	1485	1344	0	1545	1054	0	1517
Q Serve(g_s), s	0.5	31.5	5.1	4.6	25.7	0.5	18.9	0.0	15.5	2.7	0.0	2.6
Cycle Q Clear(g_c), s	0.5	31.5	5.1	4.6	25.7	0.5	21.5	0.0	15.5	18.2	0.0	2.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.92	1.00		0.71
Lane Grp Cap(c), veh/h	49	1394	647	174	1675	718	427	0	435	177	0	427
V/C Ratio(X)	0.25	1.18	0.25	0.63	0.82	0.03	1.09	0.00	0.78	0.22	0.00	0.16
Avail Cap(c_a), veh/h	369	1394	647	378	1675	718	427	0	435	177	0	427
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	36.3	22.5	14.7	33.0	16.8	10.3	30.8	0.0	25.3	33.7	0.0	20.7
Incr Delay (d2), s/veh	2.6	87.1	0.7	3.7	4.2	0.1	69.0	0.0	9.0	0.6	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.4	39.8	3.0	3.6	14.0	0.3	23.8	0.0	10.8	1.3	0.0	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.9	109.6	15.4	36.8	21.0	10.4	99.8	0.0	34.3	34.3	0.0	20.8
LnGrp LOS	D	F	B	D	C	B	F	A	C	C	A	C
Approach Vol, veh/h		1812			1496			804			107	
Approach Delay, s/veh		100.8			22.1			72.1			25.7	
Approach LOS		F			C			E			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	12.9	36.8		26.7	7.5	42.2		26.7
Change Period (Y+Rc), s	6.8	6.8		* 6.7	6.8	6.8		* 6.7
Max Green Setting (Gmax), s	15.0	30.0		* 20	15.0	30.0		* 20
Max Q Clear Time (g_c+I1), s	6.6	33.5		20.2	2.5	27.7		23.5
Green Ext Time (p_c), s	0.2	0.0		0.0	0.0	2.2		0.0

Intersection Summary	
HCM 6th Ctrl Delay	65.5
HCM 6th LOS	E

Notes

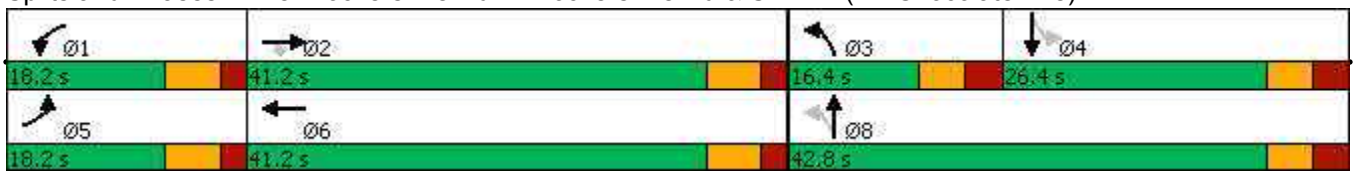
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	1350	477	142	1038	18	364	149	110	41	164	12
Future Volume (vph)	55	1350	477	142	1038	18	364	149	110	41	164	12
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	12	14	11	12	12	11	11	13	12	12	12
Grade (%)		-2%			2%			1%			-2%	
Storage Length (ft)	125		200	125		0	0		100	0		0
Storage Lanes	1		1	1		0	1		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor											1.00	
Frt			0.850		0.997			0.937			0.993	
Flt Protected	0.950			0.950			0.950				0.991	
Satd. Flow (prot)	1670	3386	1632	1604	3311	0	1628	1606	0	0	1774	0
Flt Permitted	0.950			0.950			0.359				0.879	
Satd. Flow (perm)	1670	3386	1632	1604	3311	0	615	1606	0	0	1574	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			331		2			41			3	
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		2885			1404			806			192	
Travel Time (s)		56.2			27.4			15.7			3.7	
Confl. Peds. (#/hr)							1					1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	2%	1%	2%	2%	0%	1%	1%	1%	0%	1%	0%
Adj. Flow (vph)	57	1392	492	146	1070	19	375	154	113	42	169	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	57	1392	492	146	1089	0	375	267	0	0	223	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.11	1.06	0.97	1.13	1.09	1.09	1.13	1.13	1.03	1.06	1.06	1.06
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	2	1	2		1	1		1	1	
Detector Template		Main25			Main25					Left		
Leading Detector (ft)	38	250	106	38	250		38	38		48	38	
Trailing Detector (ft)	-2	0	0	-2	0		-2	-2		-2	-2	
Detector 1 Position(ft)	-2	0	0	-2	0		-2	-2		-2	-2	
Detector 1 Size(ft)	40	0	0	40	0		40	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		244	100		244							
Detector 2 Size(ft)		6	6		6							
Detector 2 Type		Cl+Ex	Cl+Ex		Cl+Ex							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0	0.0		0.0							
Turn Type	Prot	NA	Perm	Prot	NA		pm+pt	NA		Perm	NA	
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases			2				8			4		
Detector Phase	5	2	2	1	6		3	8		4	4	
Switch Phase												
Minimum Initial (s)	3.0	15.0	15.0	3.0	15.0		3.0	3.0		3.0	3.0	
Minimum Split (s)	9.4	21.2	21.2	9.2	25.0		10.0	25.0		10.0	10.0	
Total Split (s)	18.2	41.2	41.2	18.2	41.2		16.4	42.8		26.4	26.4	
Total Split (%)	17.8%	40.3%	40.3%	17.8%	40.3%		16.0%	41.9%		25.8%	25.8%	
Maximum Green (s)	12.0	35.0	35.0	12.0	35.0		10.0	36.4		20.0	20.0	
Yellow Time (s)	4.2	4.2	4.2	4.2	4.2		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.9	2.9		2.9	2.9	
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	-1.5		-1.5	-1.5			-1.5	
Total Lost Time (s)	4.7	4.7	4.7	4.7	4.7		4.9	4.9			4.9	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes			Yes	Yes	
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.5	3.5	3.0	3.5		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	25.0	25.0	0.0	25.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	12.5	12.5	0.0	12.5		0.0	0.0		0.0	0.0	
Recall Mode	None	Min	Min	None	Min		None	None		None	None	
Walk Time (s)							2.0					
Flash Dont Walk (s)							1.0					
Pedestrian Calls (#/hr)							0					
Act Effct Green (s)	10.3	36.6	36.6	12.8	41.7		35.2	35.2			18.7	
Actuated g/C Ratio	0.10	0.37	0.37	0.13	0.42		0.36	0.36			0.19	
v/c Ratio	0.33	1.11	0.61	0.70	0.78		1.12	0.45			0.74	
Control Delay	46.7	93.4	11.9	61.0	31.7		112.9	23.1			53.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	
Total Delay	46.7	93.4	11.9	61.0	31.7		112.9	23.1			53.2	
LOS	D	F	B	E	C		F	C			D	
Approach Delay		71.3			35.2			75.6			53.2	
Approach LOS		E			D			E			D	

Intersection Summary	
Area Type: Other	
Cycle Length: 102.2	
Actuated Cycle Length: 98.9	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.12	
Intersection Signal Delay: 60.0	Intersection LOS: E
Intersection Capacity Utilization 97.3%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 18: Hockersville Rd/N. Hockersville Rd & SR 422 (W. Chocolate Ave)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	55	1350	477	142	1038	18	364	149	110	41	164	12
Future Volume (veh/h)	55	1350	477	142	1038	18	364	149	110	41	164	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1875	1846	1935	1750	1750	1750	1780	1780	1852	1860	1860	1860
Adj Flow Rate, veh/h	57	1392	492	146	1070	19	375	154	113	42	169	12
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	2	1	2	2	2	1	1	1	1	1	1
Cap, veh/h	102	1360	636	200	1507	27	423	324	238	85	227	15
Arrive On Green	0.06	0.39	0.39	0.12	0.45	0.45	0.12	0.34	0.34	0.17	0.17	0.17
Sat Flow, veh/h	1785	3508	1640	1666	3342	59	1696	954	700	239	1371	92
Grp Volume(v), veh/h	57	1392	492	146	532	557	375	0	267	223	0	0
Grp Sat Flow(s),veh/h/ln	1785	1754	1640	1666	1662	1739	1696	0	1654	1701	0	0
Q Serve(g_s), s	2.9	36.5	24.7	8.0	24.3	24.3	11.5	0.0	12.0	8.1	0.0	0.0
Cycle Q Clear(g_c), s	2.9	36.5	24.7	8.0	24.3	24.3	11.5	0.0	12.0	11.7	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.03	1.00		0.42	0.19		0.05
Lane Grp Cap(c), veh/h	102	1360	636	200	750	784	423	0	562	328	0	0
V/C Ratio(X)	0.56	1.02	0.77	0.73	0.71	0.71	0.89	0.00	0.47	0.68	0.00	0.00
Avail Cap(c_a), veh/h	256	1360	636	239	750	784	423	0	666	431	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	43.2	28.8	25.2	39.9	20.9	20.9	31.3	0.0	24.4	37.5	0.0	0.0
Incr Delay (d2), s/veh	4.8	30.5	8.1	8.8	5.0	4.7	19.9	0.0	0.6	2.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.5	27.9	15.8	6.6	15.0	15.5	9.2	0.0	8.1	8.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.0	59.3	33.3	48.7	25.8	25.6	51.2	0.0	25.1	40.3	0.0	0.0
LnGrp LOS	D	F	C	D	C	C	D	A	C	D	A	A
Approach Vol, veh/h		1941			1235			642			223	
Approach Delay, s/veh		52.4			28.4			40.3			40.3	
Approach LOS		D			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	16.0	41.2	16.4	20.5	10.1	47.2		36.9
Change Period (Y+Rc), s	6.2	6.2	6.4	6.4	6.2	6.2		6.4
Max Green Setting (Gmax), s	12.0	35.0	10.0	20.0	12.0	35.0		36.4
Max Q Clear Time (g_c+I1), s	10.0	38.5	13.5	13.7	4.9	26.3		14.0
Green Ext Time (p_c), s	0.1	0.0	0.0	0.4	0.1	7.9		0.9

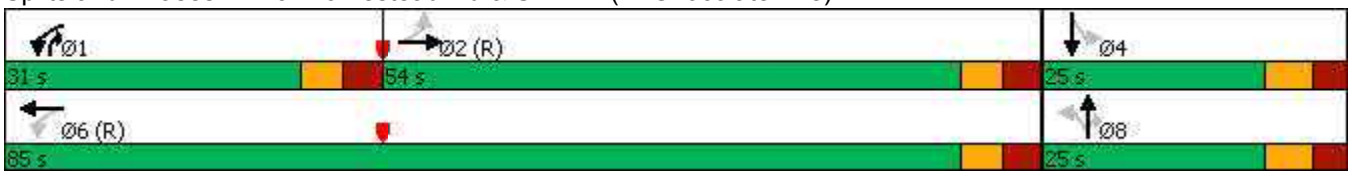
Intersection Summary	
HCM 6th Ctrl Delay	42.5
HCM 6th LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	1415	99	384	1072	6	52	12	253	84	78	39
Future Volume (vph)	11	1415	99	384	1072	6	52	12	253	84	78	39
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	12	12	10	13	13	13	13	13	13	13	13
Grade (%)		-3%			3%			-1%			-2%	
Storage Length (ft)	200		0	575		0	0		150	0		0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.990			0.999				0.850		0.974	
Flt Protected	0.950			0.950				0.961			0.979	
Satd. Flow (prot)	1620	3398	0	1556	1812	0	0	1796	1573	0	1791	0
Flt Permitted	0.200			0.072				0.549			0.833	
Satd. Flow (perm)	341	3398	0	118	1812	0	0	1026	1573	0	1524	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)		8			1				37			
Link Speed (mph)		25			35			25			25	
Link Distance (ft)		592			1437			1120			398	
Travel Time (s)		16.1			28.0			30.5			10.9	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	1%	3%	1%	1%	0%	0%	0%	1%	0%	0%	0%
Adj. Flow (vph)	11	1474	103	400	1117	6	54	13	264	88	81	41
Shared Lane Traffic (%)												
Lane Group Flow (vph)	11	1577	0	400	1123	0	0	67	264	0	210	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.15	1.05	1.05	1.19	1.05	1.05	1.02	1.02	1.02	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	1	1	1	1	
Detector Template							Left	Thru	Right	Left	Thru	
Leading Detector (ft)	0	150		38	150		48	48	48	48	48	
Trailing Detector (ft)	0	0		-2	0		-2	-2	-2	-2	-2	
Detector 1 Position(ft)	0	0		-2	0		-2	-2	-2	-2	-2	
Detector 1 Size(ft)	0	0		40	0		50	50	50	50	50	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		144			144							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	pm+ov	Perm	NA	
Protected Phases		2		1	6			8	1		4	
Permitted Phases	2			6			8		8	4		
Detector Phase	2	2		1	6		8	8	1	4	4	
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Minimum Split (s)	10.0	10.0		9.7	10.0		10.0	10.0	9.7	10.0	10.0	
Total Split (s)	54.0	54.0		31.0	85.0		25.0	25.0	31.0	25.0	25.0	
Total Split (%)	49.1%	49.1%		28.2%	77.3%		22.7%	22.7%	28.2%	22.7%	22.7%	
Maximum Green (s)	47.3	47.3		24.3	78.3		18.2	18.2	24.3	18.2	18.2	
Yellow Time (s)	3.4	3.4		3.4	3.4		3.8	3.8	3.4	3.8	3.8	
All-Red Time (s)	3.3	3.3		3.3	3.3		3.0	3.0	3.3	3.0	3.0	
Lost Time Adjust (s)	-1.5	-1.5		-1.5	-1.5			-1.5	-1.5		-1.5	
Total Lost Time (s)	5.2	5.2		5.2	5.2			5.3	5.2		5.3	
Lead/Lag	Lag	Lag		Lead					Lead			
Lead-Lag Optimize?	Yes	Yes		Yes					Yes			
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max		None	C-Max		None	None	None	None	None	
Act Effct Green (s)	50.0	50.0		80.7	80.7			18.8	49.6		18.8	
Actuated g/C Ratio	0.45	0.45		0.73	0.73			0.17	0.45		0.17	
v/c Ratio	0.07	1.02		0.95	0.84			0.39	0.36		0.81	
Control Delay	19.4	58.3		65.9	18.4			47.2	18.2		67.8	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Delay	19.4	58.3		65.9	18.4			47.2	18.2		67.8	
LOS	B	E		E	B			D	B		E	
Approach Delay		58.0			30.9			24.0			67.8	
Approach LOS		E			C			C			E	

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.02	
Intersection Signal Delay: 44.2	Intersection LOS: D
Intersection Capacity Utilization 98.6%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 19: Homestead Rd & SR 422 (E. Chocolate Ave)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	1415	99	384	1072	6	52	12	253	84	78	39
Future Volume (veh/h)	11	1415	99	384	1072	6	52	12	253	84	78	39
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1912	1898	1898	1736	1805	1805	1911	1911	1896	1950	1950	1950
Adj Flow Rate, veh/h	11	1474	103	400	1117	6	54	12	264	88	81	41
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	1	1	1	1	1	0	0	1	0	0	0
Cap, veh/h	213	1566	109	443	1301	7	196	38	642	124	94	42
Arrive On Green	0.46	0.46	0.46	0.22	0.73	0.73	0.18	0.18	0.18	0.18	0.18	0.18
Sat Flow, veh/h	541	3420	238	1653	1794	10	760	212	1607	431	525	232
Grp Volume(v), veh/h	11	774	803	400	0	1123	66	0	264	210	0	0
Grp Sat Flow(s),veh/h/ln	541	1803	1855	1653	0	1803	972	0	1607	1188	0	0
Q Serve(g_s), s	1.7	44.8	45.5	20.4	0.0	49.8	0.0	0.0	13.0	13.2	0.0	0.0
Cycle Q Clear(g_c), s	22.1	44.8	45.5	20.4	0.0	49.8	6.3	0.0	13.0	19.5	0.0	0.0
Prop In Lane	1.00		0.13	1.00		0.01	0.82		1.00	0.42		0.20
Lane Grp Cap(c), veh/h	213	826	849	443	0	1308	234	0	642	259	0	0
V/C Ratio(X)	0.05	0.94	0.95	0.90	0.00	0.86	0.28	0.00	0.41	0.81	0.00	0.00
Avail Cap(c_a), veh/h	213	826	849	467	0	1308	234	0	642	259	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	29.7	28.3	28.5	32.7	0.0	11.0	39.5	0.0	23.7	46.6	0.0	0.0
Incr Delay (d2), s/veh	0.5	19.3	20.2	19.9	0.0	7.5	0.7	0.0	0.4	17.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.4	31.2	32.6	18.4	0.0	25.4	2.9	0.0	8.7	11.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.2	47.7	48.7	52.6	0.0	18.5	40.1	0.0	24.2	63.9	0.0	0.0
LnGrp LOS	C	D	D	D	A	B	D	A	C	E	A	A
Approach Vol, veh/h		1588			1523			330			210	
Approach Delay, s/veh		48.1			27.4			27.4			63.9	
Approach LOS		D			C			C			E	

Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	29.4	55.6		25.0		85.0		25.0				
Change Period (Y+Rc), s	* 6.7	* 6.7		* 6.8		* 6.7		* 6.8				
Max Green Setting (Gmax), s	* 24	* 47		* 18		* 78		* 18				
Max Q Clear Time (g_c+I1), s	22.4	47.5		21.5		51.8		15.0				
Green Ext Time (p_c), s	0.3	0.0		0.0		14.9		0.5				

Intersection Summary	
HCM 6th Ctrl Delay	38.5
HCM 6th LOS	D

Notes

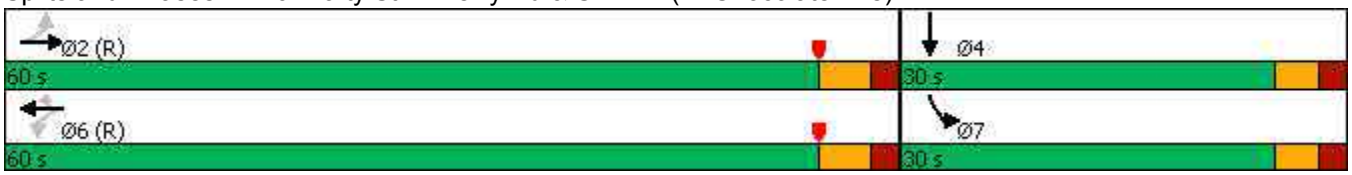
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1298	2	2	745	63	0	0	0	111	0	38
Future Volume (vph)	0	1298	2	2	745	63	0	0	0	111	0	38
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	11	11	13	12	12	12	10	10	10
Grade (%)		2%			3%			2%			2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850					0.965	
Flt Protected											0.964	
Satd. Flow (prot)	0	1747	0	0	1664	1557	0	0	0	0	1255	0
Flt Permitted					0.783						0.964	
Satd. Flow (perm)	0	1747	0	0	1303	1557	0	0	0	0	1255	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						66					30	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		4173			285			432			3474	
Travel Time (s)		81.3			5.6			11.8			94.7	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	2%	0%	0%	3%	0%	0%	0%	0%	1%	0%	88%
Adj. Flow (vph)	0	1352	2	2	776	66	0	0	0	116	0	40
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1354	0	0	778	66	0	0	0	0	156	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.14	1.14	1.05	1.09	1.09	1.09	1.19	1.19	1.19
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1				1	1	
Detector Template	Left	Main25		Left	Main25	Right				Left		
Leading Detector (ft)	48	250		48	250	48				48	45	
Trailing Detector (ft)	-2	0		-2	0	-2				-2	-5	
Detector 1 Position(ft)	-2	0		-2	0	-2				-2	-5	
Detector 1 Size(ft)	50	0		50	0	50				50	50	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex				Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0				0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0				0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0				0.0	0.0	
Detector 2 Position(ft)		244			244							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							
Turn Type		NA		Perm	NA	Perm				Prot	NA	
Protected Phases		2			6					7	4	
Permitted Phases	2			6		6						

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	2	2		6	6	6				7	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0				3.0	3.0	
Minimum Split (s)	15.5	15.5		15.5	15.5	15.5				8.0	10.0	
Total Split (s)	60.0	60.0		60.0	60.0	60.0				30.0	30.0	
Total Split (%)	66.7%	66.7%		66.7%	66.7%	66.7%				33.3%	33.3%	
Maximum Green (s)	54.5	54.5		54.5	54.5	54.5				25.0	25.0	
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5				3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0				2.0	2.0	
Lost Time Adjust (s)		-1.5			-1.5	-1.5					-1.5	
Total Lost Time (s)		4.0			4.0	4.0					3.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	6.0	6.0		6.0	6.0	6.0				3.0	3.0	
Minimum Gap (s)	5.0	5.0		5.0	5.0	5.0				3.0	3.0	
Time Before Reduce (s)	13.0	13.0		13.0	13.0	13.0				0.0	0.0	
Time To Reduce (s)	25.0	25.0		25.0	25.0	25.0				0.0	0.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max	C-Max				None	None	
Act Effct Green (s)		56.0			56.0	56.0					26.5	
Actuated g/C Ratio		0.62			0.62	0.62					0.29	
v/c Ratio		1.25			0.96	0.07					0.40	
Control Delay		138.9			39.0	1.9					24.0	
Queue Delay		0.0			0.0	0.0					0.0	
Total Delay		138.9			39.0	1.9					24.0	
LOS		F			D	A					C	
Approach Delay		138.9			36.1						24.0	
Approach LOS		F			D						C	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 2 (2%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.25	
Intersection Signal Delay: 94.4	Intersection LOS: F
Intersection Capacity Utilization 87.8%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 20: Yorty St/E. Derry Rd & SR 422 (E. Chocolate Ave)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1298	2	2	745	63	0	0	0	111	0	38
Future Volume (veh/h)	0	1298	2	2	745	63	0	0	0	111	0	38
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	1750	1750	1750	1708	1708	1820				1778	1778	1778
Adj Flow Rate, veh/h	0	1352	2	2	776	66				116	0	40
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96				0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	3	3	0				0	0	0
Cap, veh/h	0	1369	2	40	1218	1209				162	0	56
Arrive On Green	0.00	0.78	0.78	0.78	0.78	0.78				0.13	0.00	0.13
Sat Flow, veh/h	0	1747	3	0	1553	1542				1220	0	421
Grp Volume(v), veh/h	0	0	1354	778	0	66				156	0	0
Grp Sat Flow(s),veh/h/ln	0	0	1749	1553	0	1542				1641	0	0
Q Serve(g_s), s	0.0	0.0	66.6	3.9	0.0	0.9				8.2	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	66.6	70.6	0.0	0.9				8.2	0.0	0.0
Prop In Lane	0.00		0.00	0.00		1.00				0.74		0.26
Lane Grp Cap(c), veh/h	0	0	1371	1258	0	1209				218	0	0
V/C Ratio(X)	0.00	0.00	0.99	0.62	0.00	0.05				0.72	0.00	0.00
Avail Cap(c_a), veh/h	0	0	1371	1258	0	1209				483	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	1.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	9.3	4.3	0.0	2.2				37.4	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	21.5	2.3	0.0	0.1				4.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	0.0	29.7	7.4	0.0	3.7				6.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	30.8	6.5	0.0	2.3				41.8	0.0	0.0
LnGrp LOS	A	A	C	A	A	A				D	A	A
Approach Vol, veh/h		1354			844						156	
Approach Delay, s/veh		30.8			6.2						41.8	
Approach LOS		C			A						D	

Timer - Assigned Phs	2	4	6
Phs Duration (G+Y+Rc), s	74.6	15.4	74.6
Change Period (Y+Rc), s	5.5	5.0	5.5
Max Green Setting (Gmax), s	54.5	25.0	54.5
Max Q Clear Time (g_c+I1), s	68.6	10.2	72.6
Green Ext Time (p_c), s	0.0	0.5	0.0

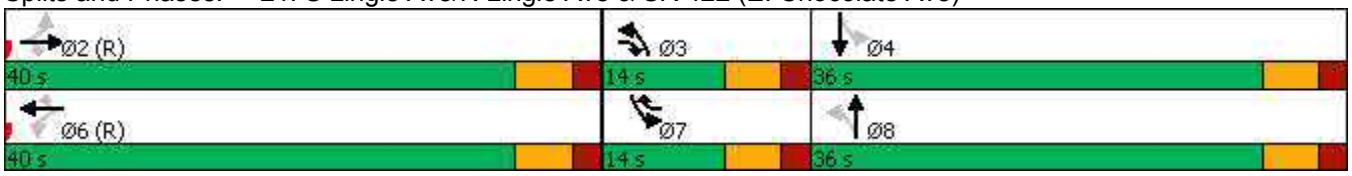
Intersection Summary	
HCM 6th Ctrl Delay	22.7
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	672	484	21	471	164	243	299	23	248	556	28
Future Volume (vph)	21	672	484	21	471	164	243	299	23	248	556	28
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	13	11	11	13	12	14	14	12	14	14
Grade (%)		1%			-2%			-2%			-3%	
Storage Length (ft)	100		525	100		150	500		0	200		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00					0.95		1.00				
Frt			0.850			0.850		0.989			0.993	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1482	1714	1573	1670	1706	1521	1727	1915	0	1736	1932	0
Flt Permitted	0.269			0.110			0.129			0.388		
Satd. Flow (perm)	419	1714	1573	193	1706	1448	235	1915	0	709	1932	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			121			173		5			3	
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		768			1230			1254			1637	
Travel Time (s)		15.0			24.0			24.4			31.9	
Confl. Peds. (#/hr)	5					5			1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	11%	1%	0%	0%	3%	5%	0%	0%	0%	0%	0%	4%
Adj. Flow (vph)	22	707	509	22	496	173	256	315	24	261	585	29
Shared Lane Traffic (%)												
Lane Group Flow (vph)	22	707	509	22	496	173	256	339	0	261	614	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.13	1.13	1.03	1.11	1.11	1.01	1.06	0.97	0.97	1.05	0.97	0.97
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	1		1	1	
Detector Template	Left	Main25	Right	Left	Main25	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	48	250	48	48	250	48	48	48		48	48	
Trailing Detector (ft)	-2	0	-2	-2	0	-2	-2	-2		-2	-2	
Detector 1 Position(ft)	-2	0	-2	-2	0	-2	-2	-2		-2	-2	
Detector 1 Size(ft)	50	0	50	50	0	50	50	50		50	50	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		244			244							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	pm+pt	NA		pm+pt	NA	
Protected Phases		2	3		6	7	3	8		7	4	
Permitted Phases	2		2	6		6	8			4		
Detector Phase	2	2	3	6	6	7	3	8		7	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0	3.0	10.0	10.0	3.0	3.0	3.0		3.0	3.0	
Minimum Split (s)	15.9	15.9	14.0	15.9	15.9	14.0	14.0	10.0		14.0	10.0	
Total Split (s)	40.0	40.0	14.0	40.0	40.0	14.0	14.0	36.0		14.0	36.0	
Total Split (%)	44.4%	44.4%	15.6%	44.4%	44.4%	15.6%	15.6%	40.0%		15.6%	40.0%	
Maximum Green (s)	34.1	34.1	8.2	34.1	34.1	8.2	8.2	30.2		8.2	30.2	
Yellow Time (s)	3.9	3.9	3.8	3.9	3.9	3.8	3.8	3.8		3.8	3.8	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5		-1.5	-1.5	
Total Lost Time (s)	4.4	4.4	4.3	4.4	4.4	4.3	4.3	4.3		4.3	4.3	
Lead/Lag			Lead			Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?			Yes			Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	6.3	6.3	3.0	6.3	6.3	3.0	3.0	3.0		3.0	3.0	
Minimum Gap (s)	5.0	5.0	3.0	5.0	5.0	3.0	3.0	3.0		3.0	3.0	
Time Before Reduce (s)	13.0	13.0	0.0	13.0	13.0	0.0	0.0	0.0		0.0	0.0	
Time To Reduce (s)	25.0	25.0	0.0	25.0	25.0	0.0	0.0	0.0		0.0	0.0	
Recall Mode	C-Max	C-Max	None	C-Max	C-Max	None	None	None		None	None	
Walk Time (s)			5.0			5.0	5.0			5.0		
Flash Dont Walk (s)			3.0			3.0	3.0			3.0		
Pedestrian Calls (#/hr)			0			0	0			0		
Act Effct Green (s)	36.3	36.3	50.4	36.3	36.3	46.1	40.7	31.0		40.7	31.0	
Actuated g/C Ratio	0.40	0.40	0.56	0.40	0.40	0.51	0.45	0.34		0.45	0.34	
v/c Ratio	0.13	1.02	0.54	0.28	0.72	0.21	0.96	0.51		0.61	0.92	
Control Delay	12.1	40.7	13.7	30.5	30.1	2.3	69.2	26.2		20.3	49.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	12.1	40.7	13.7	30.5	30.1	2.3	69.2	26.2		20.3	49.5	
LOS	B	D	B	C	C	A	E	C		C	D	
Approach Delay		29.1			23.2			44.7			40.8	
Approach LOS		C			C			D			D	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green, Master Intersection	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.02	
Intersection Signal Delay: 33.6	Intersection LOS: C
Intersection Capacity Utilization 95.1%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 21: S Lingle Ave/N Lingle Ave & SR 422 (E. Chocolate Ave)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	21	672	484	21	471	164	243	299	23	248	556	28
Future Volume (veh/h)	21	672	484	21	471	164	243	299	23	248	556	28
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1640	1780	1866	1875	1832	1876	1875	1950	1950	1912	1988	1988
Adj Flow Rate, veh/h	22	707	509	22	496	173	256	315	24	261	585	29
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	11	1	0	0	3	5	0	0	0	0	0	0
Cap, veh/h	212	723	809	87	744	813	310	611	47	502	642	32
Arrive On Green	0.41	0.41	0.41	0.41	0.41	0.41	0.11	0.34	0.34	0.11	0.34	0.34
Sat Flow, veh/h	710	1780	1572	485	1832	1580	1785	1788	136	1821	1878	93
Grp Volume(v), veh/h	22	707	509	22	496	173	256	0	339	261	0	614
Grp Sat Flow(s),veh/h/ln	710	1780	1572	485	1832	1580	1785	0	1925	1821	0	1971
Q Serve(g_s), s	2.3	35.2	20.9	1.4	19.8	5.4	8.3	0.0	12.7	8.3	0.0	26.8
Cycle Q Clear(g_c), s	22.2	35.2	20.9	36.6	19.8	5.4	8.3	0.0	12.7	8.3	0.0	26.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.07	1.00		0.05
Lane Grp Cap(c), veh/h	212	723	809	87	744	813	310	0	657	502	0	673
V/C Ratio(X)	0.10	0.98	0.63	0.25	0.67	0.21	0.83	0.00	0.52	0.52	0.00	0.91
Avail Cap(c_a), veh/h	212	723	809	87	744	813	310	0	678	502	0	694
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.8	26.3	15.7	44.8	21.8	11.9	20.9	0.0	23.7	17.1	0.0	28.3
Incr Delay (d2), s/veh	1.0	28.4	3.7	6.8	4.7	0.6	16.6	0.0	0.6	1.0	0.0	16.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.8	26.7	12.2	1.2	13.9	3.4	8.1	0.0	9.5	6.0	0.0	21.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.8	54.8	19.4	51.6	26.4	12.5	37.5	0.0	24.3	18.0	0.0	44.4
LnGrp LOS	C	D	B	D	C	B	D	A	C	B	A	D
Approach Vol, veh/h		1238			691			595			875	
Approach Delay, s/veh		39.8			23.8			30.0			36.6	
Approach LOS		D			C			C			D	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	41.0	14.0	35.0	41.0	14.0	35.0
Change Period (Y+Rc), s	5.9	* 5.8	* 5.8	5.9	* 5.8	* 5.8
Max Green Setting (Gmax), s	34.1	* 8.2	* 30	34.1	* 8.2	* 30
Max Q Clear Time (g_c+I1), s	37.2	10.3	28.8	38.6	10.3	14.7
Green Ext Time (p_c), s	0.0	0.0	0.4	0.0	0.0	1.1

Intersection Summary	
HCM 6th Ctrl Delay	34.0
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	81	95	35	3	21	69	24	467	15	63	578	87
Future Volume (vph)	81	95	35	3	21	69	24	467	15	63	578	87
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	15	15	15	15	15	15	11	11	11	11	11	11
Grade (%)		-5%			9%			-1%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.978			0.899			0.996			0.984	
Flt Protected		0.981			0.999			0.998			0.996	
Satd. Flow (prot)	0	1908	0	0	1673	0	0	1707	0	0	1685	0
Flt Permitted		0.981			0.999			0.998			0.996	
Satd. Flow (perm)	0	1908	0	0	1673	0	0	1707	0	0	1685	0
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		525			421			813			806	
Travel Time (s)		14.3			11.5			15.8			15.7	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	4%	0%	3%	0%	0%	2%	0%	2%	0%	0%	2%	1%
Adj. Flow (vph)	89	104	38	3	23	76	26	513	16	69	635	96
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	231	0	0	102	0	0	555	0	0	800	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.92	0.92	0.92	1.01	1.01	1.01	1.11	1.11	1.11	1.11	1.11	1.11
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 87.6%	ICU Level of Service E
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	63.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	81	95	35	3	21	69	24	467	15	63	578	87
Future Vol, veh/h	81	95	35	3	21	69	24	467	15	63	578	87
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-5	-	-	9	-	-	-1	-	-	-1	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	4	0	3	0	0	2	0	2	0	0	2	1
Mvmt Flow	89	104	38	3	23	76	26	513	16	69	635	96

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1444	1402	683	1465	1442	521	731	0	0	529	0	0
Stage 1	821	821	-	573	573	-	-	-	-	-	-	-
Stage 2	623	581	-	892	869	-	-	-	-	-	-	-
Critical Hdwy	6.14	5.5	5.73	8.9	8.3	7.12	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	5.14	4.5	-	7.9	7.3	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.14	4.5	-	7.9	7.3	-	-	-	-	-	-	-
Follow-up Hdwy	3.536	4	3.327	3.5	4	3.318	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	162	209	492	52	65	488	883	-	-	1048	-	-
Stage 1	459	492	-	382	381	-	-	-	-	-	-	-
Stage 2	559	591	-	217	241	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~82	178	492	23	55	488	883	-	-	1048	-	-
Mov Cap-2 Maneuver	~82	178	-	23	55	-	-	-	-	-	-	-
Stage 1	440	436	-	366	365	-	-	-	-	-	-	-
Stage 2	424	566	-	135	214	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$427.3	77.7	0.4	0.8
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	883	-	-	132	142	1048	-	-
HCM Lane V/C Ratio	0.03	-	-	1.757	0.72	0.066	-	-
HCM Control Delay (s)	9.2	0	-	$427.3	77.7	8.7	0	-
HCM Lane LOS	A	A	-	F	F	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	17.5	4.2	0.2	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

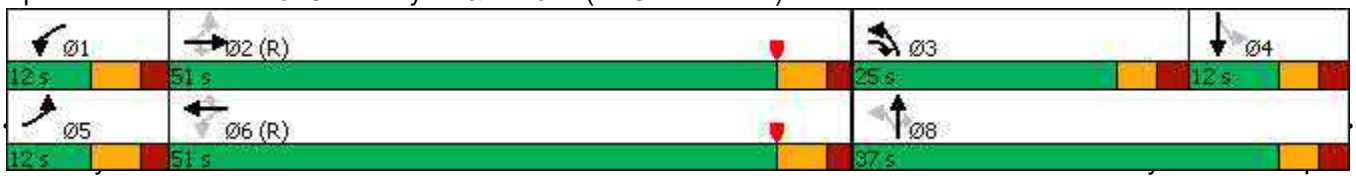
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	85	615	150	81	958	255	313	282	131	48	81	52
Future Volume (vph)	85	615	150	81	958	255	313	282	131	48	81	52
Ideal Flow (vphpl)	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Lane Width (ft)	12	12	12	12	13	11	14	12	14	12	12	12
Grade (%)		1%			-1%			-1%			-3%	
Storage Length (ft)	150		0	175		125	0		165	0		0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.97	1.00					0.97	0.97		
Frt			0.850			0.850			0.850		0.941	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1560	1610	1382	1575	1697	1349	1680	1658	1503	1591	1538	0
Flt Permitted	0.081			0.221			0.333			0.582		
Satd. Flow (perm)	133	1610	1346	366	1697	1349	589	1658	1458	947	1538	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			155			147			135		25	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		1532			974			928			672	
Travel Time (s)		29.8			19.0			25.3			18.3	
Confl. Peds. (#/hr)			8	8					7	7		
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	2%	1%	0%	1%	1%	0%	0%	0%	0%	4%	0%
Adj. Flow (vph)	88	634	155	84	988	263	323	291	135	49	84	54
Shared Lane Traffic (%)												
Lane Group Flow (vph)	88	634	155	84	988	263	323	291	135	49	138	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			14			14	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.20	1.20	1.20	1.19	1.14	1.24	1.10	1.19	1.10	1.17	1.17	1.17
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	1	1	1	1	
Detector Template		Main25	Right		Main25							
Leading Detector (ft)	38	250	48	38	250	0	38	38	38	38	38	
Trailing Detector (ft)	-2	0	-2	-2	0	0	-2	-2	-2	-2	-2	
Detector 1 Position(ft)	-2	0	-2	-2	0	0	-2	-2	-2	-2	-2	
Detector 1 Size(ft)	40	0	50	40	0	0	40	40	40	40	40	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		244			244							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	
Protected Phases	5	2	3	1	6		3	8			4	
Permitted Phases	2		2	6		6	8		8	4		
Detector Phase	5	2	3	1	6	6	3	8	8	4	4	
Switch Phase												
Minimum Initial (s)	3.0	10.0	3.0	3.0	10.0	10.0	3.0	3.0	3.0	3.0	3.0	
Minimum Split (s)	10.0	25.0	9.5	10.4	15.7	15.7	9.5	25.0	25.0	10.0	10.0	
Total Split (s)	12.0	51.0	25.0	12.0	51.0	51.0	25.0	37.0	37.0	12.0	12.0	
Total Split (%)	12.0%	51.0%	25.0%	12.0%	51.0%	51.0%	25.0%	37.0%	37.0%	12.0%	12.0%	
Maximum Green (s)	6.3	45.3	19.6	6.3	45.3	45.3	19.6	31.6	31.6	6.6	6.6	
Yellow Time (s)	3.7	3.7	3.0	3.7	3.7	3.7	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.4	2.0	2.0	2.0	2.4	2.4	2.4	2.4	2.4	
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	
Total Lost Time (s)	4.2	4.2	3.9	4.2	4.2	4.2	3.9	3.9	3.9	3.9	3.9	
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes			Yes	Yes	
Vehicle Extension (s)	3.0	6.0	3.0	3.0	6.0	6.0	3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	25.0	0.0	0.0	25.0	25.0	0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	13.0	0.0	0.0	13.0	13.0	0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	C-Max	None	None	C-Max	C-Max	None	None	None	None	None	
Act Effct Green (s)	56.5	50.2	70.6	56.5	50.2	50.2	32.1	32.1	32.1	8.1	8.1	
Actuated g/C Ratio	0.56	0.50	0.71	0.56	0.50	0.50	0.32	0.32	0.32	0.08	0.08	
v/c Ratio	0.48	0.78	0.15	0.28	1.16	0.35	0.79	0.55	0.24	0.64	0.94	
Control Delay	21.4	30.6	1.1	9.2	101.7	8.0	44.0	32.3	5.5	82.0	99.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	21.4	30.6	1.1	9.2	101.7	8.0	44.0	32.3	5.5	82.0	99.0	
LOS	C	C	A	A	F	A	D	C	A	F	F	
Approach Delay		24.4			77.4			32.5			94.5	
Approach LOS		C			E			C			F	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 60 (60%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 130
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.16
Intersection Signal Delay: 53.0 Intersection LOS: D
Intersection Capacity Utilization 105.7% ICU Level of Service G
Analysis Period (min) 15

Splits and Phases: 23: University Dr & SR 322 (W Governor Dr)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	85	615	150	81	958	255	313	282	131	48	81	52
Future Volume (veh/h)	85	615	150	81	958	255	313	282	131	48	81	52
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.99	0.98		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1645	1619	1632	1684	1738	1671	1752	1684	1752	1752	1700	1700
Adj Flow Rate, veh/h	88	634	155	84	988	263	323	291	135	49	84	54
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	2	1	0	1	1	0	0	0	0	4	4
Cap, veh/h	163	806	965	275	862	699	411	544	475	147	77	49
Arrive On Green	0.06	0.50	0.50	0.11	0.99	0.99	0.20	0.32	0.32	0.08	0.08	0.08
Sat Flow, veh/h	1567	1619	1372	1604	1738	1409	1668	1684	1468	928	948	610
Grp Volume(v), veh/h	88	634	155	84	988	263	323	291	135	49	0	138
Grp Sat Flow(s),veh/h/ln	1567	1619	1372	1604	1738	1409	1668	1684	1468	928	0	1558
Q Serve(g_s), s	2.7	32.3	3.8	2.5	49.6	0.2	16.7	14.1	6.9	5.1	0.0	8.1
Cycle Q Clear(g_c), s	2.7	32.3	3.8	2.5	49.6	0.2	16.7	14.1	6.9	5.1	0.0	8.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.39
Lane Grp Cap(c), veh/h	163	806	965	275	862	699	411	544	475	147	0	126
V/C Ratio(X)	0.54	0.79	0.16	0.31	1.15	0.38	0.79	0.53	0.28	0.33	0.00	1.09
Avail Cap(c_a), veh/h	194	806	965	311	862	699	424	557	486	147	0	126
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.44	0.44	0.44	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	22.8	20.7	5.0	15.5	0.4	0.2	30.5	27.7	25.2	44.6	0.0	46.0
Incr Delay (d2), s/veh	2.8	7.6	0.4	0.3	72.4	0.7	9.2	0.9	0.3	1.3	0.0	107.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.9	18.9	1.9	1.4	24.4	0.3	12.2	9.8	4.4	2.2	0.0	11.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.6	28.3	5.4	15.8	72.8	0.9	39.7	28.6	25.5	45.9	0.0	153.4
LnGrp LOS	C	C	A	B	F	A	D	C	C	D	A	F
Approach Vol, veh/h		877			1335			749			187	
Approach Delay, s/veh		24.0			55.0			32.8			125.2	
Approach LOS		C			E			C			F	

Timer - Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	9.8	54.0	24.2	12.0	10.0	53.8		36.2
Change Period (Y+Rc), s	* 5.7	* 5.7	5.4	5.4	* 5.7	* 5.7		5.4
Max Green Setting (Gmax), s	* 6.3	* 45	19.6	6.6	* 6.3	* 45		31.6
Max Q Clear Time (g_c+I1), s	4.5	34.3	18.7	10.1	4.7	51.6		16.1
Green Ext Time (p_c), s	0.0	8.4	0.1	0.0	0.0	0.0		1.4

Intersection Summary	
HCM 6th Ctrl Delay	45.3
HCM 6th LOS	D

Notes

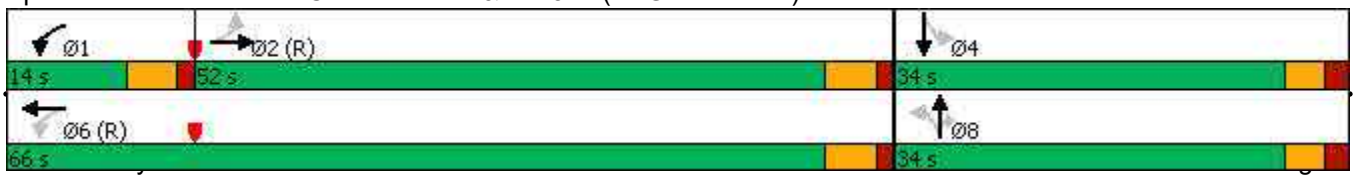
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	632	93	73	737	72	421	99	235	37	26	31
Future Volume (vph)	16	632	93	73	737	72	421	99	235	37	26	31
Ideal Flow (vphpl)	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Lane Width (ft)	12	14	12	12	12	12	12	12	14	16	16	16
Grade (%)		1%			-2%			1%			-1%	
Storage Length (ft)	130		0	165		0	0		350	0		0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		1.00	1.00			1.00	0.97		0.99	
Frt		0.981			0.987				0.850		0.955	
Flt Protected	0.950			0.950				0.961			0.981	
Satd. Flow (prot)	1560	1643	0	1552	1598	0	0	1562	1489	0	1727	0
Flt Permitted	0.231			0.138				0.706			0.361	
Satd. Flow (perm)	379	1643	0	225	1598	0	0	1145	1439	0	635	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10			9				242		25	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		974			3440			941			923	
Travel Time (s)		19.0			67.0			25.7			25.2	
Confl. Peds. (#/hr)	3		11	11		3	2		8	8		2
Confl. Bikes (#/hr)			4	4								
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	4%	5%	2%	3%	0%	1%	1%	0%	3%	0%	0%
Adj. Flow (vph)	16	652	96	75	760	74	434	102	242	38	27	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	16	748	0	75	834	0	0	536	242	0	97	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.20	1.11	1.20	1.18	1.18	1.18	1.20	1.20	1.11	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	1	1	1	1	
Detector Template		Main25		Left	Main25		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	0	250		48	250		48	48	48	48	48	
Trailing Detector (ft)	0	0		-2	0		-2	-2	-2	-2	-2	
Detector 1 Position(ft)	0	0		-2	0		-2	-2	-2	-2	-2	
Detector 1 Size(ft)	0	0		50	0		50	50	50	50	50	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		244			244							
Detector 2 Size(ft)		6			6							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8		8	4		
Detector Phase	2	2		1	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		3.0	10.0		3.0	3.0	3.0	3.0	3.0	
Minimum Split (s)	25.0	25.0		8.8	25.0		25.0	25.0	25.0	25.0	25.0	
Total Split (s)	52.0	52.0		14.0	66.0		34.0	34.0	34.0	34.0	34.0	
Total Split (%)	52.0%	52.0%		14.0%	66.0%		34.0%	34.0%	34.0%	34.0%	34.0%	
Maximum Green (s)	46.9	46.9		8.9	60.9		29.1	29.1	29.1	29.1	29.1	
Yellow Time (s)	3.8	3.8		3.8	3.8		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.3	1.3		1.3	1.3		1.9	1.9	1.9	1.9	1.9	
Lost Time Adjust (s)	-1.5	-1.5		-1.5	-1.5			-1.0	-1.0		-1.0	
Total Lost Time (s)	3.6	3.6		3.6	3.6			3.9	3.9		3.9	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	6.0	6.0		3.0	6.0		3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	25.0	25.0		0.0	25.0		0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	13.0	13.0		0.0	13.0		0.0	0.0	0.0	0.0	0.0	
Recall Mode	C-Max	C-Max		None	C-Max		None	None	None	None	None	
Act Effct Green (s)	52.0	52.0		62.4	62.4			30.1	30.1		30.1	
Actuated g/C Ratio	0.52	0.52		0.62	0.62			0.30	0.30		0.30	
v/c Ratio	0.08	0.87		0.29	0.83			1.56	0.40		0.47	
Control Delay	23.8	37.6		7.7	23.5			293.2	5.7		29.7	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Delay	23.8	37.6		7.7	23.5			293.2	5.7		29.7	
LOS	C	D		A	C			F	A		C	
Approach Delay		37.3			22.2			203.8			29.7	
Approach LOS		D			C			F			C	

Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 99 (99%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.56	
Intersection Signal Delay: 82.5	Intersection LOS: F
Intersection Capacity Utilization 107.6%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 24: Centerview Dr & SR 322 (W Governor Dr)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	632	93	73	737	72	421	99	235	37	26	31
Future Volume (veh/h)	16	632	93	73	737	72	421	99	235	37	26	31
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	0.99		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1645	1657	1593	1692	1679	1679	1632	1632	1711	1752	1752	1752
Adj Flow Rate, veh/h	16	652	96	75	760	74	434	102	242	38	27	32
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	4	4	2	3	3	1	1	0	0	0	0
Cap, veh/h	217	756	111	225	937	91	243	42	431	50	34	17
Arrive On Green	0.36	0.36	0.36	0.05	0.62	0.62	0.31	0.30	0.30	0.31	0.30	0.31
Sat Flow, veh/h	610	1405	207	1612	1501	146	590	139	1430	0	112	55
Grp Volume(v), veh/h	16	0	748	75	0	834	536	0	242	97	0	0
Grp Sat Flow(s),veh/h/ln	610	0	1612	1612	0	1647	729	0	1430	167	0	0
Q Serve(g_s), s	2.2	0.0	43.1	1.9	0.0	38.6	0.0	0.0	14.2	0.0	0.0	0.0
Cycle Q Clear(g_c), s	32.2	0.0	43.1	1.9	0.0	38.6	30.6	0.0	14.2	30.6	0.0	0.0
Prop In Lane	1.00		0.13	1.00		0.09	0.81		1.00	0.39		0.33
Lane Grp Cap(c), veh/h	217	0	867	225	0	1028	288	0	431	101	0	0
V/C Ratio(X)	0.07	0.00	0.86	0.33	0.00	0.81	1.86	0.00	0.56	0.96	0.00	0.00
Avail Cap(c_a), veh/h	217	0	867	313	0	1028	288	0	431	101	0	0
HCM Platoon Ratio	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.67	0.00	0.67	0.69	0.00	0.69	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	37.9	0.0	28.5	19.5	0.0	14.3	38.4	0.0	29.4	35.0	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.0	7.7	0.6	0.0	4.9	400.1	0.0	1.7	76.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.7	0.0	24.7	1.5	0.0	18.8	64.2	0.0	8.8	8.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.3	0.0	36.3	20.1	0.0	19.2	438.5	0.0	31.1	110.9	0.0	0.0
LnGrp LOS	D	A	D	C	A	B	F	A	C	F	A	A
Approach Vol, veh/h		764			909			778			97	
Approach Delay, s/veh		36.3			19.3			311.7			110.9	
Approach LOS		D			B			F			F	

Timer - Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	8.6	57.4		34.0		66.0		34.0
Change Period (Y+Rc), s	5.1	5.1		* 4.9		5.1		* 4.9
Max Green Setting (Gmax), s	8.9	46.9		* 29		60.9		* 29
Max Q Clear Time (g_c+I1), s	3.9	45.1		32.6		40.6		32.6
Green Ext Time (p_c), s	0.1	1.6		0.0		16.4		0.0

Intersection Summary	
HCM 6th Ctrl Delay	117.2
HCM 6th LOS	F

Notes

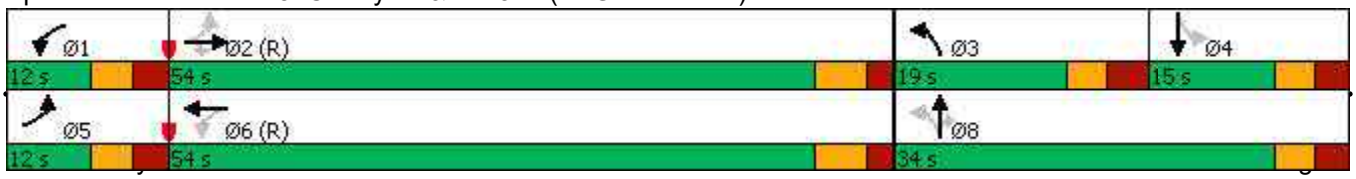
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	674	172	120	622	37	211	51	335	24	41	13
Future Volume (vph)	12	674	172	120	622	37	211	51	335	24	41	13
Ideal Flow (vphpl)	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Lane Width (ft)	10	12	14	10	14	14	10	11	12	10	12	12
Grade (%)		-3%			-2%			0%			1%	
Storage Length (ft)	100		200	205		0	100		75	75		0
Storage Lanes	1		1	1		0	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.98	1.00			1.00				0.99	
Frt			0.850		0.991				0.850		0.963	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1485	1626	1503	1435	1710	0	1449	1595	1402	1456	1504	0
Flt Permitted	0.272			0.184			0.463			0.722		
Satd. Flow (perm)	425	1626	1471	278	1710	0	704	1595	1402	1106	1504	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			164		4				276		13	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		3440			974			770			537	
Travel Time (s)		67.0			19.0			21.0			14.6	
Confl. Peds. (#/hr)			1	1			2					2
Confl. Bikes (#/hr)			1	1			2					2
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	3%	1%	3%	3%	3%	1%	0%	0%	0%	3%	8%
Adj. Flow (vph)	13	702	179	125	648	39	220	53	349	25	43	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	13	702	179	125	687	0	220	53	349	25	57	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.28	1.17	1.08	1.29	1.09	1.09	1.30	1.25	1.20	1.31	1.20	1.20
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	1	1	1	1	
Detector Template		Main25			Main25							
Leading Detector (ft)	38	250	38	38	250		38	38	38	38	38	
Trailing Detector (ft)	-2	0	-2	-2	0		-2	-2	-2	-2	-2	
Detector 1 Position(ft)	-2	0	-2	-2	0		-2	-2	-2	-2	-2	
Detector 1 Size(ft)	40	0	40	40	0		40	40	40	40	40	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		244			244							
Detector 2 Size(ft)		6			6							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases	2		2	6			8		8	4		
Detector Phase	5	2	2	1	6		3	8	8	4	4	
Switch Phase												
Minimum Initial (s)	3.0	10.0	10.0	3.0	10.0		3.0	3.0	3.0	3.0	3.0	
Minimum Split (s)	8.7	25.0	25.0	8.7	25.0		9.1	25.0	25.0	10.0	10.0	
Total Split (s)	12.0	54.0	54.0	12.0	54.0		19.0	34.0	34.0	15.0	15.0	
Total Split (%)	12.0%	54.0%	54.0%	12.0%	54.0%		19.0%	34.0%	34.0%	15.0%	15.0%	
Maximum Green (s)	6.3	48.1	48.1	6.3	48.1		12.9	28.3	28.3	9.3	9.3	
Yellow Time (s)	3.1	3.9	3.9	3.1	3.9		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.6	2.0	2.0	2.6	2.0		3.1	2.7	2.7	2.7	2.7	
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	-1.5		-1.5	-1.5	-1.5	-1.5	-1.5	
Total Lost Time (s)	4.2	4.4	4.4	4.2	4.4		4.6	4.2	4.2	4.2	4.2	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)	3.0	6.0	6.0	3.0	6.0		3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	12.5	12.5	0.0	12.5		0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	25.0	25.0	0.0	25.0		0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	C-Max	C-Max	None	C-Max		None	None	None	None	None	
Act Effct Green (s)	61.0	53.3	53.3	64.7	62.9		25.7	26.1	26.1	9.4	9.4	
Actuated g/C Ratio	0.61	0.53	0.53	0.65	0.63		0.26	0.26	0.26	0.09	0.09	
v/c Ratio	0.04	0.81	0.21	0.46	0.64		0.77	0.13	0.61	0.24	0.37	
Control Delay	9.0	37.3	8.9	10.3	17.6		50.1	26.9	12.1	47.2	41.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	9.0	37.3	8.9	10.3	17.6		50.1	26.9	12.1	47.2	41.4	
LOS	A	D	A	B	B		D	C	B	D	D	
Approach Delay		31.2			16.5			26.8			43.2	
Approach LOS		C			B			C			D	

Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 8 (8%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay: 25.5	Intersection LOS: C
Intersection Capacity Utilization 79.3%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 25: Cherry Dr & SR 322 (W Governor Dr)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	674	172	120	622	37	211	51	335	24	41	13
Future Volume (veh/h)	12	674	172	120	622	37	211	51	335	24	41	13
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	0.99		0.97	0.99		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1752	1713	1809	1679	1746	1746	1637	1650	1650	1645	1606	1606
Adj Flow Rate, veh/h	12	702	179	125	648	39	220	53	349	25	43	14
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	3	1	3	3	3	1	0	0	0	3	3
Cap, veh/h	280	892	781	291	918	55	370	470	388	158	109	35
Arrive On Green	0.02	0.52	0.52	0.04	0.38	0.38	0.14	0.28	0.28	0.09	0.09	0.09
Sat Flow, veh/h	1669	1713	1500	1599	1628	98	1559	1650	1362	907	1148	374
Grp Volume(v), veh/h	12	702	179	125	0	687	220	53	349	25	0	57
Grp Sat Flow(s),veh/h/ln	1669	1713	1500	1599	0	1726	1559	1650	1362	907	0	1522
Q Serve(g_s), s	0.3	33.3	6.5	3.3	0.0	33.8	12.2	2.4	24.6	2.6	0.0	3.5
Cycle Q Clear(g_c), s	0.3	33.3	6.5	3.3	0.0	33.8	12.2	2.4	24.6	2.6	0.0	3.5
Prop In Lane	1.00		1.00	1.00		0.06	1.00		1.00	1.00		0.25
Lane Grp Cap(c), veh/h	280	892	781	291	0	973	370	470	388	158	0	144
V/C Ratio(X)	0.04	0.79	0.23	0.43	0.00	0.71	0.59	0.11	0.90	0.16	0.00	0.40
Avail Cap(c_a), veh/h	371	892	781	309	0	973	370	492	406	170	0	164
HCM Platoon Ratio	1.00	1.00	1.00	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.57	0.57	0.57	0.53	0.00	0.53	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.9	19.5	13.1	16.7	0.0	24.1	32.2	26.4	34.4	42.1	0.0	42.6
Incr Delay (d2), s/veh	0.0	4.1	0.4	0.5	0.0	2.3	2.6	0.1	22.0	0.5	0.0	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.2	17.7	4.0	2.0	0.0	19.5	8.4	1.7	15.7	1.1	0.0	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.9	23.6	13.4	17.2	0.0	26.4	34.7	26.5	56.4	42.6	0.0	44.3
LnGrp LOS	B	C	B	B	A	C	C	C	E	D	A	D
Approach Vol, veh/h		893			812			622			82	
Approach Delay, s/veh		21.4			25.0			46.2			43.8	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	10.9	56.5	19.0	13.7	6.6	60.8		32.7
Change Period (Y+Rc), s	5.7	5.9	6.1	* 5.7	5.7	5.9		* 5.7
Max Green Setting (Gmax), s	6.3	48.1	12.9	* 9.3	6.3	48.1		* 28
Max Q Clear Time (g_c+I1), s	5.3	35.3	14.2	5.5	2.3	35.8		26.6
Green Ext Time (p_c), s	0.0	7.6	0.0	0.1	0.0	6.8		0.3

Intersection Summary	
HCM 6th Ctrl Delay	29.8
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

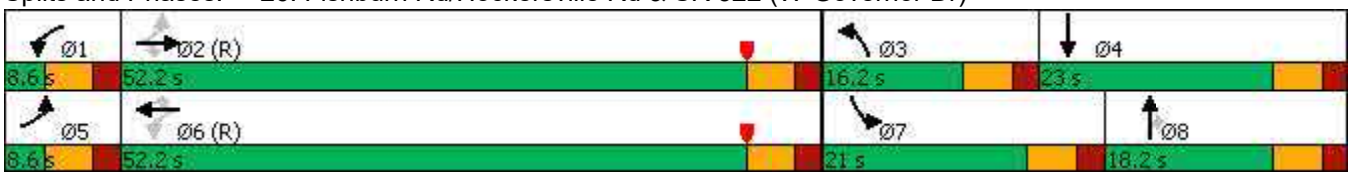
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	69	813	165	108	546	189	180	240	127	265	308	42
Future Volume (vph)	69	813	165	108	546	189	180	240	127	265	308	42
Ideal Flow (vphpl)	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Lane Width (ft)	11	12	14	11	12	14	11	11	13	11	12	12
Grade (%)		1%			0%			-1%			2%	
Storage Length (ft)	140		445	125		75	135		85	100		0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850		0.982	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1508	1625	1474	1515	1587	1481	1508	1587	1456	1500	1576	0
Flt Permitted	0.282			0.082			0.950			0.950		
Satd. Flow (perm)	448	1625	1474	131	1587	1481	1508	1587	1456	1500	1576	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			168			153			152		6	
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		974			252			343			1393	
Travel Time (s)		19.0			4.9			6.7			27.1	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	1%	1%	0%	4%	1%	1%	1%	0%	0%	2%	0%
Adj. Flow (vph)	70	830	168	110	557	193	184	245	130	270	314	43
Shared Lane Traffic (%)												
Lane Group Flow (vph)	70	830	168	110	557	193	184	245	130	270	357	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.26	1.20	1.11	1.25	1.20	1.10	1.24	1.24	1.14	1.26	1.21	1.21
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	1	1	1	1	
Detector Template		Main25	Right	Left	Main25	Right						
Leading Detector (ft)	38	250	48	48	250	48	38	38	38	38	38	
Trailing Detector (ft)	-2	0	-2	-2	0	-2	-2	-2	-2	-2	-2	
Detector 1 Position(ft)	-2	0	-2	-2	0	-2	-2	-2	-2	-2	-2	
Detector 1 Size(ft)	40	0	50	50	0	50	40	40	40	40	40	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		244			244							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6			8			
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	
Switch Phase												
Minimum Initial (s)	3.0	10.0	10.0	3.0	10.0	10.0	3.0	3.0	3.0	3.0	3.0	
Minimum Split (s)	8.6	25.0	25.0	8.6	25.0	25.0	8.7	12.0	12.0	8.7	12.0	
Total Split (s)	8.6	52.2	52.2	8.6	52.2	52.2	16.2	18.2	18.2	21.0	23.0	
Total Split (%)	8.6%	52.2%	52.2%	8.6%	52.2%	52.2%	16.2%	18.2%	18.2%	21.0%	23.0%	
Maximum Green (s)	3.0	46.6	46.6	3.0	46.6	46.6	10.5	12.5	12.5	15.3	17.3	
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	3.6	3.7	3.7	3.7	3.7	3.7	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	
Total Lost Time (s)	4.1	4.1	4.1	4.1	4.1	4.1	4.2	4.2	4.2	4.2	4.2	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	6.5	6.5	3.0	6.5	6.5	3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	25.0	25.0	0.0	25.0	25.0	0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	12.5	12.5	0.0	12.5	12.5	0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	
Act Effct Green (s)	52.6	48.1	48.1	53.4	49.8	49.8	12.0	14.0	14.0	16.8	18.8	
Actuated g/C Ratio	0.53	0.48	0.48	0.53	0.50	0.50	0.12	0.14	0.14	0.17	0.19	
v/c Ratio	0.25	1.06	0.21	0.83	0.71	0.24	1.02	1.10	0.39	1.07	1.19	
Control Delay	7.6	73.1	3.5	64.3	38.2	15.4	118.3	132.5	8.1	118.2	148.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	7.6	73.1	3.5	64.3	38.2	15.4	118.3	132.5	8.1	118.2	148.9	
LOS	A	E	A	E	D	B	F	F	A	F	F	
Approach Delay		57.8			36.4			98.9			135.7	
Approach LOS		E			D			F			F	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow, Master Intersection
Natural Cycle: 140
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.19
Intersection Signal Delay: 75.0 Intersection LOS: E
Intersection Capacity Utilization 103.1% ICU Level of Service G
Analysis Period (min) 15

Splits and Phases: 26: Fishburn Rd/Hockersville Rd & SR 322 (W Governor Dr)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	69	813	165	108	546	189	180	240	127	265	308	42
Future Volume (veh/h)	69	813	165	108	546	189	180	240	127	265	308	42
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1645	1632	1697	1650	1599	1703	1671	1671	1752	1630	1604	1604
Adj Flow Rate, veh/h	70	830	168	110	557	193	184	245	130	270	314	43
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	1	1	0	4	1	1	1	0	0	2	2
Cap, veh/h	277	785	692	143	769	694	191	234	208	261	260	36
Arrive On Green	0.06	0.64	0.64	0.05	0.48	0.48	0.12	0.14	0.14	0.17	0.19	0.19
Sat Flow, veh/h	1567	1632	1438	1571	1599	1443	1592	1671	1484	1552	1381	189
Grp Volume(v), veh/h	70	830	168	110	557	193	184	245	130	270	0	357
Grp Sat Flow(s),veh/h/ln	1567	1632	1438	1571	1599	1443	1592	1671	1484	1552	0	1570
Q Serve(g_s), s	2.2	48.1	5.0	3.6	27.8	8.0	11.5	14.0	8.3	16.8	0.0	18.8
Cycle Q Clear(g_c), s	2.2	48.1	5.0	3.6	27.8	8.0	11.5	14.0	8.3	16.8	0.0	18.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.12
Lane Grp Cap(c), veh/h	277	785	692	143	769	694	191	234	208	261	0	295
V/C Ratio(X)	0.25	1.06	0.24	0.77	0.72	0.28	0.96	1.05	0.63	1.04	0.00	1.21
Avail Cap(c_a), veh/h	277	785	692	143	769	694	191	234	208	261	0	295
HCM Platoon Ratio	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.60	0.60	0.60	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.8	18.0	10.2	23.6	20.7	15.5	43.8	43.0	40.5	41.6	0.0	40.6
Incr Delay (d2), s/veh	0.3	41.5	0.5	22.3	5.9	1.0	54.4	71.8	5.8	65.3	0.0	121.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.3	29.0	2.8	3.7	16.3	4.9	11.8	15.9	5.9	16.7	0.0	26.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.1	59.6	10.7	46.0	26.5	16.5	98.2	114.8	46.3	106.9	0.0	162.3
LnGrp LOS	B	F	B	D	C	B	F	F	D	F	A	F
Approach Vol, veh/h		1068			860			559			627	
Approach Delay, s/veh		49.0			26.8			93.4			138.4	
Approach LOS		D			C			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.6	52.2	16.2	23.0	8.6	52.2	21.0	18.2
Change Period (Y+Rc), s	5.6	5.6	* 5.7	* 5.7	5.6	5.6	* 5.7	* 5.7
Max Green Setting (Gmax), s	3.0	46.6	* 11	* 17	3.0	46.6	* 15	* 13
Max Q Clear Time (g_c+I1), s	5.6	50.1	13.5	20.8	4.2	29.8	18.8	16.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	11.9	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	68.8
HCM 6th LOS	E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	6	266	0	1	231	0
Future Volume (vph)	6	266	0	1	231	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	13	13	15	15	11	11
Grade (%)	2%			-1%	-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.868					
Flt Protected					0.950	
Satd. Flow (prot)	1598	0	0	1990	0	0
Flt Permitted					0.950	
Satd. Flow (perm)	1598	0	0	1990	0	0
Link Speed (mph)	25			25	35	
Link Distance (ft)	199			375	774	
Travel Time (s)	5.4			10.2	15.1	
Confl. Peds. (#/hr)		4	4		1	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	0%	0%	2%	0%
Adj. Flow (vph)	6	283	0	1	246	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	289	0	0	1	246	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.04	1.04	0.94	0.94	1.11	1.11
Turning Speed (mph)		9	15		15	9
Sign Control	Stop			Stop	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization Err%	ICU Level of Service H
Analysis Period (min) 15	

Intersection	
Intersection Delay, s/veh	5
Intersection LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	6	266	0	1	231	0
Future Vol, veh/h	6	266	0	1	231	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	0	0	0	0	2	0
Mvmt Flow	6	283	0	1	246	0
Number of Lanes	1	0	0	1	0	0

Approach	EB	WB
Opposing Approach	WB	EB
Opposing Lanes	1	1
Conflicting Approach Left		
Conflicting Lanes Left	0	0
Conflicting Approach Right		
Conflicting Lanes Right	0	0
HCM Control Delay	5	5
HCM LOS	A	A

Lane	EBLn1	WBLn1
Vol Left, %	0%	0%
Vol Thru, %	2%	100%
Vol Right, %	98%	0%
Sign Control	Stop	Stop
Traffic Vol by Lane	272	1
LT Vol	0	0
Through Vol	6	1
RT Vol	266	0
Lane Flow Rate	289	1
Geometry Grp	0	0
Degree of Util (X)	0	0
Departure Headway (Hd)	0	0
Convergence, Y/N	Yes	Yes
Cap	0	0
Service Time	0	0
HCM Lane V/C Ratio	0	0
HCM Control Delay	5	5
HCM Lane LOS	N	N
HCM 95th-tile Q	0	0

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	111	337	109	422	440	128
Future Volume (vph)	111	337	109	422	440	128
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	14	14
Grade (%)	-1%			1%	-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.898				0.970	
Flt Protected	0.988			0.990		
Satd. Flow (prot)	1597	0	0	1759	1852	0
Flt Permitted	0.988			0.990		
Satd. Flow (perm)	1597	0	0	1759	1852	0
Link Speed (mph)	35			35	35	
Link Distance (ft)	212			489	343	
Travel Time (s)	4.1			9.5	6.7	
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	2%	0%	0%	1%	2%	0%
Adj. Flow (vph)	112	340	110	426	444	129
Shared Lane Traffic (%)						
Lane Group Flow (vph)	452	0	0	536	573	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			11	11	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.07	1.07	1.08	1.08	0.97	0.97
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 100.9%	ICU Level of Service G
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	37.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	111	337	109	422	440	128
Future Vol, veh/h	111	337	109	422	440	128
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-1	-	-	1	-2	-
Peak Hour Factor	99	99	99	99	99	99
Heavy Vehicles, %	2	0	0	1	2	0
Mvmt Flow	112	340	110	426	444	129

Major/Minor	Minor2		Major1		Major2		
Conflicting Flow All	1155	509	573	0	-	0	
Stage 1	509	-	-	-	-	-	
Stage 2	646	-	-	-	-	-	
Critical Hdwy	6.22	6.1	4.1	-	-	-	
Critical Hdwy Stg 1	5.22	-	-	-	-	-	
Critical Hdwy Stg 2	5.22	-	-	-	-	-	
Follow-up Hdwy	3.518	3.3	2.2	-	-	-	
Pot Cap-1 Maneuver	232	576	1010	-	-	-	
Stage 1	621	-	-	-	-	-	
Stage 2	541	-	-	-	-	-	
Platoon blocked, %				-	-	-	
Mov Cap-1 Maneuver	199	576	1010	-	-	-	
Mov Cap-2 Maneuver	199	-	-	-	-	-	
Stage 1	532	-	-	-	-	-	
Stage 2	541	-	-	-	-	-	

Approach	EB	NB	SB
HCM Control Delay, s	126.2	1.8	0
HCM LOS	F		

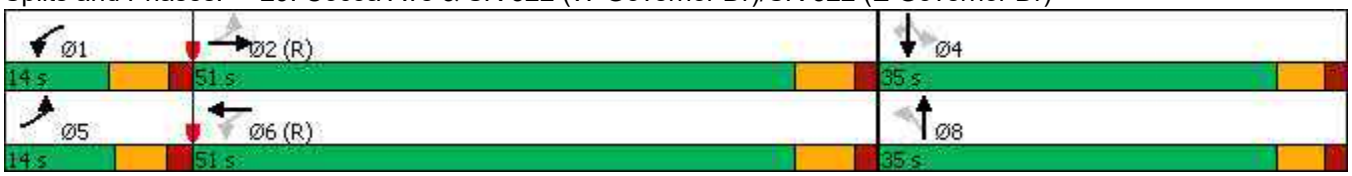
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1010	-	392	-	-
HCM Lane V/C Ratio	0.109	-	1.154	-	-
HCM Control Delay (s)	9	0	126.2	-	-
HCM Lane LOS	A	A	F	-	-
HCM 95th %tile Q(veh)	0.4	-	17.3	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6			8			4		4
Detector Phase	5	2		1	6		8	8		4	4	4
Switch Phase												
Minimum Initial (s)	3.0	10.0		3.0	10.0		3.0	3.0		3.0	3.0	3.0
Minimum Split (s)	9.4	25.0		9.4	25.0		20.0	20.0		20.0	20.0	20.0
Total Split (s)	14.0	51.0		14.0	51.0		35.0	35.0		35.0	35.0	35.0
Total Split (%)	14.0%	51.0%		14.0%	51.0%		35.0%	35.0%		35.0%	35.0%	35.0%
Maximum Green (s)	8.2	44.8		7.8	44.8		29.6	29.6		29.6	29.6	29.6
Yellow Time (s)	3.8	4.4		4.4	4.4		3.6	3.6		3.6	3.6	3.6
All-Red Time (s)	2.0	1.8		1.8	1.8		1.8	1.8		1.8	1.8	1.8
Lost Time Adjust (s)	-1.5	-1.5		-1.5	-1.5		-1.5	-1.5		-1.5	-1.5	-1.5
Total Lost Time (s)	4.3	4.7		4.7	4.7		3.9	3.9		3.9	3.9	3.9
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	5.5		3.0	5.5		3.0	3.0		3.0	3.0	3.0
Minimum Gap (s)	3.0	2.0		3.0	2.0		3.0	3.0		3.0	3.0	3.0
Time Before Reduce (s)	0.0	25.0		0.0	25.0		0.0	0.0		0.0	0.0	0.0
Time To Reduce (s)	0.0	12.5		0.0	12.5		0.0	0.0		0.0	0.0	0.0
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	None
Act Effct Green (s)	57.3	49.6		56.5	49.6		31.1	31.1		31.1	31.1	31.1
Actuated g/C Ratio	0.57	0.50		0.56	0.50		0.31	0.31		0.31	0.31	0.31
v/c Ratio	0.28	1.18		0.28	0.86		0.49	0.94		0.99	0.93	0.15
Control Delay	14.0	120.8		12.4	35.8		51.6	63.5		135.6	61.0	3.5
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	14.0	120.8		12.4	35.8		51.6	63.5		135.6	61.0	3.5
LOS	B	F		B	D		D	E		F	E	A
Approach Delay		114.5			34.2			62.6			63.5	
Approach LOS		F			C			E			E	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 55 (55%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 140
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.18
Intersection Signal Delay: 74.6 Intersection LOS: E
Intersection Capacity Utilization 105.3% ICU Level of Service G
Analysis Period (min) 15

Splits and Phases: 29: Cocoa Ave & SR 322 (W Governor Dr)/SR 322 (E Governor Dr)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	63	961	44	53	619	75	39	351	102	78	444	75
Future Volume (veh/h)	63	961	44	53	619	75	39	351	102	78	444	75
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1692	1760	1760	1752	1809	1809	1573	1676	1676	1637	1611	1676
Adj Flow Rate, veh/h	66	1001	46	55	645	78	41	366	106	81	462	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	0	1	1	6	3	3	1	3	3
Cap, veh/h	272	857	39	143	811	98	100	388	112	94	501	
Arrive On Green	0.05	0.51	0.51	0.04	0.51	0.51	0.31	0.31	0.31	0.31	0.31	0.00
Sat Flow, veh/h	1612	1669	77	1669	1583	191	826	1249	362	851	1611	1420
Grp Volume(v), veh/h	66	0	1047	55	0	723	41	0	472	81	462	0
Grp Sat Flow(s),veh/h/ln	1612	0	1746	1669	0	1775	826	0	1611	851	1611	1420
Q Serve(g_s), s	1.9	0.0	51.3	1.5	0.0	33.6	3.4	0.0	28.6	2.5	27.7	0.0
Cycle Q Clear(g_c), s	1.9	0.0	51.3	1.5	0.0	33.6	31.1	0.0	28.6	31.1	27.7	0.0
Prop In Lane	1.00		0.04	1.00		0.11	1.00		0.22	1.00		1.00
Lane Grp Cap(c), veh/h	272	0	896	143	0	909	100	0	501	94	501	
V/C Ratio(X)	0.24	0.00	1.17	0.38	0.00	0.80	0.41	0.00	0.94	0.87	0.92	
Avail Cap(c_a), veh/h	351	0	896	227	0	909	100	0	501	94	501	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	16.3	0.0	24.3	23.4	0.0	20.1	48.8	0.0	33.6	49.7	33.3	0.0
Incr Delay (d2), s/veh	0.5	0.0	87.8	1.7	0.0	7.2	2.7	0.0	26.4	52.2	22.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.2	0.0	57.9	1.2	0.0	20.5	2.0	0.0	20.6	6.0	19.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.8	0.0	112.1	25.0	0.0	27.2	51.5	0.0	60.0	101.9	55.9	0.0
LnGrp LOS	B	A	F	C	A	C	D	A	E	F	E	
Approach Vol, veh/h		1113			778			513			543	A
Approach Delay, s/veh		106.5			27.1			59.3			62.8	
Approach LOS		F			C			E			E	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.0	56.0		35.0	9.1	55.9		35.0
Change Period (Y+Rc), s	* 6.2	* 6.2		* 5.4	* 5.8	* 6.2		* 5.4
Max Green Setting (Gmax), s	* 7.8	* 45		* 30	* 8.2	* 45		* 30
Max Q Clear Time (g_c+I1), s	3.5	53.3		33.1	3.9	35.6		33.1
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	7.1		0.0

Intersection Summary	
HCM 6th Ctrl Delay	69.3
HCM 6th LOS	E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

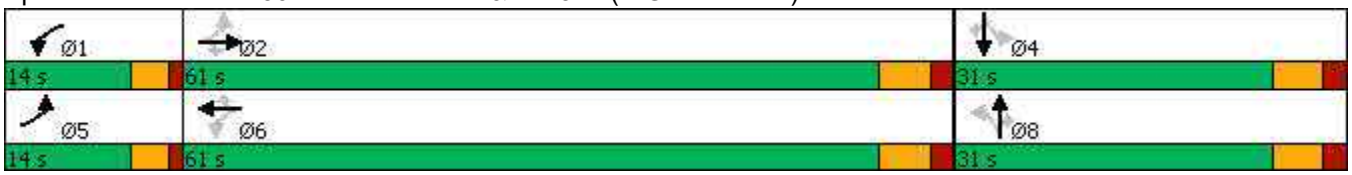
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	128	981	8	45	562	26	7	179	39	59	303	200
Future Volume (vph)	128	981	8	45	562	26	7	179	39	59	303	200
Ideal Flow (vphpl)	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Grade (%)		2%			2%			2%			2%	
Storage Length (ft)	125		100	100		100	100		100	110		200
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1552	1617	1388	1521	1617	1388	1552	1601	1388	1492	1601	1388
Flt Permitted	0.274			0.074			0.279			0.518		
Satd. Flow (perm)	448	1617	1388	119	1617	1388	456	1601	1388	814	1601	1388
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			72			72			72			215
Link Speed (mph)		40			40			35			35	
Link Distance (ft)		1219			3941			1026			2312	
Travel Time (s)		20.8			67.2			20.0			45.0	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	1%	0%	2%	1%	0%	0%	2%	0%	4%	2%	0%
Adj. Flow (vph)	138	1055	9	48	604	28	8	192	42	63	326	215
Shared Lane Traffic (%)												
Lane Group Flow (vph)	138	1055	9	48	604	28	8	192	42	63	326	215
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	1	1	1	1	1
Detector Template		Main25			Main25							
Leading Detector (ft)	38	250	38	38	250	38	38	38	38	38	38	38
Trailing Detector (ft)	-2	0	-2	-2	0	-2	-2	-2	-2	-2	-2	-2
Detector 1 Position(ft)	-2	0	-2	-2	0	-2	-2	-2	-2	-2	-2	-2
Detector 1 Size(ft)	40	0	40	40	0	40	40	40	40	40	40	40
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		244			244							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6		6	8		8	4		4
Detector Phase	5	2	2	1	6	6	8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	3.0	12.0	12.0	3.0	12.0	12.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Split (s)	8.5	29.0	29.0	8.5	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0
Total Split (s)	14.0	61.0	61.0	14.0	61.0	61.0	31.0	31.0	31.0	31.0	31.0	31.0
Total Split (%)	13.2%	57.5%	57.5%	13.2%	57.5%	57.5%	29.2%	29.2%	29.2%	29.2%	29.2%	29.2%
Maximum Green (s)	10.0	55.0	55.0	10.0	55.0	55.0	25.0	25.0	25.0	25.0	25.0	25.0
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5
Total Lost Time (s)	2.5	4.5	4.5	2.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0	6.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	28.0	28.0	0.0	28.0	28.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	14.0	14.0	0.0	14.0	14.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	Min	Min	None	Min	Min	None	None	None	None	None	None
Act Effct Green (s)	67.5	57.3	57.3	63.4	53.2	53.2	24.2	24.2	24.2	24.2	24.2	24.2
Actuated g/C Ratio	0.68	0.58	0.58	0.64	0.54	0.54	0.24	0.24	0.24	0.24	0.24	0.24
v/c Ratio	0.33	1.13	0.01	0.25	0.70	0.04	0.07	0.49	0.11	0.32	0.83	0.43
Control Delay	8.0	94.9	0.0	9.1	22.9	0.1	31.9	37.7	3.1	36.8	55.5	7.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.0	94.9	0.0	9.1	22.9	0.1	31.9	37.7	3.1	36.8	55.5	7.3
LOS	A	F	A	A	C	A	C	D	A	D	E	A
Approach Delay		84.2			21.0			31.5			36.4	
Approach LOS		F			C			C			D	

Intersection Summary	
Area Type:	Other
Cycle Length: 106	
Actuated Cycle Length: 99	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.13	
Intersection Signal Delay: 53.2	Intersection LOS: D
Intersection Capacity Utilization 99.1%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 30: Homestead Rd & SR 322 (E Governor Dr)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	128	981	8	45	562	26	7	179	39	59	303	200
Future Volume (veh/h)	128	981	8	45	562	26	7	179	39	59	303	200
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1630	1617	1630	1604	1617	1630	1630	1604	1630	1578	1604	1630
Adj Flow Rate, veh/h	138	1055	9	48	604	28	8	192	42	63	326	215
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	1	0	2	1	0	0	2	0	4	2	0
Cap, veh/h	409	963	823	138	914	781	115	389	335	219	389	335
Arrive On Green	0.07	0.60	0.60	0.04	0.57	0.57	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	1552	1617	1381	1527	1617	1381	795	1604	1381	1021	1604	1381
Grp Volume(v), veh/h	138	1055	9	48	604	28	8	192	42	63	326	215
Grp Sat Flow(s),veh/h/ln	1552	1617	1381	1527	1617	1381	795	1604	1381	1021	1604	1381
Q Serve(g_s), s	3.2	56.5	0.3	1.2	24.6	0.9	0.9	9.8	2.3	5.4	18.3	13.2
Cycle Q Clear(g_c), s	3.2	56.5	0.3	1.2	24.6	0.9	19.2	9.8	2.3	15.1	18.3	13.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	409	963	823	138	914	781	115	389	335	219	389	335
V/C Ratio(X)	0.34	1.10	0.01	0.35	0.66	0.04	0.07	0.49	0.13	0.29	0.84	0.64
Avail Cap(c_a), veh/h	488	963	823	261	963	823	144	448	386	256	448	386
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	10.7	19.2	7.8	22.8	14.3	9.1	43.3	30.9	28.1	37.4	34.1	32.2
Incr Delay (d2), s/veh	0.5	58.7	0.0	1.5	3.2	0.1	0.3	1.0	0.2	0.7	11.8	2.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.6	45.9	0.1	1.1	13.4	0.4	0.3	6.8	1.3	2.4	12.8	8.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.2	77.9	7.8	24.3	17.4	9.2	43.5	31.9	28.2	38.1	45.9	35.1
LnGrp LOS	B	F	A	C	B	A	D	C	C	D	D	D
Approach Vol, veh/h		1202			680			242			604	
Approach Delay, s/veh		69.7			17.6			31.6			41.2	
Approach LOS		E			B			C			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.3	61.0		27.5	9.2	58.1		27.5
Change Period (Y+Rc), s	4.0	6.0		6.0	4.0	6.0		6.0
Max Green Setting (Gmax), s	10.0	55.0		25.0	10.0	55.0		25.0
Max Q Clear Time (g_c+I1), s	5.2	58.5		20.3	5.2	26.6		21.2
Green Ext Time (p_c), s	0.0	0.0		1.1	0.2	15.8		0.3

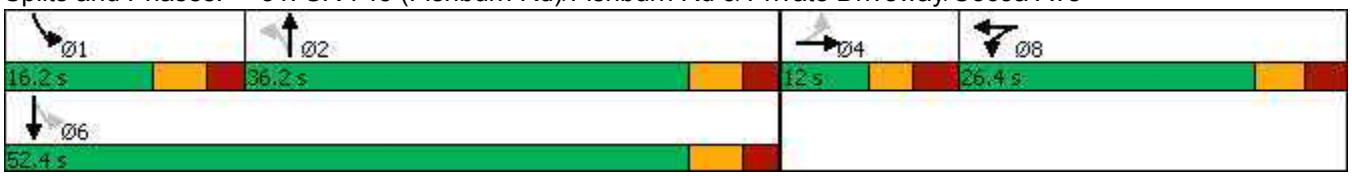
Intersection Summary	
HCM 6th Ctrl Delay	47.0
HCM 6th LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	483	0	82	0	371	256	141	711	0
Future Volume (vph)	0	0	0	483	0	82	0	371	256	141	711	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	11	11	11	11	12
Grade (%)		0%			2%			1%			-1%	
Storage Length (ft)	0		0	200		0	0		0	75		0
Storage Lanes	0		0	1		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.850			0.945				
Flt Protected				0.950						0.950		
Satd. Flow (prot)	0	1800	0	1628	1443	0	0	1591	0	1613	1731	0
Flt Permitted				0.950						0.123		
Satd. Flow (perm)	0	1800	0	1628	1443	0	0	1591	0	209	1731	0
Right Turn on Red			Yes			No			No			Yes
Satd. Flow (RTOR)												
Link Speed (mph)		25			35			35			35	
Link Distance (ft)		169			1587			679			2277	
Travel Time (s)		4.6			30.9			13.2			44.4	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	0%	0%	4%	0%	5%	0%	2%	4%	3%	1%	0%
Adj. Flow (vph)	0	0	0	498	0	85	0	382	264	145	733	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	498	85	0	0	646	0	145	733	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.09	1.09	1.09	1.08	1.13	1.13	1.11	1.11	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	1		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left		
Leading Detector (ft)	48	48		48	48		48	48		48	225	
Trailing Detector (ft)	-2	-2		-2	-2		-2	-2		-2	0	
Detector 1 Position(ft)	-2	-2		-2	-2		-2	-2		-2	0	
Detector 1 Size(ft)	50	50		50	50		50	50		50	0	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)											219	
Detector 2 Size(ft)											6	
Detector 2 Type											Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)											0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type				Split	NA			NA		pm+pt	NA	
Protected Phases		4		8	8			2		1	6	
Permitted Phases	4						2			6		
Detector Phase	4	4		8	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	2.0	2.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Split (s)	12.0	12.0		18.0	18.0		20.0	20.0		9.2	40.0	
Total Split (s)	12.0	12.0		26.4	26.4		36.2	36.2		16.2	52.4	
Total Split (%)	13.2%	13.2%		29.1%	29.1%		39.9%	39.9%		17.8%	57.7%	
Maximum Green (s)	6.0	6.0		20.0	20.0		30.0	30.0		10.0	46.2	
Yellow Time (s)	3.0	3.0		3.4	3.4		3.7	3.7		3.7	3.7	
All-Red Time (s)	3.0	3.0		3.0	3.0		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)		-1.5		-1.5	-1.5			-1.5		-1.5	-1.5	
Total Lost Time (s)		4.5		4.9	4.9			4.7		4.7	4.7	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		6.0	6.0		3.0	6.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.5	3.5		3.0	3.5	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		23.0	23.0		0.0	23.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		12.0	12.0		0.0	12.0	
Recall Mode	None	None		Min	Min		Min	Min		Min	Min	
Act Effct Green (s)				21.5	21.5			31.6		46.3	46.3	
Actuated g/C Ratio				0.28	0.28			0.41		0.60	0.60	
v/c Ratio				1.10	0.21			1.00		0.48	0.71	
Control Delay				102.6	23.7			59.8		13.6	15.6	
Queue Delay				0.0	0.0			0.0		0.0	0.0	
Total Delay				102.6	23.7			59.8		13.6	15.6	
LOS				F	C			E		B	B	
Approach Delay					91.1			59.8			15.2	
Approach LOS					F			E			B	

Intersection Summary	
Area Type:	Other
Cycle Length: 90.8	
Actuated Cycle Length: 77.4	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.10	
Intersection Signal Delay: 49.9	Intersection LOS: D
Intersection Capacity Utilization 116.8%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 31: SR 743 (Fishburn Rd)/Fishburn Rd & Private Driveway/Cocoa Ave



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	483	0	82	0	371	256	141	711	0
Future Volume (veh/h)	0	0	0	483	0	82	0	371	256	141	711	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1722	1778	1778	1766	1766	1766	1795	1823	1823
Adj Flow Rate, veh/h	0	0	0	498	0	85	0	382	264	145	733	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	4	0	0	2	2	2	3	1	1
Cap, veh/h	0	2	0	477	0	438	0	412	285	296	1056	0
Arrive On Green	0.00	0.00	0.00	0.29	0.00	0.29	0.00	0.42	0.42	0.09	0.58	0.00
Sat Flow, veh/h	0	1800	0	1640	0	1507	0	973	672	1709	1823	0
Grp Volume(v), veh/h	0	0	0	498	0	85	0	0	646	145	733	0
Grp Sat Flow(s),veh/h/ln	0	1800	0	1640	0	1507	0	0	1645	1709	1823	0
Q Serve(g_s), s	0.0	0.0	0.0	21.5	0.0	3.1	0.0	0.0	27.5	3.1	20.9	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	21.5	0.0	3.1	0.0	0.0	27.5	3.1	20.9	0.0
Prop In Lane	0.00		0.00	1.00		1.00	0.00		0.41	1.00		0.00
Lane Grp Cap(c), veh/h	0	2	0	477	0	438	0	0	697	296	1056	0
V/C Ratio(X)	0.00	0.00	0.00	1.04	0.00	0.19	0.00	0.00	0.93	0.49	0.69	0.00
Avail Cap(c_a), veh/h	0	183	0	477	0	438	0	0	701	404	1176	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	26.2	0.0	19.7	0.0	0.0	20.2	15.4	10.9	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	53.4	0.0	0.2	0.0	0.0	19.7	1.3	3.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	0.0	0.0	21.6	0.0	1.9	0.0	0.0	19.1	2.0	12.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	0.0	79.6	0.0	19.9	0.0	0.0	39.9	16.7	14.1	0.0
LnGrp LOS	A	A	A	F	A	B	A	A	D	B	B	A
Approach Vol, veh/h		0			583			646			878	
Approach Delay, s/veh		0.0			70.9			39.9			14.5	
Approach LOS					E			D			B	

Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	11.5	36.0		0.0		47.6		26.4				
Change Period (Y+Rc), s	* 6.2	* 6.2		6.0		* 6.2		6.4				
Max Green Setting (Gmax), s	* 10	* 30		6.0		* 46		20.0				
Max Q Clear Time (g_c+I1), s	5.1	29.5		0.0		22.9		23.5				
Green Ext Time (p_c), s	0.2	0.3		0.0		15.9		0.0				

Intersection Summary	
HCM 6th Ctrl Delay	37.9
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	44	56	45	559	1088	92
Future Volume (vph)	44	56	45	559	1088	92
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	15	15	12	12	12	12
Grade (%)	-4%			-2%	2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.924				0.989	
Flt Protected	0.979			0.996		
Satd. Flow (prot)	1827	0	0	1762	1729	0
Flt Permitted	0.979			0.996		
Satd. Flow (perm)	1827	0	0	1762	1729	0
Link Speed (mph)	25			35	35	
Link Distance (ft)	948			1033	614	
Travel Time (s)	25.9			20.1	12.0	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	0%	3%	2%	1%
Adj. Flow (vph)	47	60	48	595	1157	98
Shared Lane Traffic (%)						
Lane Group Flow (vph)	107	0	0	643	1255	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	15			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.92	0.92	1.06	1.06	1.09	1.09
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 83.1%		ICU Level of Service E	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	44	56	45	559	1088	92
Future Vol, veh/h	44	56	45	559	1088	92
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-4	-	-	-2	2	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	3	2	1
Mvmt Flow	47	60	48	595	1157	98

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1897	1206	1255	0	-	0
Stage 1	1206	-	-	-	-	-
Stage 2	691	-	-	-	-	-
Critical Hdwy	5.6	5.8	4.1	-	-	-
Critical Hdwy Stg 1	4.6	-	-	-	-	-
Critical Hdwy Stg 2	4.6	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	118	258	561	-	-	-
Stage 1	374	-	-	-	-	-
Stage 2	584	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	103	258	561	-	-	-
Mov Cap-2 Maneuver	103	-	-	-	-	-
Stage 1	326	-	-	-	-	-
Stage 2	584	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	32.6	0.9	0
HCM LOS	D		

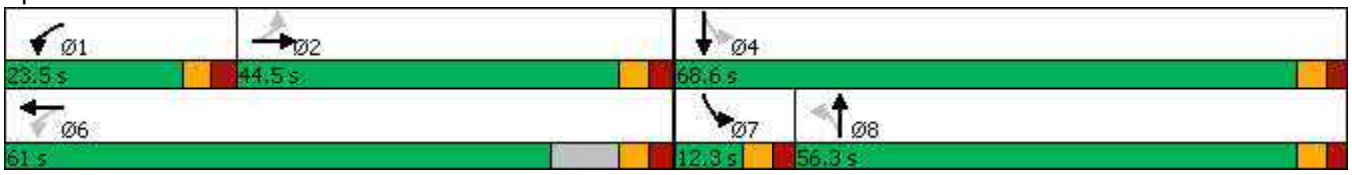
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	561	-	234	-	-
HCM Lane V/C Ratio	0.085	-	0.455	-	-
HCM Control Delay (s)	12	0	32.6	-	-
HCM Lane LOS	B	A	D	-	-
HCM 95th %tile Q(veh)	0.3	-	2.2	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	417	87	250	370	152	92	279	184	132	295	33
Future Volume (vph)	29	417	87	250	370	152	92	279	184	132	295	33
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	12	12	10	12	12	13	13	13	10	13	13
Grade (%)		-1%			1%			-4%			3%	
Storage Length (ft)	60		0	140		0	0		0	175		0
Storage Lanes	1		0	1		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								0.99		1.00	1.00	
Frt		0.974			0.956			0.955			0.985	
Flt Protected	0.950			0.950				0.992		0.950		
Satd. Flow (prot)	1499	1762	0	1572	1712	0	0	1745	0	1526	1801	0
Flt Permitted	0.423			0.090				0.869		0.295		
Satd. Flow (perm)	667	1762	0	149	1712	0	0	1528	0	473	1801	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			20			21			5	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		552			1053			474			481	
Travel Time (s)		15.1			28.7			12.9			13.1	
Confl. Peds. (#/hr)							1		4	4		1
Confl. Bikes (#/hr)							1					1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	7%	0%	0%	1%	0%	0%	3%	2%	2%	3%	0%	0%
Adj. Flow (vph)	30	434	91	260	385	158	96	291	192	138	307	34
Shared Lane Traffic (%)												
Lane Group Flow (vph)	30	525	0	260	543	0	0	579	0	138	341	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.16	1.07	1.07	1.18	1.08	1.08	1.00	1.00	1.00	1.19	1.05	1.05
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template							Left					
Leading Detector (ft)	35	35		35	35		48	35		35	35	
Trailing Detector (ft)	-5	-5		-5	-5		-2	-5		-5	-5	
Detector 1 Position(ft)	-5	-5		-5	-5		-2	-5		-5	-5	
Detector 1 Size(ft)	40	40		40	40		50	40		40	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		pm+pt	NA	
Protected Phases		2		1	6			8		7	4	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2			6			8			4		
Detector Phase	2	2		1	6		8	8		7	4	
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Split (s)	10.0	10.0		23.5	10.0		10.0	10.0		8.5	10.0	
Total Split (s)	44.5	44.5		23.5	61.0		56.3	56.3		12.3	68.6	
Total Split (%)	32.6%	32.6%		17.2%	44.7%		41.2%	41.2%		9.0%	50.2%	
Maximum Green (s)	39.0	39.0		18.0	55.5		51.0	51.0		7.0	63.3	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.1	3.1		3.1	3.1	
All-Red Time (s)	2.5	2.5		2.5	2.5		2.2	2.2		2.2	2.2	
Lost Time Adjust (s)	-0.5	-0.5		-0.5	-0.5			-0.5		-0.5	-0.5	
Total Lost Time (s)	5.0	5.0		5.0	5.0			4.8		4.8	4.8	
Lead/Lag	Lag	Lag		Lead			Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		None	Min		None	None		None	None	
Act Effct Green (s)	39.5	39.5		63.0	63.0			51.5		63.8	63.8	
Actuated g/C Ratio	0.29	0.29		0.46	0.46			0.38		0.47	0.47	
v/c Ratio	0.16	1.02		1.00	0.68			0.98		0.50	0.40	
Control Delay	38.9	91.6		93.7	33.0			73.8		28.5	25.4	
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Delay	38.9	91.6		93.7	33.0			73.8		28.5	25.4	
LOS	D	F		F	C			E		C	C	
Approach Delay		88.7			52.6			73.8			26.3	
Approach LOS		F			D			E			C	

Intersection Summary	
Area Type: Other	
Cycle Length: 136.6	
Actuated Cycle Length: 136.6	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.02	
Intersection Signal Delay: 60.8	Intersection LOS: E
Intersection Capacity Utilization 111.1%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 33: S. Hanover St/N. Hanover St & W. Main St/E. Main St



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	417	87	250	370	152	92	279	184	132	295	33
Future Volume (veh/h)	29	417	87	250	370	152	92	279	184	132	295	33
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1738	1837	1837	1780	1794	1794	1997	1997	1997	1708	1820	1820
Adj Flow Rate, veh/h	30	434	91	260	385	158	96	291	192	138	307	34
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	7	0	0	1	0	0	2	2	2	3	0	0
Cap, veh/h	251	444	93	294	573	235	121	317	202	286	724	80
Arrive On Green	0.30	0.30	0.31	0.13	0.47	0.48	0.37	0.36	0.37	0.06	0.45	0.46
Sat Flow, veh/h	846	1473	309	1696	1209	496	250	887	564	1626	1605	178
Grp Volume(v), veh/h	30	0	525	260	0	543	579	0	0	138	0	341
Grp Sat Flow(s),veh/h/ln	846	0	1782	1696	0	1705	1701	0	0	1626	0	1782
Q Serve(g_s), s	3.7	0.0	38.2	14.4	0.0	32.1	37.8	0.0	0.0	6.9	0.0	17.0
Cycle Q Clear(g_c), s	12.8	0.0	38.2	14.4	0.0	32.1	42.9	0.0	0.0	6.9	0.0	17.0
Prop In Lane	1.00		0.17	1.00		0.29	0.17		0.33	1.00		0.10
Lane Grp Cap(c), veh/h	251	0	537	294	0	808	653	0	0	286	0	805
V/C Ratio(X)	0.12	0.00	0.98	0.88	0.00	0.67	0.89	0.00	0.00	0.48	0.00	0.42
Avail Cap(c_a), veh/h	251	0	537	307	0	808	713	0	0	286	0	868
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	40.0	0.0	45.2	35.0	0.0	26.5	40.3	0.0	0.0	22.9	0.0	24.3
Incr Delay (d2), s/veh	0.2	0.0	32.8	24.3	0.0	2.2	12.2	0.0	0.0	1.3	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.4	0.0	29.5	12.6	0.0	19.6	27.3	0.0	0.0	5.0	0.0	11.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.2	0.0	78.0	59.3	0.0	28.7	52.6	0.0	0.0	24.2	0.0	24.7
LnGrp LOS	D	A	E	E	A	C	D	A	A	C	A	C
Approach Vol, veh/h		555			803			579			479	
Approach Delay, s/veh		76.0			38.6			52.6			24.5	
Approach LOS		E			D			D			C	

Timer - Assigned Phs	1	2		4		6	7	8
Phs Duration (G+Y+Rc), s	22.5	44.5		63.9		67.0	12.3	51.6
Change Period (Y+Rc), s	5.5	5.5		* 5.3		5.5	* 5.3	* 5.3
Max Green Setting (Gmax), s	18.0	39.0		* 63		55.5	* 7	* 51
Max Q Clear Time (g_c+I1), s	16.9	40.2		19.0		34.1	9.4	44.9
Green Ext Time (p_c), s	0.1	0.0		1.3		2.2	0.0	1.5

Intersection Summary	
HCM 6th Ctrl Delay	47.7
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	555	112	162	717	3	68	8	127	0	1	0
Future Volume (vph)	1	555	112	162	717	3	68	8	127	0	1	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	11	11	14	14	14	11	11	11
Grade (%)		1%			-1%			0%			-5%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.977						0.916				
Flt Protected					0.991			0.984				
Satd. Flow (prot)	0	1675	0	0	1713	0	0	1720	0	0	0	0
Flt Permitted					0.991			0.984				
Satd. Flow (perm)	0	1675	0	0	1713	0	0	1720	0	0	0	0
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		1053			1492			867			476	
Travel Time (s)		28.7			40.7			23.6			13.0	
Confl. Peds. (#/hr)							2					2
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	1%	1%	2%	1%	0%	0%	0%	1%	0%	0%	0%
Adj. Flow (vph)	1	610	123	178	788	3	75	9	140	0	1	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	734	0	0	969	0	0	224	0	0	1	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.13	1.13	1.13	1.11	1.11	1.11	0.99	0.99	0.99	1.08	1.08	1.08
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization Err%	ICU Level of Service H
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	50.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	555	112	162	717	3	68	8	127	0	1	0
Future Vol, veh/h	1	555	112	162	717	3	68	8	127	0	1	0
Conflicting Peds, #/hr	0	0	0	0	0	0	2	0	0	0	0	2
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	1	-	-	-1	-	-	0	-	-	-5	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	0	1	1	2	1	0	0	0	1	0	0	0
Mvmt Flow	1	610	123	178	788	3	75	9	140	0	1	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	791	0	0	733	0	0	1822	1821	672
Stage 1	-	-	-	-	-	-	674	674	-
Stage 2	-	-	-	-	-	-	1148	1147	-
Critical Hdwy	4.1	-	-	4.12	-	-	6.4	6.5	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-	5.4	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.4	5.5	-
Follow-up Hdwy	2.2	-	-	2.218	-	-	3.5	4	3.309
Pot Cap-1 Maneuver	838	-	-	872	-	-	86	78	458
Stage 1	-	-	-	-	-	-	510	457	-
Stage 2	-	-	-	-	-	-	305	276	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	838	-	-	872	-	-	~ 54	0	458
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 54	0	-
Stage 1	-	-	-	-	-	-	324	0	-
Stage 2	-	-	-	-	-	-	304	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.9	$ 430.2
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	127	838	-	-	872	-	-
HCM Lane V/C Ratio	1.757	0.001	-	-	0.204	-	-
HCM Control Delay (s)	$ 430.2	9.3	0	-	10.2	0	-
HCM Lane LOS	F	A	A	-	B	A	-
HCM 95th %tile Q(veh)	16.9	0	-	-	0.8	-	-

Notes

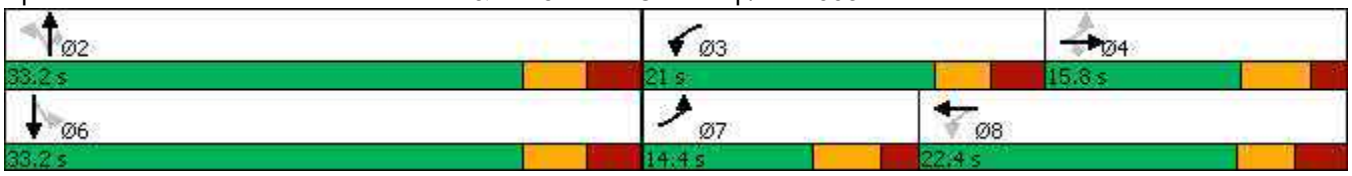
~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	193	207	281	476	0	209	0	528	441	28	544	1
Future Volume (vph)	193	207	281	476	0	209	0	528	441	28	544	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	11	12	12	12
Grade (%)		0%			3%			4%			-1%	
Storage Length (ft)	230		0	150		0	0		0	75		0
Storage Lanes	1		1	1		0	0		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.850				0.850			
Flt Protected	0.950			0.950						0.950		
Satd. Flow (prot)	1693	1800	1530	1651	1507	0	0	1747	1421	1719	1809	0
Flt Permitted	0.624			0.313						0.238		
Satd. Flow (perm)	1112	1800	1530	544	1507	0	0	1747	1421	431	1809	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			226		243				455			
Link Speed (mph)		35			45			35			25	
Link Distance (ft)		830			1331			2061			1362	
Travel Time (s)		16.2			20.2			40.1			37.1	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	0%	0%	2%	0%	0%	0%	1%	2%	0%	0%	0%
Adj. Flow (vph)	199	213	290	491	0	215	0	544	455	29	561	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	199	213	290	491	215	0	0	544	455	29	562	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.09	1.09	1.09	1.10	1.10	1.15	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	1	1	1		1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Main30	Right	Left	Main30	
Leading Detector (ft)	48	48	48	48	48		48	300	48	48	300	
Trailing Detector (ft)	-2	-2	-2	-2	-2		-2	0	-2	-2	0	
Detector 1 Position(ft)	-2	-2	-2	-2	-2		-2	0	-2	-2	0	
Detector 1 Size(ft)	50	50	50	50	50		50	0	50	50	0	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)								294			294	
Detector 2 Size(ft)								6			6	
Detector 2 Type								Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)								0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	Perm	pm+pt	NA			NA	Perm	Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4		4	8			2		2	6		
Detector Phase	7	4	4	3	8		2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	3.0	10.0	10.0	10.0	10.0		3.0	3.0	3.0	3.0	3.0	
Minimum Split (s)	8.5	15.8	15.8	15.8	15.8		30.2	30.2	30.2	30.2	30.2	
Total Split (s)	14.4	15.8	15.8	21.0	22.4		33.2	33.2	33.2	33.2	33.2	
Total Split (%)	20.6%	22.6%	22.6%	30.0%	32.0%		47.4%	47.4%	47.4%	47.4%	47.4%	
Maximum Green (s)	8.9	10.2	10.2	15.2	16.6		27.0	27.0	27.0	27.0	27.0	
Yellow Time (s)	3.5	3.6	3.6	3.0	3.0		3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	2.0	2.0	2.0	2.8	2.8		2.9	2.9	2.9	2.9	2.9	
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	-1.5			-1.5	-1.5	-1.5	-1.5	
Total Lost Time (s)	4.0	4.1	4.1	4.3	4.3			4.7	4.7	4.7	4.7	
Lead/Lag	Lead	Lag	Lag	Lead	Lag							
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None		Min	Min	Min	Min	Min	
Act Effct Green (s)	21.8	11.7	11.7	32.5	18.5			27.4	27.4	27.4	27.4	
Actuated g/C Ratio	0.32	0.17	0.17	0.47	0.27			0.40	0.40	0.40	0.40	
v/c Ratio	0.46	0.70	0.65	0.94	0.37			0.78	0.54	0.17	0.78	
Control Delay	15.9	41.8	15.2	44.4	4.4			27.9	4.3	16.4	27.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0	0.0	
Total Delay	15.9	41.8	15.2	44.4	4.4			27.9	4.3	16.4	27.5	
LOS	B	D	B	D	A			C	A	B	C	
Approach Delay		23.5			32.2			17.2			26.9	
Approach LOS		C			C			B			C	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 68.9	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.94	
Intersection Signal Delay: 24.1	Intersection LOS: C
Intersection Capacity Utilization 87.4%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 1: Middletown Rd & SR 322 EB Off Ramp/SR 2003



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	193	207	281	476	0	209	0	528	441	28	544	1
Future Volume (veh/h)	193	207	281	476	0	209	0	528	441	28	544	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1786	1800	1800	1722	1750	1750	1697	1697	1683	1837	1837	1837
Adj Flow Rate, veh/h	199	213	0	491	0	215	0	544	455	29	561	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	0	0	2	0	0	1	1	2	0	0	0
Cap, veh/h	516	299		560	0	402	0	681	572	173	735	1
Arrive On Green	0.14	0.17	0.00	0.24	0.00	0.27	0.00	0.40	0.40	0.40	0.40	0.40
Sat Flow, veh/h	1701	1800	1525	1640	0	1483	0	1697	1426	585	1833	3
Grp Volume(v), veh/h	199	213	0	491	0	215	0	544	455	29	0	562
Grp Sat Flow(s),veh/h/ln	1701	1800	1525	1640	0	1483	0	1697	1426	585	0	1837
Q Serve(g_s), s	6.4	7.8	0.0	16.7	0.0	8.6	0.0	19.6	19.4	3.2	0.0	18.3
Cycle Q Clear(g_c), s	6.4	7.8	0.0	16.7	0.0	8.6	0.0	19.6	19.4	22.8	0.0	18.3
Prop In Lane	1.00		1.00	1.00		1.00	0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	516	299		560	0	402	0	681	572	173	0	737
V/C Ratio(X)	0.39	0.71		0.88	0.00	0.54	0.00	0.80	0.80	0.17	0.00	0.76
Avail Cap(c_a), veh/h	532	304		560	0	402	0	698	586	179	0	755
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	18.9	27.3	0.0	16.8	0.0	21.5	0.0	18.3	18.2	28.3	0.0	17.9
Incr Delay (d2), s/veh	0.5	7.5	0.0	14.5	0.0	1.4	0.0	6.4	7.3	0.5	0.0	4.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.3	6.7	0.0	11.8	0.0	5.0	0.0	12.6	10.7	0.8	0.0	12.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.4	34.9	0.0	31.4	0.0	22.9	0.0	24.7	25.6	28.8	0.0	22.4
LnGrp LOS	B	C		C	A	C	A	C	C	C	A	C
Approach Vol, veh/h		412	A		706			999			591	
Approach Delay, s/veh		27.4			28.8			25.1			22.7	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	32.5	21.0	15.8	32.5	13.7	23.1
Change Period (Y+Rc), s	* 6.2	* 5.8	* 5.8	* 6.2	5.5	* 5.8
Max Green Setting (Gmax), s	* 27	* 15	* 10	* 27	8.9	* 17
Max Q Clear Time (g_c+I1), s	21.6	18.7	9.8	24.8	8.4	10.6
Green Ext Time (p_c), s	3.8	0.0	0.0	1.5	0.0	0.4

Intersection Summary	
HCM 6th Ctrl Delay	25.9
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	16	1101	225	0	1268
Future Volume (vph)	0	16	1101	225	0	1268
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	10	12	12	12	12
Grade (%)	1%		-3%			3%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95
Frt	0.865		0.977			
Flt Protected						
Satd. Flow (prot)	1446	0	1756	0	0	3335
Flt Permitted						
Satd. Flow (perm)	1446	0	1756	0	0	3335
Link Speed (mph)	35		35			35
Link Distance (ft)	609		1026			507
Travel Time (s)	11.9		20.0			9.9
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	1%	0%	2%	0%	0%	1%
Adj. Flow (vph)	0	17	1147	234	0	1321
Shared Lane Traffic (%)						
Lane Group Flow (vph)	17	0	1381	0	0	1321
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	10		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.18	1.18	1.05	1.05	1.09	1.09
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 85.6%	ICU Level of Service E
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	16	1101	225	0	1268
Future Vol, veh/h	0	16	1101	225	0	1268
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	1	-	-3	-	-	3
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	1	0	2	0	0	1
Mvmt Flow	0	17	1147	234	0	1321

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1925	1264	0	0	-	-
Stage 1	1264	-	-	-	-	-
Stage 2	661	-	-	-	-	-
Critical Hdwy	6.815	6.3	-	-	-	-
Critical Hdwy Stg 1	5.615	-	-	-	-	-
Critical Hdwy Stg 2	6.015	-	-	-	-	-
Follow-up Hdwy	3.5095	3.3	-	-	-	-
Pot Cap-1 Maneuver	59	202	-	-	0	-
Stage 1	248	-	-	-	0	-
Stage 2	461	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	59	202	-	-	-	-
Mov Cap-2 Maneuver	59	-	-	-	-	-
Stage 1	248	-	-	-	-	-
Stage 2	461	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	24.4	0	0
HCM LOS	C		

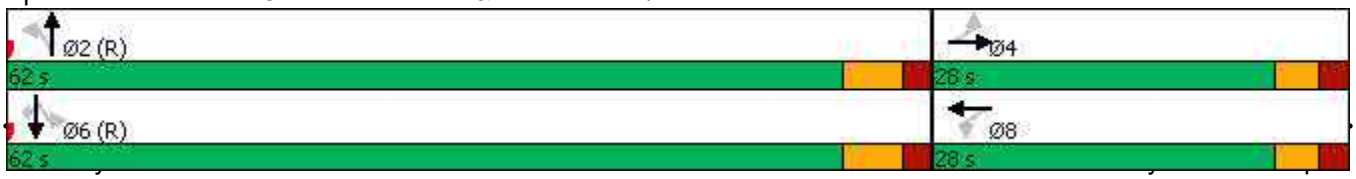
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	202	-
HCM Lane V/C Ratio	-	-	0.083	-
HCM Control Delay (s)	-	-	24.4	-
HCM Lane LOS	-	-	C	-
HCM 95th %tile Q(veh)	-	-	0.3	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	117	15	33	126	62	60	51	1221	32	36	1198	160
Future Volume (vph)	117	15	33	126	62	60	51	1221	32	36	1198	160
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	11	12	12	11	14	13
Grade (%)		3%			4%			-1%			-2%	
Storage Length (ft)	125		0	125		0	135		140	100		200
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	1.00				0.99							
Frt		0.897			0.926			0.996				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1684	1498	0	1676	1616	0	1661	3390	0	1670	3648	1597
Flt Permitted	0.590			0.724			0.183			0.169		
Satd. Flow (perm)	1045	1498	0	1277	1616	0	320	3390	0	297	3648	1597
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		35			53			6				170
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		1291			1010			1123			1026	
Travel Time (s)		35.2			27.5			21.9			20.0	
Confl. Peds. (#/hr)	1					1						
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	9%	0%	0%	0%	0%	1%	0%	0%	1%	0%
Adj. Flow (vph)	124	16	35	134	66	64	54	1299	34	38	1274	170
Shared Lane Traffic (%)												
Lane Group Flow (vph)	124	51	0	134	130	0	54	1333	0	38	1274	170
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.10	1.10	1.10	1.11	1.07	1.07	1.11	0.97	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	2		1	2	1
Detector Template												
Leading Detector (ft)	38	38		38	38		0	230		0	230	0
Trailing Detector (ft)	-2	-2		-2	-2		0	0		0	0	0
Detector 1 Position(ft)	-2	-2		-2	-2		0	0		0	0	0
Detector 1 Size(ft)	40	40		40	40		0	0		0	0	0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)								224			224	
Detector 2 Size(ft)								6			6	
Detector 2 Type								Cl+Ex			Cl+Ex	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)								0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0		16.0	16.0		16.0	16.0	16.0
Minimum Split (s)	24.0	24.0		24.0	24.0		24.0	24.0		24.0	24.0	24.0
Total Split (s)	28.0	28.0		28.0	28.0		62.0	62.0		62.0	62.0	62.0
Total Split (%)	31.1%	31.1%		31.1%	31.1%		68.9%	68.9%		68.9%	68.9%	68.9%
Maximum Green (s)	22.9	22.9		22.9	22.9		56.0	56.0		56.0	56.0	56.0
Yellow Time (s)	3.0	3.0		3.0	3.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.1	2.1		2.1	2.1		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-1.5	-1.5		-1.5	-1.5		-1.5	-1.5		-1.5	-1.5	-1.5
Total Lost Time (s)	3.6	3.6		3.6	3.6		4.5	4.5		4.5	4.5	4.5
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		6.0	6.0		6.0	6.0	6.0
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0		25.0	25.0		25.0	25.0	25.0
Time To Reduce (s)	0.0	0.0		0.0	0.0		15.0	15.0		15.0	15.0	15.0
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	C-Max
Act Effct Green (s)	16.8	16.8		16.8	16.8		65.1	65.1		65.1	65.1	65.1
Actuated g/C Ratio	0.19	0.19		0.19	0.19		0.72	0.72		0.72	0.72	0.72
v/c Ratio	0.64	0.17		0.56	0.38		0.23	0.54		0.18	0.48	0.14
Control Delay	47.7	14.6		41.4	21.2		10.9	8.6		6.2	4.7	1.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	47.7	14.6		41.4	21.2		10.9	8.6		6.2	4.7	1.1
LOS	D	B		D	C		B	A		A	A	A
Approach Delay		38.0			31.4			8.7			4.4	
Approach LOS		D			C			A			A	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.64	
Intersection Signal Delay: 10.1	Intersection LOS: B
Intersection Capacity Utilization 69.4%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 3: Middletown Rd & Deer Run Dr/Stoverdale Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	117	15	33	126	62	60	51	1221	32	36	1198	160
Future Volume (veh/h)	117	15	33	126	62	60	51	1221	32	36	1198	160
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1750	1750	1750	1711	1711	1711	1837	1823	1823	1875	1935	1950
Adj Flow Rate, veh/h	124	16	35	134	66	64	54	1299	34	38	1274	170
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	1	1	0	1	0
Cap, veh/h	251	102	223	318	167	162	348	2417	63	306	2576	1158
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	0.70	0.70	0.70	1.00	1.00	1.00
Sat Flow, veh/h	1242	488	1068	1305	797	773	383	3448	90	434	3676	1652
Grp Volume(v), veh/h	124	0	51	134	0	130	54	652	681	38	1274	170
Grp Sat Flow(s),veh/h/ln	1242	0	1556	1305	0	1569	383	1732	1807	434	1838	1652
Q Serve(g_s), s	8.6	0.0	2.4	8.4	0.0	6.4	4.4	16.3	16.3	2.3	0.0	0.0
Cycle Q Clear(g_c), s	15.0	0.0	2.4	10.8	0.0	6.4	4.4	16.3	16.3	18.6	0.0	0.0
Prop In Lane	1.00		0.69	1.00		0.49	1.00		0.05	1.00		1.00
Lane Grp Cap(c), veh/h	251	0	325	318	0	328	348	1214	1266	306	2576	1158
V/C Ratio(X)	0.49	0.00	0.16	0.42	0.00	0.40	0.16	0.54	0.54	0.12	0.49	0.15
Avail Cap(c_a), veh/h	328	0	422	399	0	425	348	1214	1266	306	2576	1158
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.2	0.0	29.1	33.5	0.0	30.7	4.7	6.5	6.5	2.4	0.0	0.0
Incr Delay (d2), s/veh	1.5	0.0	0.2	0.9	0.0	0.8	0.9	1.7	1.6	0.8	0.7	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.9	0.0	1.7	4.9	0.0	4.5	0.7	8.9	9.2	0.3	0.4	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.7	0.0	29.3	34.4	0.0	31.5	5.6	8.2	8.1	3.2	0.7	0.3
LnGrp LOS	D	A	C	C	A	C	A	A	A	A	A	A
Approach Vol, veh/h		175			264			1387			1482	
Approach Delay, s/veh		35.9			33.0			8.0			0.7	
Approach LOS		D			C			A			A	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	67.6	22.4	67.6	22.4
Change Period (Y+Rc), s	6.0	5.1	6.0	5.1
Max Green Setting (Gmax), s	56.0	22.9	56.0	22.9
Max Q Clear Time (g_c+I1), s	18.3	17.0	2.0	12.8
Green Ext Time (p_c), s	33.2	0.3	42.8	0.7

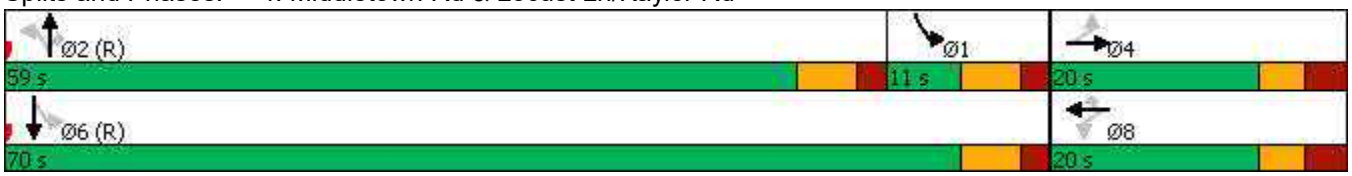
Intersection Summary	
HCM 6th Ctrl Delay	8.2
HCM 6th LOS	A

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	79	12	19	56	12	69	24	1173	26	78	1295	11
Future Volume (vph)	79	12	19	56	12	69	24	1173	26	78	1295	11
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	14	14	14	12	12	14	10	12	14	10	12	12
Grade (%)		0%			-3%			3%			-3%	
Storage Length (ft)	0		0	125		50	135		320	75		0
Storage Lanes	0		0	1		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt		0.977				0.850			0.850		0.999	
Flt Protected		0.966		0.950			0.950			0.950		
Satd. Flow (prot)	0	1812	0	1736	1827	1656	1572	3335	1608	1620	3434	0
Flt Permitted		0.781		0.710			0.170			0.185		
Satd. Flow (perm)	0	1465	0	1297	1827	1656	281	3335	1608	315	3434	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10				109			109		2	
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		1378			1146			1358			921	
Travel Time (s)		37.6			31.3			26.5			17.9	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	1%	0%
Adj. Flow (vph)	82	13	20	58	13	72	25	1222	27	81	1349	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	115	0	58	13	72	25	1222	27	81	1360	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	1.05	1.05	0.97	1.19	1.09	1.01	1.15	1.05	1.05
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1	1	1	2	1	1	2	
Detector Template	Left							Main25	Right		Main25	
Leading Detector (ft)	48	38		38	38	38	38	250	48	38	250	
Trailing Detector (ft)	-2	-2		-2	-2	-2	-2	0	-2	-2	0	
Detector 1 Position(ft)	-2	-2		-2	-2	-2	-2	0	-2	-2	0	
Detector 1 Size(ft)	50	40		40	40	40	40	0	50	40	0	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)								244			244	
Detector 2 Size(ft)								6			6	
Detector 2 Type								Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)								0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8		8	2		2	6		
Detector Phase	4	4		8	8	8	2	2	2	1	6	
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0	3.0	15.0	15.0	15.0	3.0	15.0	
Minimum Split (s)	18.0	18.0		18.0	18.0	18.0	21.0	21.0	21.0	9.0	21.0	
Total Split (s)	20.0	20.0		20.0	20.0	20.0	59.0	59.0	59.0	11.0	70.0	
Total Split (%)	22.2%	22.2%		22.2%	22.2%	22.2%	65.6%	65.6%	65.6%	12.2%	77.8%	
Maximum Green (s)	14.0	14.0		14.0	14.0	14.0	53.0	53.0	53.0	5.0	64.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-1.5		-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	
Total Lost Time (s)		4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
Lead/Lag							Lead	Lead	Lead	Lag		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	6.0	6.0	6.0	3.0	6.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	4.0	4.0	4.0	3.0	4.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	30.0	30.0	30.0	0.0	30.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0	15.0	15.0	15.0	0.0	15.0	
Recall Mode	None	None		None	None	None	C-Max	C-Max	C-Max	None	C-Max	
Act Effct Green (s)		12.7		12.5	12.5	12.5	62.9	62.9	62.9	70.8	71.7	
Actuated g/C Ratio		0.14		0.14	0.14	0.14	0.70	0.70	0.70	0.79	0.80	
v/c Ratio		0.53		0.32	0.05	0.22	0.13	0.52	0.02	0.24	0.50	
Control Delay		41.4		38.5	32.1	4.4	9.6	9.9	0.0	8.9	7.5	
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay		41.4		38.5	32.1	4.4	9.6	9.9	0.0	8.9	7.5	
LOS		D		D	C	A	A	A	A	A	A	
Approach Delay		41.4			20.8			9.7			7.5	
Approach LOS		D			C			A			A	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.53	
Intersection Signal Delay: 10.4	Intersection LOS: B
Intersection Capacity Utilization 75.1%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 4: Middletown Rd & Locust Ln/Kaylor Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	79	12	19	56	12	69	24	1173	26	78	1295	11
Future Volume (veh/h)	79	12	19	56	12	69	24	1173	26	78	1295	11
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1872	1872	1872	1912	1912	1988	1750	1736	1820	1912	1898	1898
Adj Flow Rate, veh/h	82	12	20	58	12	72	25	1222	27	81	1349	11
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	1	0	0	1	1
Cap, veh/h	185	22	29	255	222	196	270	1997	934	474	2872	23
Arrive On Green	0.12	0.12	0.12	0.12	0.12	0.12	0.61	0.61	0.61	0.13	0.78	0.78
Sat Flow, veh/h	1000	192	254	1486	1912	1685	395	3298	1542	1821	3665	30
Grp Volume(v), veh/h	114	0	0	58	12	72	25	1222	27	81	663	697
Grp Sat Flow(s),veh/h/ln	1446	0	0	1486	1912	1685	395	1649	1542	1821	1803	1892
Q Serve(g_s), s	6.3	0.0	0.0	0.0	0.5	3.6	3.2	20.9	0.6	0.0	11.3	11.3
Cycle Q Clear(g_c), s	6.8	0.0	0.0	3.2	0.5	3.6	14.5	20.9	0.6	0.0	11.3	11.3
Prop In Lane	0.72		0.18	1.00		1.00	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h	237	0	0	255	222	196	270	1997	934	474	1413	1483
V/C Ratio(X)	0.48	0.00	0.00	0.23	0.05	0.37	0.09	0.61	0.03	0.17	0.47	0.47
Avail Cap(c_a), veh/h	319	0	0	338	329	290	270	1997	934	474	1413	1483
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.2	0.0	0.0	36.5	35.4	36.7	13.0	11.1	7.1	15.6	3.3	3.3
Incr Delay (d2), s/veh	1.5	0.0	0.0	0.4	0.1	1.1	0.7	1.4	0.1	0.2	1.1	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.5	0.0	0.0	2.2	0.4	2.7	0.6	11.3	0.4	1.9	5.1	5.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.7	0.0	0.0	37.0	35.5	37.9	13.7	12.5	7.2	15.8	4.5	4.4
LnGrp LOS	D	A	A	D	D	D	B	B	A	B	A	A
Approach Vol, veh/h		114			142			1274			1441	
Approach Delay, s/veh		39.7			37.3			12.4			5.1	
Approach LOS		D			D			B			A	

Timer - Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	16.0	59.0		15.0		75.0		15.0
Change Period (Y+Rc), s	6.0	6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s	5.0	53.0		14.0		64.0		14.0
Max Q Clear Time (g_c+I1), s	2.0	22.9		8.8		13.3		5.6
Green Ext Time (p_c), s	0.0	26.9		0.1		44.8		0.3

Intersection Summary	
HCM 6th Ctrl Delay	11.1
HCM 6th LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	59	166	36	72	30	350	21	291	32	82	339	0
Future Volume (vph)	59	166	36	72	30	350	21	291	32	82	339	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	10	10	10	10	10	10	10	10	10	10	10
Grade (%)		-1%			1%			-8%			11%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.981			0.895			0.987				
Flt Protected		0.989			0.992			0.997			0.990	
Satd. Flow (prot)	0	1628	0	0	1484	0	0	1699	0	0	1566	0
Flt Permitted		0.989			0.992			0.997			0.990	
Satd. Flow (perm)	0	1628	0	0	1484	0	0	1699	0	0	1566	0
Link Speed (mph)		35			30			35			35	
Link Distance (ft)		2048			1531			1852			607	
Travel Time (s)		39.9			34.8			36.1			11.8	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	1%	0%	0%	0%	0%	6%	1%	0%	2%	0%	0%
Adj. Flow (vph)	65	182	40	79	33	385	23	320	35	90	373	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	287	0	0	497	0	0	378	0	0	463	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.16	1.16	1.16	1.18	1.18	1.18	1.11	1.11	1.11	1.26	1.26	1.26
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 87.8%	ICU Level of Service E
Analysis Period (min) 15	

Intersection	
Intersection Delay, s/veh	92.8
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	59	166	36	72	30	350	21	291	32	82	339	0
Future Vol, veh/h	59	166	36	72	30	350	21	291	32	82	339	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	0	1	0	0	0	0	6	1	0	2	0	0
Mvmt Flow	65	182	40	79	33	385	23	320	35	90	373	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	38.4	120.8	65.9	118.6
HCM LOS	E	F	F	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	6%	23%	16%	19%
Vol Thru, %	85%	64%	7%	81%
Vol Right, %	9%	14%	77%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	344	261	452	421
LT Vol	21	59	72	82
Through Vol	291	166	30	339
RT Vol	32	36	350	0
Lane Flow Rate	378	287	497	463
Geometry Grp	1	1	1	1
Degree of Util (X)	0.942	0.747	1.149	1.135
Departure Headway (Hd)	9.901	10.366	8.844	9.437
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	370	353	412	389
Service Time	7.901	8.366	6.844	7.437
HCM Lane V/C Ratio	1.022	0.813	1.206	1.19
HCM Control Delay	65.9	38.4	120.8	118.6
HCM Lane LOS	F	E	F	F
HCM 95th-tile Q	10.1	5.8	17.6	16.4

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	166	70	59	197	428	399
Future Volume (vph)	166	70	59	197	428	399
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	10	11	11	11	11
Grade (%)	1%			-1%	1%	
Storage Length (ft)	0	0	0			200
Storage Lanes	1	0	0			1
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.960					0.850
Flt Protected	0.966			0.989		
Satd. Flow (prot)	1530	0	0	1703	1714	1472
Flt Permitted	0.966			0.989		
Satd. Flow (perm)	1530	0	0	1703	1714	1472
Link Speed (mph)	30			35	35	
Link Distance (ft)	796			2135	675	
Travel Time (s)	18.1			41.6	13.1	
Confl. Peds. (#/hr)			12			12
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	2%	0%	2%	1%	0%
Adj. Flow (vph)	171	72	61	203	441	411
Shared Lane Traffic (%)						
Lane Group Flow (vph)	243	0	0	264	441	411
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	10			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.18	1.18	1.11	1.11	1.13	1.13
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Stop	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 62.4%	ICU Level of Service B
Analysis Period (min) 15	

Intersection	
Intersection Delay, s/veh	15.7
Intersection LOS	C

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	166	70	59	197	428	399
Future Vol, veh/h	166	70	59	197	428	399
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles, %	1	2	0	2	1	0
Mvmt Flow	171	72	61	203	441	411
Number of Lanes	1	0	0	1	1	1

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	2	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	13.4	12.8	17.2
HCM LOS	B	B	C

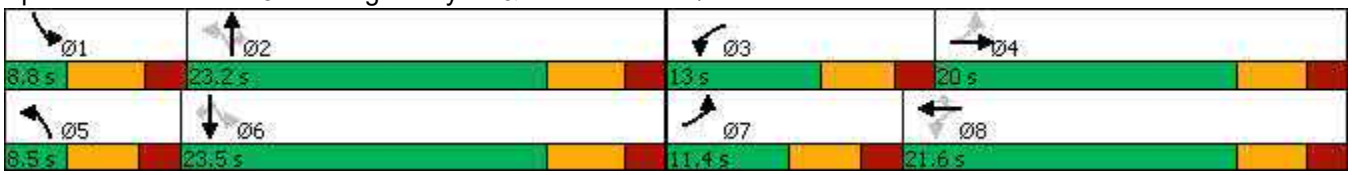
Lane	NBLn1	EBLn1	SBLn1	SBLn2
Vol Left, %	23%	70%	0%	0%
Vol Thru, %	77%	0%	100%	0%
Vol Right, %	0%	30%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	256	236	428	399
LT Vol	59	166	0	0
Through Vol	197	0	428	0
RT Vol	0	70	0	399
Lane Flow Rate	264	243	441	411
Geometry Grp	5	2	7	7
Degree of Util (X)	0.418	0.412	0.693	0.563
Departure Headway (Hd)	5.704	6.097	5.657	4.931
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	631	591	640	732
Service Time	3.736	4.126	3.385	2.659
HCM Lane V/C Ratio	0.418	0.411	0.689	0.561
HCM Control Delay	12.8	13.4	20.2	13.9
HCM Lane LOS	B	B	C	B
HCM 95th-tile Q	2.1	2	5.5	3.5

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	162	163	102	318	219	328	43	262	100	76	391	144
Future Volume (vph)	162	163	102	318	219	328	43	262	100	76	391	144
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Grade (%)		6%			-7%			-2%			2%	
Storage Length (ft)	100		0	250		0	190		270	185		175
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.942				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1642	1645	0	1770	1863	1584	1727	1782	1545	1660	1782	1485
Flt Permitted	0.617			0.338			0.322			0.461		
Satd. Flow (perm)	1067	1645	0	630	1863	1584	585	1782	1545	805	1782	1485
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		46				338			225			225
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		395			391			967			1702	
Travel Time (s)		10.8			10.7			18.8			33.2	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	0%	0%	0%	0%	0%	0%	2%	0%	2%	0%	2%
Adj. Flow (vph)	167	168	105	328	226	338	44	270	103	78	403	148
Shared Lane Traffic (%)												
Lane Group Flow (vph)	167	273	0	328	226	338	44	270	103	78	403	148
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.11	1.11	1.11	1.03	1.03	1.03	1.06	1.06	1.06	1.09	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1	1	1	2	2	1	2	2
Detector Template	Left	Thru		Left	Thru	Right	Left	Main25	Main25	Left	Main25	Main25
Leading Detector (ft)	48	48		48	48	48	48	250	250	48	250	250
Trailing Detector (ft)	-2	-2		-2	-2	-2	-2	0	0	-2	0	0
Detector 1 Position(ft)	-2	-2		-2	-2	-2	-2	0	0	-2	0	0
Detector 1 Size(ft)	50	50		50	50	50	50	0	0	50	0	0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)								244	244		244	244
Detector 2 Size(ft)								6	6		6	6
Detector 2 Type								Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)								0.0	0.0		0.0	0.0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8	2		2	6		6
Detector Phase	7	4		3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0	3.0	3.0	10.0	10.0	3.0	10.0	10.0
Minimum Split (s)	8.5	20.0		8.5	20.0	20.0	8.5	20.0	20.0	8.8	20.0	20.0
Total Split (s)	11.4	20.0		13.0	21.6	21.6	8.5	23.2	23.2	8.8	23.5	23.5
Total Split (%)	17.5%	30.8%		20.0%	33.2%	33.2%	13.1%	35.7%	35.7%	13.5%	36.2%	36.2%
Maximum Green (s)	5.9	14.6		7.5	16.2	16.2	3.0	17.4	17.4	3.0	17.7	17.7
Yellow Time (s)	3.5	3.4		3.5	3.4	3.4	3.5	3.8	3.8	3.8	3.8	3.8
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.5	-1.5		-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5
Total Lost Time (s)	4.0	3.9		4.0	3.9	3.9	4.0	4.3	4.3	4.3	4.3	4.3
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	6.0	6.0	3.0	6.0	6.0
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	25.0	25.0	0.0	25.0	25.0
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	13.0	13.0	0.0	13.0	13.0
Recall Mode	None	None		None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	21.2	13.8		25.1	18.4	18.4	21.9	18.2	18.2	22.6	20.1	20.1
Actuated g/C Ratio	0.35	0.23		0.42	0.31	0.31	0.36	0.30	0.30	0.38	0.33	0.33
v/c Ratio	0.37	0.66		0.75	0.40	0.47	0.15	0.50	0.17	0.21	0.68	0.23
Control Delay	14.1	26.6		26.7	21.7	5.1	12.1	22.6	0.6	12.8	26.8	1.7
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.1	26.6		26.7	21.7	5.1	12.1	22.6	0.6	12.8	26.8	1.7
LOS	B	C		C	C	A	B	C	A	B	C	A
Approach Delay		21.8			17.3			16.1			19.1	
Approach LOS		C			B			B			B	

Intersection Summary	
Area Type:	Other
Cycle Length: 65	
Actuated Cycle Length: 60.2	
Natural Cycle: 65	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.75	
Intersection Signal Delay: 18.4	Intersection LOS: B
Intersection Capacity Utilization 72.9%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 8: Bullfrog Valley Dr & Research Blvd/Life Lion Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	162	163	102	318	219	328	43	262	100	76	391	144
Future Volume (veh/h)	162	163	102	318	219	328	43	262	100	76	391	144
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1585	1599	1599	2061	2061	2061	1875	1846	1875	1750	1778	1750
Adj Flow Rate, veh/h	167	168	105	328	226	338	44	270	103	78	403	148
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	0	0	0	0	0	0	2	0	2	0	2
Cap, veh/h	430	215	134	490	535	453	296	506	435	388	534	445
Arrive On Green	0.12	0.23	0.23	0.15	0.26	0.26	0.05	0.27	0.27	0.07	0.30	0.30
Sat Flow, veh/h	1510	920	575	1963	2061	1746	1785	1846	1589	1666	1778	1483
Grp Volume(v), veh/h	167	0	273	328	226	338	44	270	103	78	403	148
Grp Sat Flow(s),veh/h/ln	1510	0	1496	1963	2061	1746	1785	1846	1589	1666	1778	1483
Q Serve(g_s), s	4.9	0.0	10.4	7.5	5.5	10.8	1.0	7.5	3.1	1.9	12.4	4.7
Cycle Q Clear(g_c), s	4.9	0.0	10.4	7.5	5.5	10.8	1.0	7.5	3.1	1.9	12.4	4.7
Prop In Lane	1.00		0.38	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	430	0	349	490	535	453	296	506	435	388	534	445
V/C Ratio(X)	0.39	0.00	0.78	0.67	0.42	0.75	0.15	0.53	0.24	0.20	0.75	0.33
Avail Cap(c_a), veh/h	430	0	397	490	602	510	338	576	495	392	563	470
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.3	0.0	21.8	15.1	18.7	20.6	15.2	18.7	17.1	14.1	19.2	16.5
Incr Delay (d2), s/veh	0.6	0.0	8.7	3.5	0.5	5.3	0.2	3.2	1.0	0.3	8.5	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.9	0.0	7.7	6.3	4.6	8.3	0.7	6.0	2.1	1.2	9.7	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.9	0.0	30.5	18.6	19.2	25.9	15.4	21.9	18.1	14.3	27.7	18.1
LnGrp LOS	B	A	C	B	B	C	B	C	B	B	C	B
Approach Vol, veh/h		440			892			417			629	
Approach Delay, s/veh		24.6			21.5			20.3			23.8	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.7	20.9	13.0	18.0	7.1	22.5	11.4	19.6
Change Period (Y+Rc), s	* 5.8	* 5.8	5.5	5.4	5.5	* 5.8	5.5	5.4
Max Green Setting (Gmax), s	* 3	* 17	7.5	14.6	3.0	* 18	5.9	16.2
Max Q Clear Time (g_c+I1), s	3.9	9.5	9.5	12.4	3.0	14.4	6.9	12.8
Green Ext Time (p_c), s	0.0	3.7	0.0	0.2	0.0	2.3	0.0	0.9

Intersection Summary	
HCM 6th Ctrl Delay	22.5
HCM 6th LOS	C

Notes

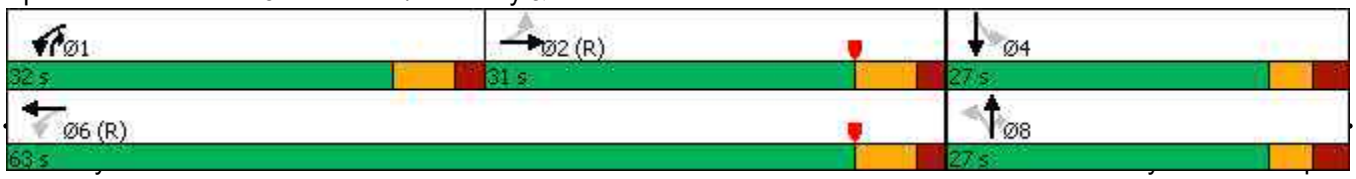
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	456	57	384	577	28	160	5	353	16	6	3
Future Volume (vph)	12	456	57	384	577	28	160	5	353	16	6	3
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	12	12	12	12	12	12	12	13	15	15	15
Grade (%)		-6%			0%			-2%			0%	
Storage Length (ft)	50		300	0		0	0		115	0		0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00				1.00							
Frt		0.983			0.993				0.850		0.984	
Flt Protected	0.950			0.950				0.954			0.968	
Satd. Flow (prot)	1644	3463	0	1693	1769	0	0	1734	1535	0	1886	0
Flt Permitted	0.426			0.362				0.713			0.801	
Satd. Flow (perm)	737	3463	0	645	1769	0	0	1296	1535	0	1561	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15			5				127		3	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		689			599			643			403	
Travel Time (s)		13.4			11.7			17.5			11.0	
Confl. Peds. (#/hr)	1					1						
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	0%	1%	1%	0%	0%	0%	4%	0%	0%	0%
Adj. Flow (vph)	13	475	59	400	601	29	167	5	368	17	6	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	13	534	0	400	630	0	0	172	368	0	26	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		23			23			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.13	1.03	1.03	1.07	1.07	1.07	1.06	1.06	1.01	0.95	0.95	0.95
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	1	1	1	1	
Detector Template							Left			Left	Thru	
Leading Detector (ft)	0	220		38	220		48	38	38	48	48	
Trailing Detector (ft)	0	0		-2	0		-2	-2	-2	-2	-2	
Detector 1 Position(ft)	0	0		-2	0		-2	-2	-2	-2	-2	
Detector 1 Size(ft)	0	0		40	0		50	40	40	50	50	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		214			214							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	pm+ov	Perm	NA	
Protected Phases		2		1	6			8	1		4	
Permitted Phases	2			6			8		8	4		
Detector Phase	2	2		1	6		8	8	1	4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		3.0	10.0		3.0	3.0	3.0	3.0	3.0	
Minimum Split (s)	25.0	25.0		9.2	25.0		15.5	15.5	9.2	15.5	15.5	
Total Split (s)	31.0	31.0		32.0	63.0		27.0	27.0	32.0	27.0	27.0	
Total Split (%)	34.4%	34.4%		35.6%	70.0%		30.0%	30.0%	35.6%	30.0%	30.0%	
Maximum Green (s)	24.8	24.8		25.8	56.8		21.5	21.5	25.8	21.5	21.5	
Yellow Time (s)	4.2	4.2		4.2	4.2		3.0	3.0	4.2	3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.5	2.5	2.0	2.5	2.5	
Lost Time Adjust (s)	-1.5	-1.5		-1.5	-1.5			-1.5	-1.5		-1.5	
Total Lost Time (s)	4.7	4.7		4.7	4.7			4.0	4.7		4.0	
Lead/Lag	Lag	Lag		Lead					Lead			
Lead-Lag Optimize?	Yes	Yes		Yes					Yes			
Vehicle Extension (s)	5.0	5.0		3.0	5.0		3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)	2.0	2.0		3.0	2.0		3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	22.0	22.0		0.0	22.0		0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	10.0	10.0		0.0	10.0		0.0	0.0	0.0	0.0	0.0	
Recall Mode	C-Min	C-Min		None	C-Min		None	None	None	None	None	
Act Effct Green (s)	40.7	40.7		63.2	63.2			18.1	39.9		18.1	
Actuated g/C Ratio	0.45	0.45		0.70	0.70			0.20	0.44		0.20	
v/c Ratio	0.04	0.34		0.61	0.51			0.66	0.49		0.08	
Control Delay	20.3	18.6		8.8	7.2			44.9	12.0		25.2	
Queue Delay	0.0	0.0		0.0	0.6			0.0	0.0		0.0	
Total Delay	20.3	18.6		8.8	7.8			44.9	12.0		25.2	
LOS	C	B		A	A			D	B		C	
Approach Delay		18.7			8.2			22.5			25.2	
Approach LOS		B			A			C			C	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 74 (82%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.66	
Intersection Signal Delay: 14.7	Intersection LOS: B
Intersection Capacity Utilization 66.8%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 9: E Main St/Driveway & Walton Ave



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	456	57	384	577	28	160	5	353	16	6	3
Future Volume (veh/h)	12	456	57	384	577	28	160	5	353	16	6	3
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	2024	2024	2024	1786	1786	1786	1875	1875	1890	1872	1872	1872
Adj Flow Rate, veh/h	12	475	59	400	601	29	167	5	368	17	6	3
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	1	1	1	0	0	4	0	0	0
Cap, veh/h	498	1583	196	683	1139	55	387	9	627	155	51	18
Arrive On Green	0.46	0.46	0.46	0.16	0.67	0.67	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	909	3443	426	1701	1690	82	1347	40	1602	389	221	80
Grp Volume(v), veh/h	12	264	270	400	0	630	172	0	368	26	0	0
Grp Sat Flow(s),veh/h/ln	909	1922	1946	1701	0	1771	1387	0	1602	689	0	0
Q Serve(g_s), s	0.7	7.7	7.8	9.8	0.0	16.2	0.0	0.0	16.3	0.2	0.0	0.0
Cycle Q Clear(g_c), s	0.7	7.7	7.8	9.8	0.0	16.2	10.7	0.0	16.3	10.9	0.0	0.0
Prop In Lane	1.00		0.22	1.00		0.05	0.97		1.00	0.65		0.12
Lane Grp Cap(c), veh/h	498	884	895	683	0	1194	396	0	627	224	0	0
V/C Ratio(X)	0.02	0.30	0.30	0.59	0.00	0.53	0.43	0.00	0.59	0.12	0.00	0.00
Avail Cap(c_a), veh/h	498	884	895	923	0	1194	436	0	669	257	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.45	0.00	0.45	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	13.3	15.2	15.2	8.4	0.0	7.4	30.9	0.0	21.6	27.7	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.9	0.9	0.4	0.0	0.8	0.7	0.0	1.2	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.3	6.1	6.3	5.0	0.0	7.7	6.1	0.0	10.3	0.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.4	16.1	16.1	8.8	0.0	8.2	31.6	0.0	22.8	27.9	0.0	0.0
LnGrp LOS	B	B	B	A	A	A	C	A	C	C	A	A
Approach Vol, veh/h		546			1030			540			26	
Approach Delay, s/veh		16.0			8.4			25.6			27.9	
Approach LOS		B			A			C			C	

Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	19.3	46.1		24.6		65.4		24.6				
Change Period (Y+Rc), s	6.2	6.2		5.5		6.2		5.5				
Max Green Setting (Gmax), s	25.8	24.8		21.5		56.8		21.5				
Max Q Clear Time (g_c+I1), s	11.8	9.8		12.9		18.2		18.3				
Green Ext Time (p_c), s	1.3	6.9		0.0		16.1		0.8				

Intersection Summary	
HCM 6th Ctrl Delay	14.9
HCM 6th LOS	B

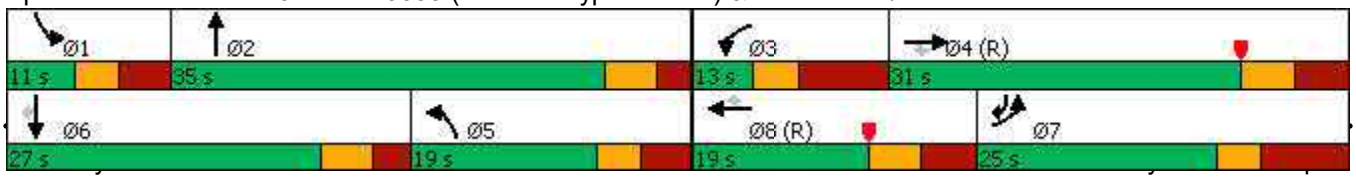
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	592	178	404	173	234	143	428	1499	90	110	1040	614
Future Volume (vph)	592	178	404	173	234	143	428	1499	90	110	1040	614
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		1%			2%			-1%			1%	
Storage Length (ft)	150		150	180		250	750		0	130		0
Storage Lanes	1		1	2		1	2		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	1.00	1.00	0.97	1.00	1.00	0.97	0.91	0.91	1.00	0.91	1.00
Ped Bike Factor	1.00		0.99	1.00		0.98		1.00		1.00		
Frt			0.850			0.850		0.991				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3159	1791	1522	3284	1782	1500	3301	4663	0	1701	4747	1507
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3145	1791	1502	3272	1782	1470	3301	4663	0	1700	4747	1507
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			416			303		11				152
Link Speed (mph)		35			25			45			45	
Link Distance (ft)		599			1652			760			1056	
Travel Time (s)		11.7			45.1			11.5			16.0	
Confl. Peds. (#/hr)	4		1	1		4			1	1		
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	0%	0%	0%	0%	1%	1%	5%	2%	0%	3%	1%
Adj. Flow (vph)	610	184	416	178	241	147	441	1545	93	113	1072	633
Shared Lane Traffic (%)												
Lane Group Flow (vph)	610	184	416	178	241	147	441	1638	0	113	1072	633
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.13	1.08	1.08	1.09	1.09	1.09	1.07	1.07	1.07	1.08	1.08	1.08
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	1	1	1	1	1	2		1	2	1
Detector Template							Left	Main25		Left	Main25	Right
Leading Detector (ft)	38	38	0	38	38	0	48	250		48	250	48
Trailing Detector (ft)	-2	-2	0	-2	-2	0	-2	0		-2	0	-2
Detector 1 Position(ft)	-2	-2	0	-2	-2	0	-2	0		-2	0	-2
Detector 1 Size(ft)	40	40	0	40	40	0	50	0		50	0	50
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)								244			244	
Detector 2 Size(ft)								6			6	
Detector 2 Type								Cl+Ex			Cl+Ex	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)								0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8						6
Detector Phase	7	4	4	3	8	8	5	2		1	6	7
Switch Phase												
Minimum Initial (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	12.0		3.0	12.0	3.0
Minimum Split (s)	12.0	10.3	10.3	12.0	10.3	10.3	10.0	18.0		10.0	18.0	12.0
Total Split (s)	25.0	31.0	31.0	13.0	19.0	19.0	19.0	35.0		11.0	27.0	25.0
Total Split (%)	27.8%	34.4%	34.4%	14.4%	21.1%	21.1%	21.1%	38.9%		12.2%	30.0%	27.8%
Maximum Green (s)	16.0	23.7	23.7	4.0	11.7	11.7	12.5	29.0		4.5	21.0	16.0
Yellow Time (s)	3.0	3.5	3.5	3.0	3.5	3.5	3.0	3.5		3.0	3.5	3.0
All-Red Time (s)	6.0	3.8	3.8	6.0	3.8	3.8	3.5	2.5		3.5	2.5	6.0
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5		-1.5	-1.5	-1.5
Total Lost Time (s)	7.5	5.8	5.8	7.5	5.8	5.8	5.0	4.5		5.0	4.5	7.5
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lag		Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	5.0	5.0		2.0	2.0	2.0
Minimum Gap (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.0		0.0	20.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	25.0		0.0	25.0	0.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Min		None	Min	None
Act Effct Green (s)	17.5	25.2	25.2	5.5	13.2	13.2	14.0	30.5		6.0	22.5	44.5
Actuated g/C Ratio	0.19	0.28	0.28	0.06	0.15	0.15	0.16	0.34		0.07	0.25	0.49
v/c Ratio	0.99	0.37	0.58	0.89	0.92	0.31	0.86	1.03		1.00	0.90	0.77
Control Delay	70.2	25.6	5.8	84.2	79.1	1.7	55.0	61.6		130.3	44.7	21.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	70.2	25.6	5.8	84.2	79.1	1.7	55.0	61.6		130.3	44.7	21.5
LOS	E	C	A	F	E	A	E	E		F	D	C
Approach Delay		41.3			60.6			60.2			42.0	
Approach LOS		D			E			E			D	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 52 (58%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.03
Intersection Signal Delay: 50.4 Intersection LOS: D
Intersection Capacity Utilization 87.5% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 10: Route 0039 (W Hersheypark Drive) & Walton Ave/Mae St



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	592	178	404	173	234	143	428	1499	90	110	1040	614
Future Volume (veh/h)	592	178	404	173	234	143	428	1499	90	110	1040	614
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1780	1794	1794	1778	1778	1764	1823	1766	1766	1794	1752	1780
Adj Flow Rate, veh/h	610	184	0	178	241	0	441	1545	93	113	1072	633
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	0	0	0	0	1	1	5	5	0	3	1
Cap, veh/h	3355	1950		201	261		543	1576	95	114	1196	1916
Arrive On Green	0.34	0.36	0.00	0.06	0.15	0.00	0.16	0.34	0.34	0.07	0.25	0.25
Sat Flow, veh/h	3289	1794	1521	3284	1778	1495	3368	4650	280	1709	4784	1507
Grp Volume(v), veh/h	610	184	0	178	241	0	441	1068	570	113	1072	633
Grp Sat Flow(s),veh/h/ln	1645	1794	1521	1642	1778	1495	1684	1607	1715	1709	1595	1507
Q Serve(g_s), s	0.0	0.0	0.0	4.8	12.0	0.0	11.4	29.6	29.6	5.9	19.5	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	4.8	12.0	0.0	11.4	29.6	29.6	5.9	19.5	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.16	1.00		1.00
Lane Grp Cap(c), veh/h	3355	1950		201	261		543	1089	581	114	1196	1916
V/C Ratio(X)	0.18	0.09		0.89	0.92		0.81	0.98	0.98	0.99	0.90	0.33
Avail Cap(c_a), veh/h	3355	1950		201	261		543	1089	581	114	1196	1916
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.92	0.92	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	41.9	37.9	0.0	36.4	29.5	29.5	42.0	32.6	0.0
Incr Delay (d2), s/veh	0.0	0.1	0.0	33.5	39.2	0.0	10.2	22.6	32.5	81.5	8.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	0.1	0.0	5.2	12.7	0.0	8.9	19.9	22.9	8.6	12.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.1	0.0	75.5	77.1	0.0	46.7	52.1	62.0	123.5	41.5	0.0
LnGrp LOS	A	A		E	E		D	D	E	F	D	A
Approach Vol, veh/h		794	A		419	A		2079			1818	
Approach Delay, s/veh		0.0			76.4			53.7			32.1	
Approach LOS		A			E			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	35.5	13.0	107.5	19.5	27.0	101.5	19.0
Change Period (Y+Rc), s	6.5	* 6.5	9.0	* 9	6.5	6.0	* 9	7.3
Max Green Setting (Gmax), s	4.5	* 29	4.0	* 24	12.5	21.0	* 16	11.7
Max Q Clear Time (g_c+I1), s	7.9	31.6	6.8	2.0	13.4	21.5	2.0	14.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.3	0.0	0.0	1.4	0.0

Intersection Summary	
HCM 6th Ctrl Delay	39.5
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

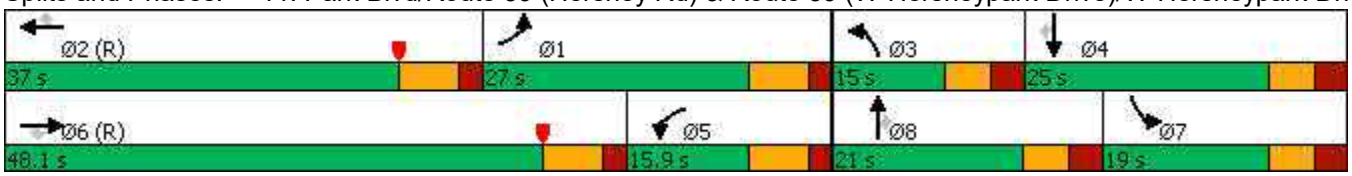
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	499	1270	211	175	1131	489	232	261	183	290	238	363
Future Volume (vph)	499	1270	211	175	1131	489	232	261	183	290	238	363
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Grade (%)		3%			-3%			1%			4%	
Storage Length (ft)	350		500	575		475	0		350	400		450
Storage Lanes	2		1	2		1	2		1	2		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.91	0.88	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3204	4654	2550	3207	4796	1522	3301	2269	1522	3156	3352	1428
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3204	4654	2550	3207	4796	1522	3301	2269	1522	3156	3352	1428
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			220			435			238			296
Link Speed (mph)		45			45			35			35	
Link Distance (ft)		1096			1663			1072			729	
Travel Time (s)		16.6			25.2			20.9			14.2	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	4%	4%	5%	4%	2%	0%	50%	0%	3%	0%	5%
Adj. Flow (vph)	520	1323	220	182	1178	509	242	272	191	302	248	378
Shared Lane Traffic (%)												
Lane Group Flow (vph)	520	1323	220	182	1178	509	242	272	191	302	248	378
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.05	1.05	1.05	1.08	1.08	1.08	1.10	1.10	1.10
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	1	1	1	1	1
Detector Template	Left	Main30	Right	Left	Main30	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	48	300	48	48	300	48	48	48	48	48	48	48
Trailing Detector (ft)	-2	0	-2	-2	0	-2	-2	-2	-2	-2	-2	-2
Detector 1 Position(ft)	-2	0	-2	-2	0	-2	-2	-2	-2	-2	-2	-2
Detector 1 Size(ft)	50	0	50	50	0	50	50	50	50	50	50	50
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		294			294							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases			6			2			8			4
Detector Phase	1	6	6	5	2	2	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	3.0	12.0	12.0	3.0	12.0	12.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Split (s)	9.7	18.5	18.5	9.7	18.5	18.5	10.0	10.0	10.0	9.2	10.0	10.0
Total Split (s)	27.0	48.1	48.1	15.9	37.0	37.0	15.0	21.0	21.0	19.0	25.0	25.0
Total Split (%)	26.0%	46.3%	46.3%	15.3%	35.6%	35.6%	14.4%	20.2%	20.2%	18.3%	24.0%	24.0%
Maximum Green (s)	20.5	41.6	41.6	9.4	30.5	30.5	8.8	14.8	14.8	12.8	18.8	18.8
Yellow Time (s)	4.7	4.7	4.7	4.7	4.7	4.7	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.8	1.8	1.8	1.8	1.8	1.8	2.7	2.7	2.7	2.7	2.7	2.7
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.7	4.7	4.7	4.7	4.7	4.7
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0	6.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.5	3.5	3.0	3.5	3.5	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	30.0	30.0	0.0	30.0	30.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	15.0	15.0	0.0	15.0	15.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	None
Act Effct Green (s)	21.7	44.2	44.2	10.6	33.1	33.1	10.3	15.9	15.9	13.9	19.5	19.5
Actuated g/C Ratio	0.21	0.42	0.42	0.10	0.32	0.32	0.10	0.15	0.15	0.13	0.19	0.19
v/c Ratio	0.78	0.67	0.18	0.55	0.77	0.65	0.74	0.79	0.44	0.72	0.39	0.75
Control Delay	47.9	26.4	3.0	57.7	24.1	10.3	60.3	59.5	5.5	53.3	38.9	19.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.9	26.4	3.0	57.7	24.1	10.3	60.3	59.5	5.5	53.3	38.9	19.6
LOS	D	C	A	E	C	B	E	E	A	D	D	B
Approach Delay		29.3			23.6			45.2			35.7	
Approach LOS		C			C			D			D	

Intersection Summary	
Area Type:	Other
Cycle Length: 104	
Actuated Cycle Length: 104	
Offset: 8 (8%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay: 30.5	Intersection LOS: C
Intersection Capacity Utilization 70.6%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 11: Park Blvd/Route 39 (Hershey Rd) & Route 39 (W Hersheypark Drive)/W Hersheypark Drive



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	499	1270	211	175	1131	489	232	261	183	290	238	363
Future Volume (veh/h)	499	1270	211	175	1131	489	232	261	183	290	238	363
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1722	1694	1694	1841	1855	1883	1794	1092	1794	1669	1711	1641
Adj Flow Rate, veh/h	520	1323	0	182	1178	0	242	272	0	302	248	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	4	4	5	4	2	0	50	0	3	0	5
Cap, veh/h	698	1916		384	1558		328	325		399	608	
Arrive On Green	0.22	0.41	0.00	0.11	0.31	0.00	0.10	0.16	0.00	0.13	0.19	0.00
Sat Flow, veh/h	3181	4624	2526	3401	5064	1596	3315	2076	1521	3083	3250	1390
Grp Volume(v), veh/h	520	1323	0	182	1178	0	242	272	0	302	248	0
Grp Sat Flow(s),veh/h/ln	1591	1541	1263	1700	1688	1596	1658	1038	1521	1541	1625	1390
Q Serve(g_s), s	15.9	24.4	0.0	5.2	21.8	0.0	7.4	13.2	0.0	9.8	7.0	0.0
Cycle Q Clear(g_c), s	15.9	24.4	0.0	5.2	21.8	0.0	7.4	13.2	0.0	9.8	7.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	698	1916		384	1558		328	325		399	608	
V/C Ratio(X)	0.74	0.69		0.47	0.76		0.74	0.84		0.76	0.41	
Avail Cap(c_a), veh/h	698	1916		384	1558		328	325		424	634	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	37.9	25.0	0.0	43.2	32.5	0.0	45.5	42.6	0.0	43.7	37.2	0.0
Incr Delay (d2), s/veh	4.3	2.1	0.0	0.9	3.5	0.0	8.4	17.0	0.0	7.2	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	10.4	13.4	0.0	3.9	13.8	0.0	6.1	7.4	0.0	7.4	5.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.2	27.0	0.0	44.2	35.9	0.0	54.0	59.6	0.0	50.9	37.6	0.0
LnGrp LOS	D	C		D	D		D	E		D	D	
Approach Vol, veh/h		1843	A		1360	A		514	A		550	A
Approach Delay, s/veh		31.3			37.0			56.9			44.9	
Approach LOS		C			D			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	27.8	37.0	15.0	24.2	16.7	48.1	18.2	21.0
Change Period (Y+Rc), s	* 6.5	* 6.5	* 6.2	* 6.2	* 6.5	* 6.5	* 6.2	* 6.2
Max Green Setting (Gmax), s	* 31	* 31	* 8.8	* 19	* 9.4	* 42	* 13	* 15
Max Q Clear Time (g_c+I1), s	17.9	23.8	9.4	9.0	7.2	26.4	11.8	15.2
Green Ext Time (p_c), s	0.7	6.3	0.0	0.7	0.1	14.3	0.1	0.0

Intersection Summary	
HCM 6th Ctrl Delay	38.0
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

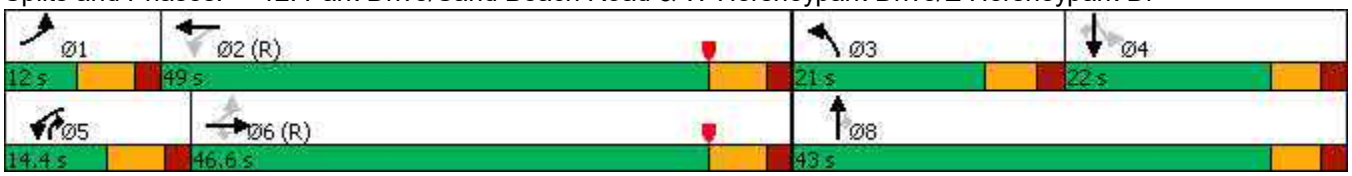
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	1688	295	183	1012	29	443	139	246	66	166	92
Future Volume (vph)	38	1688	295	183	1012	29	443	139	246	66	166	92
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	11	11	11	12	12	12
Grade (%)		2%			-2%			3%			-3%	
Storage Length (ft)	75		150	190		0	125		185	0		150
Storage Lanes	1		1	1		0	2		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	0.91	0.97	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.996				0.850			0.850
Flt Protected	0.950			0.950			0.950				0.986	
Satd. Flow (prot)	1693	4769	1485	1661	4758	0	3097	1697	1401	0	1789	1553
Flt Permitted	0.211			0.087			0.950				0.853	
Satd. Flow (perm)	376	4769	1485	152	4758	0	3097	1697	1401	0	1547	1553
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			193		5				37			169
Link Speed (mph)		45			45			35			35	
Link Distance (ft)		789			2028			659			1125	
Travel Time (s)		12.0			30.7			12.8			21.9	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	2%	2%	4%	4%	0%	2%	1%	4%	0%	1%	0%
Adj. Flow (vph)	40	1758	307	191	1054	30	461	145	256	69	173	96
Shared Lane Traffic (%)												
Lane Group Flow (vph)	40	1758	307	191	1084	0	461	145	256	0	242	96
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			22			22	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.06	1.06	1.06	1.14	1.14	1.14	1.05	1.05	1.05
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	1	1	1	1	1
Detector Template		Main30	Right		Main30					Left		Right
Leading Detector (ft)	35	300	48	35	300		30	30	30	48	35	48
Trailing Detector (ft)	-5	0	-2	-5	0		-10	-10	-10	-2	-5	-2
Detector 1 Position(ft)	-5	0	-2	-5	0		-10	-10	-10	-2	-5	-2
Detector 1 Size(ft)	40	0	50	40	0		40	40	40	50	40	50
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		294			294							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Prot	NA	pm+ov	Perm	NA	Perm
Protected Phases	1	6		5	2		3	8	5		4	
Permitted Phases	6		6	2					8	4		4
Detector Phase	1	6	6	5	2		3	8	5	4	4	4
Switch Phase												
Minimum Initial (s)	3.0	10.0	10.0	3.0	10.0		3.0	3.0	3.0	3.0	3.0	3.0
Minimum Split (s)	12.0	16.5	16.5	12.5	16.5		13.0	10.0	12.5	13.0	13.0	13.0
Total Split (s)	12.0	46.6	46.6	14.4	49.0		21.0	43.0	14.4	22.0	22.0	22.0
Total Split (%)	11.5%	44.8%	44.8%	13.8%	47.1%		20.2%	41.3%	13.8%	21.2%	21.2%	21.2%
Maximum Green (s)	5.5	40.1	40.1	7.9	42.5		14.9	36.9	7.9	15.9	15.9	15.9
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5		3.9	3.9	4.5	3.9	3.9	3.9
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.2	2.2	2.0	2.2	2.2	2.2
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	-1.5		-1.5	-1.5	-1.5		-1.5	-1.5
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		4.6	4.6	5.0		4.6	4.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead		Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes		Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0		3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	15.0	15.0	0.0	15.0		0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	30.0	30.0	0.0	30.0		0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	C-Max	C-Max	None	C-Max		None	None	None	None	None	None
Act Effct Green (s)	48.6	41.6	41.6	54.4	48.8		16.4	38.4	52.4		17.4	17.4
Actuated g/C Ratio	0.47	0.40	0.40	0.52	0.47		0.16	0.37	0.50		0.17	0.17
v/c Ratio	0.15	0.92	0.43	0.88	0.49		0.94	0.23	0.35		0.94	0.24
Control Delay	7.1	22.0	2.5	64.9	16.8		73.3	23.9	14.8		86.3	1.5
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Total Delay	7.1	22.0	2.5	64.9	16.8		73.3	23.9	14.8		86.3	1.5
LOS	A	C	A	E	B		E	C	B		F	A
Approach Delay		18.8			24.0			47.6			62.2	
Approach LOS		B			C			D			E	

Intersection Summary

Area Type: Other
Cycle Length: 104
Actuated Cycle Length: 104
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow, Master Intersection
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.94
Intersection Signal Delay: 28.9 Intersection LOS: C
Intersection Capacity Utilization 87.5% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 12: Park Drive/Sand Beach Road & W Hersheypark Drive/E Hersheypark Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	38	1688	295	183	1012	29	443	139	246	66	166	92
Future Volume (veh/h)	38	1688	295	183	1012	29	443	139	246	66	166	92
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1778	1750	1750	1818	1818	1818	1722	1736	1694	1898	1898	1912
Adj Flow Rate, veh/h	40	1758	307	191	1054	30	461	145	256	69	173	96
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	2	2	4	4	4	2	1	4	1	1	0
Cap, veh/h	295	1911	593	236	2232	64	502	641	660	111	198	271
Arrive On Green	0.04	0.40	0.40	0.09	0.45	0.45	0.16	0.37	0.37	0.17	0.17	0.17
Sat Flow, veh/h	1693	4776	1483	1731	4959	141	3181	1736	1435	396	1184	1620
Grp Volume(v), veh/h	40	1758	307	191	703	381	461	145	256	242	0	96
Grp Sat Flow(s),veh/h/ln	1693	1592	1483	1731	1654	1792	1591	1736	1435	1580	0	1620
Q Serve(g_s), s	1.4	36.3	16.3	6.3	15.4	15.4	14.8	6.0	12.2	13.9	0.0	5.5
Cycle Q Clear(g_c), s	1.4	36.3	16.3	6.3	15.4	15.4	14.8	6.0	12.2	15.6	0.0	5.5
Prop In Lane	1.00		1.00	1.00		0.08	1.00		1.00	0.29		1.00
Lane Grp Cap(c), veh/h	295	1911	593	236	1489	807	502	641	660	309	0	271
V/C Ratio(X)	0.14	0.92	0.52	0.81	0.47	0.47	0.92	0.23	0.39	0.78	0.00	0.35
Avail Cap(c_a), veh/h	341	1911	593	236	1489	807	502	641	660	309	0	271
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.2	29.6	23.6	23.4	20.0	20.0	43.1	22.6	18.5	42.4	0.0	38.3
Incr Delay (d2), s/veh	0.2	8.7	3.2	18.6	1.1	2.0	22.1	0.2	0.4	12.4	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.0	20.5	10.1	6.3	9.6	10.6	11.7	4.4	7.1	11.4	0.0	4.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.4	38.4	26.8	41.9	21.0	21.9	65.3	22.8	18.9	54.8	0.0	39.1
LnGrp LOS	B	D	C	D	C	C	E	C	B	D	A	D
Approach Vol, veh/h		2105			1275			862			338	
Approach Delay, s/veh		36.3			24.4			44.3			50.3	
Approach LOS		D			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	9.2	51.8	21.0	22.0	14.4	46.6		43.0
Change Period (Y+Rc), s	6.5	6.5	* 6.1	* 6.1	6.5	6.5		* 6.1
Max Green Setting (Gmax), s	5.5	42.5	* 15	* 16	7.9	40.1		* 37
Max Q Clear Time (g_c+I1), s	3.4	17.9	17.3	17.6	8.8	38.8		14.7
Green Ext Time (p_c), s	0.0	20.8	0.0	0.0	0.0	1.3		1.4

Intersection Summary	
HCM 6th Ctrl Delay	35.5
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	798	1133	152	3	632	6	102	202	3	9	103	409
Future Volume (vph)	798	1133	152	3	632	6	102	202	3	9	103	409
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	11	11	11	11	11	11
Grade (%)		2%			3%			6%			-6%	
Storage Length (ft)	265		0	150		0	250		0	150		230
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.982			0.999			0.998				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3220	3267	0	1684	3206	0	1603	1684	0	1703	1774	1493
Flt Permitted	0.950			0.950			0.449			0.623		
Satd. Flow (perm)	3220	3267	0	1684	3206	0	758	1684	0	1117	1774	1493
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		26			1			1				154
Link Speed (mph)		45			45			35			35	
Link Distance (ft)		2621			1081			1569			722	
Travel Time (s)		39.7			16.4			30.6			14.1	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	2%	0%	0%	5%	0%	0%	0%	0%	0%	1%	2%
Adj. Flow (vph)	840	1193	160	3	665	6	107	213	3	9	108	431
Shared Lane Traffic (%)												
Lane Group Flow (vph)	840	1353	0	3	671	0	107	216	0	9	108	431
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.16	1.16	1.16	1.08	1.08	1.08
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	1		1	1	1
Detector Template	Left	Main30		Left	Main30		Left	Thru		Left	Thru	Right
Leading Detector (ft)	48	300		48	300		48	48		48	48	48
Trailing Detector (ft)	-2	0		-2	0		-2	-2		-2	-2	-2
Detector 1 Position(ft)	-2	0		-2	0		-2	-2		-2	-2	-2
Detector 1 Size(ft)	50	0		50	0		50	50		50	50	50
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		294			294							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA		Prot	NA		pm+pt	NA		Perm	NA	pm+ov
Protected Phases	5	2		1	6		3	8			4	5
Permitted Phases							8			4		4
Detector Phase	5	2		1	6		3	8		4	4	5
Switch Phase												
Minimum Initial (s)	3.0	10.0		3.0	10.0		3.0	3.0		3.0	3.0	3.0
Minimum Split (s)	9.2	16.2		8.5	16.2		9.7	10.0		10.0	10.0	9.2
Total Split (s)	40.0	68.4		8.6	37.0		11.0	27.0		16.0	16.0	40.0
Total Split (%)	38.5%	65.8%		8.3%	35.6%		10.6%	26.0%		15.4%	15.4%	38.5%
Maximum Green (s)	33.8	62.2		3.1	30.8		5.0	20.1		9.1	9.1	33.8
Yellow Time (s)	4.2	4.2		3.5	4.2		3.5	4.2		4.2	4.2	4.2
All-Red Time (s)	2.0	2.0		2.0	2.0		2.5	2.7		2.7	2.7	2.0
Lost Time Adjust (s)	-1.5	-1.5		-1.5	-1.5		-1.5	-1.5		-1.5	-1.5	-1.5
Total Lost Time (s)	4.7	4.7		4.0	4.7		4.5	5.4		5.4	5.4	4.7
Lead/Lag	Lag	Lag		Lead	Lead		Lead			Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes			Yes	Yes	Yes
Vehicle Extension (s)	3.0	5.7		3.0	5.7		3.0	3.0		3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Time Before Reduce (s)	0.0	30.0		0.0	30.0		0.0	0.0		0.0	0.0	0.0
Time To Reduce (s)	0.0	15.0		0.0	15.0		0.0	0.0		0.0	0.0	0.0
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	None
Act Effct Green (s)	35.3	70.9		5.0	32.7		22.1	21.2		10.2	10.2	46.2
Actuated g/C Ratio	0.34	0.68		0.05	0.31		0.21	0.20		0.10	0.10	0.44
v/c Ratio	0.77	0.60		0.04	0.67		0.50	0.63		0.08	0.62	0.58
Control Delay	15.6	4.5		67.7	27.9		43.5	46.5		44.3	61.1	11.4
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	15.6	4.5		67.7	27.9		43.5	46.5		44.3	61.1	11.4
LOS	B	A		E	C		D	D		D	E	B
Approach Delay		8.7			28.1			45.5			21.7	
Approach LOS		A			C			D			C	

Intersection Summary

Area Type: Other
Cycle Length: 104
Actuated Cycle Length: 104
Offset: 36 (35%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.77
Intersection Signal Delay: 17.3 Intersection LOS: B
Intersection Capacity Utilization 67.6% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 13: Route 743 (Laudermilch Rd) & E Hersheypark Dr

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	798	1133	152	3	632	6	102	202	3	9	103	409
Future Volume (veh/h)	798	1133	152	3	632	6	102	202	3	9	103	409
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1750	1750	1750	1750	1680	1680	1599	1599	1599	2024	2009	1995
Adj Flow Rate, veh/h	840	1193	0	3	665	0	107	213	3	9	108	431
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	0	5	5	0	0	0	0	1	2
Cap, veh/h	1125	2156		28	991		197	313	4	174	188	746
Arrive On Green	0.35	0.65	0.00	0.02	0.31	0.00	0.06	0.20	0.20	0.09	0.09	0.09
Sat Flow, veh/h	3233	3412	0	1666	3275	0	1523	1573	22	1331	2009	1691
Grp Volume(v), veh/h	840	1193	0	3	665	0	107	0	216	9	108	431
Grp Sat Flow(s),veh/h/ln	1616	1662	0	1666	1596	0	1523	0	1595	1331	2009	1691
Q Serve(g_s), s	23.8	20.5	0.0	0.2	18.9	0.0	6.4	0.0	13.0	0.7	5.4	3.3
Cycle Q Clear(g_c), s	23.8	20.5	0.0	0.2	18.9	0.0	6.4	0.0	13.0	2.2	5.4	3.3
Prop In Lane	1.00		0.00	1.00		0.00	1.00		0.01	1.00		1.00
Lane Grp Cap(c), veh/h	1125	2156		28	991		197	0	318	174	188	746
V/C Ratio(X)	0.75	0.55		0.11	0.67		0.54	0.00	0.68	0.05	0.58	0.58
Avail Cap(c_a), veh/h	1125	2156		74	991		197	0	331	185	205	761
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.9	10.0	0.0	50.4	31.2	0.0	38.0	0.0	38.6	44.5	45.2	8.7
Incr Delay (d2), s/veh	2.8	1.0	0.0	1.7	3.6	0.0	3.0	0.0	5.3	0.1	3.3	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	14.1	10.6	0.0	0.2	11.8	0.0	4.5	0.0	9.3	0.4	5.1	7.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.6	11.1	0.0	52.0	34.8	0.0	41.0	0.0	43.8	44.6	48.5	9.8
LnGrp LOS	C	B		D	C		D	A	D	D	D	A
Approach Vol, veh/h		2033	A		668	A		323			548	
Approach Delay, s/veh		20.0			34.9			42.9			18.0	
Approach LOS		B			C			D			B	

Timer - Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	5.7	72.1	11.0	15.1	40.9	37.0		26.1
Change Period (Y+Rc), s	5.5	6.2	6.0	* 6.9	6.2	6.2		* 6.9
Max Green Setting (Gmax), s	3.1	62.2	5.0	* 9.1	33.8	30.8		* 20
Max Q Clear Time (g_c+I1), s	2.7	23.0	8.9	7.9	26.3	21.4		15.0
Green Ext Time (p_c), s	0.0	33.2	0.0	0.4	2.5	6.8		0.3

Intersection Summary	
HCM 6th Ctrl Delay	24.5
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

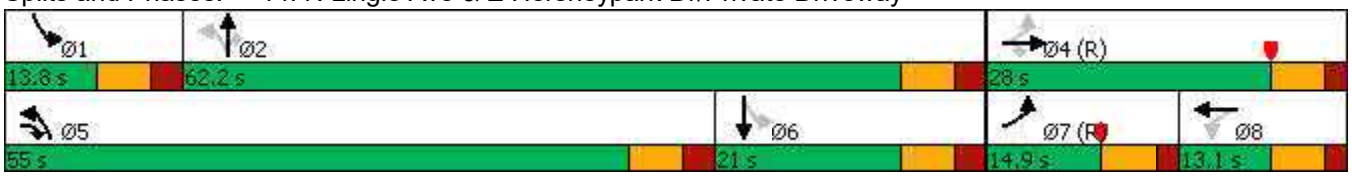
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	61	18	966	22	26	18	543	87	13	11	177	13
Future Volume (vph)	61	18	966	22	26	18	543	87	13	11	177	13
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	16	16	12	12	12	12	12	12
Grade (%)		1%			-3%			-6%			1%	
Storage Length (ft)	200		0	75		0	175		100	125		0
Storage Lanes	1		1	1		0	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.940				0.850		0.990	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1668	1060	1522	1653	1470	0	1727	1520	1126	851	1741	0
Flt Permitted	0.442			0.746			0.392			0.699		
Satd. Flow (perm)	776	1060	1522	1298	1470	0	713	1520	1126	626	1741	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			230		18				167		3	
Link Speed (mph)		45			25			35			35	
Link Distance (ft)		1844			617			1844			713	
Travel Time (s)		27.9			16.8			35.9			13.9	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	2%	69%	0%	5%	28%	39%	2%	22%	40%	100%	2%	0%
Adj. Flow (vph)	62	18	986	22	27	18	554	89	13	11	181	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	62	18	986	22	45	0	554	89	13	11	194	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.08	1.08	1.08	1.05	0.89	0.89	1.03	1.03	1.03	1.08	1.08	1.08
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	1	1	1		1	2	1	1	2	
Detector Template	Left		Right	Left			Left	Main20	Right	Left	Main20	
Leading Detector (ft)	48	48	48	48	48		48	200	48	48	200	
Trailing Detector (ft)	-2	-2	-2	-2	-2		-2	0	-2	-2	0	
Detector 1 Position(ft)	-2	-2	-2	-2	-2		-2	0	-2	-2	0	
Detector 1 Size(ft)	50	50	50	50	50		50	0	50	50	0	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)								194			194	
Detector 2 Size(ft)								6			6	
Detector 2 Type								Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)								0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	pm+ov	Perm	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	7	4	5		8		5	2		1	6	
Permitted Phases	4		4	8			2		2	6		
Detector Phase	7	4	5	8	8		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0	3.0	4.0	4.0		3.0	10.0	10.0	3.0	10.0	
Minimum Split (s)	13.1	13.1	13.7	13.1	13.1		13.7	16.7	16.7	13.7	16.7	
Total Split (s)	14.9	28.0	55.0	13.1	13.1		55.0	62.2	62.2	13.8	21.0	
Total Split (%)	14.3%	26.9%	52.9%	12.6%	12.6%		52.9%	59.8%	59.8%	13.3%	20.2%	
Maximum Green (s)	8.8	21.9	48.3	7.0	7.0		48.3	55.5	55.5	7.1	14.3	
Yellow Time (s)	4.3	4.3	4.2	4.3	4.3		4.2	4.2	4.2	4.2	4.2	
All-Red Time (s)	1.8	1.8	2.5	1.8	1.8		2.5	2.5	2.5	2.5	2.5	
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	-1.5		-1.5	-1.5	-1.5	-1.5	-1.5	
Total Lost Time (s)	4.6	4.6	5.2	4.6	4.6		5.2	5.2	5.2	5.2	5.2	
Lead/Lag	Lead		Lead	Lag	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes			Yes	Yes			Yes	Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	5.6	5.6	3.0	5.6	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	24.0	24.0	0.0	24.0	
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	12.0	12.0	0.0	12.0	
Recall Mode	C-Max	C-Max	None	None	None		None	Min	Min	None	Min	
Act Effct Green (s)	26.6	26.6	78.0	8.2	8.2		67.6	64.9	64.9	23.3	15.6	
Actuated g/C Ratio	0.26	0.26	0.75	0.08	0.08		0.65	0.62	0.62	0.22	0.15	
v/c Ratio	0.18	0.07	0.82	0.22	0.34		0.60	0.09	0.02	0.07	0.73	
Control Delay	21.4	20.7	28.6	50.0	38.3		12.2	8.3	0.1	17.4	59.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	21.4	20.7	28.6	50.0	38.3		12.2	8.3	0.1	17.4	59.0	
LOS	C	C	C	D	D		B	A	A	B	E	
Approach Delay		28.0			42.1			11.4			56.8	
Approach LOS		C			D			B			E	

Intersection Summary	
Area Type:	Other
Cycle Length: 104	
Actuated Cycle Length: 104	
Offset: 84.8 (82%), Referenced to phase 4:EBTL and 7:EBL, Start of Yellow	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.82	
Intersection Signal Delay: 26.0	Intersection LOS: C
Intersection Capacity Utilization 89.6%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 14: N Lingle Ave & E Hersheypark Dr/Private Driveway



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	61	18	966	22	26	18	543	87	13	11	177	13
Future Volume (veh/h)	61	18	966	22	26	18	543	87	13	11	177	13
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1766	826	1794	1841	1574	1574	1995	1711	1455	390	1766	1766
Adj Flow Rate, veh/h	62	18	986	22	27	18	554	89	13	11	181	13
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	69	0	5	28	28	2	22	40	100	2	2
Cap, veh/h	639	352	1083	143	112	75	668	688	496	120	233	17
Arrive On Green	0.25	0.43	0.43	0.13	0.13	0.13	0.29	0.40	0.40	0.03	0.14	0.14
Sat Flow, veh/h	1682	826	1521	583	881	587	1900	1711	1233	372	1628	117
Grp Volume(v), veh/h	62	18	986	22	0	45	554	89	13	11	0	194
Grp Sat Flow(s),veh/h/ln	1682	826	1521	583	0	1468	1900	1711	1233	372	0	1745
Q Serve(g_s), s	2.4	1.3	44.3	3.6	0.0	2.9	23.4	3.4	0.7	2.6	0.0	11.1
Cycle Q Clear(g_c), s	2.4	1.3	44.3	3.6	0.0	2.9	23.4	3.4	0.7	2.6	0.0	11.1
Prop In Lane	1.00		1.00	1.00		0.40	1.00		1.00	1.00		0.07
Lane Grp Cap(c), veh/h	639	352	1083	143	0	187	668	688	496	120	0	250
V/C Ratio(X)	0.10	0.05	0.91	0.15	0.00	0.24	0.83	0.13	0.03	0.09	0.00	0.78
Avail Cap(c_a), veh/h	639	352	1083	143	0	187	1034	938	676	141	0	265
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.2	17.5	12.2	41.2	0.0	40.9	23.1	19.6	18.8	36.8	0.0	42.9
Incr Delay (d2), s/veh	0.1	0.3	12.8	0.5	0.0	0.7	3.4	0.2	0.1	0.3	0.0	17.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.6	0.5	26.9	1.0	0.0	1.9	15.8	2.5	0.4	0.4	0.0	9.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.2	17.8	25.0	41.7	0.0	41.5	26.5	19.9	18.9	37.1	0.0	60.0
LnGrp LOS	B	B	C	D	A	D	C	B	B	D	A	E
Approach Vol, veh/h		1066			67			656			205	
Approach Delay, s/veh		24.6			41.6			25.5			58.7	
Approach LOS		C			D			C			E	

Timer - Assigned Phs	1	2		4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.1	47.0		48.9	35.0	20.1	31.1	17.8
Change Period (Y+Rc), s	6.7	6.7		* 6.1	6.7	6.7	* 6.1	* 6.1
Max Green Setting (Gmax), s	7.1	55.5		* 22	48.3	14.3	* 8.8	* 7
Max Q Clear Time (g_c+I1), s	5.1	5.9		46.8	25.9	13.1	4.9	6.1
Green Ext Time (p_c), s	0.0	1.9		0.0	2.4	0.3	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	28.9
HCM 6th LOS	C

Notes

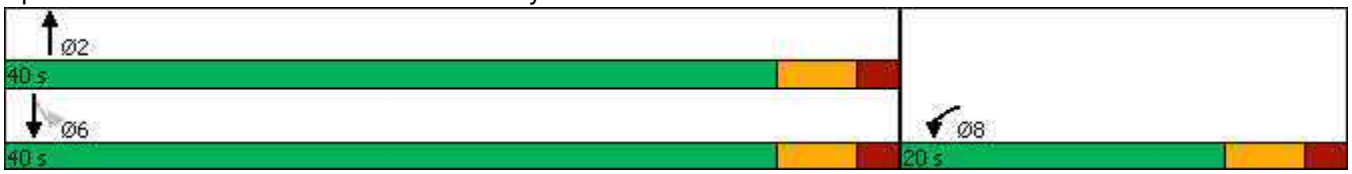
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	25	66	682	21	39	670
Future Volume (vph)	25	66	682	21	39	670
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	15	15	14	14	14	14
Grade (%)	1%		2%			-1%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.902		0.996			
Flt Protected	0.986					0.997
Satd. Flow (prot)	1733	0	1837	0	0	1854
Flt Permitted	0.986					0.946
Satd. Flow (perm)	1733	0	1837	0	0	1759
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	68		5			
Link Speed (mph)	25		35			35
Link Distance (ft)	2491		680			1197
Travel Time (s)	67.9		13.2			23.3
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	4%	0%	3%	5%	0%	4%
Adj. Flow (vph)	26	68	703	22	40	691
Shared Lane Traffic (%)						
Lane Group Flow (vph)	94	0	725	0	0	731
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	15		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	0.95	0.95	1.00	1.00	0.98	0.98
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1		2		1	2
Detector Template	Left		Thru		Left	Thru
Leading Detector (ft)	20		100		20	100
Trailing Detector (ft)	0		0		0	0
Detector 1 Position(ft)	0		0		0	0
Detector 1 Size(ft)	20		6		20	6
Detector 1 Type	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0		0.0	0.0
Detector 1 Queue (s)	0.0		0.0		0.0	0.0
Detector 1 Delay (s)	0.0		0.0		0.0	0.0
Detector 2 Position(ft)			94			94
Detector 2 Size(ft)			6			6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Detector Phase	8		2		6	6
Switch Phase						
Minimum Initial (s)	3.0		3.0		3.0	3.0
Minimum Split (s)	20.0		40.0		40.0	40.0
Total Split (s)	20.0		40.0		40.0	40.0
Total Split (%)	33.3%		66.7%		66.7%	66.7%
Maximum Green (s)	14.5		34.5		34.5	34.5
Yellow Time (s)	3.5		3.5		3.5	3.5
All-Red Time (s)	2.0		2.0		2.0	2.0
Lost Time Adjust (s)	-1.5		-1.5			-1.5
Total Lost Time (s)	4.0		4.0			4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Recall Mode	None		Min		Min	Min
Act Effct Green (s)	8.7		36.9			36.9
Actuated g/C Ratio	0.18		0.75			0.75
v/c Ratio	0.26		0.52			0.55
Control Delay	11.2		5.8			6.3
Queue Delay	0.0		0.0			0.0
Total Delay	11.2		5.8			6.3
LOS	B		A			A
Approach Delay	11.2		5.8			6.3
Approach LOS	B		A			A

Intersection Summary	
Area Type: Other	
Cycle Length: 60	
Actuated Cycle Length: 49.1	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.55	
Intersection Signal Delay: 6.4	Intersection LOS: A
Intersection Capacity Utilization 83.3%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 15: Park Ave & E. Derry Rd



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	25	66	682	21	39	670
Future Volume (veh/h)	25	66	682	21	39	670
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1866	1866	1805	1805	1852	1852
Adj Flow Rate, veh/h	26	68	703	22	40	691
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	3	3	4	4
Cap, veh/h	55	143	1032	32	164	1028
Arrive On Green	0.12	0.12	0.59	0.59	0.59	0.59
Sat Flow, veh/h	448	1173	1741	54	49	1733
Grp Volume(v), veh/h	95	0	0	725	731	0
Grp Sat Flow(s),veh/h/ln	1638	0	0	1795	1782	0
Q Serve(g_s), s	1.5	0.0	0.0	7.7	0.0	0.0
Cycle Q Clear(g_c), s	1.5	0.0	0.0	7.7	7.5	0.0
Prop In Lane	0.27	0.72		0.03	0.05	
Lane Grp Cap(c), veh/h	200	0	0	1065	1192	0
V/C Ratio(X)	0.48	0.00	0.00	0.68	0.61	0.00
Avail Cap(c_a), veh/h	934	0	0	2302	2375	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	11.5	0.0	0.0	3.9	3.8	0.0
Incr Delay (d2), s/veh	1.7	0.0	0.0	0.8	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.9	0.0	0.0	0.6	0.5	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	13.2	0.0	0.0	4.7	4.4	0.0
LnGrp LOS	B	A	A	A	A	A
Approach Vol, veh/h	95		725			731
Approach Delay, s/veh	13.2		4.7			4.4
Approach LOS	B		A			A

Timer - Assigned Phs	2			6	8
Phs Duration (G+Y+Rc), s	20.7			20.7	7.4
Change Period (Y+Rc), s	5.5			5.5	5.5
Max Green Setting (Gmax), s	34.5			34.5	14.5
Max Q Clear Time (g_c+I1), s	9.7			9.5	3.5
Green Ext Time (p_c), s	5.3			5.7	0.2

Intersection Summary	
HCM 6th Ctrl Delay	5.0
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	311	0	0	0	210	10
Future Volume (vph)	311	0	0	0	210	10
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	13	13	12	12	12	12
Grade (%)	1%			0%	11%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.994	
Flt Protected					0.954	
Satd. Flow (prot)	1814	0	0	1800	1591	0
Flt Permitted					0.954	
Satd. Flow (perm)	1814	0	0	1800	1591	0
Link Speed (mph)	30			25	25	
Link Distance (ft)	1120			1174	602	
Travel Time (s)	25.5			32.0	16.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	0%	0%	0%	1%	10%
Adj. Flow (vph)	338	0	0	0	228	11
Shared Lane Traffic (%)						
Lane Group Flow (vph)	338	0	0	0	239	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.03	1.03	1.07	1.07	1.15	1.15
Turning Speed (mph)		9	15		15	9
Sign Control	Stop			Stop	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 36.9%	ICU Level of Service A
Analysis Period (min) 15	

Intersection	
Intersection Delay, s/veh	10.7
Intersection LOS	B

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	311	0	0	0	210	10
Future Vol, veh/h	311	0	0	0	210	10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	0	0	0	1	10
Mvmt Flow	338	0	0	0	228	11
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	10.9	0	10.3
HCM LOS	B	-	B

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	95%	0%	0%
Vol Thru, %	0%	100%	100%
Vol Right, %	5%	0%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	220	311	0
LT Vol	210	0	0
Through Vol	0	311	0
RT Vol	10	0	0
Lane Flow Rate	239	338	0
Geometry Grp	1	1	1
Degree of Util (X)	0.325	0.427	0
Departure Headway (Hd)	4.886	4.544	4.906
Convergence, Y/N	Yes	Yes	Yes
Cap	734	791	0
Service Time	2.921	2.573	2.956
HCM Lane V/C Ratio	0.326	0.427	0
HCM Control Delay	10.3	10.9	8
HCM Lane LOS	B	B	N
HCM 95th-tile Q	1.4	2.2	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	1544	150	103	1287	18	436	26	293	37	19	45
Future Volume (vph)	11	1544	150	103	1287	18	436	26	293	37	19	45
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	12	14	11	12	12	12	12	12	11	12	12
Grade (%)		1%			-1%			0%			1%	
Storage Length (ft)	210		225	240		225	500		150	0		0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850		0.894	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1645	3369	1608	1661	3403	1451	3285	1800	1515	1645	1552	0
Flt Permitted	0.950			0.950			0.950			0.739		
Satd. Flow (perm)	1645	3369	1608	1661	3403	1451	3285	1800	1515	1279	1552	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			159			159			105		48	
Link Speed (mph)		50			50			25			25	
Link Distance (ft)		1997			877			940			239	
Travel Time (s)		27.2			12.0			25.6			6.5	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	1%	1%	0%	1%	6%	1%	0%	1%	0%	6%	2%
Adj. Flow (vph)	12	1643	160	110	1369	19	464	28	312	39	20	48
Shared Lane Traffic (%)												
Lane Group Flow (vph)	12	1643	160	110	1369	19	464	28	312	39	68	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.13	1.08	0.99	1.11	1.07	1.07	1.07	1.07	1.07	1.13	1.08	1.08
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	1	1	1	1	
Detector Template		Main35			Main35				Right			
Leading Detector (ft)	38	350	0	38	350	0	38	38	48	38	38	
Trailing Detector (ft)	-2	0	0	-2	0	0	-2	-2	-2	-2	-2	
Detector 1 Position(ft)	-2	0	0	-2	0	0	-2	-2	-2	-2	-2	
Detector 1 Size(ft)	40	0	0	40	0	0	40	40	50	40	40	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		344			344							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases			2			6			8	4		
Detector Phase	5	2	2	1	6	6	3	8	8	4	4	
Switch Phase												
Minimum Initial (s)	3.0	15.0	15.0	3.0	15.0	15.0	3.0	3.0	3.0	3.0	3.0	
Minimum Split (s)	9.8	21.8	21.8	9.8	21.8	21.8	8.5	15.0	15.0	15.0	15.0	
Total Split (s)	9.8	61.5	61.5	13.1	64.8	64.8	20.4	35.4	35.4	15.0	15.0	
Total Split (%)	8.9%	55.9%	55.9%	11.9%	58.9%	58.9%	18.5%	32.2%	32.2%	13.6%	13.6%	
Maximum Green (s)	3.0	54.7	54.7	6.3	58.0	58.0	14.9	28.7	28.7	8.3	8.3	
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	4.8	3.5	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	3.7	3.7	3.7	3.7	
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	
Total Lost Time (s)	5.3	5.3	5.3	5.3	5.3	5.3	4.0	5.2	5.2	5.2	5.2	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes			Yes	Yes	
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0	6.0	3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)	3.0	3.5	3.5	3.0	3.5	3.5	3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	35.0	35.0	0.0	35.0	35.0	0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	18.0	18.0	0.0	18.0	18.0	0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	Min	Min	None	Min	Min	None	None	None	None	None	
Act Effct Green (s)	4.5	56.4	56.4	7.8	67.6	67.6	16.5	26.7	26.7	9.0	9.0	
Actuated g/C Ratio	0.04	0.53	0.53	0.07	0.63	0.63	0.15	0.25	0.25	0.08	0.08	
v/c Ratio	0.17	0.92	0.17	0.91	0.64	0.02	0.92	0.06	0.68	0.36	0.39	
Control Delay	56.8	34.4	2.8	112.0	15.1	0.1	70.0	30.0	31.5	57.3	27.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	56.8	34.4	2.8	112.0	15.1	0.1	70.0	30.0	31.5	57.3	27.0	
LOS	E	C	A	F	B	A	E	C	C	E	C	
Approach Delay		31.7			22.1			53.7			38.1	
Approach LOS		C			C			D			D	

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 106.8
Natural Cycle: 100
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.92
Intersection Signal Delay: 32.6 Intersection LOS: C
Intersection Capacity Utilization 84.0% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 17: University Dr & SR 422 (W Chocolate Ave)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	1544	150	103	1287	18	436	26	293	37	19	45
Future Volume (veh/h)	11	1544	150	103	1287	18	436	26	293	37	19	45
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1794	1780	1852	1837	1823	1752	1786	1800	1786	1794	1710	1710
Adj Flow Rate, veh/h	12	1643	160	110	1369	19	464	28	0	39	20	48
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	1	1	0	1	6	1	0	1	0	6	6
Cap, veh/h	38	1755	814	126	1969	844	500	474		171	33	80
Arrive On Green	0.02	0.52	0.52	0.07	0.57	0.57	0.15	0.26	0.00	0.08	0.08	0.08
Sat Flow, veh/h	1709	3383	1569	1750	3464	1485	3300	1800	1514	1400	446	1071
Grp Volume(v), veh/h	12	1643	160	110	1369	19	464	28	0	39	0	68
Grp Sat Flow(s),veh/h/ln	1709	1691	1569	1750	1732	1485	1650	1800	1514	1400	0	1517
Q Serve(g_s), s	0.7	49.2	5.9	6.7	30.5	0.6	15.0	1.3	0.0	2.9	0.0	4.7
Cycle Q Clear(g_c), s	0.7	49.2	5.9	6.7	30.5	0.6	15.0	1.3	0.0	2.9	0.0	4.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.71
Lane Grp Cap(c), veh/h	38	1755	814	126	1969	844	500	474		171	0	114
V/C Ratio(X)	0.32	0.94	0.20	0.87	0.70	0.02	0.93	0.06		0.23	0.00	0.60
Avail Cap(c_a), veh/h	71	1755	814	126	1969	844	500	502		193	0	137
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	52.1	24.4	14.0	49.8	16.7	10.2	45.4	29.8	0.0	47.7	0.0	48.5
Incr Delay (d2), s/veh	4.6	10.7	0.4	44.3	1.8	0.0	23.9	0.1	0.0	0.7	0.0	4.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.6	27.0	0.2	7.8	16.3	0.3	12.4	1.0	0.0	1.9	0.0	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.8	35.1	14.4	94.0	18.5	10.3	69.3	29.9	0.0	48.3	0.0	53.4
LnGrp LOS	E	D	B	F	B	B	E	C		D	A	D
Approach Vol, veh/h		1815			1498			492	A		107	
Approach Delay, s/veh		33.4			23.9			67.0			51.6	
Approach LOS		C			C			E			D	

Timer - Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	13.1	61.5	20.4	13.3	7.7	66.9		33.7
Change Period (Y+Rc), s	6.8	6.8	5.5	* 6.7	6.8	6.8		* 6.7
Max Green Setting (Gmax), s	6.3	54.7	14.9	* 8.3	3.0	58.0		* 29
Max Q Clear Time (g_c+I1), s	8.7	51.2	17.0	6.7	2.7	32.5		3.3
Green Ext Time (p_c), s	0.0	3.5	0.0	0.0	0.0	24.2		0.0

Intersection Summary	
HCM 6th Ctrl Delay	34.5
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

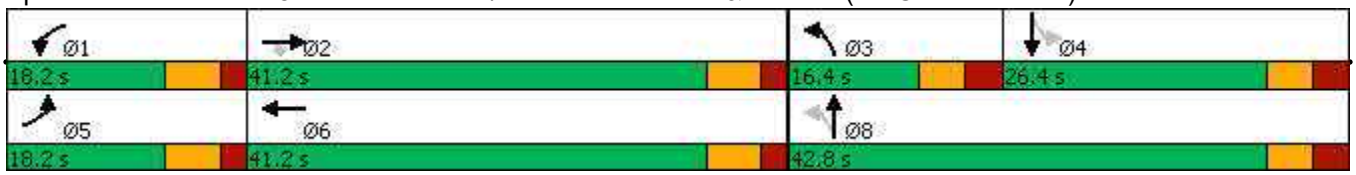
Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	1351	477	142	1040	18	364	149	110	41	164	12
Future Volume (vph)	55	1351	477	142	1040	18	364	149	110	41	164	12
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	12	14	11	12	12	11	11	13	12	12	12
Grade (%)		-2%			2%			1%			-2%	
Storage Length (ft)	125		200	125		0	0		100	0		0
Storage Lanes	1		1	1		0	1		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor											1.00	
Frt			0.850		0.997			0.937			0.993	
Flt Protected	0.950			0.950			0.950				0.991	
Satd. Flow (prot)	1670	3386	1632	1604	3311	0	1628	1606	0	0	1774	0
Flt Permitted	0.950			0.950			0.359				0.879	
Satd. Flow (perm)	1670	3386	1632	1604	3311	0	615	1606	0	0	1574	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			331		2			41			3	
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		2885			1404			806			192	
Travel Time (s)		56.2			27.4			15.7			3.7	
Confl. Peds. (#/hr)							1					1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	2%	1%	2%	2%	0%	1%	1%	1%	0%	1%	0%
Adj. Flow (vph)	57	1393	492	146	1072	19	375	154	113	42	169	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	57	1393	492	146	1091	0	375	267	0	0	223	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.11	1.06	0.97	1.13	1.09	1.09	1.13	1.13	1.03	1.06	1.06	1.06
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	2	1	2		1	1		1	1	
Detector Template		Main25			Main25					Left		
Leading Detector (ft)	38	250	106	38	250		38	38		48	38	
Trailing Detector (ft)	-2	0	0	-2	0		-2	-2		-2	-2	
Detector 1 Position(ft)	-2	0	0	-2	0		-2	-2		-2	-2	
Detector 1 Size(ft)	40	0	0	40	0		40	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		244	100		244							
Detector 2 Size(ft)		6	6		6							
Detector 2 Type		Cl+Ex	Cl+Ex		Cl+Ex							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0	0.0		0.0							
Turn Type	Prot	NA	Perm	Prot	NA		pm+pt	NA		Perm	NA	
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases			2				8			4		
Detector Phase	5	2	2	1	6		3	8		4	4	
Switch Phase												
Minimum Initial (s)	3.0	15.0	15.0	3.0	15.0		3.0	3.0		3.0	3.0	
Minimum Split (s)	9.4	21.2	21.2	9.2	25.0		10.0	25.0		10.0	10.0	
Total Split (s)	18.2	41.2	41.2	18.2	41.2		16.4	42.8		26.4	26.4	
Total Split (%)	17.8%	40.3%	40.3%	17.8%	40.3%		16.0%	41.9%		25.8%	25.8%	
Maximum Green (s)	12.0	35.0	35.0	12.0	35.0		10.0	36.4		20.0	20.0	
Yellow Time (s)	4.2	4.2	4.2	4.2	4.2		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.9	2.9		2.9	2.9	
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	-1.5		-1.5	-1.5			-1.5	
Total Lost Time (s)	4.7	4.7	4.7	4.7	4.7		4.9	4.9			4.9	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes			Yes	Yes	
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.5	3.5	3.0	3.5		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	25.0	25.0	0.0	25.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	12.5	12.5	0.0	12.5		0.0	0.0		0.0	0.0	
Recall Mode	None	Min	Min	None	Min		None	None		None	None	
Walk Time (s)							2.0					
Flash Dont Walk (s)							1.0					
Pedestrian Calls (#/hr)							0					
Act Effct Green (s)	10.3	36.6	36.6	12.8	41.7		35.2	35.2			18.7	
Actuated g/C Ratio	0.10	0.37	0.37	0.13	0.42		0.36	0.36			0.19	
v/c Ratio	0.33	1.11	0.61	0.70	0.78		1.12	0.45			0.74	
Control Delay	46.7	93.7	11.9	61.0	31.8		112.9	23.1			53.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	
Total Delay	46.7	93.7	11.9	61.0	31.8		112.9	23.1			53.2	
LOS	D	F	B	E	C		F	C			D	
Approach Delay		71.6			35.2			75.6			53.2	
Approach LOS		E			D			E			D	

Intersection Summary	
Area Type: Other	
Cycle Length: 102.2	
Actuated Cycle Length: 98.9	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.12	
Intersection Signal Delay: 60.1	Intersection LOS: E
Intersection Capacity Utilization 97.3%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 18: Hockersville Rd/N. Hockersville Rd & SR 422 (W. Chocolate Ave)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	55	1351	477	142	1040	18	364	149	110	41	164	12
Future Volume (veh/h)	55	1351	477	142	1040	18	364	149	110	41	164	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1875	1846	1935	1750	1750	1750	1780	1780	1852	1860	1860	1860
Adj Flow Rate, veh/h	57	1393	492	146	1072	19	375	154	113	42	169	12
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	2	1	2	2	2	1	1	1	1	1	1
Cap, veh/h	102	1360	636	200	1507	27	423	324	238	85	227	15
Arrive On Green	0.06	0.39	0.39	0.12	0.45	0.45	0.12	0.34	0.34	0.17	0.17	0.17
Sat Flow, veh/h	1785	3508	1640	1666	3342	59	1696	954	700	239	1371	92
Grp Volume(v), veh/h	57	1393	492	146	533	558	375	0	267	223	0	0
Grp Sat Flow(s),veh/h/ln	1785	1754	1640	1666	1662	1739	1696	0	1654	1701	0	0
Q Serve(g_s), s	2.9	36.5	24.7	8.0	24.4	24.4	11.5	0.0	12.0	8.1	0.0	0.0
Cycle Q Clear(g_c), s	2.9	36.5	24.7	8.0	24.4	24.4	11.5	0.0	12.0	11.7	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.03	1.00		0.42	0.19		0.05
Lane Grp Cap(c), veh/h	102	1360	636	200	750	784	423	0	562	328	0	0
V/C Ratio(X)	0.56	1.02	0.77	0.73	0.71	0.71	0.89	0.00	0.47	0.68	0.00	0.00
Avail Cap(c_a), veh/h	256	1360	636	239	750	784	423	0	666	431	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	43.2	28.8	25.2	39.9	20.9	20.9	31.3	0.0	24.4	37.5	0.0	0.0
Incr Delay (d2), s/veh	4.8	30.7	8.1	8.8	5.0	4.8	19.9	0.0	0.6	2.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.5	28.0	15.8	6.6	15.0	15.5	9.2	0.0	8.1	8.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.0	59.5	33.3	48.7	25.9	25.7	51.2	0.0	25.1	40.3	0.0	0.0
LnGrp LOS	D	F	C	D	C	C	D	A	C	D	A	A
Approach Vol, veh/h		1942			1237			642			223	
Approach Delay, s/veh		52.5			28.5			40.3			40.3	
Approach LOS		D			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	16.0	41.2	16.4	20.5	10.1	47.2		36.9
Change Period (Y+Rc), s	6.2	6.2	6.4	6.4	6.2	6.2		6.4
Max Green Setting (Gmax), s	12.0	35.0	10.0	20.0	12.0	35.0		36.4
Max Q Clear Time (g_c+I1), s	10.0	38.5	13.5	13.7	4.9	26.4		14.0
Green Ext Time (p_c), s	0.1	0.0	0.0	0.4	0.1	7.9		0.9

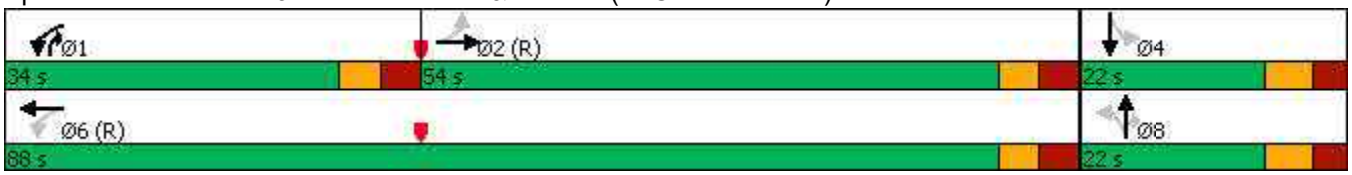
Intersection Summary	
HCM 6th Ctrl Delay	42.6
HCM 6th LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	1219	99	384	965	6	52	12	253	84	78	39
Future Volume (vph)	11	1219	99	384	965	6	52	12	253	84	78	39
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	12	12	10	13	13	13	13	13	13	13	13
Grade (%)		-3%			3%			-1%			-2%	
Storage Length (ft)	200		0	575		0	0		150	0		0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.989			0.999				0.850		0.974	
Flt Protected	0.950			0.950				0.961			0.979	
Satd. Flow (prot)	1620	3394	0	1556	1812	0	0	1796	1573	0	1791	0
Flt Permitted	0.298			0.072				0.532			0.833	
Satd. Flow (perm)	508	3394	0	118	1812	0	0	994	1573	0	1524	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)		10			1				37			
Link Speed (mph)		25			35			25			25	
Link Distance (ft)		592			1437			1120			398	
Travel Time (s)		16.1			28.0			30.5			10.9	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	1%	3%	1%	1%	0%	0%	0%	1%	0%	0%	0%
Adj. Flow (vph)	11	1270	103	400	1005	6	54	13	264	88	81	41
Shared Lane Traffic (%)												
Lane Group Flow (vph)	11	1373	0	400	1011	0	0	67	264	0	210	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.15	1.05	1.05	1.19	1.05	1.05	1.02	1.02	1.02	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	1	1	1	1	
Detector Template							Left	Thru	Right	Left	Thru	
Leading Detector (ft)	0	150		38	150		48	48	48	48	48	
Trailing Detector (ft)	0	0		-2	0		-2	-2	-2	-2	-2	
Detector 1 Position(ft)	0	0		-2	0		-2	-2	-2	-2	-2	
Detector 1 Size(ft)	0	0		40	0		50	50	50	50	50	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		144			144							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	pm+ov	Perm	NA	
Protected Phases		2		1	6			8	1		4	
Permitted Phases	2			6			8		8	4		
Detector Phase	2	2		1	6		8	8	1	4	4	
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Minimum Split (s)	10.0	10.0		9.8	10.0		10.0	10.0	9.8	10.0	10.0	
Total Split (s)	54.0	54.0		34.0	88.0		22.0	22.0	34.0	22.0	22.0	
Total Split (%)	49.1%	49.1%		30.9%	80.0%		20.0%	20.0%	30.9%	20.0%	20.0%	
Maximum Green (s)	47.3	47.3		27.3	81.3		15.2	15.2	27.3	15.2	15.2	
Yellow Time (s)	3.4	3.4		3.4	3.4		3.8	3.8	3.4	3.8	3.8	
All-Red Time (s)	3.3	3.3		3.3	3.3		3.0	3.0	3.3	3.0	3.0	
Lost Time Adjust (s)	-1.5	-1.5		-1.5	-1.5			-1.5	-1.5		-1.5	
Total Lost Time (s)	5.2	5.2		5.2	5.2			5.3	5.2		5.3	
Lead/Lag	Lag	Lag		Lead					Lead			
Lead-Lag Optimize?	Yes	Yes		Yes					Yes			
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max		None	C-Max		None	None	None	None	None	
Act Effct Green (s)	50.6	50.6		82.8	82.8			16.7	49.0		16.7	
Actuated g/C Ratio	0.46	0.46		0.75	0.75			0.15	0.45		0.15	
v/c Ratio	0.05	0.88		0.90	0.74			0.45	0.37		0.91	
Control Delay	18.4	35.0		55.2	11.8			53.0	18.4		86.7	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Delay	18.4	35.0		55.2	11.8			53.0	18.4		86.7	
LOS	B	D		E	B			D	B		F	
Approach Delay		34.9			24.1			25.4			86.7	
Approach LOS		C			C			C			F	

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay: 32.7	Intersection LOS: C
Intersection Capacity Utilization 92.8%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 19: Homestead Rd & SR 422 (E. Chocolate Ave)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	1219	99	384	965	6	52	12	253	84	78	39
Future Volume (veh/h)	11	1219	99	384	965	6	52	12	253	84	78	39
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1912	1898	1898	1736	1805	1805	1911	1911	1896	1950	1950	1950
Adj Flow Rate, veh/h	11	1270	103	400	1005	6	54	12	264	88	81	41
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	1	1	1	1	1	0	0	1	0	0	0
Cap, veh/h	328	1784	144	453	1349	8	177	34	529	106	70	31
Arrive On Green	0.53	0.53	0.53	0.18	0.75	0.75	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	602	3378	273	1653	1793	11	774	223	1607	393	458	207
Grp Volume(v), veh/h	11	676	697	400	0	1011	66	0	264	210	0	0
Grp Sat Flow(s),veh/h/ln	602	1803	1848	1653	0	1803	997	0	1607	1058	0	0
Q Serve(g_s), s	1.2	31.2	31.4	14.9	0.0	34.7	0.0	0.0	14.5	10.4	0.0	0.0
Cycle Q Clear(g_c), s	11.2	31.2	31.4	14.9	0.0	34.7	6.3	0.0	14.5	16.7	0.0	0.0
Prop In Lane	1.00		0.15	1.00		0.01	0.82		1.00	0.42		0.20
Lane Grp Cap(c), veh/h	328	952	976	453	0	1357	211	0	529	207	0	0
V/C Ratio(X)	0.03	0.71	0.71	0.88	0.00	0.74	0.31	0.00	0.50	1.01	0.00	0.00
Avail Cap(c_a), veh/h	328	952	976	592	0	1357	211	0	529	207	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	17.7	19.6	19.7	25.1	0.0	7.7	42.1	0.0	29.6	50.0	0.0	0.0
Incr Delay (d2), s/veh	0.2	4.5	4.4	12.1	0.0	3.7	0.8	0.0	0.7	66.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.3	20.0	20.6	17.2	0.0	17.2	3.0	0.0	9.7	14.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.9	24.1	24.1	37.2	0.0	11.4	42.9	0.0	30.4	116.2	0.0	0.0
LnGrp LOS	B	C	C	D	A	B	D	A	C	F	A	A
Approach Vol, veh/h		1384			1411			330			210	
Approach Delay, s/veh		24.0			18.7			32.9			116.2	
Approach LOS		C			B			C			F	

Timer - Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	24.7	63.3		22.0		88.0		22.0
Change Period (Y+Rc), s	* 6.7	* 6.7		* 6.8		* 6.7		* 6.8
Max Green Setting (Gmax), s	* 27	* 47		* 15		* 81		* 15
Max Q Clear Time (g_c+I1), s	16.9	33.4		18.7		36.7		16.5
Green Ext Time (p_c), s	1.1	10.0		0.0		15.8		0.0

Intersection Summary	
HCM 6th Ctrl Delay	28.5
HCM 6th LOS	C

Notes

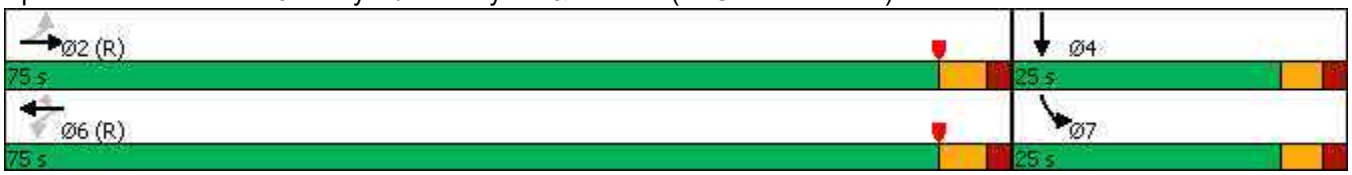
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1102	2	2	637	63	0	0	0	111	0	38
Future Volume (vph)	0	1102	2	2	637	63	0	0	0	111	0	38
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	11	11	13	12	12	12	10	10	10
Grade (%)		2%			3%			2%			2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850					0.965	
Flt Protected											0.964	
Satd. Flow (prot)	0	1747	0	0	1664	1557	0	0	0	0	1255	0
Flt Permitted					0.998						0.964	
Satd. Flow (perm)	0	1747	0	0	1661	1557	0	0	0	0	1255	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						66					27	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		4173			285			432			3474	
Travel Time (s)		81.3			5.6			11.8			94.7	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	2%	0%	0%	3%	0%	0%	0%	0%	1%	0%	88%
Adj. Flow (vph)	0	1148	2	2	664	66	0	0	0	116	0	40
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1150	0	0	666	66	0	0	0	0	156	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.14	1.14	1.05	1.09	1.09	1.09	1.19	1.19	1.19
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1				1	1	
Detector Template	Left	Main25		Left	Main25	Right				Left		
Leading Detector (ft)	48	250		48	250	48				48	45	
Trailing Detector (ft)	-2	0		-2	0	-2				-2	-5	
Detector 1 Position(ft)	-2	0		-2	0	-2				-2	-5	
Detector 1 Size(ft)	50	0		50	0	50				50	50	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex				Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0				0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0				0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0				0.0	0.0	
Detector 2 Position(ft)		244			244							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							
Turn Type		NA		Perm	NA	Perm				Prot	NA	
Protected Phases		2			6					7	4	
Permitted Phases	2			6		6						

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	2	2		6	6	6				7	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0				3.0	3.0	
Minimum Split (s)	15.5	15.5		15.5	15.5	15.5				8.0	10.0	
Total Split (s)	75.0	75.0		75.0	75.0	75.0				25.0	25.0	
Total Split (%)	75.0%	75.0%		75.0%	75.0%	75.0%				25.0%	25.0%	
Maximum Green (s)	69.5	69.5		69.5	69.5	69.5				20.0	20.0	
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5				3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0				2.0	2.0	
Lost Time Adjust (s)		-1.5			-1.5	-1.5					-1.5	
Total Lost Time (s)		4.0			4.0	4.0					3.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	6.0	6.0		6.0	6.0	6.0				3.0	3.0	
Minimum Gap (s)	5.0	5.0		5.0	5.0	5.0				3.0	3.0	
Time Before Reduce (s)	13.0	13.0		13.0	13.0	13.0				0.0	0.0	
Time To Reduce (s)	25.0	25.0		25.0	25.0	25.0				0.0	0.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max	C-Max				None	None	
Act Effct Green (s)		71.0			71.0	71.0					21.5	
Actuated g/C Ratio		0.71			0.71	0.71					0.22	
v/c Ratio		0.93			0.56	0.06					0.54	
Control Delay		27.1			10.3	0.8					36.4	
Queue Delay		0.0			0.0	0.0					0.0	
Total Delay		27.1			10.3	0.8					36.4	
LOS		C			B	A					D	
Approach Delay		27.1			9.4						36.4	
Approach LOS		C			A						D	

Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 21.4	Intersection LOS: C
Intersection Capacity Utilization 77.0%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 20: Yorty St/E. Derry Rd & SR 422 (E. Chocolate Ave)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1102	2	2	637	63	0	0	0	111	0	38
Future Volume (veh/h)	0	1102	2	2	637	63	0	0	0	111	0	38
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	1750	1750	1750	1708	1708	1820				1778	1778	1778
Adj Flow Rate, veh/h	0	1148	2	2	664	66				116	0	40
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96				0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	3	3	0				0	0	0
Cap, veh/h	0	1391	2	37	1358	1228				157	0	54
Arrive On Green	0.00	0.80	0.80	0.80	0.80	0.80				0.13	0.00	0.13
Sat Flow, veh/h	0	1746	3	1	1705	1542				1220	0	421
Grp Volume(v), veh/h	0	0	1150	666	0	66				156	0	0
Grp Sat Flow(s),veh/h/ln	0	0	1749	1706	0	1542				1641	0	0
Q Serve(g_s), s	0.0	0.0	39.1	0.0	0.0	0.9				9.2	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	39.1	13.0	0.0	0.9				9.2	0.0	0.0
Prop In Lane	0.00		0.00	0.00		1.00				0.74		0.26
Lane Grp Cap(c), veh/h	0	0	1393	1395	0	1228				211	0	0
V/C Ratio(X)	0.00	0.00	0.83	0.48	0.00	0.05				0.74	0.00	0.00
Avail Cap(c_a), veh/h	0	0	1393	1395	0	1228				353	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	1.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	6.0	3.4	0.0	2.2				42.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	5.7	1.2	0.0	0.1				5.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	0.0	16.1	5.8	0.0	4.0				7.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	11.7	4.6	0.0	2.2				47.0	0.0	0.0
LnGrp LOS	A	A	B	A	A	A				D	A	A
Approach Vol, veh/h		1150			732						156	
Approach Delay, s/veh		11.7			4.4						47.0	
Approach LOS		B			A						D	

Timer - Assigned Phs	2	4	6
Phs Duration (G+Y+Rc), s	83.7	16.3	83.7
Change Period (Y+Rc), s	5.5	5.0	5.5
Max Green Setting (Gmax), s	69.5	20.0	69.5
Max Q Clear Time (g_c+I1), s	41.1	11.2	15.0
Green Ext Time (p_c), s	26.7	0.3	27.7

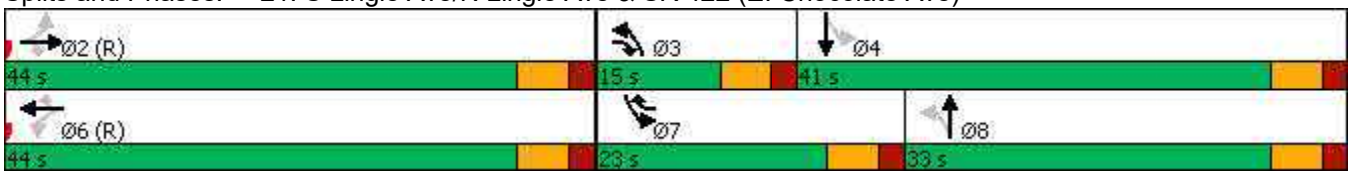
Intersection Summary	
HCM 6th Ctrl Delay	11.8
HCM 6th LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	564	407	21	399	228	212	330	23	344	633	28
Future Volume (vph)	21	564	407	21	399	228	212	330	23	344	633	28
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	13	11	11	13	12	14	14	12	14	14
Grade (%)		1%			-2%			-2%			-3%	
Storage Length (ft)	100		525	100		150	500		0	200		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00					0.95		1.00				
Frt			0.850			0.850		0.990			0.994	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1482	1714	1573	1670	1706	1521	1727	1917	0	1736	1934	0
Flt Permitted	0.334			0.158			0.135			0.250		
Satd. Flow (perm)	519	1714	1573	278	1706	1444	245	1917	0	457	1934	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			98			223		3			2	
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		768			1230			1254			1637	
Travel Time (s)		15.0			24.0			24.4			31.9	
Confl. Peds. (#/hr)	5					5			1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	11%	1%	0%	0%	3%	5%	0%	0%	0%	0%	0%	4%
Adj. Flow (vph)	22	594	428	22	420	240	223	347	24	362	666	29
Shared Lane Traffic (%)												
Lane Group Flow (vph)	22	594	428	22	420	240	223	371	0	362	695	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.13	1.13	1.03	1.11	1.11	1.01	1.06	0.97	0.97	1.05	0.97	0.97
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	1		1	1	
Detector Template	Left	Main25	Right	Left	Main25	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	48	250	48	48	250	48	48	48		48	48	
Trailing Detector (ft)	-2	0	-2	-2	0	-2	-2	-2		-2	-2	
Detector 1 Position(ft)	-2	0	-2	-2	0	-2	-2	-2		-2	-2	
Detector 1 Size(ft)	50	0	50	50	0	50	50	50		50	50	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		244			244							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	pm+pt	NA		pm+pt	NA	
Protected Phases		2	3		6	7	3	8		7	4	
Permitted Phases	2		2	6		6	8			4		
Detector Phase	2	2	3	6	6	7	3	8		7	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0	3.0	10.0	10.0	3.0	3.0	3.0		3.0	3.0	
Minimum Split (s)	15.9	15.9	14.0	15.9	15.9	14.0	14.0	10.0		14.0	10.0	
Total Split (s)	44.0	44.0	15.0	44.0	44.0	23.0	15.0	33.0		23.0	41.0	
Total Split (%)	44.0%	44.0%	15.0%	44.0%	44.0%	23.0%	15.0%	33.0%		23.0%	41.0%	
Maximum Green (s)	38.1	38.1	9.2	38.1	38.1	17.2	9.2	27.2		17.2	35.2	
Yellow Time (s)	3.9	3.9	3.8	3.9	3.9	3.8	3.8	3.8		3.8	3.8	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5		-1.5	-1.5	
Total Lost Time (s)	4.4	4.4	4.3	4.4	4.4	4.3	4.3	4.3		4.3	4.3	
Lead/Lag			Lead			Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?			Yes			Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	6.3	6.3	3.0	6.3	6.3	3.0	3.0	3.0		3.0	3.0	
Minimum Gap (s)	5.0	5.0	3.0	5.0	5.0	3.0	3.0	3.0		3.0	3.0	
Time Before Reduce (s)	13.0	13.0	0.0	13.0	13.0	0.0	0.0	0.0		0.0	0.0	
Time To Reduce (s)	25.0	25.0	0.0	25.0	25.0	0.0	0.0	0.0		0.0	0.0	
Recall Mode	C-Max	C-Max	None	C-Max	C-Max	None	None	None		None	None	
Walk Time (s)			5.0			5.0	5.0			5.0		
Flash Dont Walk (s)			3.0			3.0	3.0			3.0		
Pedestrian Calls (#/hr)			0			0	0			0		
Act Effct Green (s)	39.6	39.6	54.7	39.6	39.6	57.4	40.4	29.7		51.6	36.7	
Actuated g/C Ratio	0.40	0.40	0.55	0.40	0.40	0.57	0.40	0.30		0.52	0.37	
v/c Ratio	0.11	0.88	0.47	0.20	0.62	0.26	0.87	0.65		0.78	0.98	
Control Delay	19.4	38.3	18.8	25.7	29.2	2.1	55.5	37.1		28.5	61.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	19.4	38.3	18.8	25.7	29.2	2.1	55.5	37.1		28.5	61.1	
LOS	B	D	B	C	C	A	E	D		C	E	
Approach Delay		29.9			19.5			44.0			50.0	
Approach LOS		C			B			D			D	

Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.98	
Intersection Signal Delay: 36.6	Intersection LOS: D
Intersection Capacity Utilization 91.5%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 21: S Lingle Ave/N Lingle Ave & SR 422 (E. Chocolate Ave)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	21	564	407	21	399	228	212	330	23	344	633	28
Future Volume (veh/h)	21	564	407	21	399	228	212	330	23	344	633	28
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1640	1780	1866	1875	1832	1876	1875	1950	1950	1912	1988	1988
Adj Flow Rate, veh/h	22	594	428	22	420	240	223	347	24	362	666	29
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	11	1	0	0	3	5	0	0	0	0	0	0
Cap, veh/h	227	705	792	127	725	887	281	558	39	529	694	30
Arrive On Green	0.40	0.40	0.40	0.40	0.40	0.40	0.11	0.31	0.31	0.16	0.37	0.37
Sat Flow, veh/h	715	1780	1572	583	1832	1579	1785	1802	125	1821	1891	82
Grp Volume(v), veh/h	22	594	428	22	420	240	223	0	371	362	0	695
Grp Sat Flow(s),veh/h/ln	715	1780	1572	583	1832	1579	1785	0	1927	1821	0	1973
Q Serve(g_s), s	2.5	30.2	18.6	3.6	18.0	7.9	8.3	0.0	16.5	12.6	0.0	34.4
Cycle Q Clear(g_c), s	20.5	30.2	18.6	33.8	18.0	7.9	8.3	0.0	16.5	12.6	0.0	34.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.06	1.00		0.04
Lane Grp Cap(c), veh/h	227	705	792	127	725	887	281	0	596	529	0	724
V/C Ratio(X)	0.10	0.84	0.54	0.17	0.58	0.27	0.79	0.00	0.62	0.68	0.00	0.96
Avail Cap(c_a), veh/h	227	705	792	127	725	887	281	0	596	570	0	724
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	31.7	27.4	17.0	42.7	23.7	11.4	24.2	0.0	29.5	18.5	0.0	30.9
Incr Delay (d2), s/veh	0.9	11.7	2.6	3.0	3.4	0.8	14.4	0.0	2.0	3.1	0.0	23.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.9	20.7	11.2	1.1	12.8	5.0	7.9	0.0	12.3	9.2	0.0	27.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.5	39.1	19.6	45.7	27.0	12.1	38.5	0.0	31.5	21.6	0.0	54.8
LnGrp LOS	C	D	B	D	C	B	D	A	C	C	A	D
Approach Vol, veh/h		1044			682			594			1057	
Approach Delay, s/veh		31.0			22.4			34.2			43.5	
Approach LOS		C			C			C			D	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	44.0	15.0	41.0	44.0	20.8	35.2
Change Period (Y+Rc), s	5.9	* 5.8	* 5.8	5.9	* 5.8	* 5.8
Max Green Setting (Gmax), s	38.1	* 9.2	* 35	38.1	* 17	* 27
Max Q Clear Time (g_c+I1), s	32.2	10.3	36.4	35.8	14.6	18.5
Green Ext Time (p_c), s	5.2	0.0	0.0	1.7	0.4	1.0

Intersection Summary	
HCM 6th Ctrl Delay	33.7
HCM 6th LOS	C

Notes

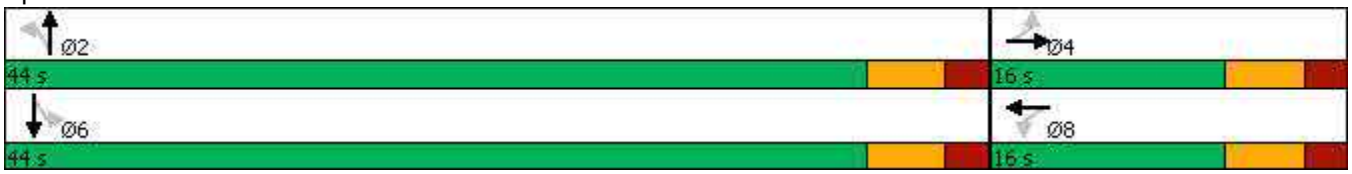
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	81	95	35	3	21	69	24	467	15	63	578	87
Future Volume (vph)	81	95	35	3	21	69	24	467	15	63	578	87
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	15	15	15	15	15	15	11	11	11	11	11	11
Grade (%)		-5%			9%			-1%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.978			0.899			0.996			0.984	
Flt Protected		0.981			0.999			0.998			0.996	
Satd. Flow (prot)	0	1908	0	0	1673	0	0	1707	0	0	1685	0
Flt Permitted		0.867			0.991			0.954			0.921	
Satd. Flow (perm)	0	1687	0	0	1660	0	0	1631	0	0	1558	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15			76			5			25	
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		525			421			813			806	
Travel Time (s)		14.3			11.5			15.8			15.7	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	4%	0%	3%	0%	0%	2%	0%	2%	0%	0%	2%	1%
Adj. Flow (vph)	89	104	38	3	23	76	26	513	16	69	635	96
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	231	0	0	102	0	0	555	0	0	800	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.92	0.92	0.92	1.01	1.01	1.01	1.11	1.11	1.11	1.11	1.11	1.11
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Split (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Total Split (s)	16.0	16.0		16.0	16.0		44.0	44.0		44.0	44.0	
Total Split (%)	26.7%	26.7%		26.7%	26.7%		73.3%	73.3%		73.3%	73.3%	
Maximum Green (s)	10.5	10.5		10.5	10.5		38.5	38.5		38.5	38.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-1.5			-1.5			-1.5			-1.5	
Total Lost Time (s)		4.0			4.0			4.0			4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Act Effct Green (s)		11.4			11.4			34.8			34.8	
Actuated g/C Ratio		0.21			0.21			0.64			0.64	
v/c Ratio		0.63			0.25			0.53			0.79	
Control Delay		28.8			10.2			7.5			14.4	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		28.8			10.2			7.5			14.4	
LOS		C			B			A			B	
Approach Delay		28.8			10.2			7.5			14.4	
Approach LOS		C			B			A			B	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 54.2	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay: 13.8	Intersection LOS: B
Intersection Capacity Utilization 87.6%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 22: Hockersville Rd & W Areba Ave



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	81	95	35	3	21	69	24	467	15	63	578	87
Future Volume (veh/h)	81	95	35	3	21	69	24	467	15	63	578	87
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	2066	2066	2066	1402	1402	1402	1809	1809	1809	1809	1809	1809
Adj Flow Rate, veh/h	89	104	38	3	23	76	26	513	16	69	635	96
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	2	2	2	2	2	2
Cap, veh/h	254	186	62	96	60	187	115	995	30	150	831	121
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.60	0.60	0.60	0.60	0.60	0.60
Sat Flow, veh/h	636	913	305	18	297	921	36	1666	51	89	1391	202
Grp Volume(v), veh/h	231	0	0	102	0	0	555	0	0	800	0	0
Grp Sat Flow(s),veh/h/ln	1855	0	0	1236	0	0	1753	0	0	1681	0	0
Q Serve(g_s), s	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.2	0.0	0.0
Cycle Q Clear(g_c), s	4.3	0.0	0.0	2.9	0.0	0.0	7.2	0.0	0.0	14.1	0.0	0.0
Prop In Lane	0.39		0.16	0.03		0.75	0.05		0.03	0.09		0.12
Lane Grp Cap(c), veh/h	501	0	0	344	0	0	1141	0	0	1102	0	0
V/C Ratio(X)	0.46	0.00	0.00	0.30	0.00	0.00	0.49	0.00	0.00	0.73	0.00	0.00
Avail Cap(c_a), veh/h	671	0	0	461	0	0	1815	0	0	1754	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	14.4	0.0	0.0	13.9	0.0	0.0	4.7	0.0	0.0	6.0	0.0	0.0
Incr Delay (d2), s/veh	0.7	0.0	0.0	0.5	0.0	0.0	0.3	0.0	0.0	0.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.1	0.0	0.0	1.3	0.0	0.0	2.2	0.0	0.0	4.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.1	0.0	0.0	14.4	0.0	0.0	5.0	0.0	0.0	6.9	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	A	A	A	A	A	A
Approach Vol, veh/h		231			102			555			800	
Approach Delay, s/veh		15.1			14.4			5.0			6.9	
Approach LOS		B			B			A			A	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	28.0	12.2	28.0	12.2
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	38.5	10.5	38.5	10.5
Max Q Clear Time (g_c+I1), s	9.2	6.3	16.1	4.9
Green Ext Time (p_c), s	4.0	0.5	6.4	0.2

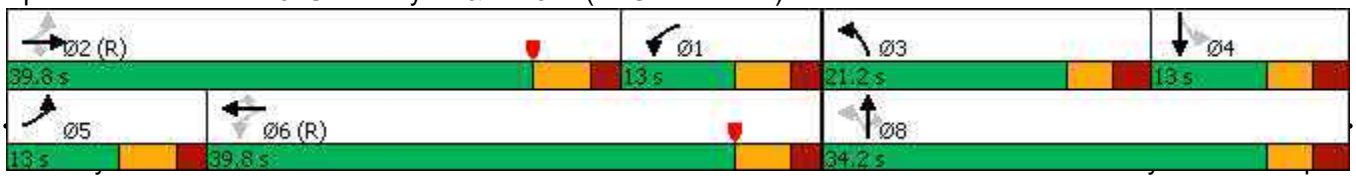
Intersection Summary	
HCM 6th Ctrl Delay	7.9
HCM 6th LOS	A

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	85	615	150	81	959	255	313	282	131	48	81	52
Future Volume (vph)	85	615	150	81	959	255	313	282	131	48	81	52
Ideal Flow (vphpl)	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Lane Width (ft)	12	12	12	12	13	11	14	12	14	12	12	12
Grade (%)		1%			-1%			-1%			-3%	
Storage Length (ft)	150		150	175		125	0		165	0		0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.97	1.00					0.98	0.99		
Frt			0.850			0.850			0.850		0.941	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1560	3058	1382	1575	3223	1349	1680	1658	1503	1591	1538	0
Flt Permitted	0.132			0.411			0.333			0.582		
Satd. Flow (perm)	217	3058	1341	679	3223	1349	589	1658	1477	962	1538	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			169			212			177		30	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		1532			974			928			672	
Travel Time (s)		29.8			19.0			25.3			18.3	
Confl. Peds. (#/hr)			8	8					7	7		
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	2%	1%	0%	1%	1%	0%	0%	0%	0%	4%	0%
Adj. Flow (vph)	88	634	155	84	989	263	323	291	135	49	84	54
Shared Lane Traffic (%)												
Lane Group Flow (vph)	88	634	155	84	989	263	323	291	135	49	138	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			14			14	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.20	1.20	1.20	1.19	1.14	1.24	1.10	1.19	1.10	1.17	1.17	1.17
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	1	1	1	1	
Detector Template		Main25	Right		Main25							
Leading Detector (ft)	38	250	48	38	250	0	38	38	38	38	38	
Trailing Detector (ft)	-2	0	-2	-2	0	0	-2	-2	-2	-2	-2	
Detector 1 Position(ft)	-2	0	-2	-2	0	0	-2	-2	-2	-2	-2	
Detector 1 Size(ft)	40	0	50	40	0	0	40	40	40	40	40	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		244			244							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases	2		2	6		6	8		8	4		
Detector Phase	5	2	2	1	6	6	3	8	8	4	4	
Switch Phase												
Minimum Initial (s)	3.0	10.0	10.0	3.0	10.0	10.0	3.0	3.0	3.0	3.0	3.0	
Minimum Split (s)	13.0	25.0	25.0	13.0	15.7	15.7	9.5	25.0	25.0	10.0	10.0	
Total Split (s)	13.0	39.8	39.8	13.0	39.8	39.8	21.2	34.2	34.2	13.0	13.0	
Total Split (%)	14.9%	45.7%	45.7%	14.9%	45.7%	45.7%	24.4%	39.3%	39.3%	14.9%	14.9%	
Maximum Green (s)	7.3	34.1	34.1	7.3	34.1	34.1	15.8	28.8	28.8	7.6	7.6	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.4	2.4	2.4	2.4	2.4	
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	
Total Lost Time (s)	4.2	4.2	4.2	4.2	4.2	4.2	3.9	3.9	3.9	3.9	3.9	
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag	Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes			Yes	Yes	
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0	6.0	3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	25.0	25.0	0.0	25.0	25.0	0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	13.0	13.0	0.0	13.0	13.0	0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	
Act Effct Green (s)	38.8	38.8	38.8	38.8	38.8	38.8	29.7	29.7	29.7	9.0	9.0	
Actuated g/C Ratio	0.45	0.45	0.45	0.45	0.45	0.45	0.34	0.34	0.34	0.10	0.10	
v/c Ratio	0.39	0.46	0.22	0.22	0.69	0.37	0.79	0.52	0.22	0.50	0.75	
Control Delay	21.1	19.3	3.2	15.0	19.7	3.6	38.6	26.6	2.4	55.3	55.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	21.1	19.3	3.2	15.0	19.7	3.6	38.6	26.6	2.4	55.3	55.2	
LOS	C	B	A	B	B	A	D	C	A	E	E	
Approach Delay		16.7			16.2			27.4			55.2	
Approach LOS		B			B			C			E	

Intersection Summary	
Area Type:	Other
Cycle Length: 87	
Actuated Cycle Length: 87	
Offset: 36 (41%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay: 21.3	Intersection LOS: C
Intersection Capacity Utilization 78.1%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 23: University Dr & SR 322 (W Governor Dr)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	85	615	150	81	959	255	313	282	131	48	81	52
Future Volume (veh/h)	85	615	150	81	959	255	313	282	131	48	81	52
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.99		0.99	0.99		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1645	1619	1632	1684	1738	1671	1752	1684	1752	1752	1700	1700
Adj Flow Rate, veh/h	88	634	155	84	989	263	323	291	135	49	84	54
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	2	1	0	1	1	0	0	0	0	4	4
Cap, veh/h	276	1259	560	385	1454	620	437	587	514	181	100	64
Arrive On Green	0.07	0.41	0.41	0.20	0.88	0.88	0.20	0.35	0.35	0.10	0.10	0.10
Sat Flow, veh/h	1567	3076	1370	1604	3302	1408	1668	1684	1475	940	958	616
Grp Volume(v), veh/h	88	634	155	84	989	263	323	291	135	49	0	138
Grp Sat Flow(s),veh/h/ln	1567	1538	1370	1604	1651	1408	1668	1684	1475	940	0	1575
Q Serve(g_s), s	3.2	13.3	2.9	0.0	7.8	3.1	14.1	11.8	5.7	4.3	0.0	7.5
Cycle Q Clear(g_c), s	3.2	13.3	2.9	0.0	7.8	3.1	14.1	11.8	5.7	4.3	0.0	7.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.39
Lane Grp Cap(c), veh/h	276	1259	560	385	1454	620	437	587	514	181	0	165
V/C Ratio(X)	0.32	0.50	0.28	0.22	0.68	0.42	0.74	0.50	0.26	0.27	0.00	0.84
Avail Cap(c_a), veh/h	324	1259	560	385	1454	620	437	587	514	181	0	165
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.69	0.69	0.69	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	18.2	19.1	3.4	20.4	3.4	3.1	25.1	22.3	20.3	36.8	0.0	38.2
Incr Delay (d2), s/veh	0.7	1.4	1.2	0.2	1.8	1.5	6.5	0.7	0.3	0.8	0.0	29.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.1	8.3	3.7	2.1	2.8	1.6	10.3	8.3	3.6	1.8	0.0	7.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.9	20.6	4.7	20.6	5.2	4.6	31.6	23.0	20.6	37.6	0.0	68.1
LnGrp LOS	B	C	A	C	A	A	C	C	C	D	A	E
Approach Vol, veh/h		877			1336			749			187	
Approach Delay, s/veh		17.6			6.0			26.3			60.1	
Approach LOS		B			A			C			E	

Timer - Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	13.0	39.8	21.2	13.0	10.3	42.5		34.2
Change Period (Y+Rc), s	* 5.7	* 5.7	5.4	5.4	* 5.7	* 5.7		5.4
Max Green Setting (Gmax), s	* 7.3	* 34	15.8	7.6	* 7.3	* 34		28.8
Max Q Clear Time (g_c+I1), s	2.0	15.3	16.1	9.5	5.2	9.8		13.8
Green Ext Time (p_c), s	0.1	12.8	0.0	0.0	0.0	18.7		1.4

Intersection Summary	
HCM 6th Ctrl Delay	17.3
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	632	93	73	737	72	421	99	235	37	26	31
Future Volume (vph)	16	632	93	73	737	72	421	99	235	37	26	31
Ideal Flow (vphpl)	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Lane Width (ft)	12	14	12	12	12	12	12	12	14	16	16	16
Grade (%)		1%			-2%			1%			-1%	
Storage Length (ft)	130		0	165		0	150		350	0		0
Storage Lanes	1		0	1		0	1		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		1.00	1.00		1.00		0.98		0.99	
Frt		0.981			0.987				0.850		0.955	
Flt Protected	0.950			0.950			0.950				0.981	
Satd. Flow (prot)	1560	3120	0	1552	3036	0	1544	1625	1489	0	1732	0
Flt Permitted	0.338			0.237			0.714				0.880	
Satd. Flow (perm)	554	3120	0	386	3036	0	1159	1625	1461	0	1551	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		22			18				242		32	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		974			2219			941			923	
Travel Time (s)		19.0			43.2			25.7			25.2	
Confl. Peds. (#/hr)	3		11	11		3	2		8	8		2
Confl. Bikes (#/hr)			4	4								
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	4%	5%	2%	3%	0%	1%	1%	0%	3%	0%	0%
Adj. Flow (vph)	16	652	96	75	760	74	434	102	242	38	27	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	16	748	0	75	834	0	434	102	242	0	97	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.20	1.11	1.20	1.18	1.18	1.18	1.20	1.20	1.11	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	1	1	1	1	
Detector Template		Main25		Left	Main25		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	0	250		48	250		48	48	48	48	48	
Trailing Detector (ft)	0	0		-2	0		-2	-2	-2	-2	-2	
Detector 1 Position(ft)	0	0		-2	0		-2	-2	-2	-2	-2	
Detector 1 Size(ft)	0	0		50	0		50	50	50	50	50	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		244			244							
Detector 2 Size(ft)		6			6							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8		8	4		
Detector Phase	2	2		1	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		3.0	10.0		3.0	3.0	3.0	3.0	3.0	
Minimum Split (s)	25.0	25.0		13.0	25.0		25.0	25.0	25.0	25.0	25.0	
Total Split (s)	38.0	38.0		13.0	51.0		36.0	36.0	36.0	36.0	36.0	
Total Split (%)	43.7%	43.7%		14.9%	58.6%		41.4%	41.4%	41.4%	41.4%	41.4%	
Maximum Green (s)	32.9	32.9		7.9	45.9		31.1	31.1	31.1	31.1	31.1	
Yellow Time (s)	3.8	3.8		3.8	3.8		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.3	1.3		1.3	1.3		1.9	1.9	1.9	1.9	1.9	
Lost Time Adjust (s)	-1.5	-1.5		-1.5	-1.5		-1.5	-1.0	-1.0		-1.0	
Total Lost Time (s)	3.6	3.6		3.6	3.6		3.4	3.9	3.9		3.9	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	6.0	6.0		3.0	6.0		3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	25.0	25.0		0.0	25.0		0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	13.0	13.0		0.0	13.0		0.0	0.0	0.0	0.0	0.0	
Recall Mode	C-Max	C-Max		None	C-Max		None	None	None	None	None	
Act Effct Green (s)	37.3	37.3		47.4	47.4		32.6	32.1	32.1		32.1	
Actuated g/C Ratio	0.43	0.43		0.54	0.54		0.37	0.37	0.37		0.37	
v/c Ratio	0.07	0.55		0.23	0.50		1.00	0.17	0.35		0.16	
Control Delay	7.8	8.8		7.8	8.8		73.0	19.5	4.2		13.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0		0.0	
Total Delay	7.8	8.8		7.8	8.8		73.0	19.5	4.2		13.7	
LOS	A	A		A	A		E	B	A		B	
Approach Delay		8.8			8.7			44.6			13.7	
Approach LOS		A			A			D			B	

Intersection Summary	
Area Type:	Other
Cycle Length: 87	
Actuated Cycle Length: 87	
Offset: 44.9 (52%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.00	
Intersection Signal Delay: 19.9	Intersection LOS: B
Intersection Capacity Utilization 78.0%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 24: Centerview Dr & SR 322 (W Governor Dr)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	632	93	73	737	72	421	99	235	37	26	31
Future Volume (veh/h)	16	632	93	73	737	72	421	99	235	37	26	31
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.97	0.99		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1645	1657	1593	1692	1679	1679	1632	1632	1711	1752	1752	1752
Adj Flow Rate, veh/h	16	652	96	75	760	74	434	102	242	38	27	32
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	4	4	2	3	3	1	1	0	0	0	0
Cap, veh/h	320	1234	181	448	1604	156	551	597	527	223	157	159
Arrive On Green	0.90	0.90	0.90	0.06	0.55	0.55	0.37	0.37	0.37	0.37	0.37	0.37
Sat Flow, veh/h	609	2739	403	1612	2927	285	1231	1632	1440	453	428	434
Grp Volume(v), veh/h	16	374	374	75	414	420	434	102	242	97	0	0
Grp Sat Flow(s),veh/h/ln	609	1574	1567	1612	1595	1617	1231	1632	1440	1315	0	0
Q Serve(g_s), s	0.5	3.9	3.9	2.0	13.8	13.8	24.4	3.7	11.1	0.5	0.0	0.0
Cycle Q Clear(g_c), s	5.8	3.9	3.9	2.0	13.8	13.8	28.6	3.7	11.1	4.1	0.0	0.0
Prop In Lane	1.00		0.26	1.00		0.18	1.00		1.00	0.39		0.33
Lane Grp Cap(c), veh/h	320	709	706	448	874	886	551	597	527	546	0	0
V/C Ratio(X)	0.05	0.53	0.53	0.17	0.47	0.47	0.79	0.17	0.46	0.18	0.00	0.00
Avail Cap(c_a), veh/h	320	709	706	532	874	886	555	602	531	550	0	0
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.91	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	3.3	2.6	2.6	10.3	12.0	12.0	25.9	18.7	21.0	18.5	0.0	0.0
Incr Delay (d2), s/veh	0.3	2.6	2.6	0.2	1.8	1.8	7.4	0.1	0.6	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.1	2.2	2.2	1.2	8.4	8.5	14.4	2.5	6.8	2.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	3.5	5.1	5.1	10.5	13.8	13.8	33.3	18.8	21.7	18.7	0.0	0.0
LnGrp LOS	A	A	A	B	B	B	C	B	C	B	A	A
Approach Vol, veh/h		764			909			778			97	
Approach Delay, s/veh		5.1			13.6			27.8			18.7	
Approach LOS		A			B			C			B	

Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	8.5	42.8		35.7		51.3		35.7				
Change Period (Y+Rc), s	5.1	5.1		* 4.9		5.1		* 4.9				
Max Green Setting (Gmax), s	7.9	32.9		* 31		45.9		* 31				
Max Q Clear Time (g_c+I1), s	4.0	5.9		6.1		15.8		30.6				
Green Ext Time (p_c), s	0.1	17.2		0.4		20.5		0.2				

Intersection Summary	
HCM 6th Ctrl Delay	15.5
HCM 6th LOS	B

Notes

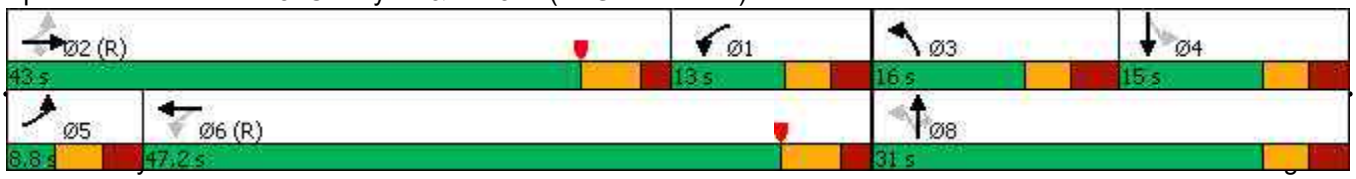
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	674	172	120	622	37	211	51	335	24	41	13
Future Volume (vph)	12	674	172	120	622	37	211	51	335	24	41	13
Ideal Flow (vphpl)	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Lane Width (ft)	10	12	14	10	14	14	10	11	12	10	12	12
Grade (%)		-3%			-2%			0%			1%	
Storage Length (ft)	100		200	205		0	100		75	75		0
Storage Lanes	1		1	1		0	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.98	1.00			1.00				1.00	
Frt			0.850		0.991				0.850		0.963	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1485	3089	1503	1435	3250	0	1449	1595	1402	1456	1509	0
Flt Permitted	0.282			0.360			0.459			0.722		
Satd. Flow (perm)	441	3089	1470	543	3250	0	699	1595	1402	1106	1509	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			184		10				311		14	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		1214			446			770			537	
Travel Time (s)		23.6			8.7			21.0			14.6	
Confl. Peds. (#/hr)			1	1			2					2
Confl. Bikes (#/hr)			1	1			2					2
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	3%	1%	3%	3%	3%	1%	0%	0%	0%	3%	8%
Adj. Flow (vph)	13	702	179	125	648	39	220	53	349	25	43	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	13	702	179	125	687	0	220	53	349	25	57	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.28	1.17	1.08	1.29	1.09	1.09	1.30	1.25	1.20	1.31	1.20	1.20
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	1	1	1	1	
Detector Template		Main25			Main25							
Leading Detector (ft)	38	250	38	38	250		38	38	38	38	38	
Trailing Detector (ft)	-2	0	-2	-2	0		-2	-2	-2	-2	-2	
Detector 1 Position(ft)	-2	0	-2	-2	0		-2	-2	-2	-2	-2	
Detector 1 Size(ft)	40	0	40	40	0		40	40	40	40	40	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		244			244							
Detector 2 Size(ft)		6			6							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases	2		2	6			8		8	4		
Detector Phase	5	2	2	1	6		3	8	8	4	4	
Switch Phase												
Minimum Initial (s)	3.0	10.0	10.0	3.0	10.0		3.0	3.0	3.0	3.0	3.0	
Minimum Split (s)	8.7	25.0	25.0	13.0	25.0		13.0	25.0	25.0	15.0	15.0	
Total Split (s)	8.8	43.0	43.0	13.0	47.2		16.0	31.0	31.0	15.0	15.0	
Total Split (%)	10.1%	49.4%	49.4%	14.9%	54.3%		18.4%	35.6%	35.6%	17.2%	17.2%	
Maximum Green (s)	3.1	37.1	37.1	7.3	41.3		9.9	25.3	25.3	9.3	9.3	
Yellow Time (s)	3.1	3.9	3.9	3.1	3.9		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.6	2.0	2.0	2.6	2.0		3.1	2.7	2.7	2.7	2.7	
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	-1.5		-1.5	-1.5	-1.5	-1.5	-1.5	
Total Lost Time (s)	4.2	4.4	4.4	4.2	4.4		4.6	4.2	4.2	4.2	4.2	
Lead/Lag	Lead	Lead	Lead	Lag	Lag		Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)	3.0	6.0	6.0	3.0	6.0		3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	12.5	12.5	0.0	12.5		0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	25.0	25.0	0.0	25.0		0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	C-Max	C-Max	None	C-Max		None	None	None	None	None	
Act Effct Green (s)	42.6	42.4	42.4	53.8	53.6		22.6	23.0	23.0	9.3	9.3	
Actuated g/C Ratio	0.49	0.49	0.49	0.62	0.62		0.26	0.26	0.26	0.11	0.11	
v/c Ratio	0.05	0.47	0.22	0.29	0.34		0.79	0.13	0.58	0.21	0.33	
Control Delay	5.2	7.6	1.2	10.0	7.8		48.2	22.9	8.7	39.3	33.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	5.2	7.6	1.2	10.0	7.8		48.2	22.9	8.7	39.3	33.7	
LOS	A	A	A	A	A		D	C	A	D	C	
Approach Delay		6.2			8.2			23.9			35.4	
Approach LOS		A			A			C			D	

Intersection Summary	
Area Type:	Other
Cycle Length: 87	
Actuated Cycle Length: 87	
Offset: 36.3 (42%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay: 12.4	Intersection LOS: B
Intersection Capacity Utilization 59.9%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 25: Cherry Dr & SR 322 (W Governor Dr)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	674	172	120	622	37	211	51	335	24	41	13
Future Volume (veh/h)	12	674	172	120	622	37	211	51	335	24	41	13
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1752	1713	1809	1679	1746	1746	1637	1650	1650	1645	1606	1606
Adj Flow Rate, veh/h	12	702	179	125	648	39	220	53	349	25	43	14
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	3	1	3	3	3	1	0	0	0	3	3
Cap, veh/h	314	1444	665	424	1714	103	372	474	395	177	119	39
Arrive On Green	0.03	0.44	0.44	0.12	0.54	0.54	0.13	0.29	0.29	0.10	0.10	0.10
Sat Flow, veh/h	1669	3255	1499	1599	3175	191	1559	1650	1377	909	1153	375
Grp Volume(v), veh/h	12	702	179	125	338	349	220	53	349	25	0	57
Grp Sat Flow(s),veh/h/ln	1669	1628	1499	1599	1659	1707	1559	1650	1377	909	0	1529
Q Serve(g_s), s	0.4	13.3	3.4	0.0	10.3	10.3	10.6	2.1	21.1	2.2	0.0	3.0
Cycle Q Clear(g_c), s	0.4	13.3	3.4	0.0	10.3	10.3	10.6	2.1	21.1	2.2	0.0	3.0
Prop In Lane	1.00		1.00	1.00		0.11	1.00		1.00	1.00		0.25
Lane Grp Cap(c), veh/h	314	1444	665	424	896	921	372	474	395	177	0	158
V/C Ratio(X)	0.04	0.49	0.27	0.29	0.38	0.38	0.59	0.11	0.88	0.14	0.00	0.36
Avail Cap(c_a), veh/h	359	1444	665	424	896	921	372	508	424	196	0	190
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.68	0.68	0.68	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.7	17.2	4.1	21.8	11.6	11.6	28.1	22.8	29.6	36.0	0.0	36.3
Incr Delay (d2), s/veh	0.0	1.2	1.0	0.4	1.2	1.2	1.7	0.1	13.5	0.4	0.0	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.2	8.5	4.0	3.5	6.7	6.9	6.8	1.5	12.2	0.9	0.0	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.8	18.3	5.1	22.2	12.8	12.8	29.8	22.9	43.1	36.3	0.0	37.7
LnGrp LOS	B	B	A	C	B	B	C	C	D	D	A	D
Approach Vol, veh/h		893			812			622			82	
Approach Delay, s/veh		15.6			14.2			36.7			37.3	
Approach LOS		B			B			D			D	

Timer - Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	14.8	43.0	16.0	13.2	6.5	51.4		29.2
Change Period (Y+Rc), s	5.9	* 5.9	6.1	* 5.7	5.7	5.9		* 5.7
Max Green Setting (Gmax), s	7.3	* 37	9.9	* 9.3	3.1	41.3		* 25
Max Q Clear Time (g_c+I1), s	2.0	15.3	12.6	5.0	2.4	12.3		23.1
Green Ext Time (p_c), s	0.1	10.2	0.0	0.1	0.0	10.3		0.4

Intersection Summary	
HCM 6th Ctrl Delay	21.3
HCM 6th LOS	C

Notes

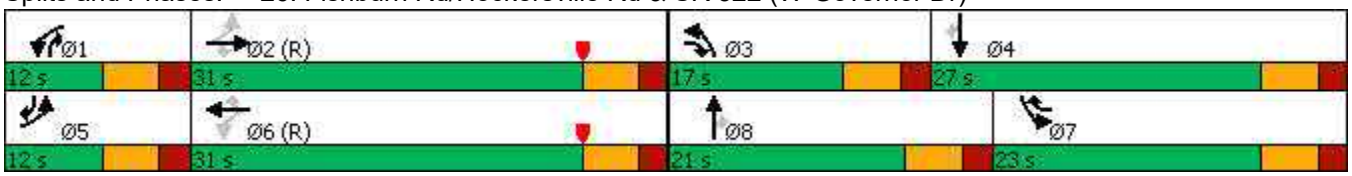
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	69	813	165	108	546	189	180	240	127	265	308	42
Future Volume (vph)	69	813	165	108	546	189	180	240	127	265	308	42
Ideal Flow (vphpl)	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Lane Width (ft)	11	12	14	11	12	14	11	11	13	11	12	12
Grade (%)		1%			0%			-1%			2%	
Storage Length (ft)	140		300	125		75	135		85	100		100
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1508	3088	1474	1515	3014	1481	1508	1587	1456	1500	1601	1388
Flt Permitted	0.350			0.152			0.950			0.950		
Satd. Flow (perm)	555	3088	1474	242	3014	1481	1508	1587	1456	1500	1601	1388
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			168			193			104			104
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		528			252			343			1393	
Travel Time (s)		10.3			4.9			6.7			27.1	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	1%	1%	0%	4%	1%	1%	1%	0%	0%	2%	0%
Adj. Flow (vph)	70	830	168	110	557	193	184	245	130	270	314	43
Shared Lane Traffic (%)												
Lane Group Flow (vph)	70	830	168	110	557	193	184	245	130	270	314	43
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.26	1.20	1.11	1.25	1.20	1.10	1.24	1.24	1.14	1.26	1.21	1.21
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	1	1	1	1	1
Detector Template		Main25	Right	Left	Main25	Right						Right
Leading Detector (ft)	38	250	48	48	250	48	38	38	38	38	38	48
Trailing Detector (ft)	-2	0	-2	-2	0	-2	-2	-2	-2	-2	-2	-2
Detector 1 Position(ft)	-2	0	-2	-2	0	-2	-2	-2	-2	-2	-2	-2
Detector 1 Size(ft)	40	0	50	50	0	50	40	40	40	40	40	50
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		244			244							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8	1	7	4	5
Permitted Phases	2		2	6		6			8			4
Detector Phase	5	2	3	1	6	7	3	8	1	7	4	5
Switch Phase												
Minimum Initial (s)	3.0	10.0	3.0	3.0	10.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Split (s)	12.0	25.0	12.0	12.0	25.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
Total Split (s)	12.0	31.0	17.0	12.0	31.0	23.0	17.0	21.0	12.0	23.0	27.0	12.0
Total Split (%)	13.8%	35.6%	19.5%	13.8%	35.6%	26.4%	19.5%	24.1%	13.8%	26.4%	31.0%	13.8%
Maximum Green (s)	6.4	25.4	11.3	6.4	25.4	17.3	11.3	15.3	6.4	17.3	21.3	6.4
Yellow Time (s)	3.6	3.6	3.7	3.6	3.6	3.7	3.7	3.7	3.6	3.7	3.7	3.6
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5
Total Lost Time (s)	4.1	4.1	4.2	4.1	4.1	4.2	4.2	4.2	4.1	4.2	4.2	4.1
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lead	Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	6.5	3.0	3.0	6.5	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	25.0	0.0	0.0	25.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	12.5	0.0	0.0	12.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	C-Max	None	None	C-Max	None	None	None	None	None	None	None
Act Effct Green (s)	35.7	28.0	44.8	36.6	30.3	49.3	12.8	16.3	24.3	18.3	21.8	33.7
Actuated g/C Ratio	0.41	0.32	0.51	0.42	0.35	0.57	0.15	0.19	0.28	0.21	0.25	0.39
v/c Ratio	0.22	0.84	0.20	0.51	0.53	0.21	0.83	0.82	0.27	0.86	0.78	0.07
Control Delay	12.9	25.9	0.7	30.8	11.9	0.6	64.3	53.5	4.9	59.4	45.4	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.9	25.9	0.7	30.8	11.9	0.6	64.3	53.5	4.9	59.4	45.4	0.2
LOS	B	C	A	C	B	A	E	D	A	E	D	A
Approach Delay		21.1			11.8			45.8			48.4	
Approach LOS		C			B			D			D	

Intersection Summary	
Area Type:	Other
Cycle Length: 87	
Actuated Cycle Length: 87	
Offset: 33 (38%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay: 28.4	Intersection LOS: C
Intersection Capacity Utilization 78.1%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 26: Fishburn Rd/Hockersville Rd & SR 322 (W Governor Dr)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	69	813	165	108	546	189	180	240	127	265	308	42
Future Volume (veh/h)	69	813	165	108	546	189	180	240	127	265	308	42
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1645	1632	1697	1650	1599	1703	1671	1671	1752	1630	1604	1630
Adj Flow Rate, veh/h	70	830	168	110	557	193	184	245	130	270	314	43
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	1	1	0	4	1	1	1	0	0	2	0
Cap, veh/h	315	1041	694	257	1081	813	234	311	395	322	396	423
Arrive On Green	0.06	0.34	0.34	0.08	0.36	0.36	0.05	0.06	0.06	0.21	0.25	0.25
Sat Flow, veh/h	1567	3101	1438	1571	3037	1443	1592	1671	1484	1552	1604	1381
Grp Volume(v), veh/h	70	830	168	110	557	193	184	245	130	270	314	43
Grp Sat Flow(s),veh/h/ln	1567	1550	1438	1571	1519	1443	1592	1671	1484	1552	1604	1381
Q Serve(g_s), s	2.5	21.1	6.0	3.8	12.6	1.2	9.9	12.6	3.3	14.5	16.0	1.9
Cycle Q Clear(g_c), s	2.5	21.1	6.0	3.8	12.6	1.2	9.9	12.6	3.3	14.5	16.0	1.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	315	1041	694	257	1081	813	234	311	395	322	396	423
V/C Ratio(X)	0.22	0.80	0.24	0.43	0.52	0.24	0.79	0.79	0.33	0.84	0.79	0.10
Avail Cap(c_a), veh/h	365	1041	694	274	1081	813	234	323	405	335	420	444
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.4	26.2	13.2	19.2	22.1	2.8	40.0	39.1	10.6	33.1	30.7	21.6
Incr Delay (d2), s/veh	0.4	6.4	0.8	1.1	1.8	0.7	15.3	11.3	0.5	16.3	9.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.6	13.0	3.5	2.5	8.0	1.1	8.7	10.7	2.6	11.0	11.3	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.8	32.6	14.0	20.4	23.8	3.5	55.4	50.5	11.0	49.4	40.2	21.7
LnGrp LOS	B	C	B	C	C	A	E	D	B	D	D	C
Approach Vol, veh/h		1068			860			559			627	
Approach Delay, s/veh		28.7			18.8			42.9			42.9	
Approach LOS		C			B			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	33.3	17.0	25.7	9.3	35.1	22.3	20.4
Change Period (Y+Rc), s	5.6	5.6	* 5.7	* 5.7	5.6	5.6	* 5.7	* 5.7
Max Green Setting (Gmax), s	6.4	25.4	* 11	* 21	6.4	25.4	* 17	* 15
Max Q Clear Time (g_c+I1), s	5.8	23.1	11.9	18.0	4.5	14.6	16.5	14.6
Green Ext Time (p_c), s	0.0	2.1	0.0	0.4	0.0	8.0	0.1	0.1

Intersection Summary	
HCM 6th Ctrl Delay	31.4
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	6	266	0	1	2	231	16	0	4	10	9
Future Volume (vph)	17	6	266	0	1	2	231	16	0	4	10	9
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	13	13	15	15	12	11	12	11	12	12	12
Grade (%)		2%			-1%			-2%			0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.876			0.910						0.946	
Flt Protected		0.997						0.955			0.992	
Satd. Flow (prot)	0	1608	0	0	1811	0	0	1703	0	0	1689	0
Flt Permitted		0.997						0.955			0.992	
Satd. Flow (perm)	0	1608	0	0	1811	0	0	1703	0	0	1689	0
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		199			375			774			244	
Travel Time (s)		5.4			10.2			15.1			4.8	
Confl. Peds. (#/hr)			4	4			1					1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	2%	1%	0%	0%	0%	0%
Adj. Flow (vph)	18	6	283	0	1	2	246	17	0	4	11	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	307	0	0	3	0	0	263	0	0	25	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.04	1.04	0.94	0.94	1.07	1.11	1.06	1.11	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 53.5%	ICU Level of Service A
Analysis Period (min) 15	

Intersection	
Intersection Delay, s/veh	9.7
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	17	6	266	0	1	2	231	16	0	4	10	9
Future Vol, veh/h	17	6	266	0	1	2	231	16	0	4	10	9
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	0	0	0	0	0	0	2	1	0	0	0	0
Mvmt Flow	18	6	283	0	1	2	246	17	0	4	11	10
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9.3	7.6	10.4	7.9
HCM LOS	A	A	B	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	94%	6%	0%	17%
Vol Thru, %	6%	2%	33%	43%
Vol Right, %	0%	92%	67%	39%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	247	289	3	23
LT Vol	231	17	0	4
Through Vol	16	6	1	10
RT Vol	0	266	2	9
Lane Flow Rate	263	307	3	24
Geometry Grp	1	1	1	1
Degree of Util (X)	0.351	0.349	0.004	0.032
Departure Headway (Hd)	4.803	4.082	4.549	4.685
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	746	882	784	760
Service Time	2.845	2.103	2.591	2.736
HCM Lane V/C Ratio	0.353	0.348	0.004	0.032
HCM Control Delay	10.4	9.3	7.6	7.9
HCM Lane LOS	B	A	A	A
HCM 95th-tile Q	1.6	1.6	0	0.1

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	111	337	109	422	440	128
Future Volume (vph)	111	337	109	422	440	128
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	14	14
Grade (%)	-1%			1%	-2%	
Storage Length (ft)	250	0	150			75
Storage Lanes	1	1	1			1
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1685	1538	1701	1773	1901	1648
Flt Permitted	0.950		0.484			
Satd. Flow (perm)	1685	1538	867	1773	1901	1648
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		340				102
Link Speed (mph)	35			35	35	
Link Distance (ft)	212			489	343	
Travel Time (s)	4.1			9.5	6.7	
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	2%	0%	0%	1%	2%	0%
Adj. Flow (vph)	112	340	110	426	444	129
Shared Lane Traffic (%)						
Lane Group Flow (vph)	112	340	110	426	444	129
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.07	1.07	1.08	1.08	0.97	0.97
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	1
Detector Template	Left	Right	Left	Thru	Thru	Right
Leading Detector (ft)	20	20	20	100	100	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	20	6	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	4			2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	2	2	6	6
Switch Phase						
Minimum Initial (s)	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	37.0	37.0	50.0	50.0	50.0	50.0
Total Split (%)	42.5%	42.5%	57.5%	57.5%	57.5%	57.5%
Maximum Green (s)	31.5	31.5	44.5	44.5	44.5	44.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	C-Min	C-Min	C-Min	C-Min
Act Effct Green (s)	12.8	12.8	66.2	66.2	66.2	66.2
Actuated g/C Ratio	0.15	0.15	0.76	0.76	0.76	0.76
v/c Ratio	0.45	0.66	0.17	0.32	0.31	0.10
Control Delay	38.8	10.5	4.2	4.5	2.1	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.5	0.0
Total Delay	38.8	10.5	4.2	4.5	2.5	0.3
LOS	D	B	A	A	A	A
Approach Delay	17.5			4.4	2.0	
Approach LOS	B			A	A	

Intersection Summary	
Area Type: Other	
Cycle Length: 87	
Actuated Cycle Length: 87	
Offset: 75 (86%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	
Natural Cycle: 40	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.66	
Intersection Signal Delay: 7.3	Intersection LOS: A
Intersection Capacity Utilization 53.1%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 28: Fishburn Rd & Sand Hill Rd

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	111	337	109	422	440	128
Future Volume (veh/h)	111	337	109	422	440	128
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1809	1837	1794	1780	1920	1950
Adj Flow Rate, veh/h	112	340	110	426	444	129
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	0	0	1	2	0
Cap, veh/h	449	406	466	1152	1243	1069
Arrive On Green	0.26	0.26	0.65	0.65	0.21	0.21
Sat Flow, veh/h	1723	1557	850	1780	1920	1652
Grp Volume(v), veh/h	112	340	110	426	444	129
Grp Sat Flow(s),veh/h/ln	1723	1557	850	1780	1920	1652
Q Serve(g_s), s	4.5	18.0	7.1	9.7	17.1	5.5
Cycle Q Clear(g_c), s	4.5	18.0	24.2	9.7	17.1	5.5
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	449	406	466	1152	1243	1069
V/C Ratio(X)	0.25	0.84	0.24	0.37	0.36	0.12
Avail Cap(c_a), veh/h	653	591	466	1152	1243	1069
HCM Platoon Ratio	1.00	1.00	1.00	1.00	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.80	0.80
Uniform Delay (d), s/veh	25.4	30.4	15.1	7.1	18.8	14.2
Incr Delay (d2), s/veh	0.3	7.0	1.2	0.9	0.6	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.2	11.6	2.6	6.0	13.2	3.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	25.7	37.4	16.3	8.0	19.4	14.4
LnGrp LOS	C	D	B	A	B	B
Approach Vol, veh/h	452			536	573	
Approach Delay, s/veh	34.5			9.7	18.3	
Approach LOS	C			A	B	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		60.3		26.7		60.3
Change Period (Y+Rc), s		5.5		5.5		5.5
Max Green Setting (Gmax), s		44.5		31.5		44.5
Max Q Clear Time (g_c+I1), s		26.2		20.0		19.1
Green Ext Time (p_c), s		3.1		1.2		3.2

Intersection Summary	
HCM 6th Ctrl Delay	20.0
HCM 6th LOS	C

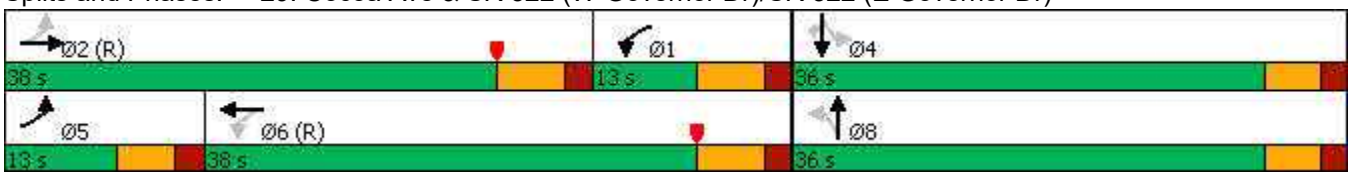
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	63	961	44	53	619	75	39	351	102	78	444	75
Future Volume (vph)	63	961	44	53	619	75	39	351	102	78	444	75
Ideal Flow (vphpl)	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Lane Width (ft)	10	15	15	11	13	13	11	13	13	11	12	15
Grade (%)		-2%			-3%			0%			0%	
Storage Length (ft)	175		0	80		0	75		0	75		150
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.993			0.984			0.966				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1449	3394	0	1538	3203	0	1429	1610	0	1500	1602	1498
Flt Permitted	0.220			0.227			0.232			0.221		
Satd. Flow (perm)	335	3394	0	367	3203	0	349	1610	0	349	1602	1498
Right Turn on Red			No			Yes			No			Yes
Satd. Flow (RTOR)					17							191
Link Speed (mph)		35			40			35			35	
Link Distance (ft)		1911			1234			997			1054	
Travel Time (s)		37.2			21.0			19.4			20.5	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	2%	0%	0%	1%	1%	6%	3%	0%	1%	3%	3%
Adj. Flow (vph)	66	1001	46	55	645	78	41	366	106	81	463	78
Shared Lane Traffic (%)												
Lane Group Flow (vph)	66	1047	0	55	723	0	41	472	0	81	463	78
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.29	1.05	1.05	1.23	1.13	1.13	1.25	1.15	1.15	1.25	1.20	1.06
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	1		1	1	1
Detector Template		Main25			Main25							
Leading Detector (ft)	38	250		38	250		38	38		38	38	0
Trailing Detector (ft)	-2	0		-2	0		-2	-2		-2	-2	0
Detector 1 Position(ft)	-2	0		-2	0		-2	-2		-2	-2	0
Detector 1 Size(ft)	40	0		40	0		40	40		40	40	0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		244			244							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6			8			4		4
Detector Phase	5	2		1	6		8	8		4	4	4
Switch Phase												
Minimum Initial (s)	3.0	10.0		3.0	10.0		3.0	3.0		3.0	3.0	3.0
Minimum Split (s)	13.0	25.0		13.0	25.0		20.0	20.0		20.0	20.0	20.0
Total Split (s)	13.0	38.0		13.0	38.0		36.0	36.0		36.0	36.0	36.0
Total Split (%)	14.9%	43.7%		14.9%	43.7%		41.4%	41.4%		41.4%	41.4%	41.4%
Maximum Green (s)	7.2	31.8		6.8	31.8		30.6	30.6		30.6	30.6	30.6
Yellow Time (s)	3.8	4.4		4.4	4.4		3.6	3.6		3.6	3.6	3.6
All-Red Time (s)	2.0	1.8		1.8	1.8		1.8	1.8		1.8	1.8	1.8
Lost Time Adjust (s)	-1.5	-1.5		-1.5	-1.5		-1.5	-1.5		-1.5	-1.5	-1.5
Total Lost Time (s)	4.3	4.7		4.7	4.7		3.9	3.9		3.9	3.9	3.9
Lead/Lag	Lead	Lead		Lag	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	5.5		3.0	5.5		3.0	3.0		3.0	3.0	3.0
Minimum Gap (s)	3.0	2.0		3.0	2.0		3.0	3.0		3.0	3.0	3.0
Time Before Reduce (s)	0.0	25.0		0.0	25.0		0.0	0.0		0.0	0.0	0.0
Time To Reduce (s)	0.0	12.5		0.0	12.5		0.0	0.0		0.0	0.0	0.0
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	None
Act Effct Green (s)	41.2	40.8		38.4	38.4		29.8	29.8		29.8	29.8	29.8
Actuated g/C Ratio	0.47	0.47		0.44	0.44		0.34	0.34		0.34	0.34	0.34
v/c Ratio	0.25	0.66		0.21	0.51		0.34	0.86		0.68	0.84	0.12
Control Delay	8.3	9.5		13.1	12.1		29.7	42.9		54.6	41.8	0.4
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	8.3	9.5		13.1	12.1		29.7	42.9		54.6	41.8	0.4
LOS	A	A		B	B		C	D		D	D	A
Approach Delay		9.4			12.2			41.9			38.2	
Approach LOS		A			B			D			D	

Intersection Summary

Area Type: Other
Cycle Length: 87
Actuated Cycle Length: 87
Offset: 74.8 (86%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.86
Intersection Signal Delay: 21.6 Intersection LOS: C
Intersection Capacity Utilization 83.5% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 29: Cocoa Ave & SR 322 (W Governor Dr)/SR 322 (E Governor Dr)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	63	961	44	53	619	75	39	351	102	78	444	75
Future Volume (veh/h)	63	961	44	53	619	75	39	351	102	78	444	75
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1692	1760	1760	1752	1809	1809	1573	1676	1676	1637	1611	1676
Adj Flow Rate, veh/h	66	1001	46	55	645	78	41	366	106	81	462	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	0	1	1	6	3	3	1	3	3
Cap, veh/h	262	1246	57	278	1312	158	178	461	133	174	595	
Arrive On Green	0.06	0.38	0.38	0.10	0.43	0.43	0.37	0.37	0.37	0.37	0.37	0.00
Sat Flow, veh/h	1612	3255	150	1669	3088	373	826	1249	362	851	1611	1420
Grp Volume(v), veh/h	66	514	533	55	359	364	41	0	472	81	462	0
Grp Sat Flow(s),veh/h/ln	1612	1672	1733	1669	1719	1742	826	0	1611	851	1611	1420
Q Serve(g_s), s	2.4	23.8	23.8	0.0	13.2	13.2	4.0	0.0	22.8	8.2	22.1	0.0
Cycle Q Clear(g_c), s	2.4	23.8	23.8	0.0	13.2	13.2	26.1	0.0	22.8	30.9	22.1	0.0
Prop In Lane	1.00		0.09	1.00		0.21	1.00		0.22	1.00		1.00
Lane Grp Cap(c), veh/h	262	640	663	278	730	740	178	0	594	174	595	
V/C Ratio(X)	0.25	0.80	0.80	0.20	0.49	0.49	0.23	0.00	0.79	0.46	0.78	
Avail Cap(c_a), veh/h	330	640	663	278	730	740	178	0	594	174	595	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	20.3	23.9	23.9	33.6	18.2	18.2	35.8	0.0	24.5	38.3	24.3	0.0
Incr Delay (d2), s/veh	0.5	10.3	10.0	0.3	2.4	2.3	0.7	0.0	7.3	1.9	6.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.6	15.9	16.3	1.9	9.0	9.1	1.5	0.0	14.3	3.1	13.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.8	34.2	33.9	34.0	20.5	20.5	36.5	0.0	31.8	40.2	30.7	0.0
LnGrp LOS	C	C	C	C	C	C	D	A	C	D	C	
Approach Vol, veh/h		1113			778			513			543	A
Approach Delay, s/veh		33.3			21.5			32.2			32.1	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.0	38.0		36.0	9.3	41.7		36.0
Change Period (Y+Rc), s	* 6.2	* 6.2		* 5.4	* 5.8	* 6.2		* 5.4
Max Green Setting (Gmax), s	* 6.8	* 32		* 31	* 7.2	* 32		* 31
Max Q Clear Time (g_c+I1), s	2.0	25.8		32.9	4.4	15.2		28.1
Green Ext Time (p_c), s	0.0	5.4		0.0	0.0	10.7		0.6

Intersection Summary	
HCM 6th Ctrl Delay	29.8
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

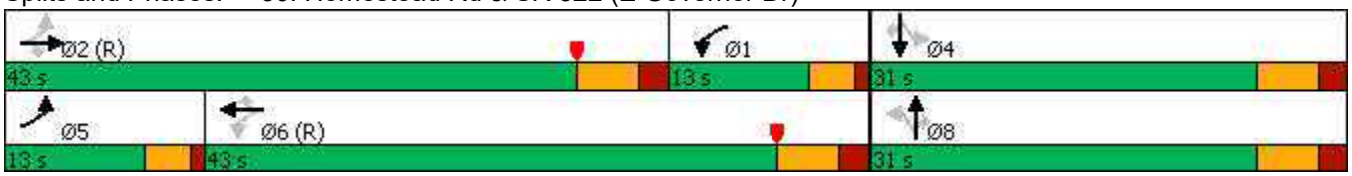
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	128	981	8	45	562	26	7	179	39	59	303	200
Future Volume (vph)	128	981	8	45	562	26	7	179	39	59	303	200
Ideal Flow (vphpl)	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Grade (%)		2%			2%			2%			2%	
Storage Length (ft)	125		100	100		100	100		100	110		200
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1552	3073	1388	1521	3073	1388	1552	1601	1388	1492	1601	1388
Flt Permitted	0.338			0.261			0.327			0.550		
Satd. Flow (perm)	552	3073	1388	418	3073	1388	534	1601	1388	864	1601	1388
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			113			88			163			215
Link Speed (mph)		40			40			35			35	
Link Distance (ft)		1219			3941			1026			2312	
Travel Time (s)		20.8			67.2			20.0			45.0	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	1%	0%	2%	1%	0%	0%	2%	0%	4%	2%	0%
Adj. Flow (vph)	138	1055	9	48	604	28	8	192	42	63	326	215
Shared Lane Traffic (%)												
Lane Group Flow (vph)	138	1055	9	48	604	28	8	192	42	63	326	215
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	1	1	1	1	1
Detector Template		Main25			Main25							
Leading Detector (ft)	38	250	38	38	250	38	38	38	38	38	38	38
Trailing Detector (ft)	-2	0	-2	-2	0	-2	-2	-2	-2	-2	-2	-2
Detector 1 Position(ft)	-2	0	-2	-2	0	-2	-2	-2	-2	-2	-2	-2
Detector 1 Size(ft)	40	0	40	40	0	40	40	40	40	40	40	40
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		244			244							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6		6	8		8	4		4
Detector Phase	5	2	2	1	6	6	8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	3.0	12.0	12.0	3.0	12.0	12.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Split (s)	13.0	29.0	29.0	13.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0
Total Split (s)	13.0	43.0	43.0	13.0	43.0	43.0	31.0	31.0	31.0	31.0	31.0	31.0
Total Split (%)	14.9%	49.4%	49.4%	14.9%	49.4%	49.4%	35.6%	35.6%	35.6%	35.6%	35.6%	35.6%
Maximum Green (s)	9.0	37.0	37.0	9.0	37.0	37.0	25.0	25.0	25.0	25.0	25.0	25.0
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5
Total Lost Time (s)	2.5	4.5	4.5	2.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0	6.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	28.0	28.0	0.0	28.0	28.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	14.0	14.0	0.0	14.0	14.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
Act Effct Green (s)	50.2	48.2	48.2	47.7	42.9	42.9	23.0	23.0	23.0	23.0	23.0	23.0
Actuated g/C Ratio	0.58	0.55	0.55	0.55	0.49	0.49	0.26	0.26	0.26	0.26	0.26	0.26
v/c Ratio	0.32	0.62	0.01	0.14	0.40	0.04	0.06	0.45	0.09	0.28	0.77	0.41
Control Delay	3.8	3.8	0.0	15.2	15.9	0.1	23.0	29.6	0.4	27.4	42.1	6.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	3.8	3.8	0.0	15.2	15.9	0.1	23.0	29.6	0.4	27.4	42.1	6.0
LOS	A	A	A	B	B	A	C	C	A	C	D	A
Approach Delay		3.8			15.2			24.3			27.7	
Approach LOS		A			B			C			C	

Intersection Summary	
Area Type:	Other
Cycle Length: 87	
Actuated Cycle Length: 87	
Offset: 33 (38%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.77	
Intersection Signal Delay: 13.7	Intersection LOS: B
Intersection Capacity Utilization 70.8%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 30: Homestead Rd & SR 322 (E Governor Dr)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	128	981	8	45	562	26	7	179	39	59	303	200
Future Volume (veh/h)	128	981	8	45	562	26	7	179	39	59	303	200
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1630	1617	1630	1604	1617	1630	1630	1604	1630	1578	1604	1630
Adj Flow Rate, veh/h	138	1055	9	48	604	28	8	192	42	63	326	215
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	1	0	2	1	0	0	2	0	4	2	0
Cap, veh/h	370	1327	596	380	1615	726	127	397	342	231	397	342
Arrive On Green	0.09	0.43	0.43	0.17	0.53	0.53	0.25	0.25	0.25	0.25	0.25	0.25
Sat Flow, veh/h	1552	3072	1381	1527	3072	1381	795	1604	1381	1021	1604	1381
Grp Volume(v), veh/h	138	1055	9	48	604	28	8	192	42	63	326	215
Grp Sat Flow(s),veh/h/ln	1552	1536	1381	1527	1536	1381	795	1604	1381	1021	1604	1381
Q Serve(g_s), s	4.9	25.9	0.3	0.0	10.1	0.9	0.8	8.9	2.1	4.9	16.7	12.1
Cycle Q Clear(g_c), s	4.9	25.9	0.3	0.0	10.1	0.9	17.5	8.9	2.1	13.8	16.7	12.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	370	1327	596	380	1615	726	127	397	342	231	397	342
V/C Ratio(X)	0.37	0.80	0.02	0.13	0.37	0.04	0.06	0.48	0.12	0.27	0.82	0.63
Avail Cap(c_a), veh/h	411	1359	611	380	1615	726	172	489	421	289	489	421
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.8	21.4	14.1	26.5	12.2	10.0	39.2	28.0	25.4	33.9	30.9	29.2
Incr Delay (d2), s/veh	0.6	5.0	0.0	0.1	0.7	0.1	0.2	0.9	0.2	0.6	8.9	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.0	14.3	0.2	1.4	5.8	0.5	0.3	6.1	1.2	2.2	11.5	7.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.4	26.4	14.2	26.6	12.8	10.1	39.4	28.9	25.5	34.5	39.8	31.2
LnGrp LOS	B	C	B	C	B	B	D	C	C	C	D	C
Approach Vol, veh/h		1202			680			242			604	
Approach Delay, s/veh		25.3			13.7			28.6			36.2	
Approach LOS		C			B			C			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	18.9	42.1		26.1	10.7	50.2		26.1
Change Period (Y+Rc), s	6.0	* 6		6.0	4.0	6.0		6.0
Max Green Setting (Gmax), s	9.0	* 37		25.0	9.0	37.0		25.0
Max Q Clear Time (g_c+I1), s	2.0	27.9		18.7	6.9	12.1		19.5
Green Ext Time (p_c), s	0.0	8.2		1.4	0.1	13.6		0.4

Intersection Summary	
HCM 6th Ctrl Delay	25.1
HCM 6th LOS	C

Notes

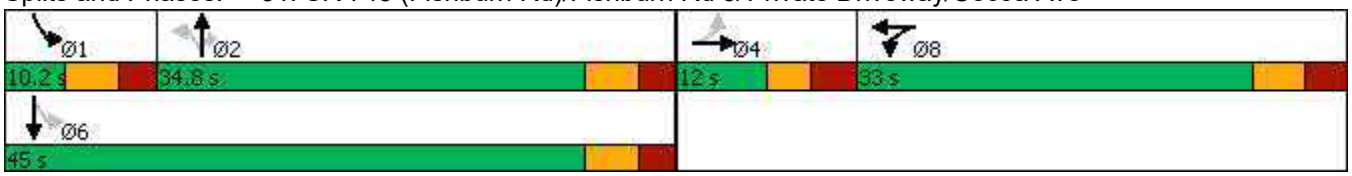
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	483	0	82	0	371	256	141	711	0
Future Volume (vph)	0	0	0	483	0	82	0	371	256	141	711	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	11	11	11	11	12
Grade (%)		0%			2%			1%			-1%	
Storage Length (ft)	0		0	200		0	0		0	75		0
Storage Lanes	0		0	1		0	0		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.850				0.850			
Flt Protected				0.950						0.950		
Satd. Flow (prot)	0	1800	0	1628	1443	0	0	1697	1415	1613	1731	0
Flt Permitted				0.950						0.333		
Satd. Flow (perm)	0	1800	0	1628	1443	0	0	1697	1415	565	1731	0
Right Turn on Red			Yes			No			No			Yes
Satd. Flow (RTOR)												
Link Speed (mph)		25			35			35			35	
Link Distance (ft)		169			1587			679			2277	
Travel Time (s)		4.6			30.9			13.2			44.4	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	0%	0%	4%	0%	5%	0%	2%	4%	3%	1%	0%
Adj. Flow (vph)	0	0	0	498	0	85	0	382	264	145	733	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	498	85	0	0	382	264	145	733	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.09	1.09	1.09	1.08	1.13	1.13	1.11	1.11	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	1	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left		
Leading Detector (ft)	48	48		48	48		48	48	48	48	225	
Trailing Detector (ft)	-2	-2		-2	-2		-2	-2	-2	-2	0	
Detector 1 Position(ft)	-2	-2		-2	-2		-2	-2	-2	-2	0	
Detector 1 Size(ft)	50	50		50	50		50	50	50	50	0	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)											219	
Detector 2 Size(ft)											6	
Detector 2 Type											Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)											0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type				Split	NA			NA	Perm	pm+pt	NA	
Protected Phases		4		8	8			2		1	6	
Permitted Phases	4						2		2	6		
Detector Phase	4	4		8	8		2	2	2	1	6	
Switch Phase												
Minimum Initial (s)	2.0	2.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Minimum Split (s)	12.0	12.0		18.0	18.0		20.0	20.0	20.0	9.2	40.0	
Total Split (s)	12.0	12.0		33.0	33.0		34.8	34.8	34.8	10.2	45.0	
Total Split (%)	13.3%	13.3%		36.7%	36.7%		38.7%	38.7%	38.7%	11.3%	50.0%	
Maximum Green (s)	6.0	6.0		26.6	26.6		28.6	28.6	28.6	4.0	38.8	
Yellow Time (s)	3.0	3.0		3.4	3.4		3.7	3.7	3.7	3.7	3.7	
All-Red Time (s)	3.0	3.0		3.0	3.0		2.5	2.5	2.5	2.5	2.5	
Lost Time Adjust (s)		-1.5		-1.5	-1.5			-1.5	-1.5	-1.5	-1.5	
Total Lost Time (s)		4.5		4.9	4.9			4.7	4.7	4.7	4.7	
Lead/Lag							Lag	Lag	Lag	Lead		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		6.0	6.0	6.0	3.0	6.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.5	3.5	3.5	3.0	3.5	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		23.0	23.0	23.0	0.0	23.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		12.0	12.0	12.0	0.0	12.0	
Recall Mode	None	None		Min	Min		Min	Min	Min	Min	Min	
Act Effct Green (s)				28.1	28.1			29.5	29.5	39.7	39.7	
Actuated g/C Ratio				0.36	0.36			0.38	0.38	0.51	0.51	
v/c Ratio				0.84	0.16			0.59	0.49	0.40	0.83	
Control Delay				38.3	18.1			23.7	22.0	13.6	25.9	
Queue Delay				0.0	0.0			0.0	0.0	0.0	0.0	
Total Delay				38.3	18.1			23.7	22.0	13.6	25.9	
LOS				D	B			C	C	B	C	
Approach Delay					35.3			23.0			23.9	
Approach LOS					D			C			C	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 77.4	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay: 26.8	Intersection LOS: C
Intersection Capacity Utilization 100.3%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 31: SR 743 (Fishburn Rd)/Fishburn Rd & Private Driveway/Cocoa Ave



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	483	0	82	0	371	256	141	711	0
Future Volume (veh/h)	0	0	0	483	0	82	0	371	256	141	711	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1722	1778	1778	1766	1766	1738	1795	1823	1823
Adj Flow Rate, veh/h	0	0	0	498	0	85	0	382	264	145	733	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	4	0	0	2	2	4	3	1	1
Cap, veh/h	0	3	0	571	0	525	0	661	551	393	943	0
Arrive On Green	0.00	0.00	0.00	0.35	0.00	0.35	0.00	0.37	0.37	0.08	0.52	0.00
Sat Flow, veh/h	0	1800	0	1640	0	1507	0	1766	1473	1709	1823	0
Grp Volume(v), veh/h	0	0	0	498	0	85	0	382	264	145	733	0
Grp Sat Flow(s),veh/h/ln	0	1800	0	1640	0	1507	0	1766	1473	1709	1823	0
Q Serve(g_s), s	0.0	0.0	0.0	20.3	0.0	2.8	0.0	12.3	9.8	3.4	23.2	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	20.3	0.0	2.8	0.0	12.3	9.8	3.4	23.2	0.0
Prop In Lane	0.00		0.00	1.00		1.00	0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	0	3	0	571	0	525	0	661	551	393	943	0
V/C Ratio(X)	0.00	0.00	0.00	0.87	0.00	0.16	0.00	0.58	0.48	0.37	0.78	0.00
Avail Cap(c_a), veh/h	0	189	0	646	0	593	0	745	621	393	1030	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	21.8	0.0	16.1	0.0	17.8	17.0	12.3	13.9	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	11.5	0.0	0.1	0.0	2.9	2.3	0.6	5.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	0.0	0.0	13.7	0.0	1.6	0.0	8.8	6.0	2.2	14.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	0.0	33.2	0.0	16.2	0.0	20.7	19.4	12.9	19.5	0.0
LnGrp LOS	A	A	A	C	A	B	A	C	B	B	B	A
Approach Vol, veh/h		0			583			646			878	
Approach Delay, s/veh		0.0			30.7			20.2			18.4	
Approach LOS					C			C			B	

Timer - Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	10.2	31.4		0.0		41.6		29.8
Change Period (Y+Rc), s	* 6.2	* 6.2		6.0		* 6.2		6.4
Max Green Setting (Gmax), s	* 4	* 29		6.0		* 39		26.6
Max Q Clear Time (g_c+I1), s	5.4	14.3		0.0		25.2		22.3
Green Ext Time (p_c), s	0.0	5.9		0.0		10.2		1.1

Intersection Summary	
HCM 6th Ctrl Delay	22.4
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	44	56	45	559	1088	92
Future Volume (vph)	44	56	45	559	1088	92
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	15	15	12	12	12	12
Grade (%)	-4%			-2%	2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.924				0.989	
Flt Protected	0.979			0.996		
Satd. Flow (prot)	1827	0	0	1762	1729	0
Flt Permitted	0.979			0.996		
Satd. Flow (perm)	1827	0	0	1762	1729	0
Link Speed (mph)	25			35	35	
Link Distance (ft)	948			1033	614	
Travel Time (s)	25.9			20.1	12.0	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	0%	3%	2%	1%
Adj. Flow (vph)	47	60	48	595	1157	98
Shared Lane Traffic (%)						
Lane Group Flow (vph)	107	0	0	643	1255	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	15			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.92	0.92	1.06	1.06	1.09	1.09
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 83.1%		ICU Level of Service E	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	44	56	45	559	1088	92
Future Vol, veh/h	44	56	45	559	1088	92
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-4	-	-	-2	2	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	3	2	1
Mvmt Flow	47	60	48	595	1157	98

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1897	1206	1255	0	-	0
Stage 1	1206	-	-	-	-	-
Stage 2	691	-	-	-	-	-
Critical Hdwy	5.6	5.8	4.1	-	-	-
Critical Hdwy Stg 1	4.6	-	-	-	-	-
Critical Hdwy Stg 2	4.6	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	118	258	561	-	-	-
Stage 1	374	-	-	-	-	-
Stage 2	584	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	103	258	561	-	-	-
Mov Cap-2 Maneuver	103	-	-	-	-	-
Stage 1	326	-	-	-	-	-
Stage 2	584	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	32.6	0.9	0
HCM LOS	D		

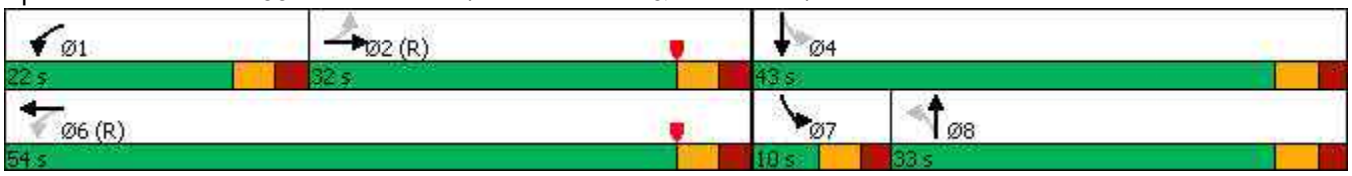
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	561	-	234	-	-
HCM Lane V/C Ratio	0.085	-	0.455	-	-
HCM Control Delay (s)	12	0	32.6	-	-
HCM Lane LOS	B	A	D	-	-
HCM 95th %tile Q(veh)	0.3	-	2.2	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	417	88	251	370	152	93	281	185	132	297	33
Future Volume (vph)	29	417	88	251	370	152	93	281	185	132	297	33
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	12	12	10	12	12	13	13	13	10	13	13
Grade (%)		-1%			1%			-4%			3%	
Storage Length (ft)	60		0	140		0	150		0	175		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor							1.00	0.99		1.00	1.00	
Frt		0.974			0.956			0.940			0.985	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1499	1762	0	1572	1712	0	1750	1730	0	1526	1801	0
Flt Permitted	0.461			0.116			0.555			0.123		
Satd. Flow (perm)	727	1762	0	192	1712	0	1021	1730	0	197	1801	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			31			34			7	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		552			1053			474			481	
Travel Time (s)		15.1			28.7			12.9			13.1	
Confl. Peds. (#/hr)							1		4	4		1
Confl. Bikes (#/hr)							1					1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	7%	0%	0%	1%	0%	0%	3%	2%	2%	3%	0%	0%
Adj. Flow (vph)	30	434	92	261	385	158	97	293	193	138	309	34
Shared Lane Traffic (%)												
Lane Group Flow (vph)	30	526	0	261	543	0	97	486	0	138	343	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			13			13	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.16	1.07	1.07	1.18	1.08	1.08	1.00	1.00	1.00	1.19	1.05	1.05
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template							Left					
Leading Detector (ft)	35	35		35	35		48	35		35	35	
Trailing Detector (ft)	-5	-5		-5	-5		-2	-5		-5	-5	
Detector 1 Position(ft)	-5	-5		-5	-5		-2	-5		-5	-5	
Detector 1 Size(ft)	40	40		40	40		50	40		40	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		pm+pt	NA	
Protected Phases		2		1	6			8		7	4	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2			6			8			4		
Detector Phase	2	2		1	6		8	8		7	4	
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Split (s)	10.0	10.0		23.5	10.0		10.0	10.0		8.5	10.0	
Total Split (s)	32.0	32.0		22.0	54.0		33.0	33.0		10.0	43.0	
Total Split (%)	33.0%	33.0%		22.7%	55.7%		34.0%	34.0%		10.3%	44.3%	
Maximum Green (s)	26.5	26.5		16.5	48.5		27.7	27.7		4.7	37.7	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.1	3.1		3.1	3.1	
All-Red Time (s)	2.5	2.5		2.5	2.5		2.2	2.2		2.2	2.2	
Lost Time Adjust (s)	-0.5	-0.5		-0.5	-0.5		-1.5	-0.5		-0.5	-0.5	
Total Lost Time (s)	5.0	5.0		5.0	5.0		3.8	4.8		4.8	4.8	
Lead/Lag	Lag	Lag		Lead			Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		None	C-Max		None	None		None	None	
Act Effct Green (s)	29.4	29.4		49.6	49.6		28.6	27.6		37.6	37.6	
Actuated g/C Ratio	0.30	0.30		0.51	0.51		0.29	0.28		0.39	0.39	
v/c Ratio	0.14	0.97		0.83	0.61		0.32	0.94		0.94	0.49	
Control Delay	28.4	67.8		31.6	22.9		30.0	60.2		86.6	24.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	28.4	67.8		31.6	22.9		30.0	60.2		86.6	24.7	
LOS	C	E		C	C		C	E		F	C	
Approach Delay		65.7			25.7			55.2			42.5	
Approach LOS		E			C			E			D	

Intersection Summary	
Area Type:	Other
Cycle Length: 97	
Actuated Cycle Length: 97	
Offset: 50.1 (52%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.97	
Intersection Signal Delay: 45.3	Intersection LOS: D
Intersection Capacity Utilization 95.2%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 33: S. Hanover St/N. Hanover St & W. Main St/E. Main St



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	417	88	251	370	152	93	281	185	132	297	33
Future Volume (veh/h)	29	417	88	251	370	152	93	281	185	132	297	33
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1738	1837	1837	1780	1794	1794	1983	1997	1997	1708	1820	1820
Adj Flow Rate, veh/h	30	434	92	261	385	158	97	293	193	138	309	34
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	7	0	0	1	0	0	3	2	2	3	0	0
Cap, veh/h	354	485	103	342	618	254	366	316	208	191	623	69
Arrive On Green	0.33	0.33	0.34	0.17	0.68	0.69	0.30	0.28	0.30	0.05	0.39	0.40
Sat Flow, veh/h	846	1470	312	1696	1209	496	1156	1110	731	1626	1606	177
Grp Volume(v), veh/h	30	0	526	261	0	543	97	0	486	138	0	343
Grp Sat Flow(s),veh/h/ln	846	0	1781	1696	0	1705	1156	0	1841	1626	0	1782
Q Serve(g_s), s	2.4	0.0	27.2	9.2	0.0	17.0	6.6	0.0	24.9	5.2	0.0	14.1
Cycle Q Clear(g_c), s	2.4	0.0	27.2	9.2	0.0	17.0	10.8	0.0	24.9	5.2	0.0	14.1
Prop In Lane	1.00		0.17	1.00		0.29	1.00		0.40	1.00		0.10
Lane Grp Cap(c), veh/h	354	0	588	342	0	871	366	0	524	191	0	691
V/C Ratio(X)	0.08	0.00	0.90	0.76	0.00	0.62	0.26	0.00	0.93	0.72	0.00	0.50
Avail Cap(c_a), veh/h	354	0	588	419	0	871	373	0	535	191	0	702
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.30	0.00	0.30	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	22.6	0.0	30.8	19.8	0.0	10.2	29.6	0.0	33.5	27.5	0.0	22.5
Incr Delay (d2), s/veh	0.5	0.0	18.7	2.0	0.0	1.0	0.4	0.0	22.2	12.7	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.9	0.0	20.8	5.1	0.0	6.9	3.4	0.0	20.3	5.1	0.0	10.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.0	0.0	49.5	21.9	0.0	11.2	30.0	0.0	55.7	40.2	0.0	23.0
LnGrp LOS	C	A	D	C	A	B	C	A	E	D	A	C
Approach Vol, veh/h		556			804			583			481	
Approach Delay, s/veh		48.1			14.7			51.5			27.9	
Approach LOS		D			B			D			C	

Timer - Assigned Phs	1	2		4		6	7	8
Phs Duration (G+Y+Rc), s	17.6	37.0		42.4		54.6	10.0	32.4
Change Period (Y+Rc), s	5.5	5.5		* 5.3		5.5	* 5.3	* 5.3
Max Green Setting (Gmax), s	16.5	26.5		* 38		48.5	* 4.7	* 28
Max Q Clear Time (g_c+I1), s	11.7	29.2		16.1		19.0	7.7	26.9
Green Ext Time (p_c), s	0.4	0.0		1.2		2.3	0.0	0.3

Intersection Summary	
HCM 6th Ctrl Delay	33.8
HCM 6th LOS	C

Notes

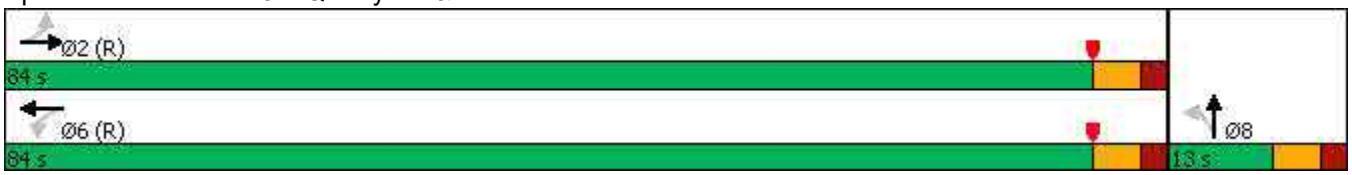
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	555	112	164	718	3	68	8	128	0	0	0
Future Volume (vph)	1	555	112	164	718	3	68	8	128	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	11	11	14	14	14	11	11	11
Grade (%)		1%			-1%			0%			-5%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								1.00				
Frt		0.977						0.915				
Flt Protected					0.991			0.984				
Satd. Flow (prot)	0	1675	0	0	1713	0	0	1718	0	0	0	0
Flt Permitted		0.999			0.753			0.984				
Satd. Flow (perm)	0	1673	0	0	1301	0	0	1712	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		43			1			69				
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		1053			1492			867			476	
Travel Time (s)		28.7			40.7			23.6			13.0	
Confl. Peds. (#/hr)							2					2
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	1%	1%	2%	1%	0%	0%	0%	1%	0%	0%	0%
Adj. Flow (vph)	1	610	123	180	789	3	75	9	141	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	734	0	0	972	0	0	225	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.13	1.13	1.13	1.11	1.11	1.11	0.99	0.99	0.99	1.08	1.08	1.08
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	1				
Detector Template	Left	Thru		Left	Thru		Left	Thru				
Leading Detector (ft)	48	48		48	48		48	48				
Trailing Detector (ft)	-2	-2		-2	-2		-2	-2				
Detector 1 Position(ft)	-2	-2		-2	-2		-2	-2				
Detector 1 Size(ft)	50	50		50	50		50	50				
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex				
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0				
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0				
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0				
Turn Type	Perm	NA		Perm	NA		Perm	NA				
Protected Phases		2			6			8				
Permitted Phases	2			6			8					
Detector Phase	2	2		6	6		8	8				
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0		3.0	3.0				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	10.0	10.0		10.0	10.0		10.0	10.0				
Total Split (s)	84.0	84.0		84.0	84.0		13.0	13.0				
Total Split (%)	86.6%	86.6%		86.6%	86.6%		13.4%	13.4%				
Maximum Green (s)	78.5	78.5		78.5	78.5		7.5	7.5				
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5				
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0				
Lost Time Adjust (s)		-1.5			-1.5			-1.5				
Total Lost Time (s)		4.0			4.0			4.0				
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0				
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None				
Act Effct Green (s)		80.0			80.0			9.0				
Actuated g/C Ratio		0.82			0.82			0.09				
v/c Ratio		0.53			0.91			1.02				
Control Delay		3.6			20.5			97.5				
Queue Delay		0.0			0.0			0.0				
Total Delay		3.6			20.5			97.5				
LOS		A			C			F				
Approach Delay		3.6			20.5			97.5				
Approach LOS		A			C			F				

Intersection Summary	
Area Type:	Other
Cycle Length: 97	
Actuated Cycle Length: 97	
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.02	
Intersection Signal Delay: 23.0	Intersection LOS: C
Intersection Capacity Utilization 117.1%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 34: Quarry Rd & E. Main St



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	555	112	164	718	3	68	8	128	0	0	0
Future Volume (veh/h)	1	555	112	164	718	3	68	8	128	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1780	1780	1780	1823	1823	1823	1872	1872	1872			
Adj Flow Rate, veh/h	1	610	123	180	789	3	75	9	141			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91			
Percent Heavy Veh, %	1	1	1	1	1	1	0	0	0			
Cap, veh/h	37	1186	239	248	1000	4	51	6	96			
Arrive On Green	1.00	1.00	1.00	0.82	0.82	0.82	0.09	0.09	0.09			
Sat Flow, veh/h	0	1438	290	247	1213	5	549	66	1031			
Grp Volume(v), veh/h	734	0	0	972	0	0	225	0	0			
Grp Sat Flow(s),veh/h/ln	1728	0	0	1464	0	0	1646	0	0			
Q Serve(g_s), s	0.0	0.0	0.0	25.1	0.0	0.0	9.0	0.0	0.0			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	30.8	0.0	0.0	9.0	0.0	0.0			
Prop In Lane	0.00		0.17	0.19		0.00	0.33		0.63			
Lane Grp Cap(c), veh/h	1462	0	0	1252	0	0	153	0	0			
V/C Ratio(X)	0.50	0.00	0.00	0.78	0.00	0.00	1.47	0.00	0.00			
Avail Cap(c_a), veh/h	1462	0	0	1252	0	0	153	0	0			
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.17	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	0.0	0.0	0.0	3.9	0.0	0.0	44.0	0.0	0.0			
Incr Delay (d2), s/veh	0.2	0.0	0.0	4.8	0.0	0.0	245.0	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(95%),veh/ln	0.2	0.0	0.0	10.7	0.0	0.0	22.9	0.0	0.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.2	0.0	0.0	8.7	0.0	0.0	289.0	0.0	0.0			
LnGrp LOS	A	A	A	A	A	A	F	A	A			
Approach Vol, veh/h		734			972			225				
Approach Delay, s/veh		0.2			8.7			289.0				
Approach LOS		A			A			F				

Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		84.0				84.0		13.0				
Change Period (Y+Rc), s		5.5				5.5		5.5				
Max Green Setting (Gmax), s		78.5				78.5		7.5				
Max Q Clear Time (g_c+I1), s		2.0				32.8		11.0				
Green Ext Time (p_c), s		4.1				8.3		0.0				

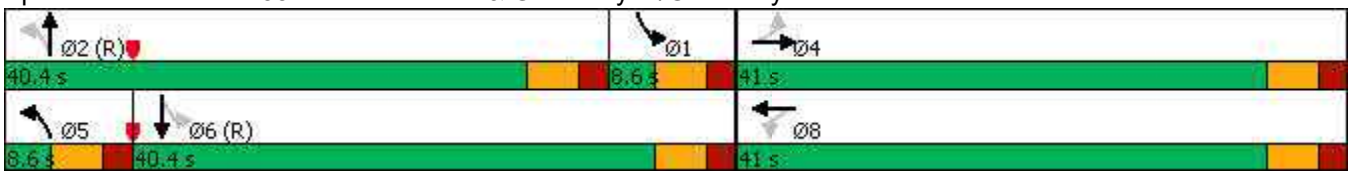
Intersection Summary												
HCM 6th Ctrl Delay			38.1									
HCM 6th LOS			D									

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	4	8	463	5	72	12	949	171	80	1104	15
Future Volume (vph)	7	4	8	463	5	72	12	949	171	80	1104	15
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Grade (%)		0%			0%			0%			3%	
Storage Length (ft)	0		0	350		0	150		150	150		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.896			0.859			0.977			0.998	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1676	1581	0	1676	1516	0	1710	3286	0	1684	3329	0
Flt Permitted	0.703			0.749			0.123			0.123		
Satd. Flow (perm)	1241	1581	0	1322	1516	0	221	3286	0	218	3329	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9			78			27			2	
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		450			1673			507			990	
Travel Time (s)		8.8			32.6			9.9			19.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	0%	2%	0%	0%	1%	0%
Adj. Flow (vph)	8	4	9	503	5	78	13	1032	186	87	1200	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	8	13	0	503	83	0	13	1218	0	87	1216	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			20			20	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.09	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	48	48		48	48		48	48		48	48	
Trailing Detector (ft)	-2	-2		-2	-2		-2	-2		-2	-2	
Detector 1 Position(ft)	-2	-2		-2	-2		-2	-2		-2	-2	
Detector 1 Size(ft)	50	50		50	50		50	50		50	50	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	10.0	10.0		10.0	10.0		8.5	10.0		8.5	10.0	
Total Split (s)	41.0	41.0		41.0	41.0		8.6	40.4		8.6	40.4	
Total Split (%)	45.6%	45.6%		45.6%	45.6%		9.6%	44.9%		9.6%	44.9%	
Maximum Green (s)	35.5	35.5		35.5	35.5		3.1	34.9		3.1	34.9	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.5	-1.5		-1.5	-1.5		-1.5	-1.5		-1.5	-1.5	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag							Lead	Lead		Lag	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Act Effct Green (s)	36.2	36.2		36.2	36.2		38.9	38.9		44.0	44.0	
Actuated g/C Ratio	0.40	0.40		0.40	0.40		0.43	0.43		0.49	0.49	
v/c Ratio	0.02	0.02		0.95	0.13		0.07	0.85		0.48	0.75	
Control Delay	16.0	10.4		55.3	5.1		21.3	32.4		34.0	23.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	16.0	10.4		55.3	5.1		21.3	32.4		34.0	23.2	
LOS	B	B		E	A		C	C		C	C	
Approach Delay		12.5			48.2			32.2			24.0	
Approach LOS		B			D			C			C	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.95	
Intersection Signal Delay: 31.7	Intersection LOS: C
Intersection Capacity Utilization 81.9%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 35: Middletown Rd & Gramercy Pl/Gramercy Pl Ext



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	4	8	463	5	72	12	949	171	80	1104	15
Future Volume (veh/h)	7	4	8	463	5	72	12	949	171	80	1104	15
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1772	1772	1772	1772	1772	1772	1800	1772	1772	1750	1736	1736
Adj Flow Rate, veh/h	8	4	9	503	5	78	13	1032	186	87	1200	16
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	0	2	2	0	1	1
Cap, veh/h	551	191	429	624	36	560	135	1153	207	198	1491	20
Arrive On Green	0.39	0.39	0.39	0.39	0.39	0.39	0.01	0.13	0.13	0.07	0.45	0.45
Sat Flow, veh/h	1315	485	1091	1401	91	1424	1714	2850	513	1666	3332	44
Grp Volume(v), veh/h	8	0	13	503	0	83	13	609	609	87	594	622
Grp Sat Flow(s),veh/h/ln	1315	0	1576	1401	0	1516	1714	1683	1680	1666	1649	1728
Q Serve(g_s), s	0.4	0.0	0.5	30.8	0.0	3.2	0.4	32.0	32.1	0.0	28.0	28.0
Cycle Q Clear(g_c), s	3.5	0.0	0.5	31.3	0.0	3.2	0.4	32.0	32.1	0.0	28.0	28.0
Prop In Lane	1.00		0.69	1.00		0.94	1.00		0.31	1.00		0.03
Lane Grp Cap(c), veh/h	551	0	620	624	0	596	135	681	679	198	738	773
V/C Ratio(X)	0.01	0.00	0.02	0.81	0.00	0.14	0.10	0.89	0.90	0.44	0.80	0.81
Avail Cap(c_a), veh/h	574	0	648	649	0	623	178	681	679	198	738	773
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.6	0.0	16.7	26.3	0.0	17.5	22.9	37.1	37.1	39.0	21.5	21.5
Incr Delay (d2), s/veh	0.0	0.0	0.0	7.2	0.0	0.1	0.3	16.6	16.9	1.5	9.1	8.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.2	0.0	0.3	16.2	0.0	1.9	0.3	24.2	24.3	3.3	17.5	18.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.7	0.0	16.7	33.4	0.0	17.6	23.2	53.7	54.1	40.5	30.6	30.2
LnGrp LOS	B	A	B	C	A	B	C	D	D	D	C	C
Approach Vol, veh/h		21			586			1231			1303	
Approach Delay, s/veh		17.4			31.2			53.5			31.1	
Approach LOS		B			C			D			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.2	40.4		39.4	6.3	44.3		39.4
Change Period (Y+Rc), s	5.5	5.5		5.5	5.5	5.5		5.5
Max Green Setting (Gmax), s	3.1	34.9		35.5	3.1	34.9		35.5
Max Q Clear Time (g_c+I1), s	2.0	34.1		5.5	2.4	30.0		33.3
Green Ext Time (p_c), s	0.0	0.5		0.0	0.0	2.4		0.6

Intersection Summary	
HCM 6th Ctrl Delay	39.8
HCM 6th LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	390	139	96	85	174	165	51	298	36	217	223	429
Future Volume (vph)	390	139	96	85	174	165	51	298	36	217	223	429
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Frt		0.979			0.947			0.986			0.933	
Flt Protected		0.970			0.990			0.993			0.988	
Satd. Flow (prot)	0	1624	0	0	1636	0	0	3349	0	0	1659	0
Flt Permitted		0.970			0.990			0.993			0.988	
Satd. Flow (perm)	0	1624	0	0	1636	0	0	3349	0	0	1659	0
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		2002			587			752			1016	
Travel Time (s)		39.0			11.4			14.6			19.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	7%	4%	0%	0%	2%	6%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	433	154	107	94	193	183	57	331	40	241	248	477
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	694	0	0	470	0	0	428	0	0	966	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Yield			Yield			Yield			Yield	

Intersection Summary	
Area Type:	Other
Control Type: Roundabout	
Intersection Capacity Utilization 139.6%	ICU Level of Service H
Analysis Period (min) 15	

Intersection	
Intersection Delay, s/veh	25.5
Intersection LOS	D

Approach	EB	WB	NB	SB
Entry Lanes	1	1	2	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	694	470	428	966
Demand Flow Rate, veh/h	730	485	428	966
Vehicles Circulating, veh/h	583	851	864	348
Vehicles Exiting, veh/h	254	441	449	988
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	47.7	35.3	15.6	9.2
Approach LOS	E	E	C	A

Lane	Left	Left	Left	Right	Left	Bypass
Designated Moves	LTR	LTR	LT	R	LT	R
Assumed Moves	LTR	LTR	LT	R	LT	R
RT Channelized						Yield
Lane Util	1.000	1.000	0.907	0.093	1.000	
Follow-Up Headway, s	2.609	2.609	2.535	2.535	2.609	
Critical Headway, s	4.976	4.976	4.544	4.544	4.976	477
Entry Flow, veh/h	730	485	388	40	489	1065
Cap Entry Lane, veh/h	761	579	647	647	968	1.000
Entry HV Adj Factor	0.950	0.969	1.000	1.000	1.000	477
Flow Entry, veh/h	694	470	388	40	489	1065
Cap Entry, veh/h	724	562	647	647	968	0.448
V/C Ratio	0.959	0.837	0.600	0.062	0.505	8.3
Control Delay, s/veh	47.7	35.3	16.6	6.2	10.0	A
LOS	E	E	C	A	A	2
95th %tile Queue, veh	14	9	4	0	3	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	519	319	160	155	51	0	51	151	110	14	198	79
Future Volume (vph)	519	319	160	155	51	0	51	151	110	14	198	79
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	75		0	75		0	75		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.950						0.953			0.963	
Flt Protected	0.950			0.950				0.992			0.998	
Satd. Flow (prot)	1676	1676	0	1676	1765	0	0	1668	0	0	1696	0
Flt Permitted	0.484			0.488				0.895			0.976	
Satd. Flow (perm)	854	1676	0	861	1765	0	0	1505	0	0	1659	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		33						34			23	
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		605			877			325			770	
Travel Time (s)		11.8			17.1			6.3			15.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	577	354	178	172	57	0	57	168	122	16	220	88
Shared Lane Traffic (%)												
Lane Group Flow (vph)	577	532	0	172	57	0	0	347	0	0	324	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	48	48		48	48		48	48		48	48	
Trailing Detector (ft)	-2	-2		-2	-2		-2	-2		-2	-2	
Detector 1 Position(ft)	-2	-2		-2	-2		-2	-2		-2	-2	
Detector 1 Size(ft)	50	50		50	50		50	50		50	50	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Split (s)	8.5	10.0		8.5	10.0		10.0	10.0		10.0	10.0	
Total Split (s)	39.0	39.0		15.0	15.0		36.0	36.0		36.0	36.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (%)	43.3%	43.3%		16.7%	16.7%		40.0%	40.0%		40.0%	40.0%	
Maximum Green (s)	33.5	33.5		9.5	9.5		30.5	30.5		30.5	30.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.5	-1.5		-1.5	-1.5			-1.5			-1.5	
Total Lost Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Max	Max		Max	Max	
Act Effct Green (s)	45.1	30.4		18.3	10.9			32.2			32.2	
Actuated g/C Ratio	0.53	0.36		0.21	0.13			0.38			0.38	
v/c Ratio	0.73	0.86		0.60	0.25			0.59			0.51	
Control Delay	20.5	39.1		29.1	37.5			25.2			23.5	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	20.5	39.1		29.1	37.5			25.2			23.5	
LOS	C	D		C	D			C			C	
Approach Delay		29.5			31.2			25.2			23.5	
Approach LOS		C			C			C			C	

Intersection Summary	
Area Type: Other	
Cycle Length: 90	
Actuated Cycle Length: 85.3	
Natural Cycle: 50	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay: 28.0	Intersection LOS: C
Intersection Capacity Utilization 84.1%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 37: Cherry Dr & Hope Dr/Hope Drive Ext

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	519	319	160	155	51	0	51	151	110	14	198	79
Future Volume (veh/h)	519	319	160	155	51	0	51	151	110	14	198	79
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1772	1772	1772	1772	1772	1772	1772	1772	1772	1772	1772	1772
Adj Flow Rate, veh/h	577	354	178	172	57	0	57	168	122	16	220	88
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	802	397	200	340	278	0	119	319	211	59	446	172
Arrive On Green	0.32	0.36	0.36	0.12	0.16	0.00	0.38	0.38	0.38	0.38	0.38	0.38
Sat Flow, veh/h	1688	1112	559	1688	1772	0	184	842	557	38	1177	453
Grp Volume(v), veh/h	577	0	532	172	57	0	347	0	0	324	0	0
Grp Sat Flow(s),veh/h/ln	1688	0	1671	1688	1772	0	1583	0	0	1667	0	0
Q Serve(g_s), s	21.8	0.0	25.4	6.9	2.4	0.0	1.2	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	21.8	0.0	25.4	6.9	2.4	0.0	13.7	0.0	0.0	12.4	0.0	0.0
Prop In Lane	1.00		0.33	1.00		0.00	0.16		0.35	0.05		0.27
Lane Grp Cap(c), veh/h	802	0	597	340	278	0	650	0	0	677	0	0
V/C Ratio(X)	0.72	0.00	0.89	0.51	0.21	0.00	0.53	0.00	0.00	0.48	0.00	0.00
Avail Cap(c_a), veh/h	958	0	693	355	278	0	650	0	0	677	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	16.1	0.0	25.6	25.0	31.0	0.0	20.5	0.0	0.0	20.1	0.0	0.0
Incr Delay (d2), s/veh	2.1	0.0	12.6	1.2	0.4	0.0	3.1	0.0	0.0	2.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	12.6	0.0	17.0	4.9	1.8	0.0	9.4	0.0	0.0	8.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.2	0.0	38.2	26.1	31.4	0.0	23.7	0.0	0.0	22.6	0.0	0.0
LnGrp LOS	B	A	D	C	C	A	C	A	A	C	A	A
Approach Vol, veh/h		1109			229			347			324	
Approach Delay, s/veh		27.8			27.4			23.7			22.6	
Approach LOS		C			C			C			C	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		36.0	14.3	34.1		36.0	31.2	17.2				
Change Period (Y+Rc), s		5.5	5.5	5.5		5.5	5.5	5.5				
Max Green Setting (Gmax), s		30.5	9.5	33.5		30.5	33.5	9.5				
Max Q Clear Time (g_c+I1), s		15.7	8.9	27.4		14.4	23.8	4.4				
Green Ext Time (p_c), s		1.3	0.0	1.3		1.1	1.9	0.0				

Intersection Summary	
HCM 6th Ctrl Delay	26.2
HCM 6th LOS	C

APPENDIX K
SEGMENT CAPACITY ANALYSIS

GREATER HERSHEY AREA

SEGMENT ANALYSIS

Volume to Capacity Analysis - 2018 Existing Conditions, 2028 Forecasted Traffic, 2038 Forecasted Traffic

													2018 Existing Conditions				2028 Forecasted Traffic				2038 Forecasted Traffic			
Roadway Segment	**SEGMENT NUMBER**	**CLASSIFICATION**	**LANES**	**CAPACITY[a]**	**LANE WIDTH**	**SHOULDER WIDTH**	**LANE FACTOR**	**PHF**	**HEAVY VEH %**	**F_g[b]**	**F_{hv}[c]**	**ADJUSTED CAPACITY[d]**	**VOLUME**	**V/C**	**ADT**	**LOS**	**VOLUME**	**V/C**	**ADT**	**LOS**	**VOLUME**	**V/C**	**ADT**	**LOS**
SR 2002 (Schoolhouse Rd) from Middletown Rd to Colebrook Rd	S-1	Collector	2	3400	11	0	0.61	0.70	3.5%	0.71	0.98	1008	199	0.20	1990	A	347	0.34	3470	A	428	0.42	4280	A
SR 2005 (Roundtop Rd) from Colebrook Rd to Steinruck Road)	S-2	Collector	2	3400	11	0	0.61	0.75	3.2%	0.71	0.98	1082	218	0.20	2180	A	355	0.33	3550	A	495	0.46	4950	A
SR 341 (Colebrook Rd) from Route 230 to Roush Road	S-3	Collector	2	3400	11	2	0.72	0.81	1.6%	0.71	0.99	1397	373	0.27	3730	A	394	0.28	3940	A	415	0.30	4150	A

Notes:

[a] Capacity is based on 3200 pc/hr for two-lane highways and adjusted accordingly for various roadway classifications

[b] F_g = Grade Adjustment Factor, Exhibit 20-7 HCM 2000

[c] F_{hv} = Heavy Vehicle Adjustment Factor, Exhibit 20-9 & Equation 20-4 HCM 2000

[d] Adjusted Capacity = Capacity * Lane Factor * PHF * F_g * F_{hv}

LOS	
A	=< 0.50
B	0.51 - 0.60
C	0.61 - 0.70
D	0.71 - 0.80
E	0.81- 0.90
F	> 0.90

Revised: 11/6/2019;7:31 AM

APPENDIX L
INTERSECTION CAPACITY ANALYSIS SUMMARY

UNSIGNALIZED INTERSECTIONS – LOS CRITERIA		
LEVEL OF SERVICE	AVERAGE CONTROL DELAY (SEC/VEH)	EXPECTED DELAY CHARACTERISTICS
A	≤ 10	Little or no delay
B	> 10 and ≤ 15	Short traffic delays
C	> 15 and ≤ 25	Average traffic delays
D	> 25 and ≤ 35	Long traffic delays
E	> 35 and ≤ 50	Very long delays
F	> 50	Volume exceeds capacity

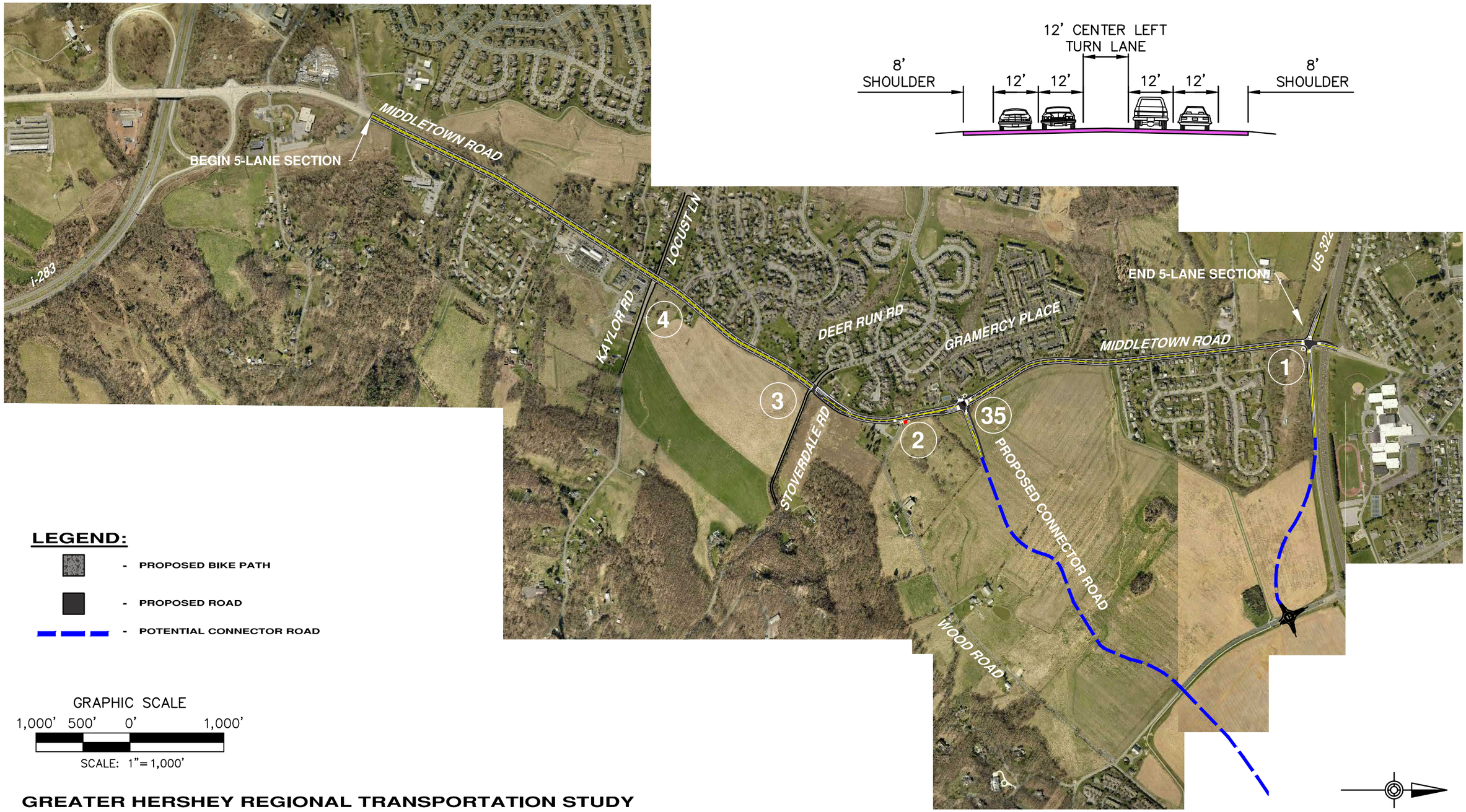
SIGNALIZED INTERSECTIONS – LOS CRITERIA		
LEVEL OF SERVICE	AVERAGE CONTROL DELAY (SEC/VEH)	EXPECTED DELAY CHARACTERISTICS
A	≤ 10	Occurs when the volume-to-capacity ratio is low and either progression is exceptionally favorable (most vehicles arrive during the green indication and travel through the intersection without stopping) or the cycle length is very short.
B	> 10 and ≤ 20	Occurs when the volume-to-capacity ratio is low and either progression is highly favorable or the cycle length is short. More vehicles stop than with LOS A.
C	> 20 and ≤ 35	Occurs when progression is favorable or the cycle length is moderate. Individual cycle failures may begin to appear in this level. The number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.
D	> 35 and ≤ 55	Occurs when the volume-to-capacity ratio is high and either progression is ineffective or the cycle length is long. Many vehicles stop and individual cycle failures are noticeable.
E	> 55 and ≤ 80	Occurs when the volume-to-capacity ratio is high, progression is unfavorable, and the cycle length is long. Individual cycle failures are frequent.
F	> 80	Occurs when the volume-to-capacity ratio is very high or greater than 1.0, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.

Table 1: Level of Service Summary									
		AM Peak Hour				PM Peak Hour			
Road	Movement	2018 Existing Conditions	2028 Forecasted Traffic with New Links and Mitigation	2038 Forecasted Traffic with New Links	2038 Forecasted Traffic with New Links and Mitigation	2018 Existing Conditions	2028 Forecasted Traffic with New Links and Mitigation	2038 Forecasted Traffic with New Links	2038 Forecasted Traffic with New Links and Mitigation
Intersection 1: SR 2003 (Middletown Rd) & SR 322 EB Off Ramp/Service Rd									
Overall		N/A	N/A	N/A	N/A	**C (32.8)**	**C (20.3)**	**F (195.4)**	**C (25.9)**
Intersection 2: SR 2003 (Middletown Rd) & Wood Rd									
Overall		N/A	N/A	N/A	N/A	**E (38.4)**	**A (0.1)**	**A (0.1)**	**A (0.1)**
Intersection 3: SR 2003 (Middletown Rd) & Deer Run Dr/Stoverdale Rd									
Overall		N/A	N/A	N/A	N/A	**B (14.2)**	**B (13.6)**	**C (32.6)**	**C (31.1)**
Intersection 4: SR 2003 (Middletown Rd) & Locust Ln/Kaylor Rd									
Overall		N/A	N/A	N/A	N/A	**B (11.4)**	**B (18.5)**	**C (31.0)**	**B (11.1)**
Intersection 5: SR 2005 (Waltonville Rd/Quarry Rd) & Service Rd/SR 322 EB On Ramp									
Overall		**B (13.6)**	**See Intersection 36**			**B (17.6)**	**See Intersection 36**		
Intersection 6: SR 2005 (Waltonville Rd) & Wood Rd									
Overall		N/A	N/A	N/A	N/A	**C (15.6)**	**D (28.3)**	**F (66.0)**	**A (0.1)**
Intersection 7: Bullfrog Valley Rd & Wood Rd									
Overall		N/A	N/A	N/A	N/A	**C (17.0)**	**B (12.2)**	**F (66.9)**	**C (15.7)**
Intersection 8: Bullfrog Valley Rd & Research Blvd / Life Lion Dr									
Overall		**B (11.9)**	**C (22.8)**	**E (74.0)**	**C (34.6)**	**B (10.7)**	**B (18.5)**	**B (17.7)**	**C (22.5)**
Intersection 9: Walton Ave & E Main St/Driveway									
Overall		N/A	N/A	N/A	N/A	**A (8.4)**	**B (12.8)**	**B (12.3)**	**B (14.9)**
Intersection 10: Route 39 (W Hersheypark Drive) & Walton Ave/Mae St									
Overall		N/A	N/A	N/A	N/A	**F (83.9)**	**C (34.4)**	**F (108.4)**	**D (39.5)**
Intersection 11: Route 39 (W Hersheypark Drive)/W Hersheypark Drive & Route 39 (Hershey Rd)/Park Blvd									
Overall		**C (34.9)**	**C (29.2)**	**F (106.3)**	**C (28.2)**	**D (39.5)**	**C (34.9)**	**F (86.4)**	**D (38.0)**
Intersection 12: W Hersheypark Drive/E Hersheypark Dr & Park Drive/Sand Beach Road									
Overall		**B (19.9)**	**C (31.6)**	**D (51.9)**	**C (27.9)**	**C (29.1)**	**C (33.3)**	**F (143.3)**	**D (35.5)**

Road	Movement	AM Peak Hour				PM Peak Hour			
		2018 Existing Conditions	2028 Forecasted Traffic with New Links and Mitigation	2038 Forecasted Traffic with New Links	2038 Forecasted Traffic with New Links and Mitigation	2018 Existing Conditions	2028 Forecasted Traffic with New Links and Mitigation	2038 Forecasted Traffic with New Links	2038 Forecasted Traffic with New Links and Mitigation
Intersection 13: E Hersheypark Dr & Laudermilch Rd									
Overall		N/A	N/A	N/A	N/A	**B (18.3)**	**C (29.2)**	**F (87.5)**	**C (24.5)**
Intersection 14: E Hersheypark Dr & N Lingle Ave									
Overall		N/A	N/A	N/A	N/A	**B (12.2)**	**C (20.0)**	**C (30.2)**	**C (28.9)**
Intersection 15: Park Ave & E. Derry Rd									
Overall		N/A	N/A	N/A	N/A	**C (16.9)**	**A (4.9)**	**F (59.7)**	**A (5.0)**
Intersection 16: Park Blvd & Ridge Rd									
Overall		N/A	N/A	N/A	N/A	**A (9.2)**	**B (10.1)**	**B (10.7)**	**B (10.7)**
Intersection 17: SR 422 (W. Chocolate Ave) & University Ave									
Overall		N/A	N/A	N/A	N/A	**C (24.4)**	**C (30.2)**	**E (65.5)**	**C (34.5)**
Intersection 18: SR 422 (W. Chocolate Ave) & Hockersville Rd									
Overall		N/A	N/A	N/A	N/A	**C (24.1)**	**C (29.7)**	**D (42.5)**	**D (42.6)**
Intersection 19: SR 422 (E. Chocolate Ave) & Homestead Rd									
Overall		**C (22.1)**	**D (29.1)**	**E (43.2)**	**E (43.2)**	**C (28.8)**	**C (23.7)**	**D (34.3)**	**C (21.3)**
Intersection 20: SR 422 (E. Chocolate Ave) & E. Derry Rd									
Overall		N/A	N/A	N/A	N/A	**A (9.4)**	**B (13.5)**	**C (22.7)**	**B (11.8)**
Intersection 21: SR 422 (E. Chocolate Ave) & N. Lingle Ave/S. Lingle Ave									
Overall		N/A	N/A	N/A	N/A	**C (24.0)**	**C (27.7)**	**C (34.0)**	**C (33.7)**
Intersection 22: Hockersville Road and W Areba Avenue									
Overall		N/A	N/A	N/A	N/A	**C (18.7)**	**A (7.4)**	**F (63.8)**	**A (7.9)**
Intersection 23: SR 322 (W Governor Dr) & University Dr									
Overall		**B (19.9)**	**C (22.4)**	**E (75.3)**	**C (24.4)**	**B (15.3)**	**C (20.9)**	**D (45.3)**	**B (17.3)**
Intersection 24: SR 322 (W Governor Dr) & Centerview Dr									
Overall		**C (22.4)**	**B (11.9)**	**F (177.0)**	**B (10.8)**	**D (46.8)**	**C (23.3)**	**F (117.2)**	**B (15.5)**

Road	Movement	AM Peak Hour				PM Peak Hour			
		2018 Existing Conditions	2028 Forecasted Traffic with New Links and Mitigation	2038 Forecasted Traffic with New Links	2038 Forecasted Traffic with New Links and Mitigation	2018 Existing Conditions	2028 Forecasted Traffic with New Links and Mitigation	2038 Forecasted Traffic with New Links	2038 Forecasted Traffic with New Links and Mitigation
Intersection 25: SR 322 (W Governor Dr) & Cherry Dr									
Overall		N/A	N/A	N/A	N/A	**C (23.8)**	**C (26.2)**	**C (29.8)**	**C (21.3)**
Intersection 26: SR 322 (W Governor Dr) & Fishburn Rd/Hockersville Rd									
Overall		**D (43.5)**	**C (34.2)**	**F (93.0)**	**C (34.1)**	**D (46.3)**	**C (29.0)**	**E (68.8)**	**C (31.4)**
Intersection 27: Cherry Dr & Sand Hill Drive									
Overall		N/A	N/A	N/A	N/A	**B (14.4)**	**A (9.0)**	**A (9.7)**	**A (9.7)**
Intersection 28: SR 743 (Fishburn Rd) & Sand Hill Rd									
Overall		N/A	N/A	N/A	N/A	**A (9.4)**	**B (19.2)**	**E (37.2)**	**C (20.0)**
Intersection 29: SR 322 (W Governor Dr/E Governor Dr) & Cocoa Ave									
Overall		**B (19.1)**	**B (18.1)**	**D (45.1)**	**B (19.3)**	**C (26.6)**	**C (26.6)**	**E (69.3)**	**C (29.8)**
Intersection 30: SR 322 (E Governor Dr) & Homestead Rd									
Overall		**C (32.8)**	**C (30.8)**	**F (92.7)**	**C (32.5)**	**B (19.3)**	**C (24.6)**	**D (47.0)**	**C (25.1)**
Intersection 31: SR 743 (Fishburn Rd) & Cocoa Ave									
Overall		N/A	N/A	N/A	N/A	**C (20.1)**	**C (28.0)**	**D (37.9)**	**C (22.4)**
Intersection 32: SR 743 (Fishburn Rd) & Church Rd									
Overall		N/A	N/A	N/A	N/A	**A (1.3)**	**A (1.7)**	**A (2.0)**	**A (2.0)**
Intersection 33: Main St & Hanover St									
Overall		N/A	N/A	N/A	N/A	**C (20.6)**	**C (32.0)**	**D (47.7)**	**C (33.8)**
Intersection 34: Main St & Quarry Rd									
Overall		N/A	N/A	N/A	N/A	**A (3.4)**	**A (7.5)**	**F (50.8)**	**B (13.4)**
Intersection 35: SR 2003 (Middletown Rd) & Proposed Connector Rd									
Overall		N/A	N/A	N/A	N/A	N/A	N/A	**F (280.0)**	**D (39.8)**
Intersection 36: SR 2005 (Waltonville Rd) & Hershey West End Driveway / Service Rd									
Overall		N/A	N/A	N/A	N/A	N/A	N/A	**E (39.4)**	**D (25.5)**
Intersection 37: Hope Dr & Cherry Dr									
Overall		N/A	N/A	N/A	N/A	N/A	N/A	N/A	**C (26.2)**

APPENDIX M
IMPROVEMENT SKETCHES



LEGEND:

- PROPOSED BIKE PATH
- PROPOSED ROAD
- POTENTIAL CONNECTOR ROAD

GRAPHIC SCALE

1,000' 500' 0' 1,000'

SCALE: 1"= 1,000'

GREATER HERSHEY REGIONAL TRANSPORTATION STUDY

CONCEPT IMPROVEMENT PLAN

CORRIDOR 3 - MIDDLETOWN RD
DERRY TOWNSHIP, DAUPHIN COUNTY, PENNSYLVANIA

JOB#: R002484.0484 OCTOBER 2020

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Herbert, Rowland & Grubic, Inc.
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www.hrg-inc.com

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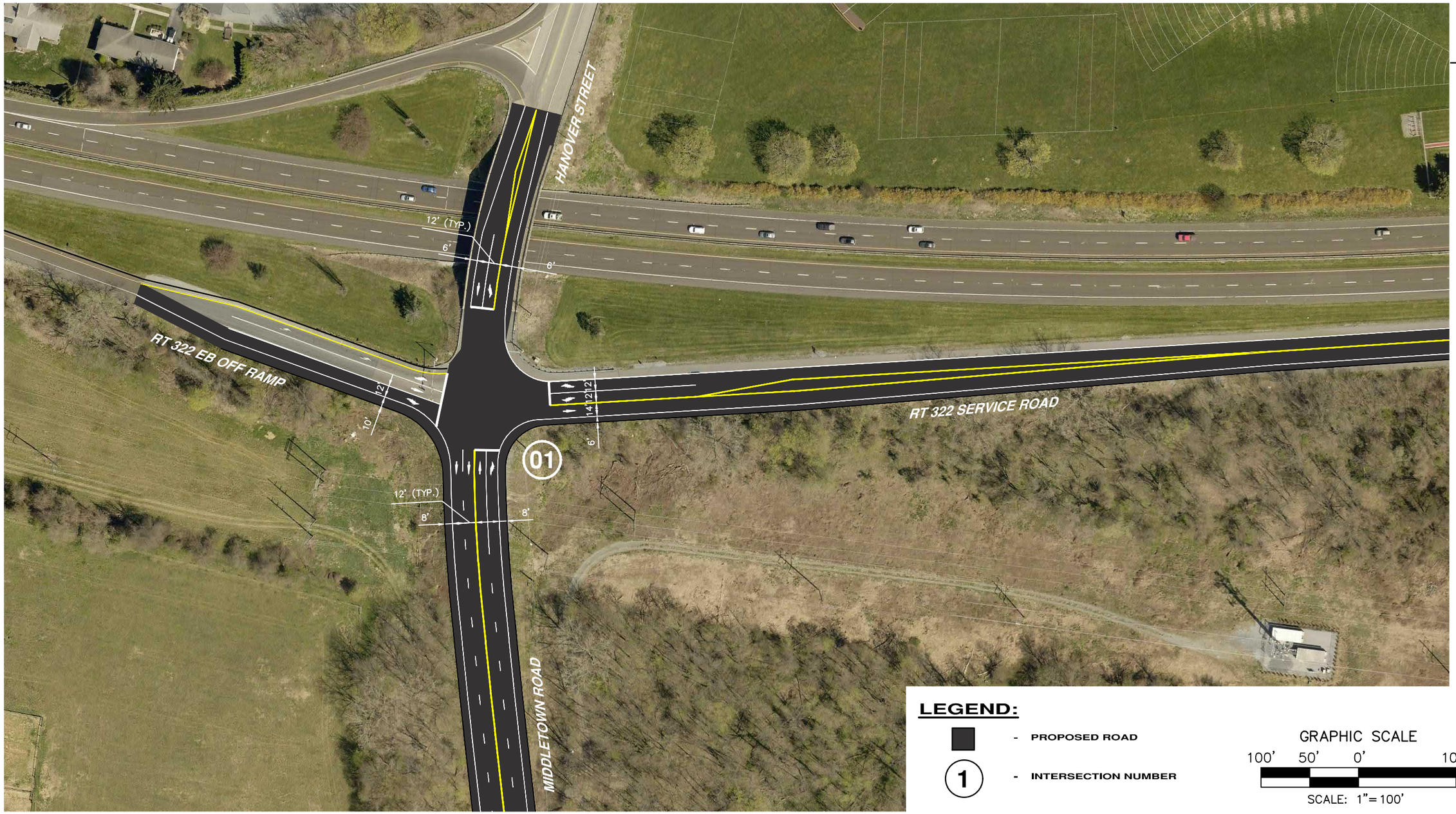

GREATER HERSHEY REGIONAL TRANSPORTATION STUDY

CONCEPT IMPROVEMENT PLAN

INT. 01 - MIDDLETOWN RD & RT 322 EB RAMP/SERVICE RD
DERRY TOWNSHIP, DAUPHIN COUNTY, PENNSYLVANIA

JOB#: R002484.0484 SEPTEMBER 2020

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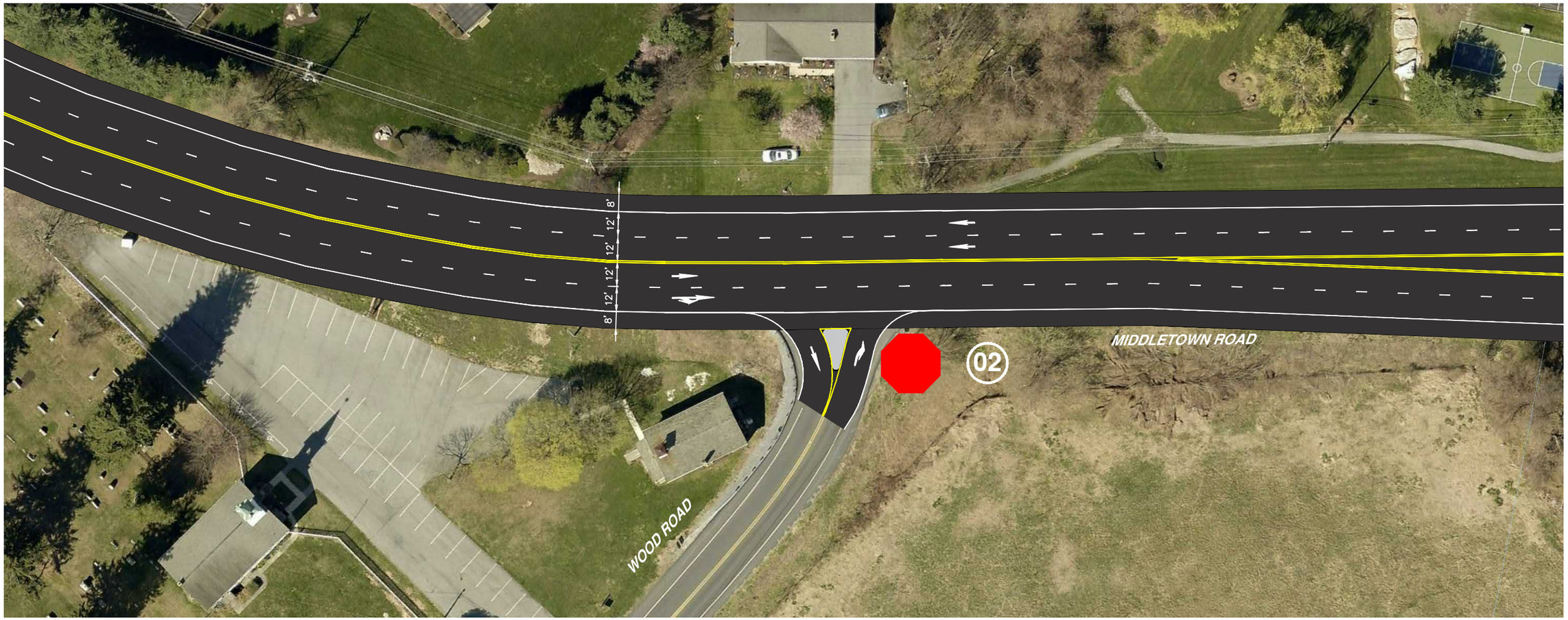

LEGEND:

- PROPOSED ROAD
- PROPOSED STOP
- (1) INTERSECTION NUMBER

GRAPHIC SCALE

50' 25' 0' 50'

SCALE: 1"= 50'

GREATER HERSHEY REGIONAL TRANSPORTATION STUDY

CONCEPT IMPROVEMENT PLAN

INT. 02 - MIDDLETOWN RD & WOOD RD
DERRY TOWNSHIP, DAUPHIN COUNTY, PENNSYLVANIA

JOB#: R002484.0484 JANUARY 2020

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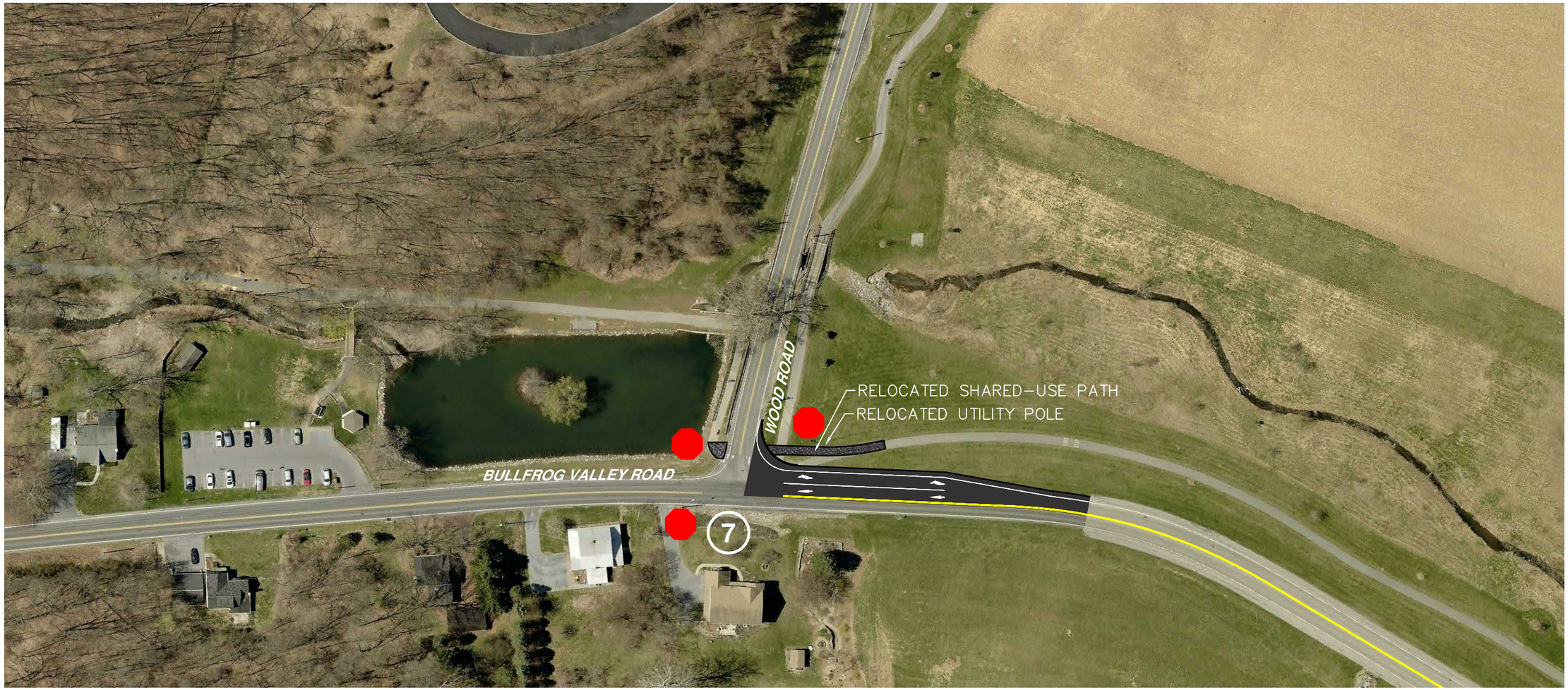

LEGEND:

- PROPOSED BIKE PATH
- PROPOSED ROAD
- PROPOSED STOP
- (1) INTERSECTION NUMBER

GRAPHIC SCALE

100' 50' 0' 100'

SCALE: 1"=100'

GREATER HERSHEY REGIONAL TRANSPORTATION STUDY

CONCEPT IMPROVEMENT PLAN

INT. 07 - BULLFROG VALLEY ROAD & WOOD ROAD
DERRY TOWNSHIP, DAUPHIN COUNTY, PENNSYLVANIA

JOB#: R002484.0484 JUNE 2020

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GRAPHIC SCALE

100' 50' 0' 100'

SCALE: 1"= 100'

LEGEND:

- PROPOSED BIKE PATH
- PROPOSED ROAD
- (1) INTERSECTION NUMBER

GREATER HERSHEY REGIONAL TRANSPORTATION STUDY

CONCEPT IMPROVEMENT PLAN

INT. 08 - BULLFROG VALLEY ROAD & RESEARCH BLVD/LIFE LION DR
DERRY TOWNSHIP, DAUPHIN COUNTY, PENNSYLVANIA

JOB#: R002484.0484 JUNE 2020

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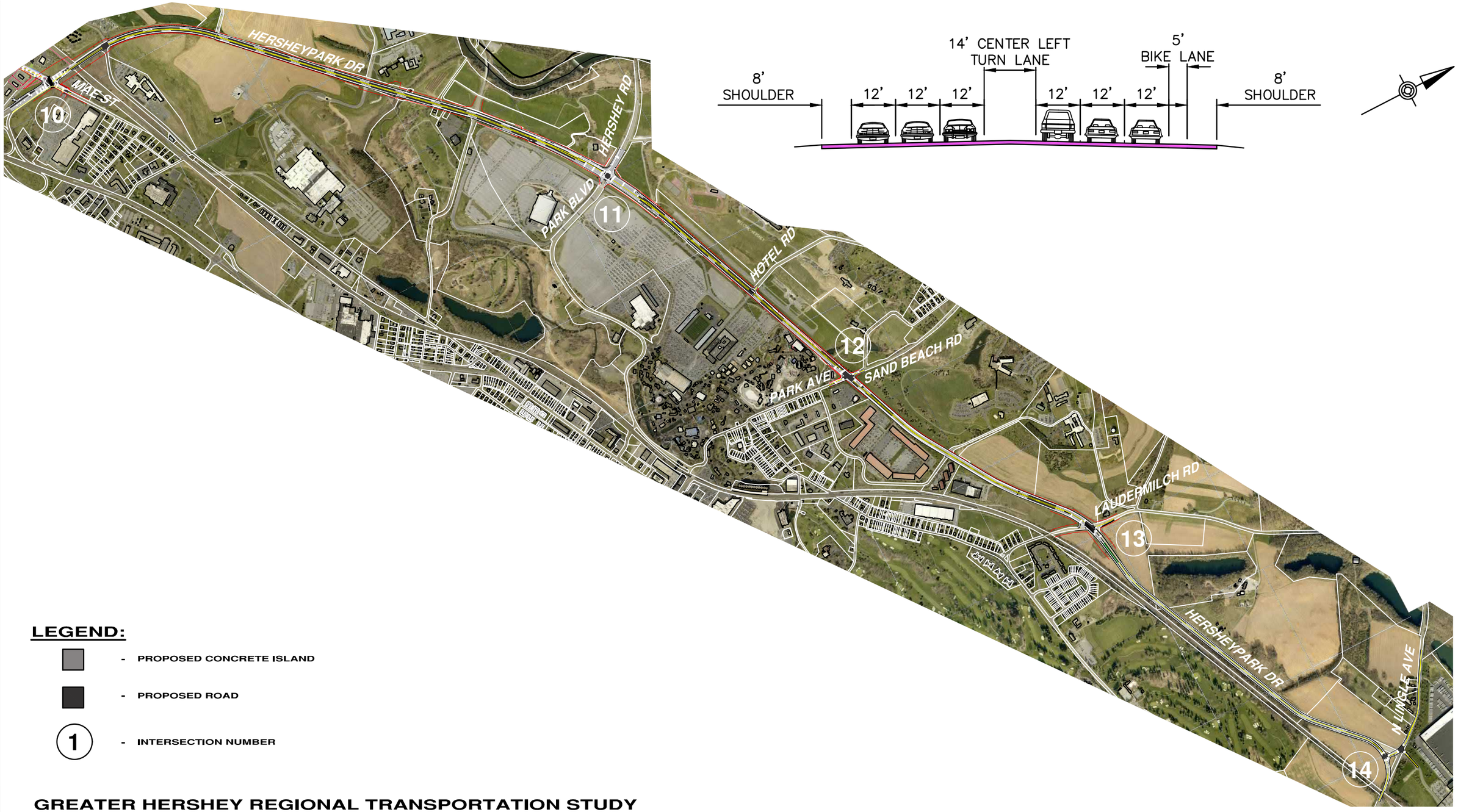

LEGEND:

- PROPOSED CONCRETE ISLAND
- PROPOSED ROAD
- (1) INTERSECTION NUMBER

GREATER HERSHEY REGIONAL TRANSPORTATION STUDY

CONCEPT IMPROVEMENT PLAN

CORRIDOR 1 - HERSHEY PARK DRIVE
DERRY TOWNSHIP, DAUPHIN COUNTY, PENNSYLVANIA

JOB#: R002484.0484 JANUARY 2020

GRAPHIC SCALE

1500' 750' 0' 1500'

SCALE: 1"=1500'

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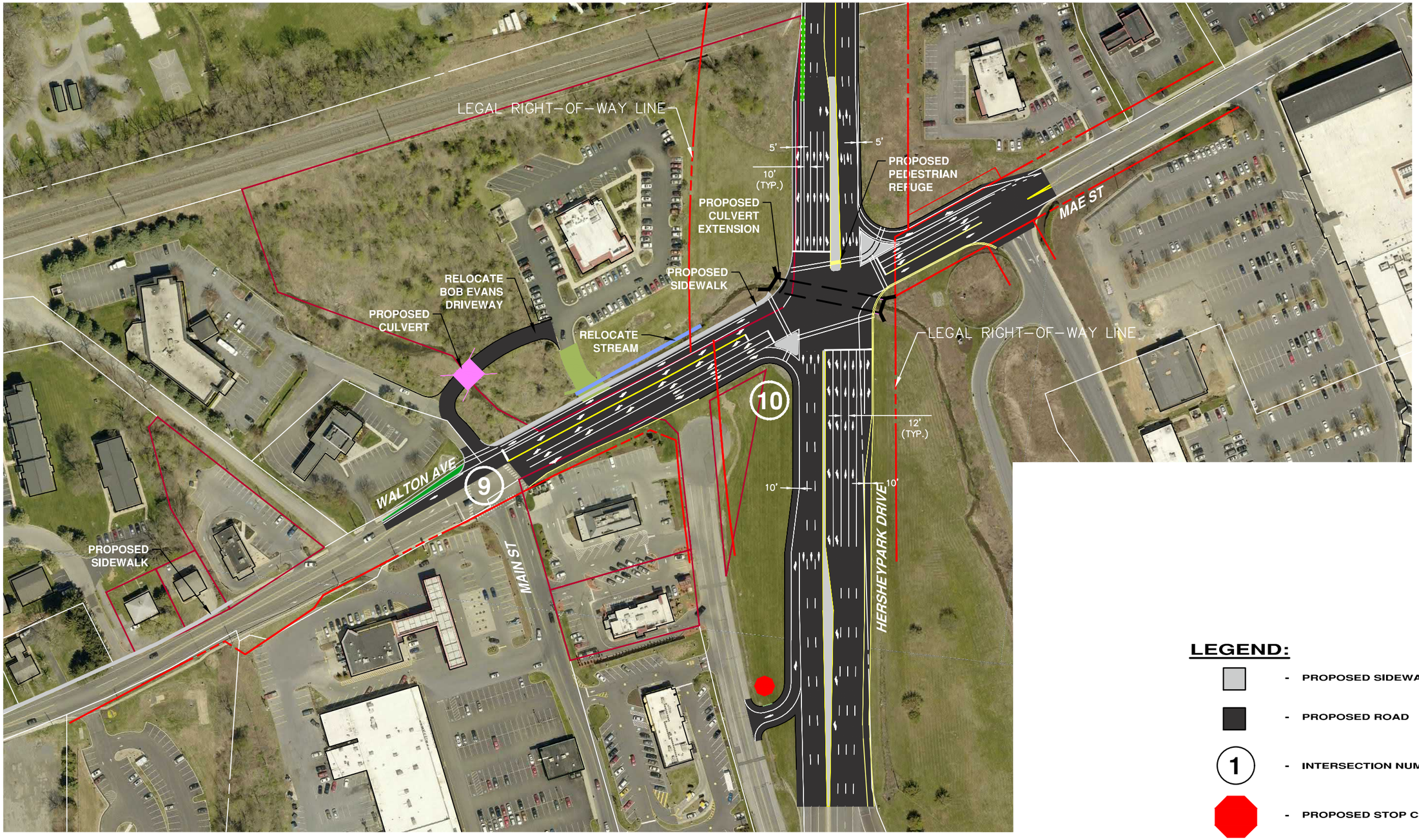

LEGEND:

- PROPOSED SIDEWALK/ISLAND
- PROPOSED ROAD
- 1 - INTERSECTION NUMBER
- PROPOSED STOP CONTROL

GREATER HERSHEY REGIONAL TRANSPORTATION STUDY

CONCEPT IMPROVEMENT PLAN

INT. 10 - W HERSHEYPARK DRIVE & WALTON AVE/MAE ST
DERRY TOWNSHIP, DAUPHIN COUNTY, PENNSYLVANIA

JOB#: R002484.0484 JUNE 2020

GRAPHIC SCALE

150' 75' 0' 150'

SCALE: 1"=150'

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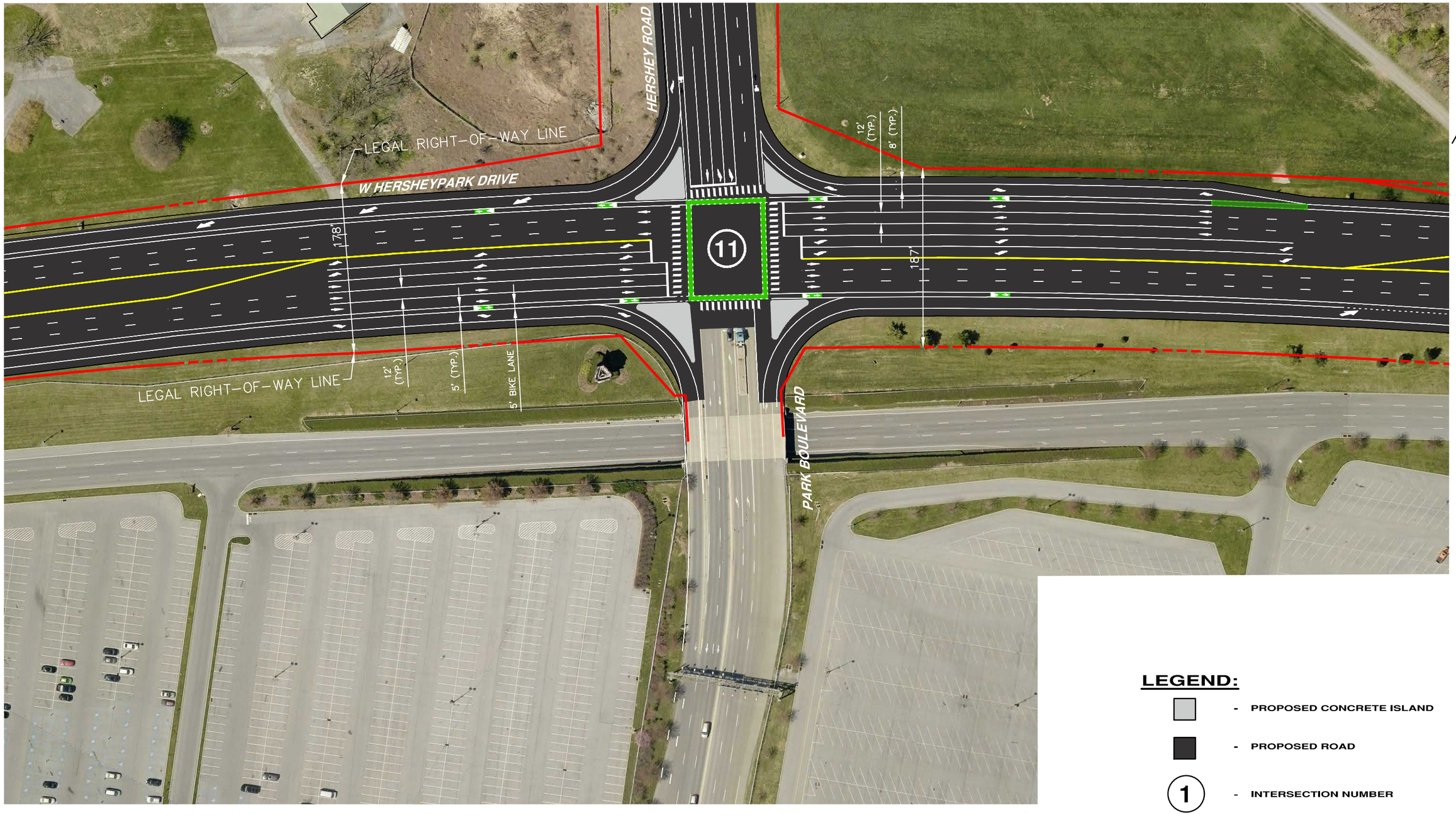
File name: P:\002A\002484_0484\C3D\Plan Sets\EXH\T002484_0484-HERSHEY PARK DRIVE.dwg Layout:INT-10 Jun 15, 2020-5:08pm cmiller



LEGEND:

- PROPOSED CONCRETE ISLAND
- PROPOSED ROAD
- (1) INTERSECTION NUMBER

GREATER HERSHEY REGIONAL TRANSPORTATION STUDY

CONCEPT IMPROVEMENT PLAN

INT. 11 - W HERSHEYPARK DRIVE & HERSHEY ROAD
DERRY TOWNSHIP, DAUPHIN COUNTY, PENNSYLVANIA

JOB#: R002484.0484 JUNE 2020

GRAPHIC SCALE

100' 50' 0' 100'

SCALE: 1"= 100'

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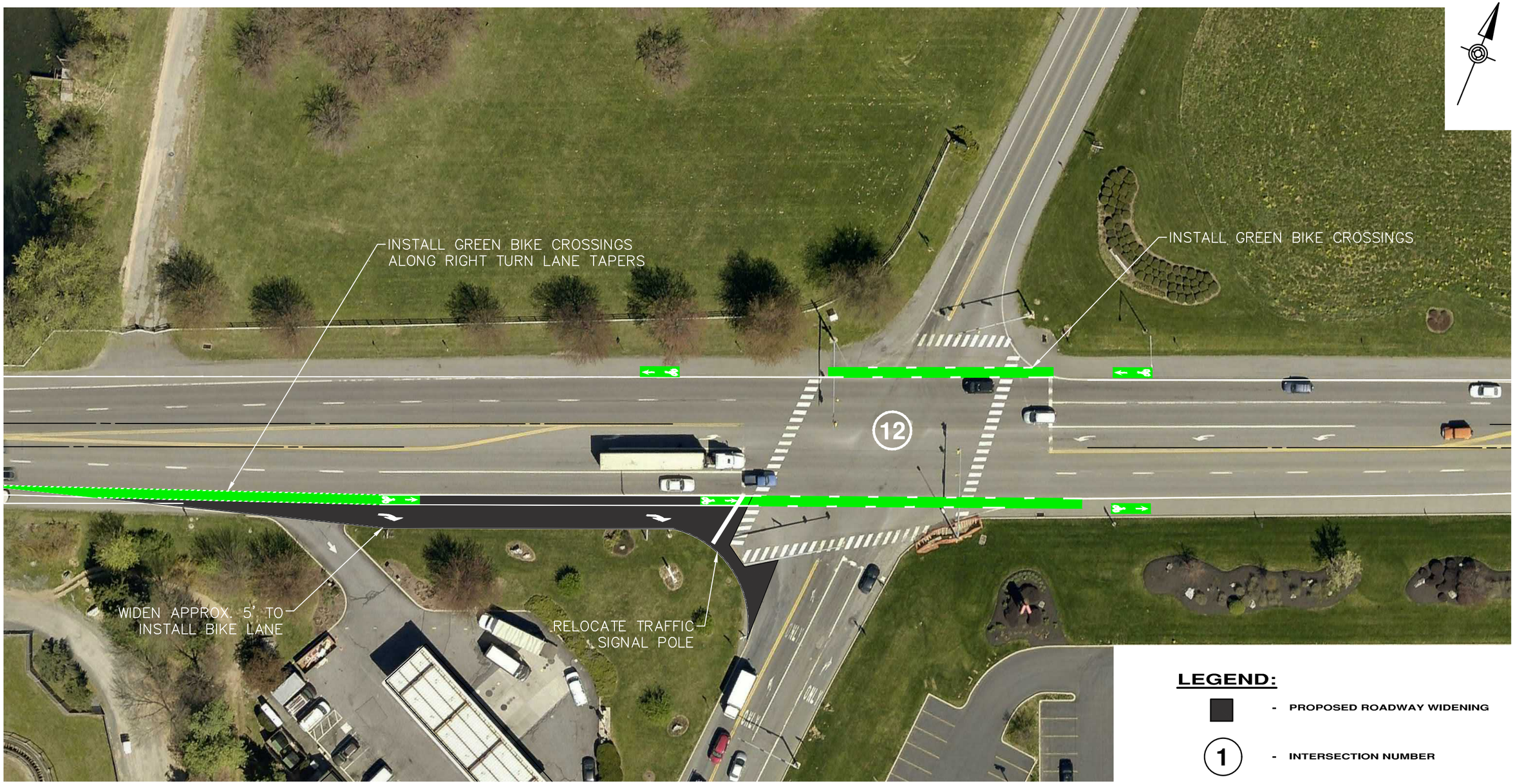
File name: P:\0024\002484_0484\C3D\Plan Sets\EXH\T002484\0484-HERSHEY PARK DRIVE.dwg Layout:INT-11 Jun 12, 2020-7:57am cmiller



LEGEND:

- PROPOSED ROADWAY WIDENING
- 1 - INTERSECTION NUMBER

SHORT TERM
GREATER HERSHEY REGIONAL TRANSPORTATION STUDY

CONCEPT IMPROVEMENT PLAN

INT. 12 - E/W HERSHEYPARK DRIVE & SAND BEACH RD/PARK AVE
DERRY TOWNSHIP, DAUPHIN COUNTY, PENNSYLVANIA

JOB#: R002484.0484 **JUNE 2020**

GRAPHIC SCALE
50' 25' 0' 50'
SCALE: 1"= 50'

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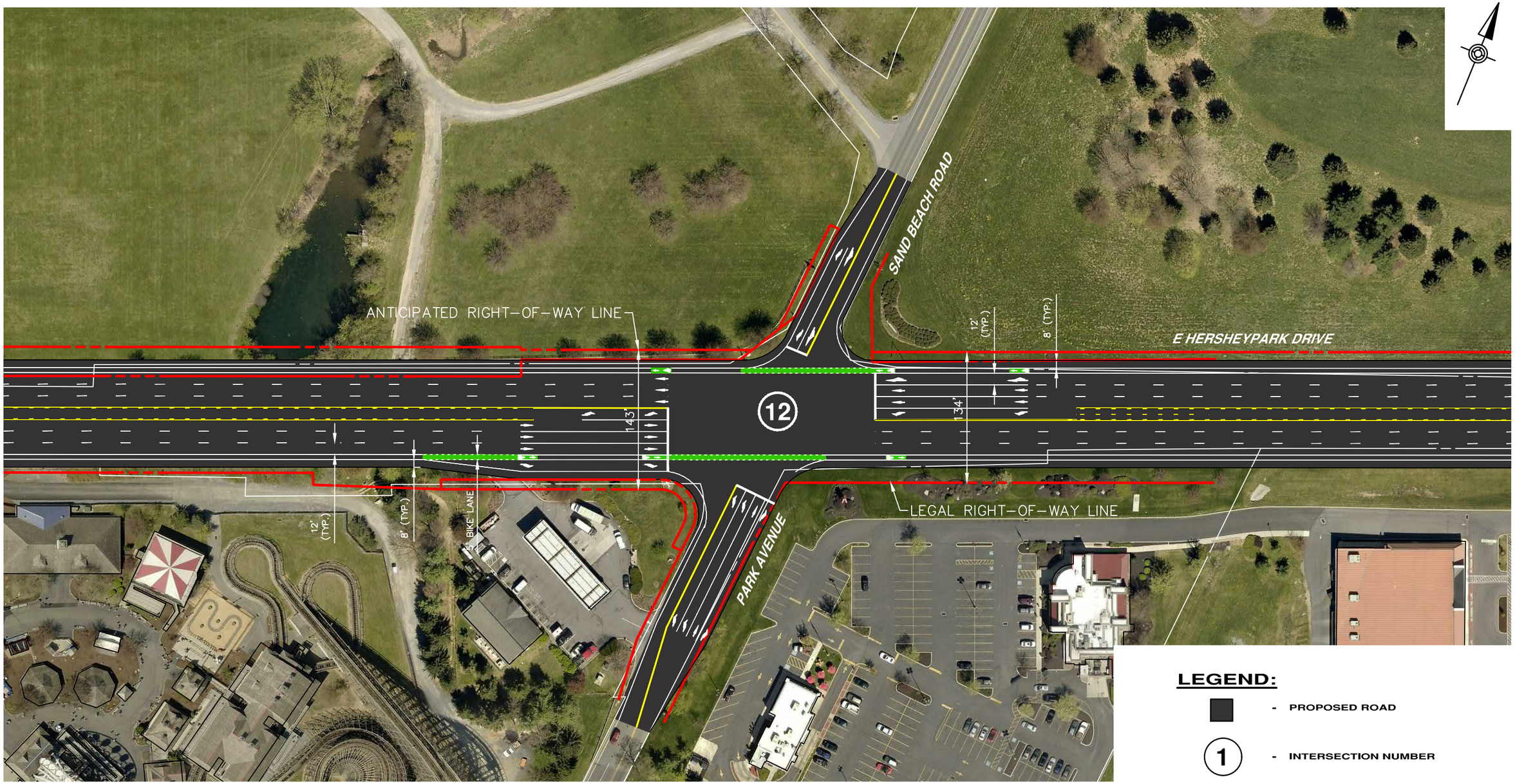
File name: P:\002A\002484_0484\C3D\Plan Sets\EXH\T002484048 4-HERSHEY PARK DRIVE BIKE LANES.dwg Layout:INT-12 Jun 15, 2020-5:14pm cmiller



LEGEND:

- PROPOSED ROAD
- (1) INTERSECTION NUMBER

LONG TERM
GREATER HERSHEY REGIONAL TRANSPORTATION STUDY

CONCEPT IMPROVEMENT PLAN

INT. 12 - E/W HERSHEYPARK DRIVE & SAND BEACH RD/PARK AVE
DERRY TOWNSHIP, DAUPHIN COUNTY, PENNSYLVANIA

JOB#: R002484.0484 JUNE 2020

GRAPHIC SCALE
100' 50' 0' 100'
SCALE: 1"= 100'

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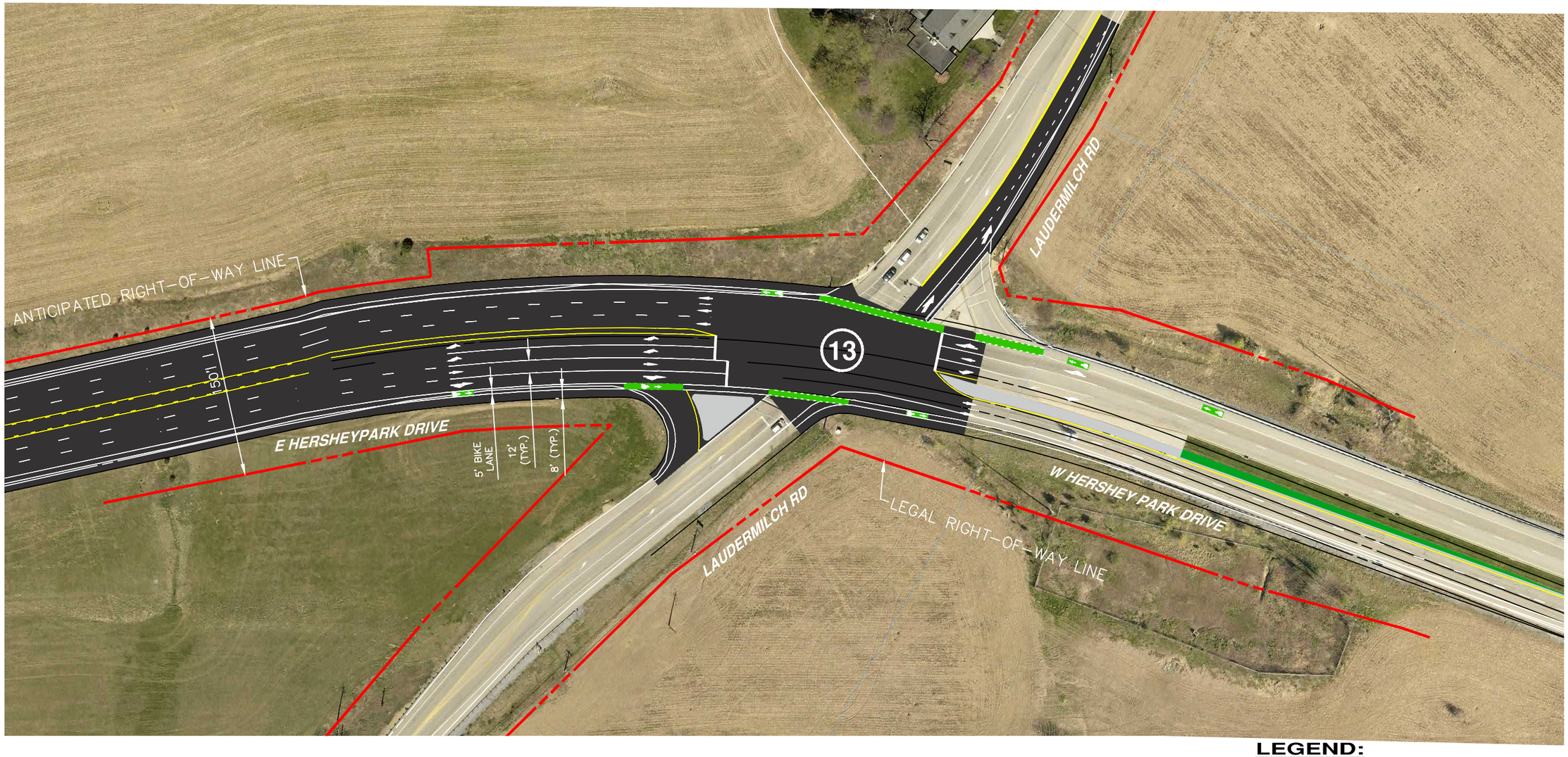

LEGEND:

- PROPOSED CONCRETE ISLAND
- PROPOSED ROAD
- (1) INTERSECTION NUMBER

GREATER HERSHEY REGIONAL TRANSPORTATION STUDY

CONCEPT IMPROVEMENT PLAN

INT. 13 - E HERSHEYPARK DRIVE & LAUDERMILCH ROAD
DERRY TOWNSHIP, DAUPHIN COUNTY, PENNSYLVANIA

JOB#: R002484.0484 JUNE 2020

GRAPHIC SCALE
100' 50' 0' 100'
SCALE: 1"=100'

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File name: P:\0024\002484_0484\C3D\Plan Sets\EXH\T0024840484-HERSHEY PARK DRIVE.dwg Layout:INT-13 Jun 15, 2020-5:20pm cmiller

LEGEND:

- PROPOSED ROAD
- PROPOSED CONCRETE ISLAND
- 1 - INTERSECTION NUMBER
- PROPOSED SIGNALIZED INTERSECTION

GREATER HERSHEY REGIONAL TRANSPORTATION STUDY

CONCEPT IMPROVEMENT PLAN

INT. 14 - E HERSHEYPARK DRIVE & N LINGLE AVENUE
DERRY TOWNSHIP, DAUPHIN COUNTY, PENNSYLVANIA

JOB#: R002484.0484 JUNE 2020

GRAPHIC SCALE

150' 75' 0' 150'

SCALE: 1"=150'

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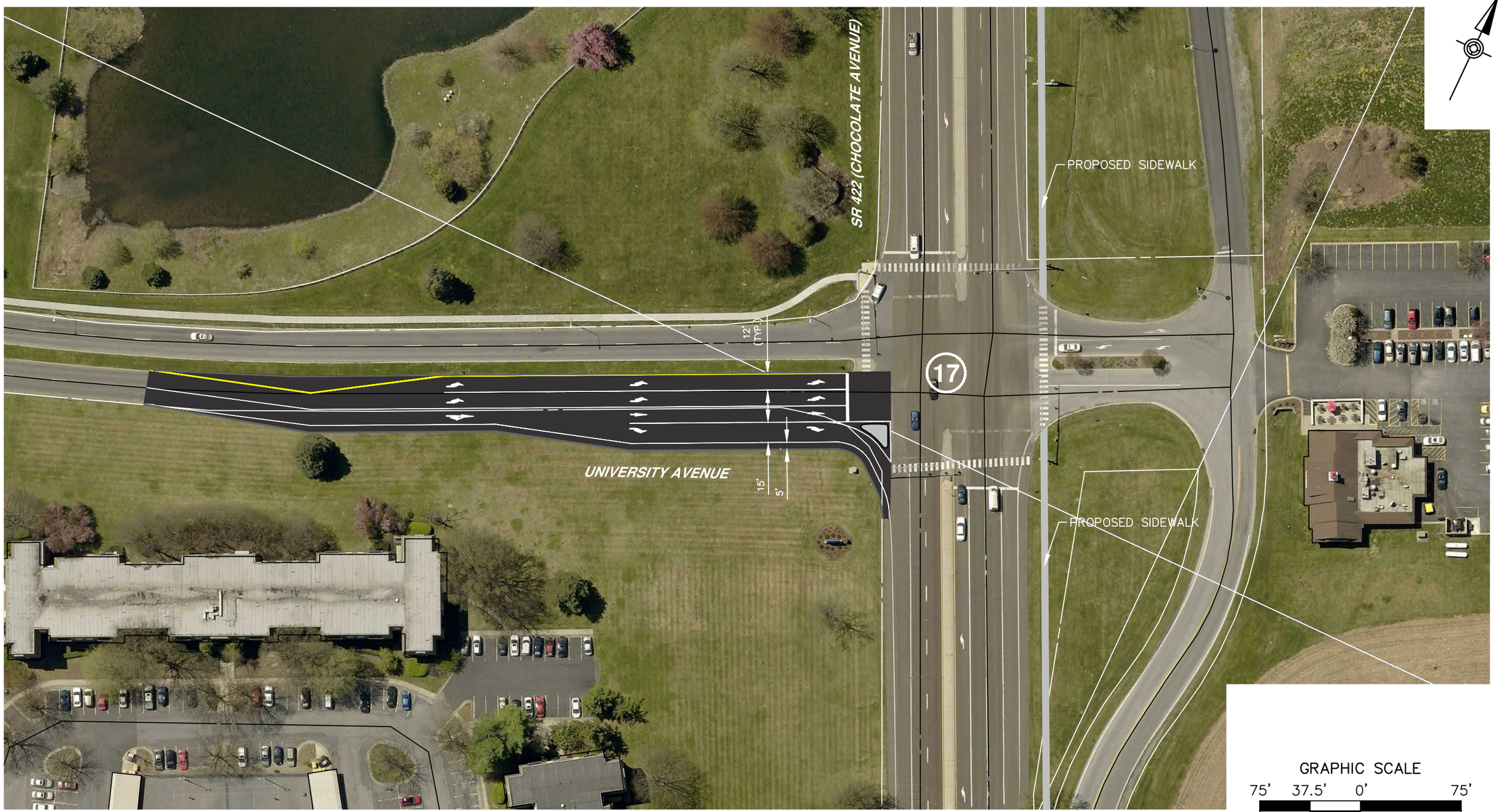

GRAPHIC SCALE

75' 37.5' 0' 75'

SCALE: 1"= 75'

LEGEND:

- PROPOSED ROAD
- PROPOSED CONCRETE ISLAND/ SIDEWALK
- (1) INTERSECTION NUMBER

GREATER HERSHEY REGIONAL TRANSPORTATION STUDY

CONCEPT IMPROVEMENT PLAN

INT. 17 - W CHOCOLATE AVE & UNIVERSITY DR
DAUPHIN COUNTY, PENNSYLVANIA

JOB#: R002484.0484 JANUARY 2020

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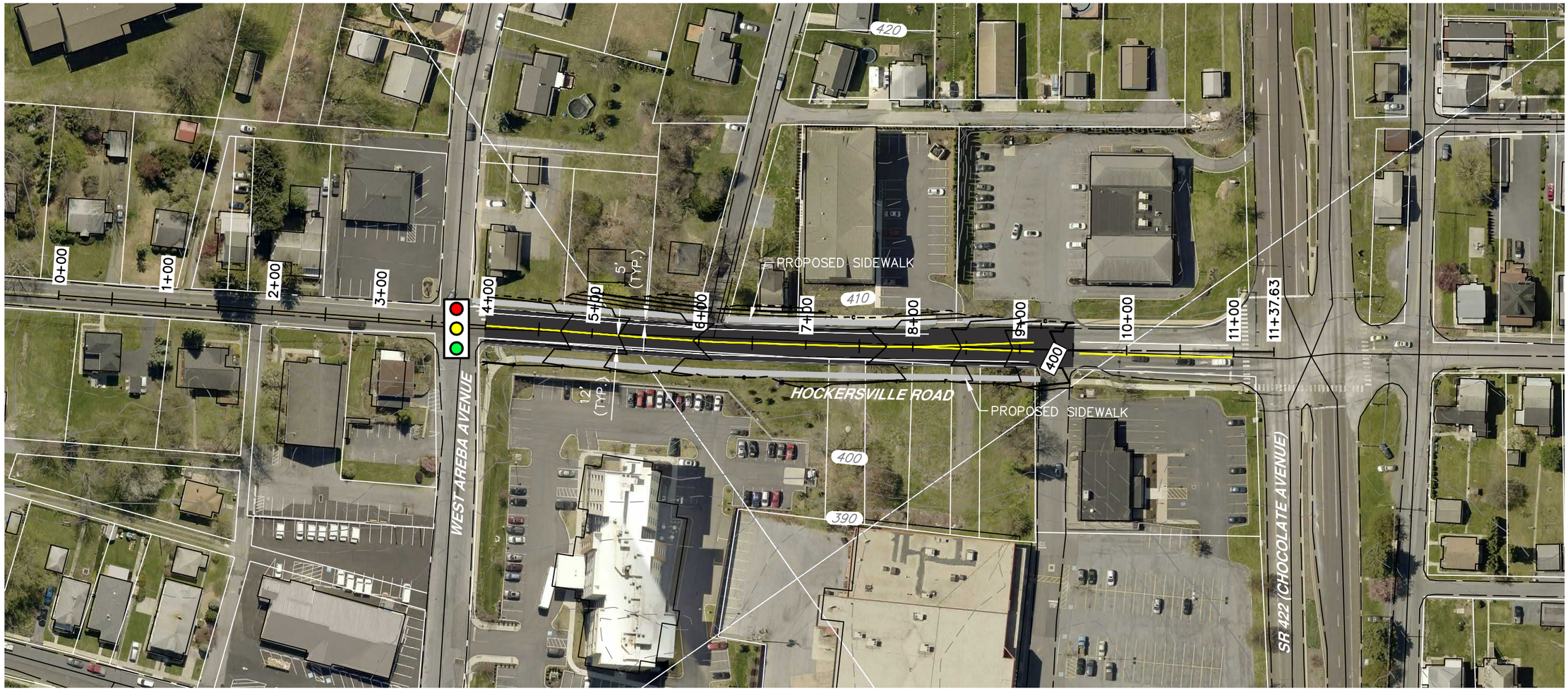

GRAPHIC SCALE

100' 50' 0' 100'

SCALE: 1"= 100'

LEGEND:

- PROPOSED ROAD
- PROPOSED SIDEWALK
- PROPOSED SIGNALIZED INTERSECTION

GREATER HERSHEY REGIONAL TRANSPORTATION STUDY

CONCEPT IMPROVEMENT PLAN

INT. 22 - HOCKERSVILLE ROAD & WEST AREBA AVENUE
DAUPHIN COUNTY, PENNSYLVANIA

JOB#: R002484.0484 JANUARY 2020

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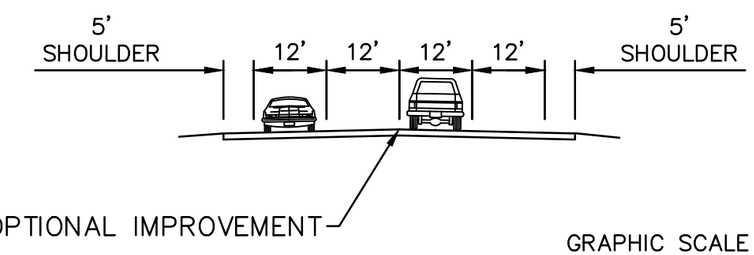

GRAPHIC SCALE

1,000' 500' 0' 1,000'

SCALE: 1"= 1,000'

LEGEND:

- PROPOSED ROAD

1 - INTERSECTION NUMBER

GREATER HERSHEY REGIONAL TRANSPORTATION STUDY

CONCEPT IMPROVEMENT PLAN

COORIDOR 2 - GOVERNOR ROAD

DERRY TOWNSHIP, DAUPHIN COUNTY, PENNSYLVANIA

JOB#: R002484.0484 SEPTEMBER 2020

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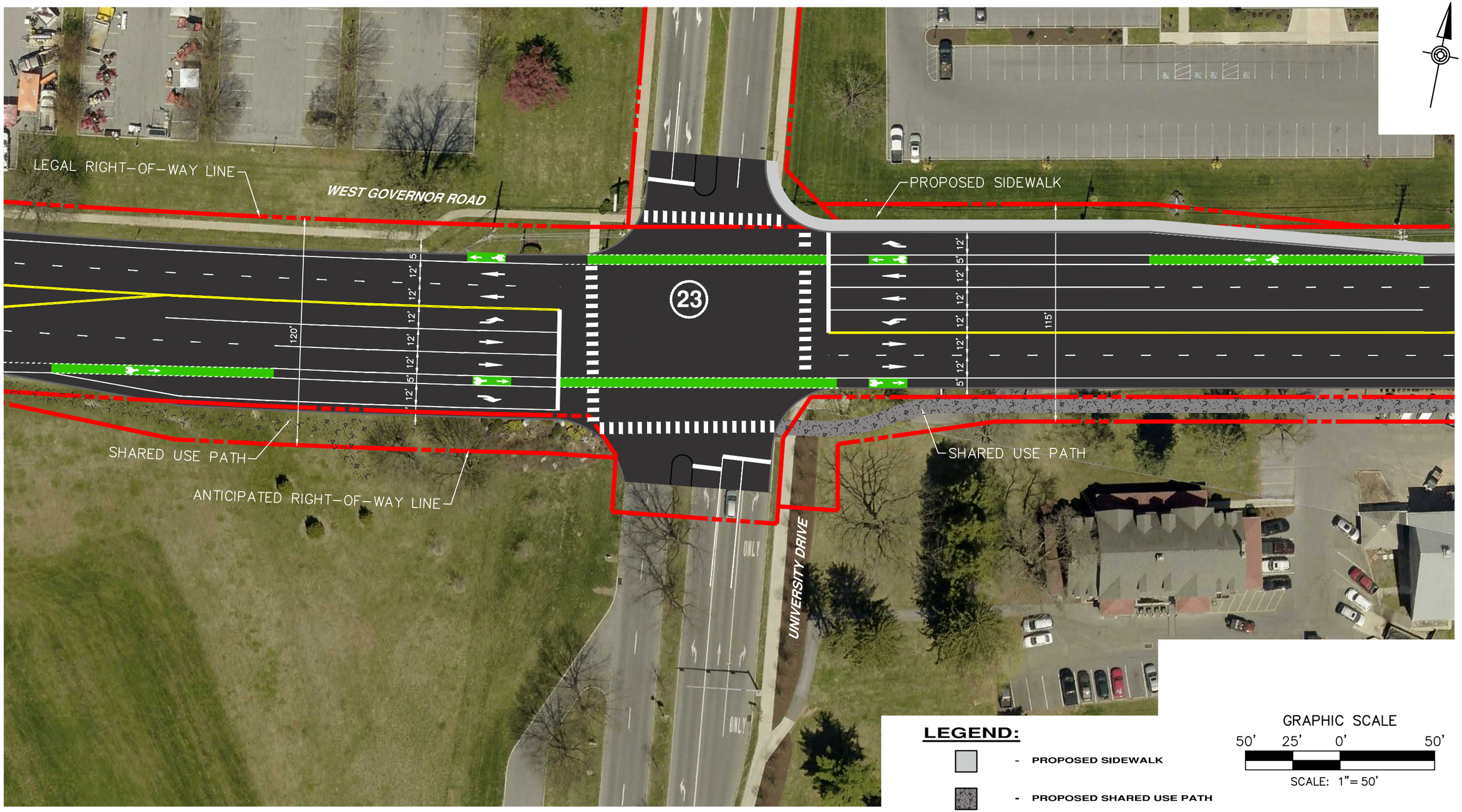

LEGEND:

- PROPOSED SIDEWALK
- PROPOSED SHARED USE PATH
- PROPOSED ROAD
- (1) INTERSECTION NUMBER

GRAPHIC SCALE

50' 25' 0' 50'

SCALE: 1"= 50'

GREATER HERSHEY REGIONAL TRANSPORTATION STUDY

CONCEPT IMPROVEMENT PLAN

INT. 23 - W GOVERNOR RD & UNIVERSITY DR
DERRY TOWNSHIP, DAUPHIN COUNTY, PENNSYLVANIA

JOB#: R002484.0484 SEPTEMBER 2020

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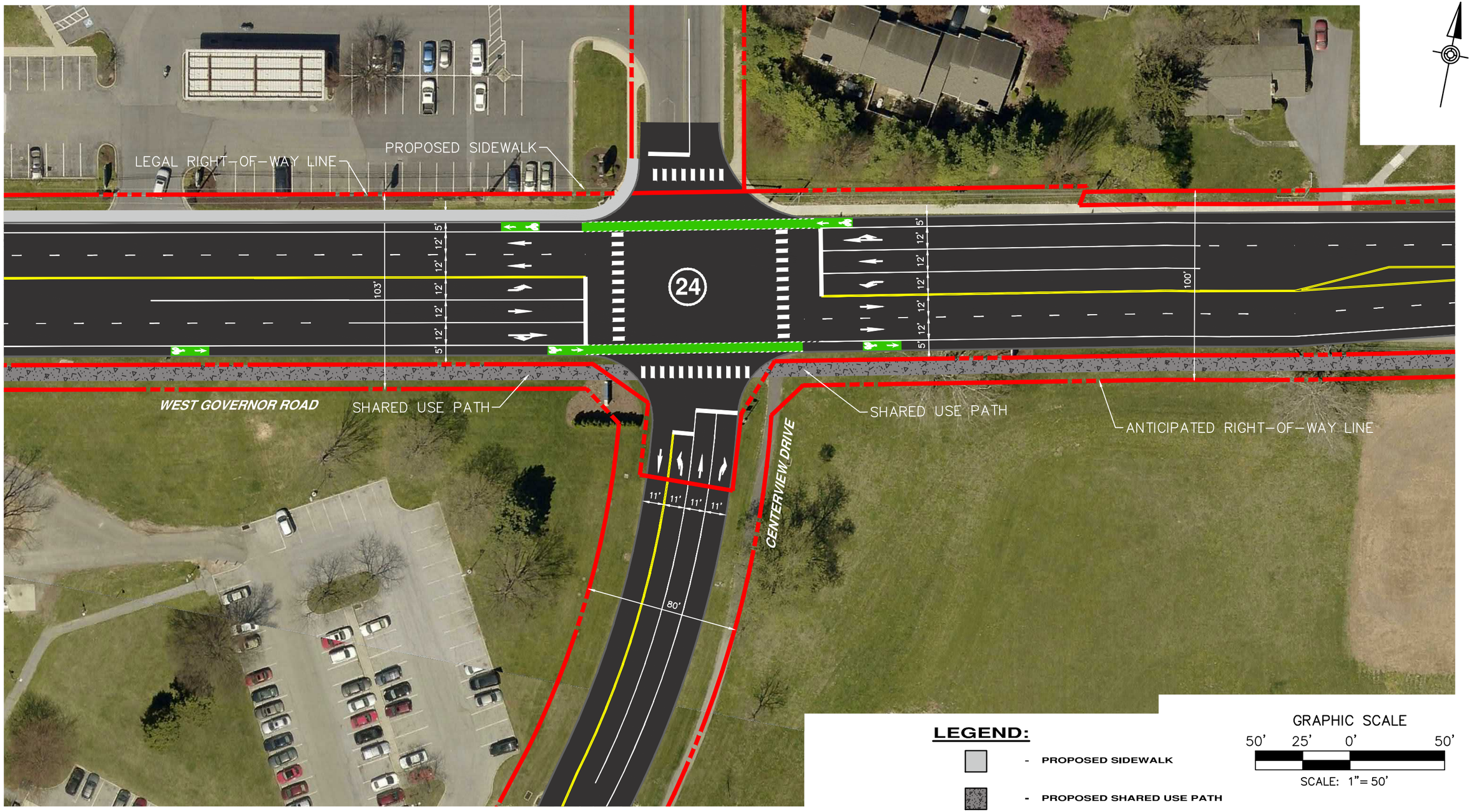

LEGEND:

- PROPOSED SIDEWALK
- PROPOSED SHARED USE PATH
- PROPOSED ROAD
- (1) INTERSECTION NUMBER

GRAPHIC SCALE

50' 25' 0' 50'

SCALE: 1"= 50'

GREATER HERSHEY REGIONAL TRANSPORTATION STUDY

CONCEPT IMPROVEMENT PLAN

INT. 24 - W GOVERNOR RD & CENTERVIEW DR
DERRY TOWNSHIP, DAUPHIN COUNTY, PENNSYLVANIA

JOB#: R002484.0484 SEPTEMBER 2020

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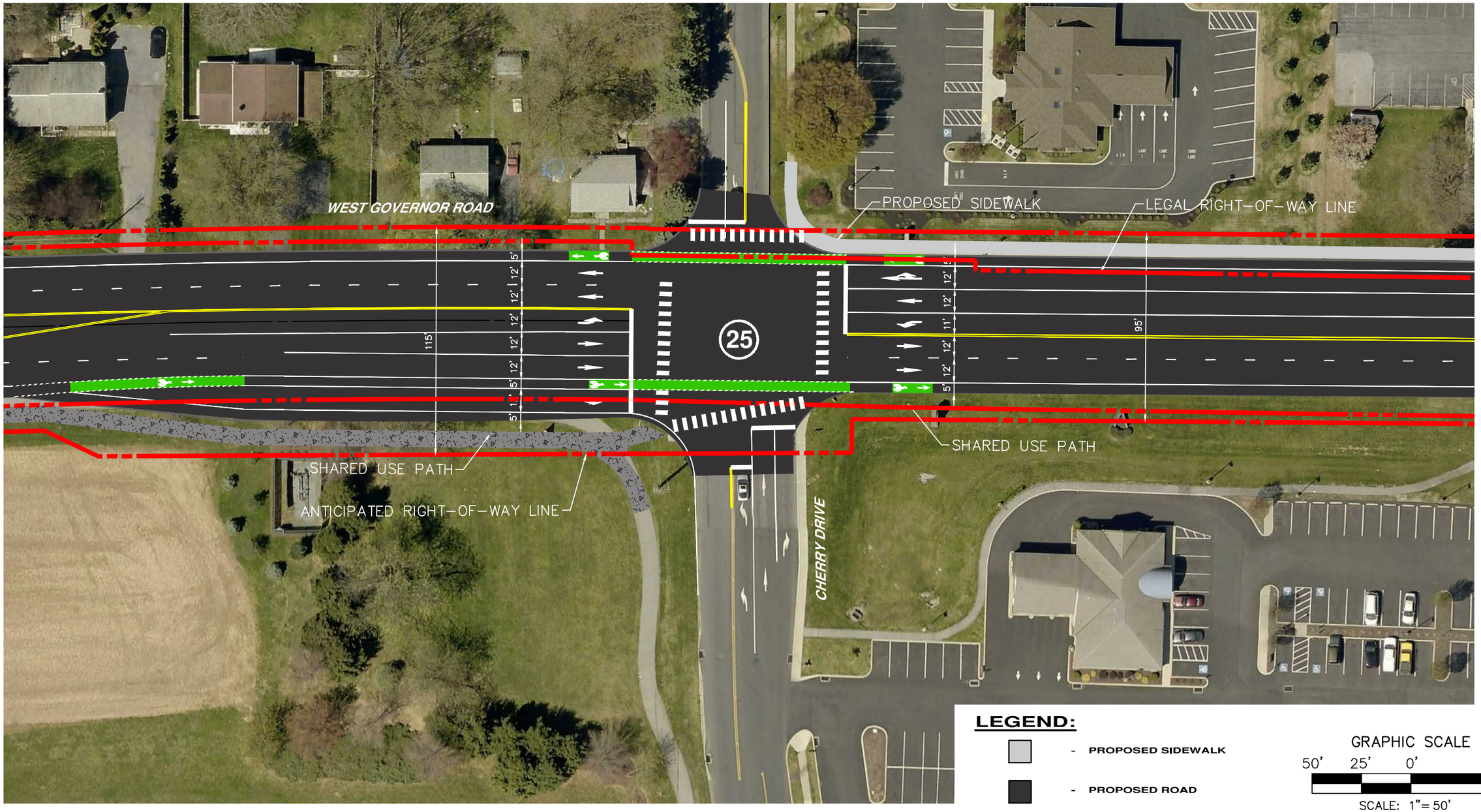

LEGEND:

- PROPOSED SIDEWALK
- PROPOSED ROAD
- PROPOSED SHARED USE PATH
- (1) INTERSECTION NUMBER

GRAPHIC SCALE

50' 25' 0' 50'

SCALE: 1"= 50'

GREATER HERSHEY REGIONAL TRANSPORTATION STUDY

CONCEPT IMPROVEMENT PLAN

INT. 25 - W GOVERNOR RD & CHERRY DR
DERRY TOWNSHIP, DAUPHIN COUNTY, PENNSYLVANIA

JOB#: R002484.0484 SEPTEMBER 2020

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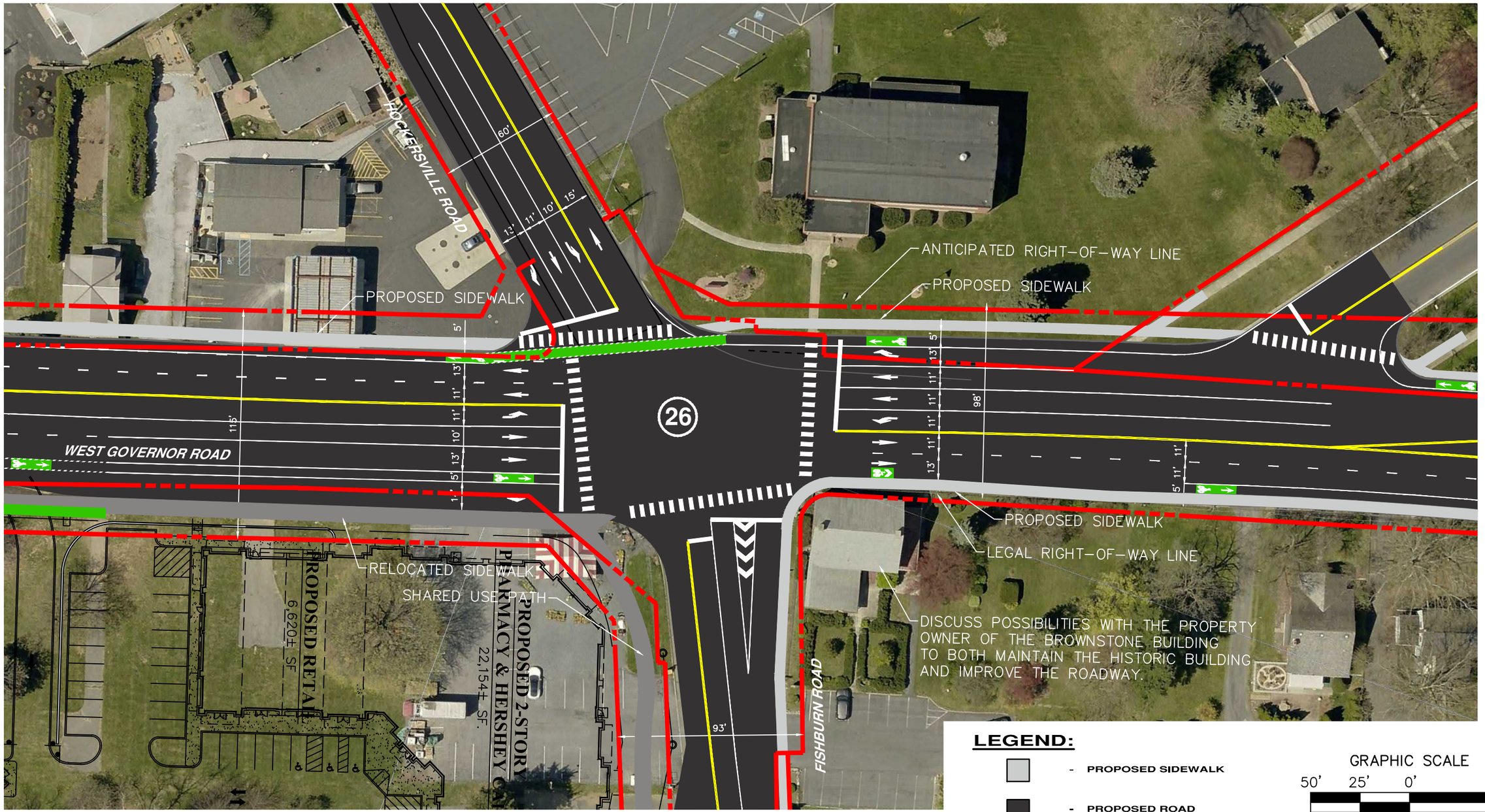

LEGEND:

- PROPOSED SIDEWALK
- PROPOSED ROAD
- PROPOSED SHARED USE PATH
- (1) INTERSECTION NUMBER

GRAPHIC SCALE

50' 25' 0' 50'

SCALE: 1"= 50'

GREATER HERSHEY REGIONAL TRANSPORTATION STUDY

CONCEPT IMPROVEMENT PLAN

INT. 26 - W GOVERNOR RD & HOCKERSVILLE RD/FISHBURN RD
DERRY TOWNSHIP, DAUPHIN COUNTY, PENNSYLVANIA

JOB#: R002484.0484 SEPTEMBER 2020

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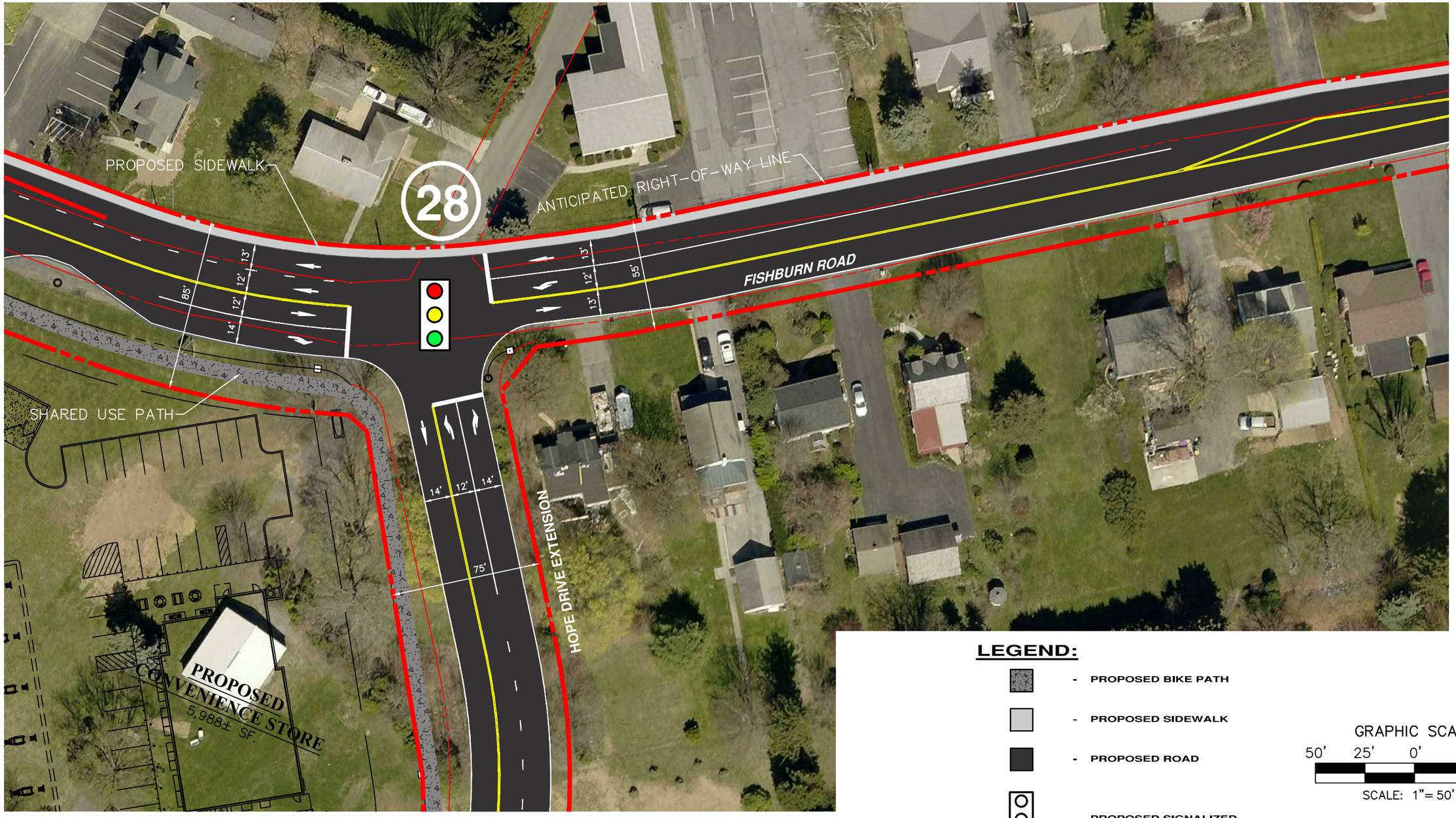
File name: P:\002X\002484_0484\C3D\Plan Sets\EXH\T002484_0484-GOVERNOR RD.dwg Layout:INT-26 Oct 01, 2020-11:39am cmiller



LEGEND:

- PROPOSED BIKE PATH
- PROPOSED SIDEWALK
- PROPOSED ROAD
- PROPOSED SIGNALIZED INTERSECTION
- 1 - INTERSECTION NUMBER

GRAPHIC SCALE

50' 25' 0' 50'

SCALE: 1"= 50'

GREATER HERSHEY REGIONAL TRANSPORTATION STUDY

CONCEPT IMPROVEMENT PLAN

INT. 28 - FISHBURN RD & SAND HILL RD
DERRY TOWNSHIP, DAUPHIN COUNTY, PENNSYLVANIA

JOB#: R002484.0484 JUNE 2020

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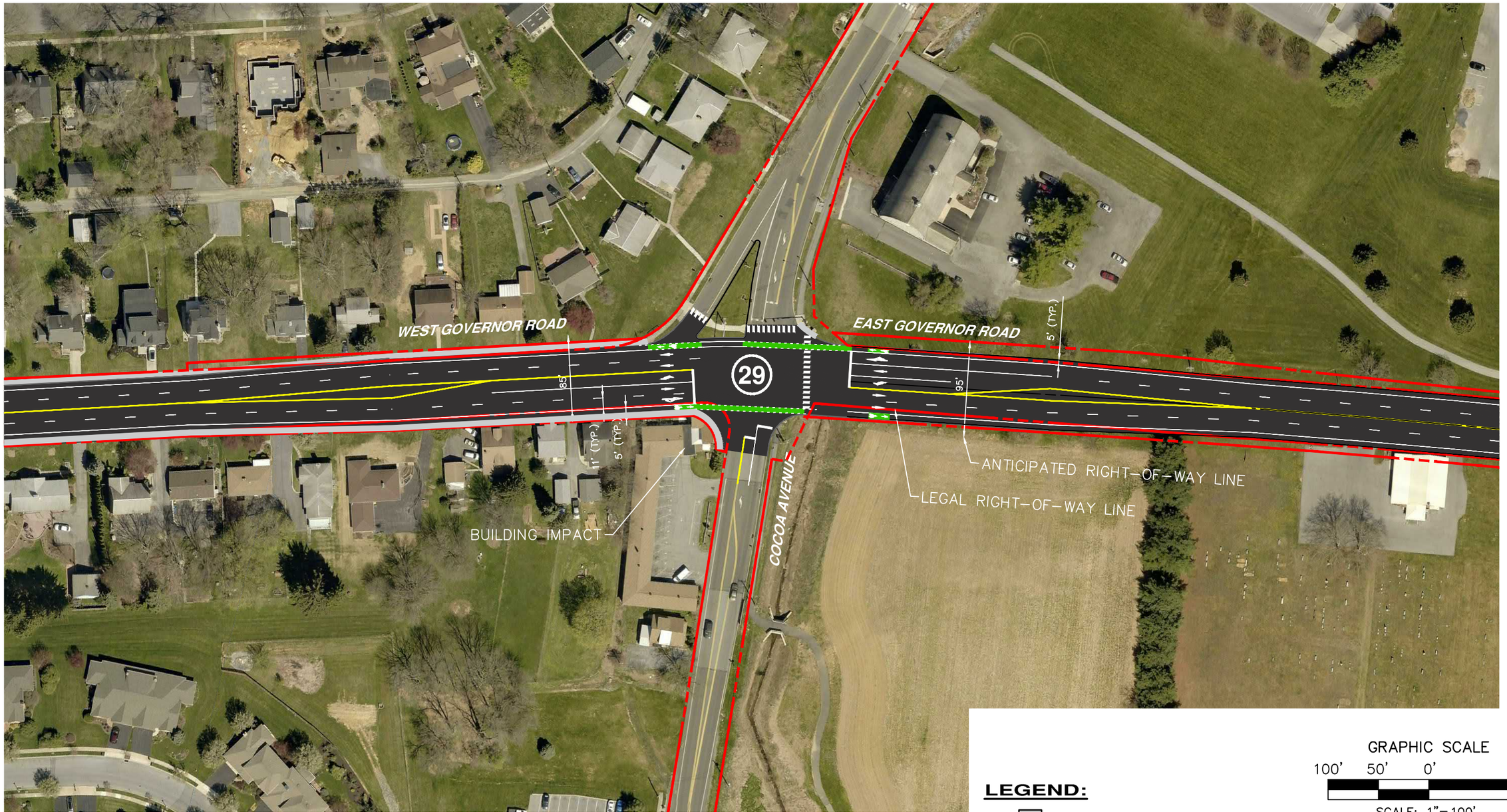

GRAPHIC SCALE

100' 50' 0' 100'

SCALE: 1"=100'

LEGEND:

- PROPOSED SIDEWALK
- PROPOSED ROAD
- (1) INTERSECTION NUMBER

GREATER HERSHEY REGIONAL TRANSPORTATION STUDY

CONCEPT IMPROVEMENT PLAN

INT. 29 - E/W GOVERNOR RD & COCOA AVE
DERRY TOWNSHIP, DAUPHIN COUNTY, PENNSYLVANIA

JOB#: R002484.0484 SEPTEMBER 2020

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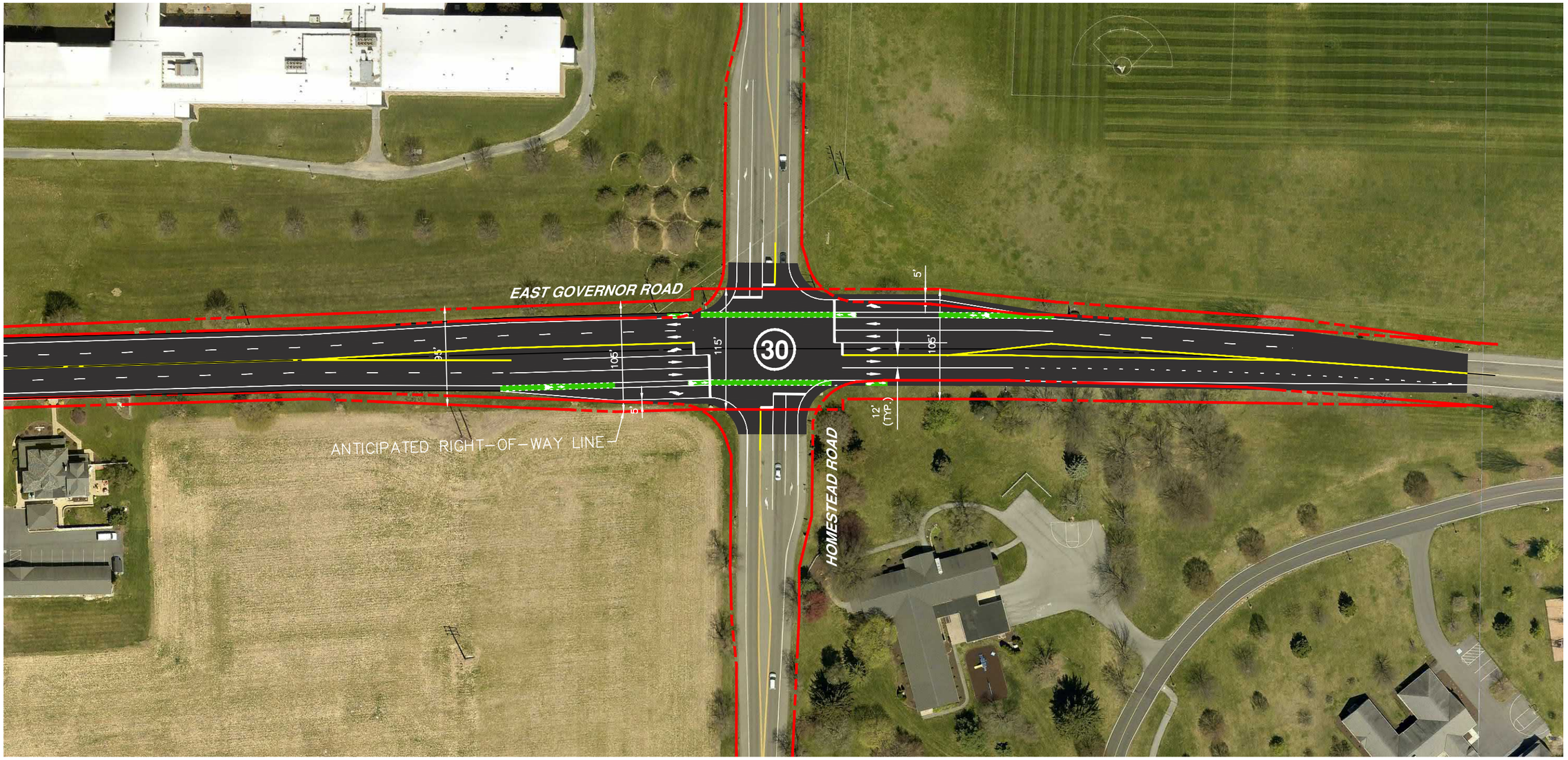

GRAPHIC SCALE

100' 50' 0' 100'

SCALE: 1"=100'

LEGEND:

- PROPOSED ROAD

(1) - INTERSECTION NUMBER

GREATER HERSHEY REGIONAL TRANSPORTATION STUDY

CONCEPT IMPROVEMENT PLAN

INT. 30 - E/W GOVERNOR RD & HOMESTEAD ROAD
DERRY TOWNSHIP, DAUPHIN COUNTY, PENNSYLVANIA

JOB#: R002484.0484 SEPTEMBER 2020

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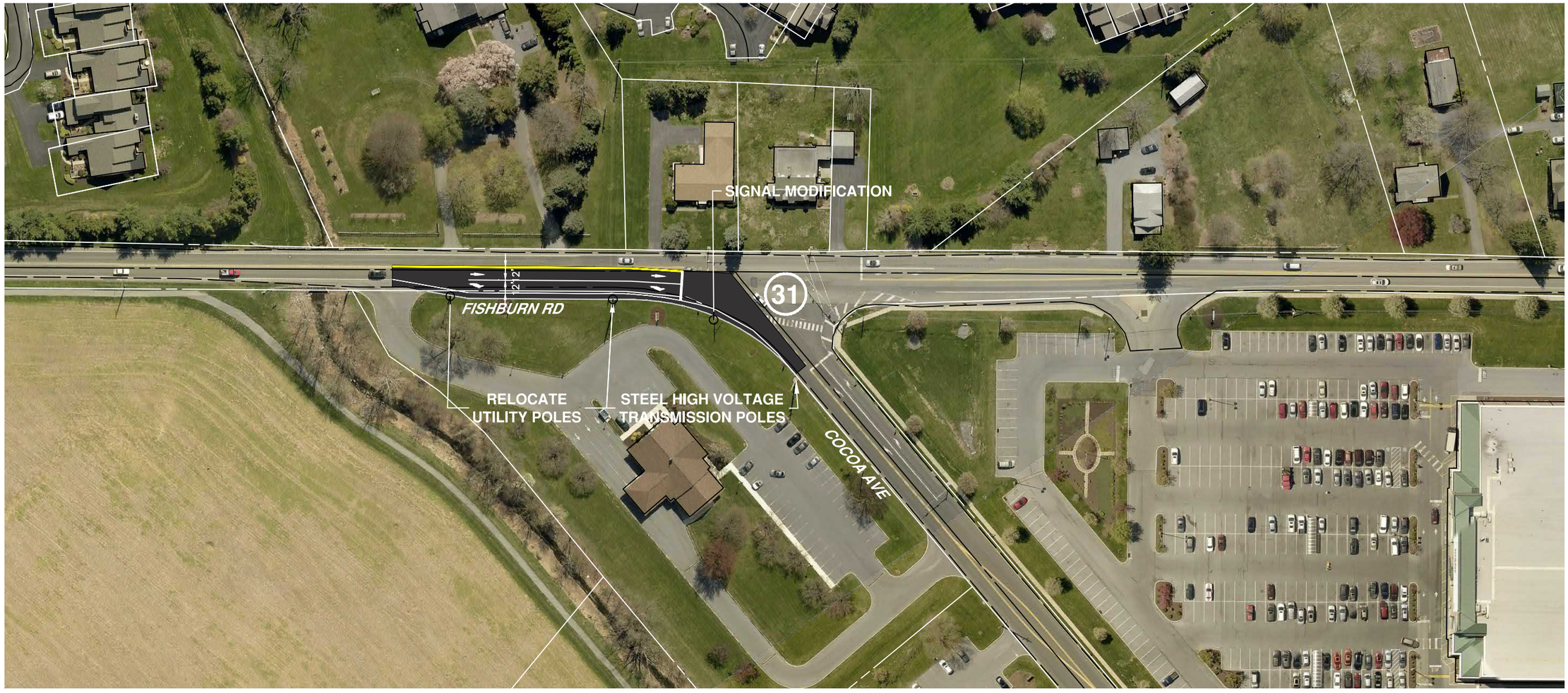

GRAPHIC SCALE

100' 50' 0' 100'

SCALE: 1"= 100'

LEGEND:

- PROPOSED ROAD
- (1) - INTERSECTION NUMBER

GREATER HERSHEY REGIONAL TRANSPORTATION STUDY

CONCEPT IMPROVEMENT PLAN

INT. 31 - FISHBURN ROAD & COCOA AVENUE
DAUPHIN COUNTY, PENNSYLVANIA

JOB#: R002484.0484 JANUARY 2020

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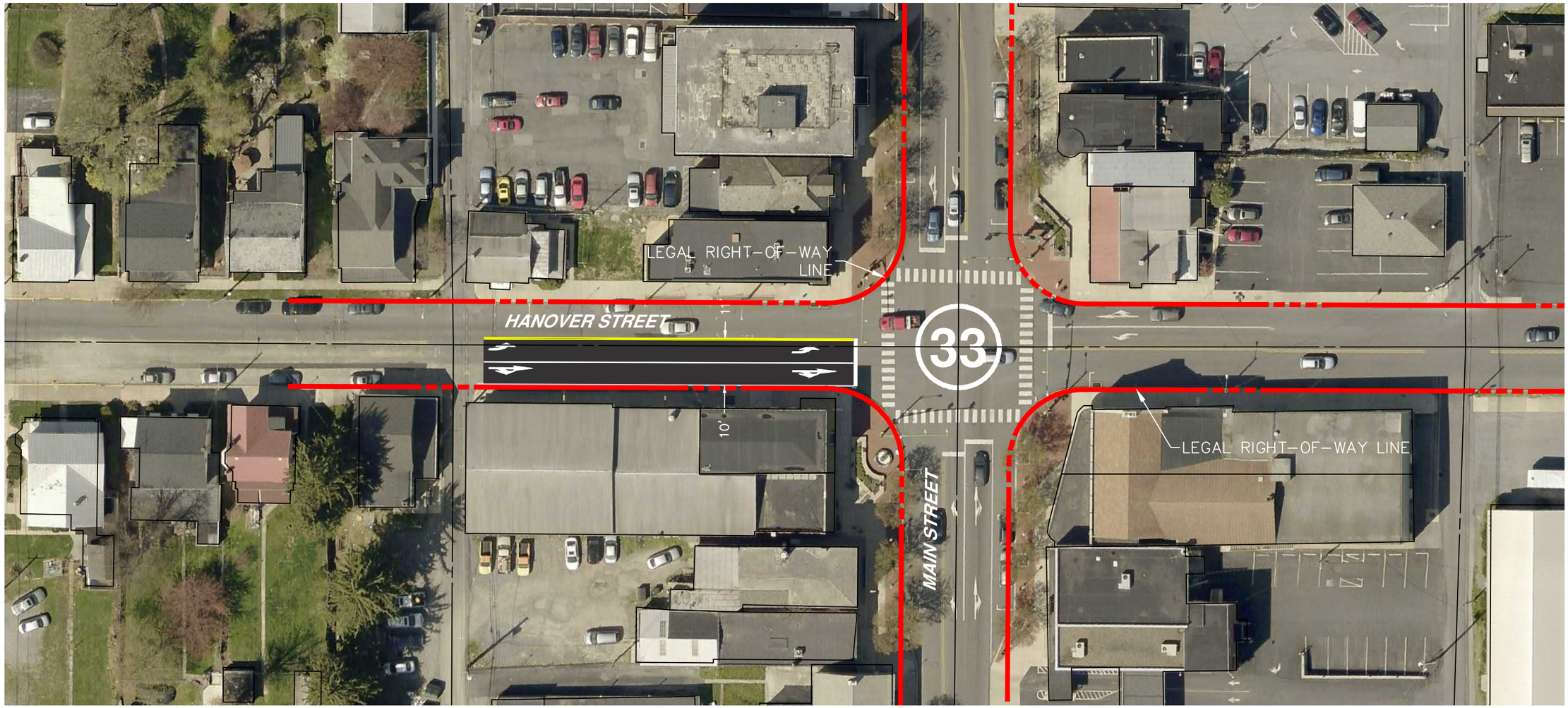

GRAPHIC SCALE

50' 25' 0' 50'

SCALE: 1"= 50'

GREATER HERSHEY REGIONAL TRANSPORTATION STUDY

CONCEPT IMPROVEMENT PLAN

INT. 33 - MAIN ST & HANOVER ST

HUMMELSTOWN BOROUGH, DAUPHIN COUNTY, PENNSYLVANIA

JOB#: R002484.0484 JANUARY 2020

LEGEND:

- PROPOSED ROAD

(1) - INTERSECTION NUMBER

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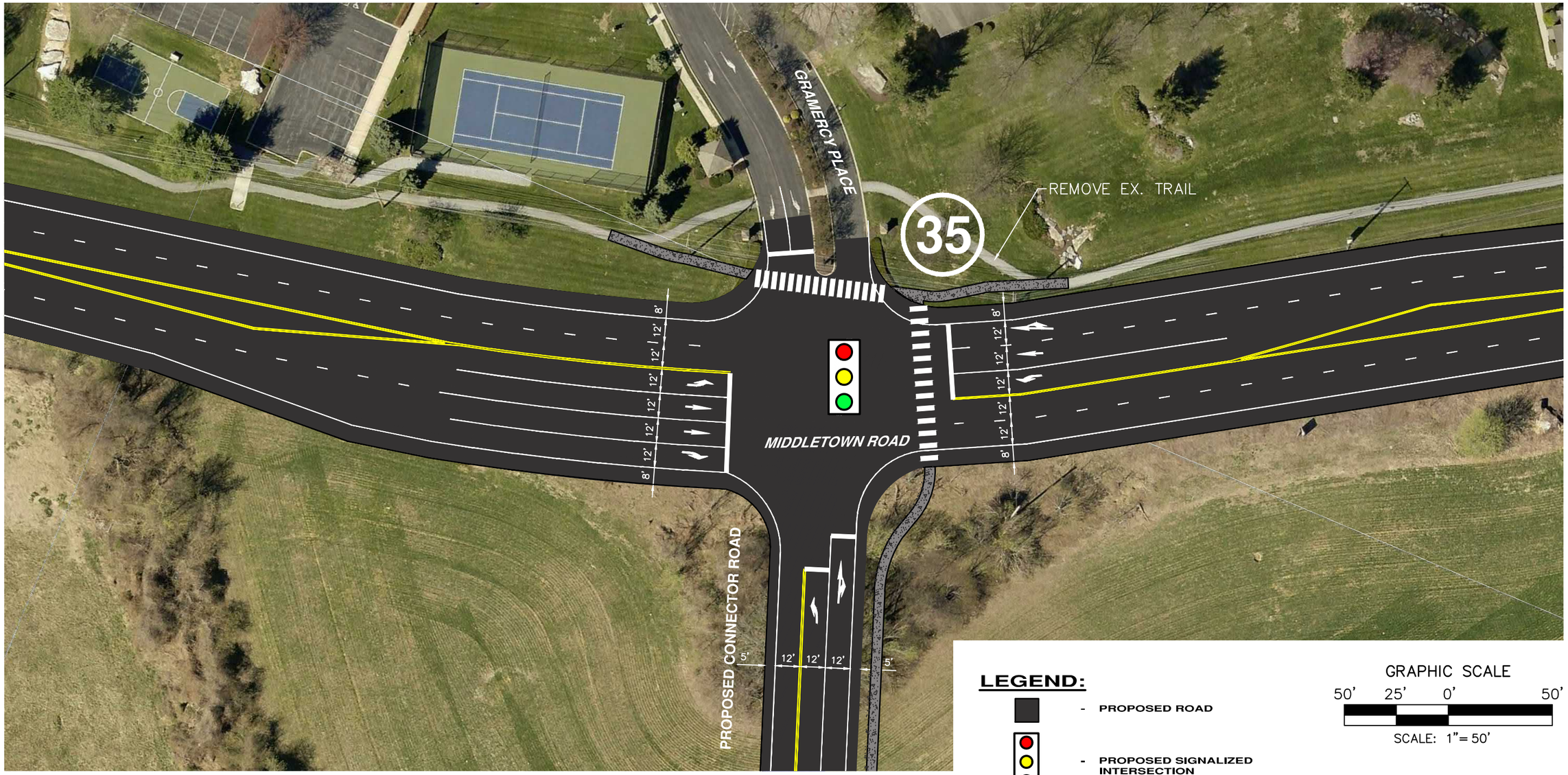
File name: P:\0024\002484_0484\C3D\Plan Sets\Exh1\T002484048 4-MAIN ST.dwg Layout:INT-33 Jan 15, 2020-3:49pm kvo



LEGEND:

- PROPOSED ROAD
- PROPOSED SIGNALIZED INTERSECTION
- 1 - INTERSECTION NUMBER

GRAPHIC SCALE

50' 25' 0' 50'

SCALE: 1"= 50'

GREATER HERSHEY REGIONAL TRANSPORTATION STUDY

CONCEPT IMPROVEMENT PLAN

INT. 35 - MIDDLETOWN RD & PROPOSED CONNECTOR
DERRY TOWNSHIP, DAUPHIN COUNTY, PENNSYLVANIA
JOB#: R002484.0484 JANUARY 2020

HRG
Herbert, Rowland & Grubic, Inc.
Engineering & Related Services
AN EMPLOYEE-OWNED COMPANY
369 East Park Drive
Harrisburg, PA 17111
(717) 564-1121
Fax (717) 564-1158
hrg@hrg-inc.com
www.hrg-inc.com

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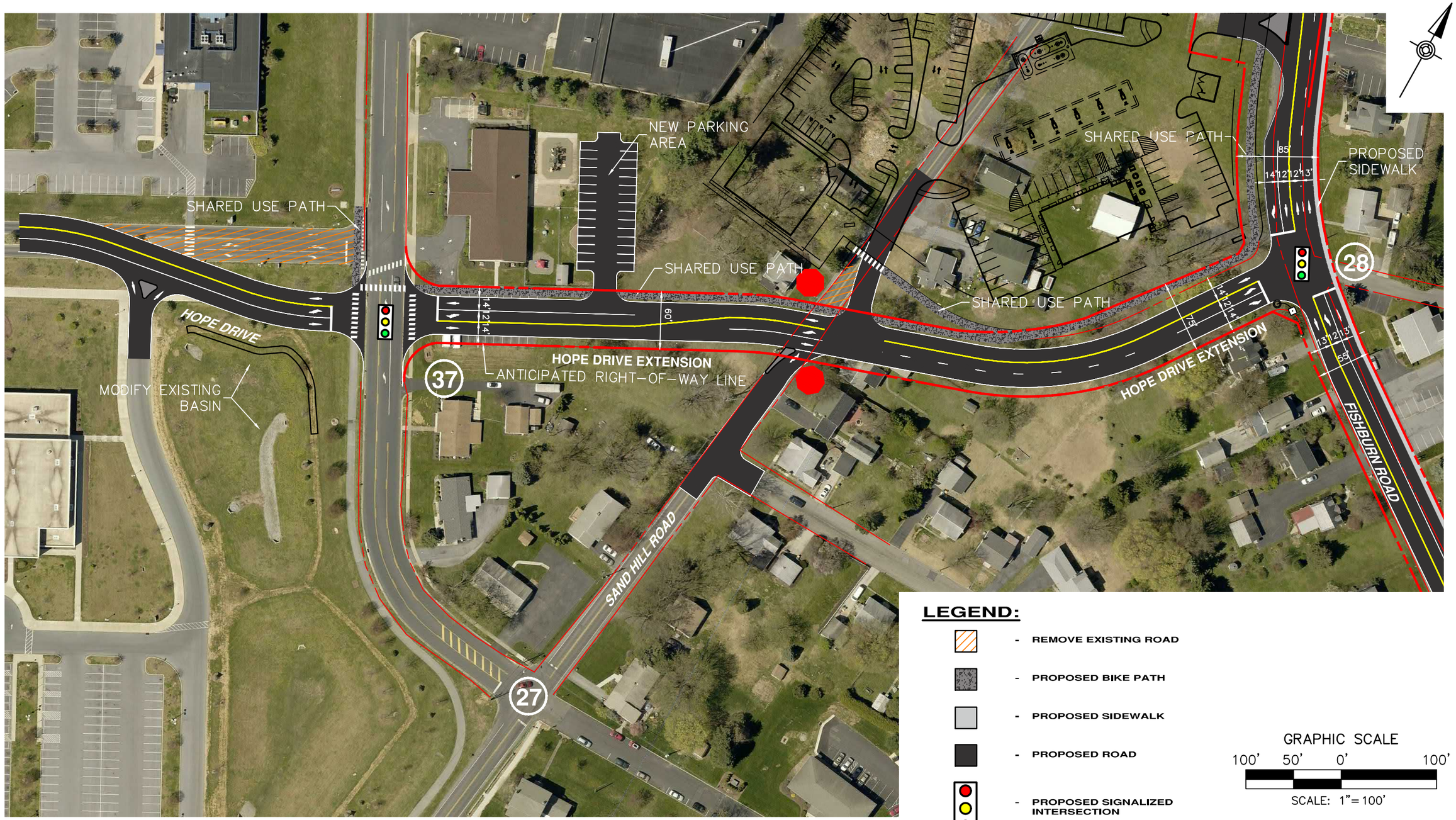

LEGEND:

- REMOVE EXISTING ROAD
- PROPOSED BIKE PATH
- PROPOSED SIDEWALK
- PROPOSED ROAD
- PROPOSED SIGNALIZED INTERSECTION
- PROPOSED STOP CONTROL
- INTERSECTION NUMBER

GRAPHIC SCALE

100' 50' 0' 100'

SCALE: 1"= 100'

GREATER HERSHEY REGIONAL TRANSPORTATION STUDY

CONCEPT IMPROVEMENT PLAN

INT. 37 - HOPE DRIVE EXTENSION
DERRY TOWNSHIP, DAUPHIN COUNTY, PENNSYLVANIA

JOB#: R002484.0484 JUNE 2020

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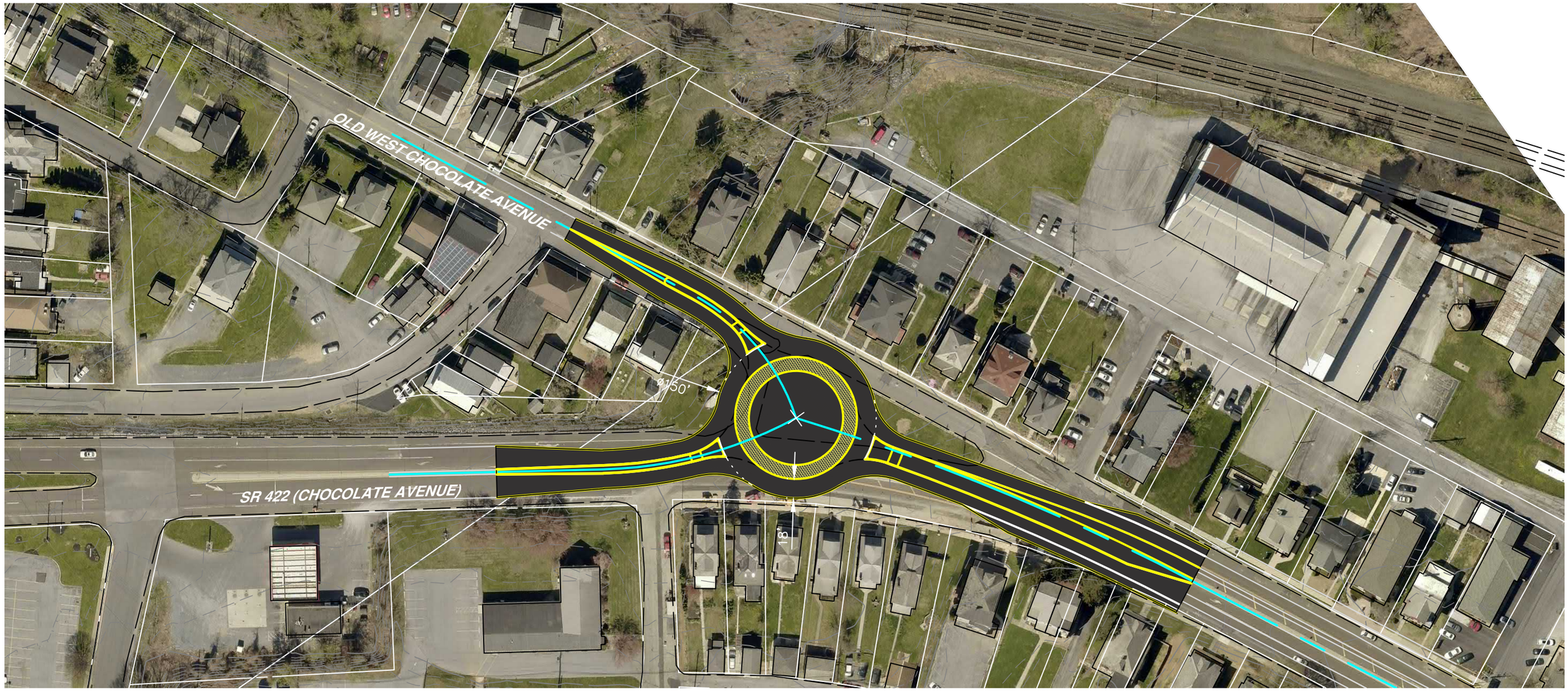
File name: P:\0024\002484_0484\C3D\Plan Sets\EXH\T002484484-GOVERNOR RD.dwg Layout:INT-37 Jun 15, 2020-5:57pm cmiller



GRAPHIC SCALE

100' 50' 0' 100'

SCALE: 1"=100'

GREATER HERSHEY REGIONAL TRANSPORTATION STUDY

CONCEPT IMPROVEMENT PLAN

W CHOCOLATE AVE & OLD WEST CHOCOLATE RD
DERRY TOWNSHIP, DAUPHIN COUNTY, PENNSYLVANIA

JOB#: R002484.0484 JANUARY 2020

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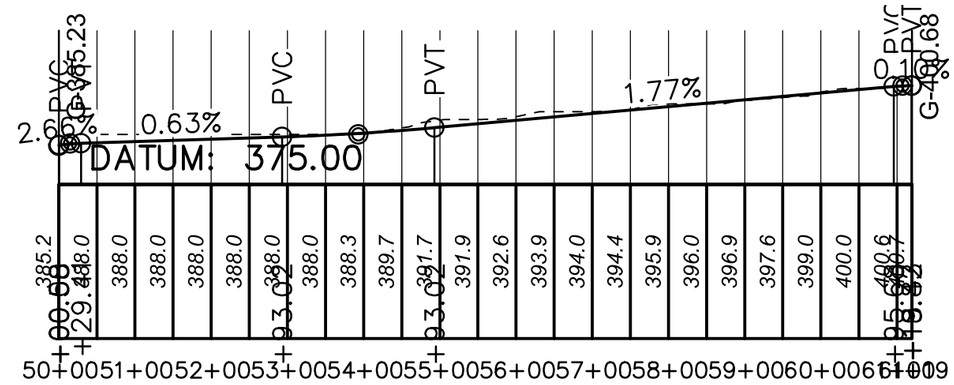
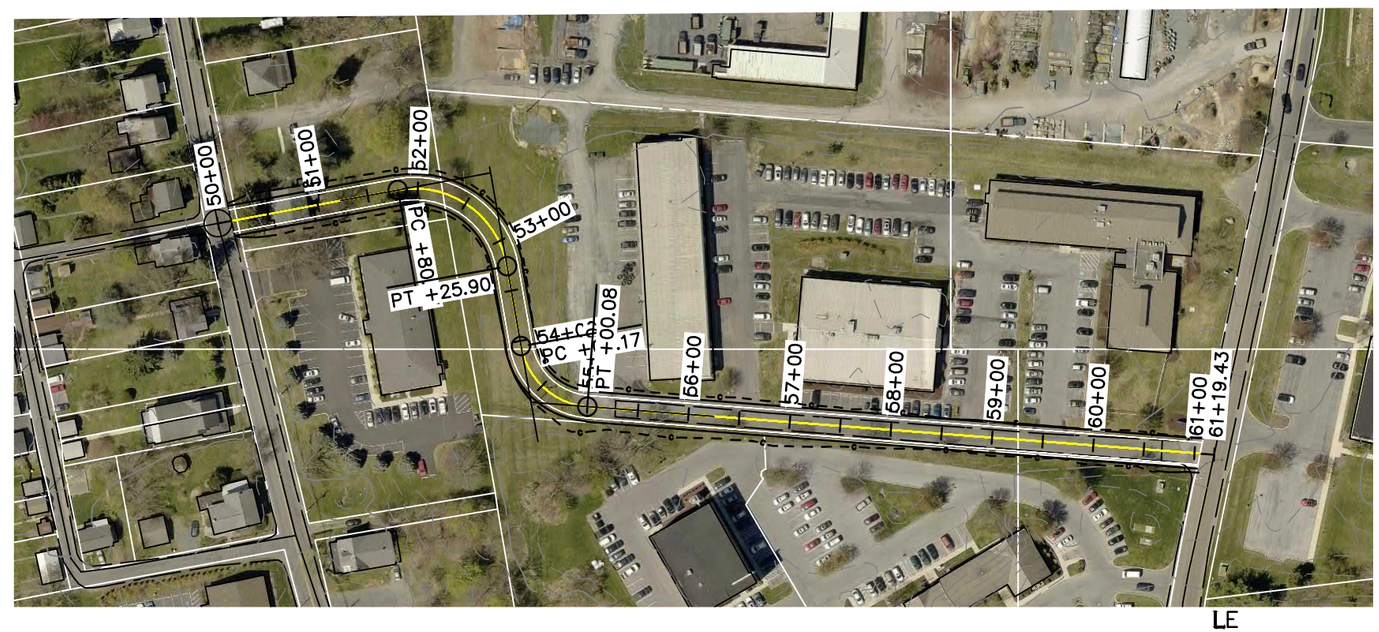
File name: C:\Users\kvo\appdata\local\temp\AcPublish_12392\T002484\484-W CHOCOLATE AVE.dwg Layout:SR422 ROUND Jan 15, 2020-3:48pm kvo

APPENDIX N
PROPOSED ROADWAYS





LE

150'

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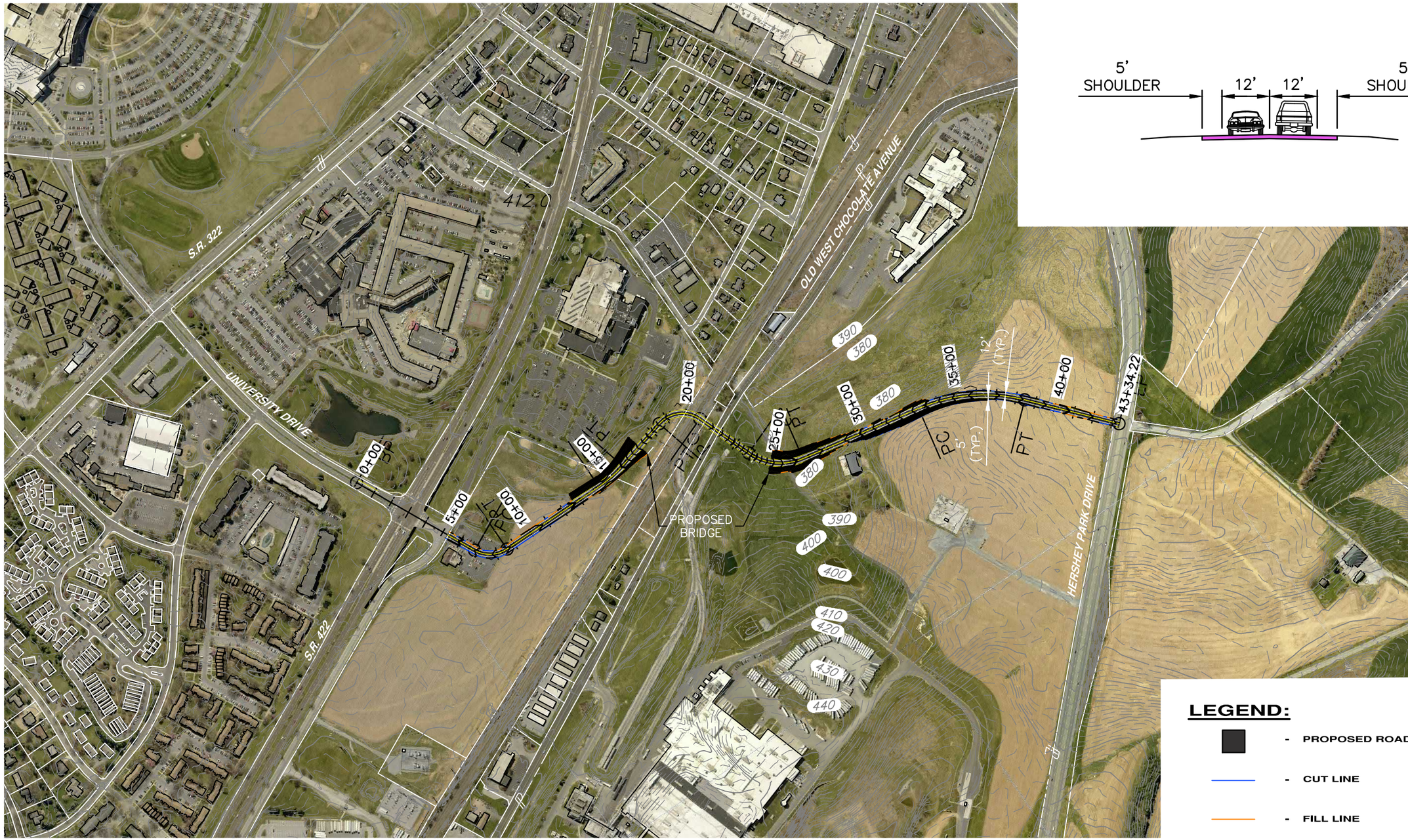
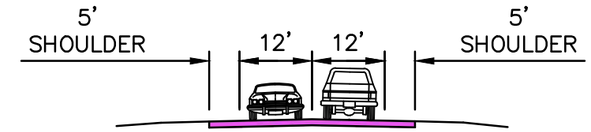
File name: P:\0024\002484_0484\C3D\Model Files\T002484C484-NORTHEAST DR





LEGEND:

- PROPOSED ROAD
- CUT LINE
- FILL LINE

GREATER HERSHEY REGIONAL TRANSPORTATION STUDY

CONCEPT IMPROVEMENT PLAN

UNIVERSITY DRIVE EXTENSION
DERRY TOWNSHIP, DAUPHIN COUNTY, PENNSYLVANIA

JOB#: R002484.0484 NOVEMBER 2019

GRAPHIC SCALE

500' 250' 0' 500'

SCALE: 1"= 500'

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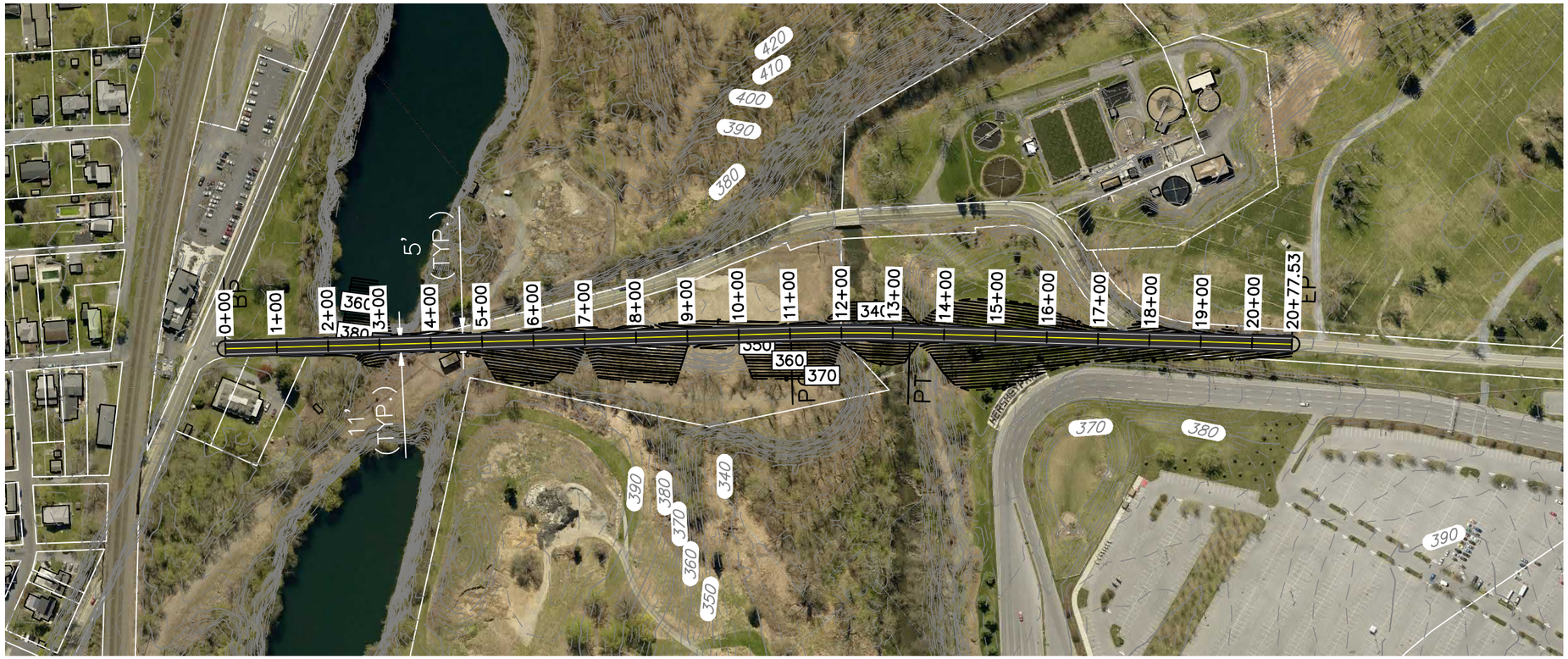
File name: P:\0024\002484_0484\C3D\Plan Sets\Exh\T002484\0484-422 & UNIVERSITY.dwg Layout:422 - UNIVERSITY Nov 05, 2019-9:02am kvo



- PROPOSED CONCRETE ISLAND
- PROPOSED ROAD
- 1 - INTERSECTION NUMBER

GREATER HERSHEY REGIONAL TRANSPORTATION STUDY

CONCEPT IMPROVEMENT PLAN

HOCKERSVILLE ROAD
DERRY TOWNSHIP, DAUPHIN COUNTY, PENNSYLVANIA

JOB#: R002484.0484 OCTOBER 2019

GRAPHIC SCALE

250' 125' 0' 250'

SCALE: 1"= 250'

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File name: P:\002484_0484\C3D\Plan Sets\EXH\T002484_0484-HOCKERSVILLE.dwg Layout:422 - UNIVERSITY Oct 30, 2019-10:01am kwo

INTERCHANGE RENDERS

1. Top View

2. Northeast View

INTERCHANGE RENDERS

3. Facing Southwest

4. Interchange Stack

INTERCHANGE RENDERS

5. Route 422 and Route 322 Exit Ramp

EXACT ALIGNMENT AND GRADING TO BE DETERMINED DURING DESIGN. IT MAY BE NECESSARY TO SHIFT CARACAS FURTHER EAST.

LEGEND:

- ROAD REMOVAL
- PROPOSED ROAD
- PROPOSED MULTI-USE TRAIL

GREATER HERSHEY REGIONAL TRANSPORTATION STUDY

CONCEPT IMPROVEMENT PLAN

JAVA AVENUE ONE WAY
DERRY TOWNSHIP, DAUPHIN COUNTY, PENNSYLVANIA

JOB#: R002484.0484 JANUARY 2020

GRAPHIC SCALE

60' 30' 0' 60'

SCALE: 1"= 60'

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File name: C:\Users\kvo\appdata\local\temp\AcPublish_12392\Hershey East One-way EXH.dwg Layout:ONE WAY Jan 15, 2020-3:21pm kvo

GREATER HERSHEY REGIONAL TRANSPORTATION STUDY

CONCEPT IMPROVEMENT PLAN

JAVA AVENUE REMOVAL
DERRY TOWNSHIP, DAUPHIN COUNTY, PENNSYLVANIA

JOB#: R002484.0484 JANUARY 2020

GRAPHIC SCALE

60' 30' 0' 60'

SCALE: 1"= 60'

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File name: C:\Users\kvo\appdata\local\temp\AcPublish_12392\Hershey East One-way EXH.dwg Layout:REMOVAL Jan 15, 2020-3:21pm kvo

APPENDIX O
COST ESTIMATES

GREATER HERSHEY REGIONAL TRANSPORTATION STUDY
COST ESTIMATE WORKSHEET

Project Number	**I-1-M**
Intersection 1: SR 2003 (Middletown Rd) & SR 322 EB Off Ramp/Service Rd	Widen the Route 322 Off Ramp to the south to provide an eastbound right turn lane. Widen Service Road to the south to provide a westbound left turn lane. Add sidewalk along Middletown Road (See P-18)

Description	Cost	Unit	Quantity	Total
Construction Items				
Traffic Signals				
New Signal (4-Way)	$300,000.00	Each		$0.00
New Signal (3-Way)	$260,000.00	Each		$0.00
Signal Modifications	$35,000.00	Each	2	$70,000.00
Pavement				
1.5" Pavement Overlay and Milling	$25.00	Square Yard	2080	$52,000.00
Arterials - Roadway	$120.00	Square Yard	3271	$392,520.00
Arterials - Shoulders	$40.00	Square Yard	326	$13,040.00
Collector Roads	$90.00	Square Yard		$0.00
Local Roads	$60.00	Square Yard		$0.00
4" PVC Underdrain	$10.00	Linear Foot	330	$3,300.00
Excavation				
Excavation (Borrow)	$40.00	Cubic Yard		$0.00
Drainage				
Inlet/Manhole	$5,000.00	Each		$0.00
Pipe and Trenching	$110.00	Linear Foot		$0.00
Culvert	$660.00	Square Foot		$0.00
Additional Construction Costs Based on Pavement Area				
Pavement Marking/Signing	5.0%	Percentage of Pavement Cost		$23,043.00
Const. Surveying/Field Office, etc.	15.0%	Percentage of Pavement Cost		$69,129.00
Miscellaneous				
Guide Rail	$30.00	Linear Foot	1475	$44,250.00
Concrete Curb	$50.00	Linear Foot		$0.00
Bituminous Wedge Curb	$5.00	Linear Foot		$0.00
Concrete Island	$125.00	Square Yard		$0.00
Sidewalk	$110.00	Square Yard		$0.00
Shared Use Path	$50.00	Square Yard		$0.00
Structures				
Bridges	$200.00	Square Foot		$0.00
			Construction Subtotal:	$667,282.00
Mobilization	5.0%	Of Construction Subtotal		$33,364.10
Maintenance and Protection of Traffic	7.5%	Of Construction Subtotal		$50,046.15
Contigency	5.0%	Of Construction Total		$33,364.10
			Total Construction:	$784,056.35
Utility Relocation				
Utility Pole Relocation	$10,000.00	Each	1	$10,000.00
Fire Hydrant Relocation	$5,000.00	Each		$0.00
Underground Relocation	5.0%	Of Construction Subtotal		$33,364.10
			Total Utility Relocation:	$43,364.10
Right-of-Way				
Right-of-Way - (Commercial)	$250,000.00	Acres		$0.00
Right-of-Way - (Residential)	$150,000.00	Acres		$0.00
Construction Easement (75% of ROW)	$187,500.00	Acres	0	$0.00
			Total Right-of-Way:	$0.00
Engineering	12.0%	Of Construction Total		$94,086.76
Construction Inspection	8.0%	Of Construction Total		$62,724.51
Administration and Planning	1.5%	Of Construction Total		$11,760.85
	Total Project Cost Range:		**$800,000 to $1,200,000**	

GREATER HERSHEY REGIONAL TRANSPORTATION STUDY
COST ESTIMATE WORKSHEET

Project Number	**I-2-M**
Intersection 2: SR 2003 (Middletown Rd) & Wood Rd	Convert Wood Road approach to right-in/right-out only.

Description	Cost	Unit	Quantity	Total
Construction Items				
Traffic Signals				
New Signal (4-Way)	$300,000.00	Each		$0.00
New Signal (3-Way)	$260,000.00	Each		$0.00
Signal Modifications	$35,000.00	Each		$0.00
Pavement				
1.5" Pavement Overlay and Milling	$25.00	Square Yard		$0.00
Arterials - Roadway	$120.00	Square Yard		$0.00
Arterials - Shoulders	$40.00	Square Yard		$0.00
Collector Roads	$90.00	Square Yard	471	$42,390.00
Local Roads	$60.00	Square Yard		$0.00
4" PVC Underdrain	$10.00	Linear Foot	300	$3,000.00
Excavation				
Excavation (Borrow)	$40.00	Cubic Yard		$0.00
Drainage				
Inlet/Manhole	$5,000.00	Each	4	$20,000.00
Pipe and Trenching	$110.00	Linear Foot	150	$16,500.00
Culvert	$660.00	Square Foot		$0.00
Additional Construction Costs Based on Pavement Area				
Pavement Marking/Signing	5.0%	Percentage of Pavement Cost		$2,269.50
Const. Surveying/Field Office, etc.	15.0%	Percentage of Pavement Cost		$6,808.50
Miscellaneous				
Guide Rail	$30.00	Linear Foot	125	$3,750.00
Concrete Curb	$50.00	Linear Foot	55	$2,750.00
Bituminous Wedge Curb	$5.00	Linear Foot		$0.00
Concrete Island	$125.00	Square Yard	157	$19,625.00
Sidewalk	$110.00	Square Yard		$0.00
Shared Use Path	$50.00	Square Yard		$0.00
Structures				
Bridges	$200.00	Square Foot		$0.00
			Construction Subtotal:	$117,093.00
Mobilization	5.0%	Of Construction Subtotal		$5,854.65
Maintenance and Protection of Traffic	7.5%	Of Construction Subtotal		$8,781.98
Contigency	5.0%	Of Construction Total		$5,854.65
			Total Construction:	$137,584.28
Utility Relocation				
Utility Pole Relocation	$10,000.00	Each	1	$10,000.00
Fire Hydrant Relocation	$5,000.00	Each		$0.00
Underground Relocation	5.0%	Of Construction Subtotal		$5,854.65
			Total Utility Relocation:	$15,854.65
Right-of-Way				
Right-of-Way - (Commercial)	$250,000.00	Acres		$0.00
Right-of-Way - (Residential)	$150,000.00	Acres		$0.00
Construction Easement (75% of ROW)	$187,500.00	Acres	0	$0.00
			Total Right-of-Way:	$0.00
Engineering	12.0%	Of Construction Total		$16,510.11
Construction Inspection	8.0%	Of Construction Total		$11,006.74
Administration and Planning	1.5%	Of Construction Total		$2,063.76
	Total Project Cost Range:		**$150,000 to $220,000**	

GREATER HERSHEY REGIONAL TRANSPORTATION STUDY
COST ESTIMATE WORKSHEET

Project Number	**I-3-L**
Intersection 3: SR 2003 (Middletown Rd) & Deer Run Dr/Stoverdale Rd	Widen Middletown Road to provide an additional northbound and an additional southbound through lane; this will provide a 5-lane typical section.

Description	Cost	Unit	Quantity	Total
Construction Items				
Traffic Signals				
New Signal (4-Way)	$300,000.00	Each	1	$300,000.00
New Signal (3-Way)	$260,000.00	Each		$0.00
Signal Modifications	$35,000.00	Each		$0.00
Pavement				
1.5" Pavement Overlay and Milling	$25.00	Square Yard		$0.00
Arterials - Roadway	$120.00	Square Yard	8556	$1,026,720.00
Arterials - Shoulders	$40.00	Square Yard		$0.00
Collector Roads	$90.00	Square Yard		$0.00
Local Roads	$60.00	Square Yard		$0.00
4" PVC Underdrain	$10.00	Linear Foot	3076	$30,760.00
Excavation				
Excavation (Borrow)	$40.00	Cubic Yard		$0.00
Drainage				
Inlet/Manhole	$5,000.00	Each	9	$45,000.00
Pipe and Trenching	$110.00	Linear Foot	1641	$180,510.00
Culvert	$660.00	Square Foot	240	$158,400.00
Additional Construction Costs Based on Pavement Area				
Pavement Marking/Signing	5.0%	Percentage of Pavement Cost		$52,874.00
Const. Surveying/Field Office, etc.	15.0%	Percentage of Pavement Cost		$158,622.00
Miscellaneous				
Guide Rail	$30.00	Linear Foot	275	$8,250.00
Concrete Curb	$50.00	Linear Foot		$0.00
Bituminous Wedge Curb	$5.00	Linear Foot		$0.00
Concrete Island	$125.00	Square Yard		$0.00
Sidewalk	$110.00	Square Yard		$0.00
Shared Use Path	$50.00	Square Yard		$0.00
Structures				
Bridges	$200.00	Square Foot		$0.00
			Construction Subtotal:	$1,961,136.00
Mobilization	5.0%	Of Construction Subtotal		$98,056.80
Maintenance and Protection of Traffic	7.5%	Of Construction Subtotal		$147,085.20
Contigency	5.0%	Of Construction Total		$98,056.80
			Total Construction:	$2,304,334.80
Utility Relocation				
Utility Pole Relocation	$10,000.00	Each	7	$70,000.00
Fire Hydrant Relocation	$5,000.00	Each		$0.00
Underground Relocation	5.0%	Of Construction Subtotal		$98,056.80
			Total Utility Relocation:	$168,056.80
Right-of-Way				
Right-of-Way - (Commercial)	$250,000.00	Acres		$0.00
Right-of-Way - (Residential)	$150,000.00	Acres		$0.00
Construction Easement (75% of ROW)	$187,500.00	Acres	0	$0.00
			Total Right-of-Way:	$0.00
Engineering	12.0%	Of Construction Total		$276,520.18
Construction Inspection	8.0%	Of Construction Total		$184,346.78
Administration and Planning	1.5%	Of Construction Total		$34,565.02
	Total Project Cost Range:		**$2,370,000 to $3,560,000**	

GREATER HERSHEY REGIONAL TRANSPORTATION STUDY
COST ESTIMATE WORKSHEET

Project Number	**I-4-L**
Intersection 4: SR 2003 (Middletown Rd) & Locust Ln/Kaylor Rd	Widen Middletown Road to provide an additional northbound and an additional southbound through lane; this will provide a 5-lane typical section.

Description	Cost	Unit	Quantity	Total
Construction Items				
Traffic Signals				
New Signal (4-Way)	$300,000.00	Each	1	$300,000.00
New Signal (3-Way)	$260,000.00	Each		$0.00
Signal Modifications	$35,000.00	Each		$0.00
Pavement				
1.5" Pavement Overlay and Milling	$25.00	Square Yard		$0.00
Arterials - Roadway	$120.00	Square Yard	20702	$2,484,240.00
Arterials - Shoulders	$40.00	Square Yard		$0.00
Collector Roads	$90.00	Square Yard		$0.00
Local Roads	$60.00	Square Yard		$0.00
4" PVC Underdrain	$10.00	Linear Foot	9316	$93,160.00
Excavation				
Excavation (Borrow)	$40.00	Cubic Yard		$0.00
Drainage				
Inlet/Manhole	$5,000.00	Each	27	$135,000.00
Pipe and Trenching	$110.00	Linear Foot	2721	$299,310.00
Culvert	$660.00	Square Foot	240	$158,400.00
Additional Construction Costs Based on Pavement Area				
Pavement Marking/Signing	5.0%	Percentage of Pavement Cost		$128,870.00
Const. Surveying/Field Office, etc.	15.0%	Percentage of Pavement Cost		$386,610.00
Miscellaneous				
Guide Rail	$30.00	Linear Foot		$0.00
Concrete Curb	$50.00	Linear Foot		$0.00
Bituminous Wedge Curb	$5.00	Linear Foot		$0.00
Concrete Island	$125.00	Square Yard		$0.00
Sidewalk	$110.00	Square Yard		$0.00
Shared Use Path	$50.00	Square Yard		$0.00
Structures				
Bridges	$200.00	Square Foot		$0.00
			Construction Subtotal:	$3,985,590.00
Mobilization	5.0%	Of Construction Subtotal		$199,279.50
Maintenance and Protection of Traffic	7.5%	Of Construction Subtotal		$298,919.25
Contigency	5.0%	Of Construction Total		$199,279.50
			Total Construction:	$4,683,068.25
Utility Relocation				
Utility Pole Relocation	$10,000.00	Each	21	$210,000.00
Fire Hydrant Relocation	$5,000.00	Each		$0.00
Underground Relocation	5.0%	Of Construction Subtotal		$199,279.50
			Total Utility Relocation:	$409,279.50
Right-of-Way				
Right-of-Way - (Commercial)	$250,000.00	Acres		$0.00
Right-of-Way - (Residential)	$150,000.00	Acres		$0.00
Construction Easement (75% of ROW)	$187,500.00	Acres	0	$0.00
			Total Right-of-Way:	$0.00
Engineering	12.0%	Of Construction Total		$561,968.19
Construction Inspection	8.0%	Of Construction Total		$374,645.46
Administration and Planning	1.5%	Of Construction Total		$70,246.02
	Total Project Cost Range:		**$4,880,000 to $7,320,000**	

GREATER HERSHEY REGIONAL TRANSPORTATION STUDY
COST ESTIMATE WORKSHEET

Project Number	**I-7-M**
Intersection 7: Bullfrog Valley Rd & Wood Rd	Widen Bullfrog Valley Road to construct a southbound right turn lane. Convert to Two-Way Stop Control with Wood Road being the stop-controlled approach.

Description	Cost	Unit	Quantity	Total
Construction Items				
Traffic Signals				
New Signal (4-Way)	$300,000.00	Each		$0.00
New Signal (3-Way)	$260,000.00	Each		$0.00
Signal Modifications	$35,000.00	Each		$0.00
Pavement				
1.5" Pavement Overlay and Milling	$25.00	Square Yard	886	$22,150.00
Arterials - Roadway	$120.00	Square Yard		$0.00
Arterials - Shoulders	$40.00	Square Yard		$0.00
Collector Roads	$90.00	Square Yard	551	$49,590.00
Local Roads	$60.00	Square Yard		$0.00
4" PVC Underdrain	$10.00	Linear Foot	65	$650.00
Excavation				
Excavation (Borrow)	$40.00	Cubic Yard		$0.00
Drainage				
Inlet/Manhole	$5,000.00	Each		$0.00
Pipe and Trenching	$110.00	Linear Foot		$0.00
Culvert	$660.00	Square Foot		$0.00
Additional Construction Costs Based on Pavement Area				
Pavement Marking/Signing	5.0%	Percentage of Pavement Cost		$3,619.50
Const. Surveying/Field Office, etc.	15.0%	Percentage of Pavement Cost		$10,858.50
Miscellaneous				
Guide Rail	$30.00	Linear Foot		$0.00
Concrete Curb	$50.00	Linear Foot	65	$3,250.00
Bituminous Wedge Curb	$5.00	Linear Foot		$0.00
Concrete Island	$125.00	Square Yard		$0.00
Sidewalk	$110.00	Square Yard		$0.00
Shared Use Path	$50.00	Square Yard	121	$6,050.00
Structures				
Bridges	$200.00	Square Foot		$0.00
			Construction Subtotal:	$96,168.00
Mobilization	5.0%	Of Construction Subtotal		$4,808.40
Maintenance and Protection of Traffic	7.5%	Of Construction Subtotal		$7,212.60
Contigency	5.0%	Of Construction Total		$4,808.40
			Total Construction:	$112,997.40
Utility Relocation				
Utility Pole Relocation	$10,000.00	Each	1	$10,000.00
Fire Hydrant Relocation	$5,000.00	Each		$0.00
Underground Relocation	5.0%	Of Construction Subtotal		$4,808.40
			Total Utility Relocation:	$14,808.40
Right-of-Way				
Right-of-Way - (Commercial)	$250,000.00	Acres		$0.00
Right-of-Way - (Residential)	$150,000.00	Acres		$0.00
Construction Easement (75% of ROW)	$187,500.00	Acres	0	$0.00
			Total Right-of-Way:	$0.00
Engineering	12.0%	Of Construction Total		$13,559.69
Construction Inspection	8.0%	Of Construction Total		$9,039.79
Administration and Planning	1.5%	Of Construction Total		$1,694.96
	Total Project Cost Range:		**$120,000 to $180,000**	

GREATER HERSHEY REGIONAL TRANSPORTATION STUDY
COST ESTIMATE WORKSHEET

Project Number	**I-8-M**
Intersection 8: Bullfrog Valley Rd & Research Blvd / Life Lion Dr	Widen Life Lion Drive to construct a westbound right turn lane. Implement protected/permitted left turn phasing for all approaches.

Description	Cost	Unit	Quantity	Total
Construction Items				
Traffic Signals				
New Signal (4-Way)	$300,000.00	Each		$0.00
New Signal (3-Way)	$260,000.00	Each		$0.00
Signal Modifications	$35,000.00	Each	2	$70,000.00
Pavement				
1.5" Pavement Overlay and Milling	$25.00	Square Yard	1253	$31,325.00
Arterials - Roadway	$120.00	Square Yard		$0.00
Arterials - Shoulders	$40.00	Square Yard		$0.00
Collector Roads	$90.00	Square Yard	533	$47,970.00
Local Roads	$60.00	Square Yard		$0.00
4" PVC Underdrain	$10.00	Linear Foot	360	$3,600.00
Excavation				
Excavation (Borrow)	$40.00	Cubic Yard		$0.00
Drainage				
Inlet/Manhole	$5,000.00	Each	2	$10,000.00
Pipe and Trenching	$110.00	Linear Foot	360	$39,600.00
Culvert	$660.00	Square Foot		$0.00
Additional Construction Costs Based on Pavement Area				
Pavement Marking/Signing	5.0%	Percentage of Pavement Cost		$4,144.75
Const. Surveying/Field Office, etc.	15.0%	Percentage of Pavement Cost		$12,434.25
Miscellaneous				
Guide Rail	$30.00	Linear Foot		$0.00
Concrete Curb	$50.00	Linear Foot	360	$18,000.00
Bituminous Wedge Curb	$5.00	Linear Foot		$0.00
Concrete Island	$125.00	Square Yard		$0.00
Sidewalk	$110.00	Square Yard		$0.00
Shared Use Path	$50.00	Square Yard	200	$10,000.00
Structures				
Bridges	$200.00	Square Foot		$0.00
			Construction Subtotal:	$247,074.00
Mobilization	5.0%	Of Construction Subtotal		$12,353.70
Maintenance and Protection of Traffic	7.5%	Of Construction Subtotal		$18,530.55
Contigency	5.0%	Of Construction Total		$12,353.70
			Total Construction:	$290,311.95
Utility Relocation				
Utility Pole Relocation	$10,000.00	Each		$0.00
Lighting & Sign Relocation	$10,000.00	Each	2	$20,000.00
Underground Relocation	5.0%	Of Construction Subtotal		$12,353.70
			Total Utility Relocation:	$32,353.70
Right-of-Way				
Right-of-Way - (Commercial)	$250,000.00	Acres		$0.00
Right-of-Way - (Residential)	$150,000.00	Acres		$0.00
Construction Easement (75% of ROW)	$187,500.00	Acres	0	$0.00
			Total Right-of-Way:	$0.00
Engineering	12.0%	Of Construction Total		$34,837.43
Construction Inspection	8.0%	Of Construction Total		$23,224.96
Administration and Planning	1.5%	Of Construction Total		$4,354.68
	Total Project Cost Range:		**$310,000 to $460,000**	

GREATER HERSHEY REGIONAL TRANSPORTATION STUDY
COST ESTIMATE WORKSHEET

Project Number	**I-10-M**
Intersection 10: Route 39 (W Hersheypark Drive) & Walton Ave/Mae St	Widen Walton Avenue to the north to provide an additional lane between Hersheypark Drive and Main Street. This will yield a six-lane section; one westbound left turn lane, one westbound shared through-right lane, two eastbound left turn lanes, one eastbound through lane and an eastbound right turn lane. Widen Hersheypark Drive in order to provide dual northbound left turn lanes and a northbound right turn lane.

Description	Cost	Unit	Quantity	Total
Construction Items				
Traffic Signals				
New Signal (4-Way)	$300,000.00	Each	1	$300,000.00
New Signal (3-Way)	$260,000.00	Each		$0.00
Signal Modifications	$35,000.00	Each	1	$35,000.00
Pavement				
1.5" Pavement Overlay and Milling	$25.00	Square Yard	8972	$224,300.00
Arterials - Roadway	$120.00	Square Yard	3128	$375,360.00
Arterials - Shoulders	$40.00	Square Yard	0	$0.00
Collector Roads	$90.00	Square Yard	0	$0.00
Local Roads	$60.00	Square Yard	0	$0.00
4" PVC Underdrain	$10.00	Linear Foot	3912	$39,120.00
Excavation				
Excavation (Borrow)	$40.00	Cubic Yard		$0.00
Drainage				
Inlet/Manhole	$5,000.00	Each	4	$20,000.00
Pipe and Trenching	$110.00	Linear Foot	854	$93,940.00
Culvert	$660.00	Square Foot	2564	$1,692,240.00
Additional Construction Costs Based on Pavement Area				
Pavement Marking/Signing	5.0%	Percentage of Pavement Cost		$31,939.00
Const. Surveying/Field Office, etc.	15.0%	Percentage of Pavement Cost		$95,817.00
Miscellaneous				
Guide Rail	$30.00	Linear Foot	854	$25,620.00
Concrete Curb	$50.00	Linear Foot	854	$42,700.00
Concrete Island	$125.00	Square Yard	705	$88,125.00
Sidewalk	$110.00	Square Yard	384	$42,240.00
Shared Use Path	$50.00	Square Yard	0	$0.00
Stream Relocation	$1,000.00	Linear Foot	250	$250,000.00
Structures				
Bridges	$200.00	Square Foot	0	$0.00
			Construction Subtotal:	$3,106,401.00
Mobilization	5.0%	Of Construction Subtotal		$155,320.05
Maintenance and Protection of Traffic	7.5%	Of Construction Subtotal		$232,980.08
Contigency	5.0%	Of Construction Total		$155,320.05
			Total Construction:	$3,650,021.18
Utility Relocation				
Utility Pole Relocation	$10,000.00	Each		$0.00
Fire Hydrant Relocation	$5,000.00	Each		$0.00
Underground Relocation	5.0%	Of Construction Subtotal		$155,320.05
			Total Utility Relocation:	$155,320.05
Right-of-Way				
Right-of-Way - (Commercial)	$250,000.00	Acres	0	$0.00
Right-of-Way - (Residential)	$150,000.00	Acres	0	$0.00
Construction Easement (75% of ROW)	$112,500.00	Acres	0	$0.00
			Total Right-of-Way:	$0.00
Engineering	12.0%	Of Construction Total		$438,002.54
Construction Inspection	8.0%	Of Construction Total		$292,001.69
Administration and Planning	1.5%	Of Construction Total		$54,750.32
	Total Project Cost Range:		**$3,670,000 to $5,510,000**	

GREATER HERSHEY REGIONAL TRANSPORTATION STUDY
COST ESTIMATE WORKSHEET

Project Number	**I-10-L**
Intersection 10: Route 39 (W Hersheypark Drive) & Walton Ave/Mae St	Widen Hersheypark Drive to provide an additional northbound and southbound through lane. Implement southbound right overlap phasing.

Description	Cost	Unit	Quantity	Total
Construction Items				
Traffic Signals				
New Signal (4-Way)	$300,000.00	Each		$0.00
New Signal (3-Way)	$260,000.00	Each		$0.00
Signal Modifications	$35,000.00	Each	2	$70,000.00
Pavement				
1.5" Pavement Overlay and Milling	$25.00	Square Yard	40148	$1,003,700.00
Arterials - Roadway	$120.00	Square Yard	15750	$1,890,000.00
Arterials - Shoulders	$40.00	Square Yard	0	$0.00
Collector Roads	$90.00	Square Yard	0	$0.00
Local Roads	$60.00	Square Yard	0	$0.00
4" PVC Underdrain	$10.00	Linear Foot	8555	$85,550.00
Excavation				
Excavation (Borrow)	$40.00	Cubic Yard		$0.00
Drainage				
Inlet/Manhole	$5,000.00	Each	2	$10,000.00
Pipe and Trenching	$110.00	Linear Foot	854	$93,940.00
Culvert	$660.00	Square Foot	0	$0.00
Additional Construction Costs Based on Pavement Area				
Pavement Marking/Signing	5.0%	Percentage of Pavement Cost		$148,962.50
Const. Surveying/Field Office, etc.	15.0%	Percentage of Pavement Cost		$446,887.50
Miscellaneous				
Guide Rail	$30.00	Linear Foot	854	$25,620.00
Concrete Curb	$50.00	Linear Foot	854	$42,700.00
Bituminous Wedge Curb	$5.00	Linear Foot		$0.00
Concrete Island	$125.00	Square Yard	112	$14,000.00
Sidewalk	$110.00	Square Yard	0	$0.00
Shared Use Path	$50.00	Square Yard	0	$0.00
Structures				
Steel sign structure relocation	$270,000.00	Each	1	$270,000.00
			Construction Subtotal:	$4,101,360.00
Mobilization	5.0%	Of Construction Subtotal		$205,068.00
Maintenance and Protection of Traffic	7.5%	Of Construction Subtotal		$307,602.00
Contigency	5.0%	Of Construction Total		$205,068.00
			Total Construction:	$4,819,098.00
Utility Relocation				
Utility Pole Relocation	$10,000.00	Each	0	$0.00
Fire Hydrant Relocation	$5,000.00	Each	0	$0.00
Underground Relocation	5.0%	Of Construction Subtotal		$205,068.00
			Total Utility Relocation:	$205,068.00
Right-of-Way				
Right-of-Way - (Commercial)	$250,000.00	Acres	0.89	$222,500.00
Right-of-Way - (Residential)	$150,000.00	Acres	0	$0.00
Construction Easement (75% of ROW)	$112,500.00	Acres	0	$0.00
			Total Right-of-Way:	$222,500.00
Engineering	12.0%	Of Construction Total		$578,291.76
Construction Inspection	8.0%	Of Construction Total		$385,527.84
Administration and Planning	1.5%	Of Construction Total		$72,286.47
	Total Project Cost Range:		**$5,030,000 to $7,540,000**	

GREATER HERSHEY REGIONAL TRANSPORTATION STUDY
COST ESTIMATE WORKSHEET

Project Number	**I-11-M**
Intersection 11: Route 39 (W Hersheypark Drive)/W Hersheypark Drive & Route 39 (Hershey Rd)/Park Blvd	Widen Route 39 (Hershey Rd) to provide dual southbound left turn lanes.

Description	Cost	Unit	Quantity	Total
Construction Items				
Traffic Signals				
New Signal (4-Way)	$300,000.00	Each	0	$0.00
New Signal (3-Way)	$260,000.00	Each		$0.00
Signal Modifications	$35,000.00	Each	1	$35,000.00
Pavement				
1.5" Pavement Overlay and Milling	$25.00	Square Yard	6553	$163,825.00
Arterials - Roadway	$120.00	Square Yard	1583	$189,960.00
Arterials - Shoulders	$40.00	Square Yard	0	$0.00
Collector Roads	$90.00	Square Yard	0	$0.00
Local Roads	$60.00	Square Yard	0	$0.00
4" PVC Underdrain	$10.00	Linear Foot	839	$8,390.00
Excavation				
Excavation (Borrow)	$40.00	Cubic Yard	0	$0.00
Drainage				
Inlet/Manhole	$5,000.00	Each	0	$0.00
Pipe and Trenching	$110.00	Linear Foot	0	$0.00
Culvert	$660.00	Square Foot	0	$0.00
Additional Construction Costs Based on Pavement Area				
Pavement Marking/Signing	5.0%	Percentage of Pavement Cost		$18,108.75
Const. Surveying/Field Office, etc.	15.0%	Percentage of Pavement Cost		$54,326.25
Miscellaneous				
Guide Rail	$30.00	Linear Foot	1207	$36,210.00
Concrete Curb	$50.00	Linear Foot	0	$0.00
Bituminous Wedge Curb	$5.00	Linear Foot	0	$0.00
Concrete Island	$125.00	Square Yard	0	$0.00
Sidewalk	$110.00	Square Yard	0	$0.00
Shared Use Path	$50.00	Square Yard	0	$0.00
Structures				
Bridges	$200.00	Square Foot	0	$0.00
			Construction Subtotal:	$505,820.00
Mobilization	5.0%	Of Construction Subtotal		$25,291.00
Maintenance and Protection of Traffic	7.5%	Of Construction Subtotal		$37,936.50
Contigency	5.0%	Of Construction Total		$25,291.00
			Total Construction:	$594,338.50
Utility Relocation				
Utility Pole Relocation	$10,000.00	Each	0	$0.00
Fire Hydrant Relocation	$5,000.00	Each	0	$0.00
Underground Relocation	5.0%	Of Construction Subtotal		$25,291.00
			Total Utility Relocation:	$25,291.00
Right-of-Way				
Right-of-Way - (Commercial)	$250,000.00	Acres	0	$0.00
Right-of-Way - (Residential)	$150,000.00	Acres	0	$0.00
Construction Easement (75% of ROW)	$112,500.00	Acres	0	$0.00
			Total Right-of-Way:	$0.00
Engineering	12.0%	Of Construction Total		$71,320.62
Construction Inspection	8.0%	Of Construction Total		$47,547.08
Administration and Planning	1.5%	Of Construction Total		$8,915.08
	Total Project Cost Range:		**$600,000 to $900,000**	

GREATER HERSHEY REGIONAL TRANSPORTATION STUDY
COST ESTIMATE WORKSHEET

Project Number	**I-11-L**
Intersection 11: Route 39 (W Hersheypark Drive)/W Hersheypark Drive & Route 39 (Hershey Rd)/Park Blvd	Widen Hersheypark Drive to providing an additional eastbound and westbound through lane; this will provide a six-lane section. Coordinate signal with Hersheypark Drive corridor.

Description	Cost	Unit	Quantity	Total
Construction Items				
Traffic Signals				
New Signal (4-Way)	$300,000.00	Each	1	$300,000.00
New Signal (3-Way)	$260,000.00	Each		$0.00
Signal Modifications	$35,000.00	Each	0	$0.00
Pavement				
1.5" Pavement Overlay and Milling	$25.00	Square Yard	57812	$1,445,300.00
Arterials - Roadway	$120.00	Square Yard	27755	$3,330,600.00
Arterials - Shoulders	$40.00	Square Yard	0	$0.00
Collector Roads	$90.00	Square Yard	0	$0.00
Local Roads	$60.00	Square Yard	0	$0.00
4" PVC Underdrain	$10.00	Linear Foot	15720	$157,200.00
Excavation				
Excavation (Borrow)	$40.00	Cubic Yard	0	$0.00
Drainage				
Inlet/Manhole	$5,000.00	Each	0	$0.00
Pipe and Trenching	$110.00	Linear Foot	0	$0.00
Culvert	$660.00	Square Foot	0	$0.00
Additional Construction Costs Based on Pavement Area				
Pavement Marking/Signing	5.0%	Percentage of Pavement Cost		$246,655.00
Const. Surveying/Field Office, etc.	15.0%	Percentage of Pavement Cost		$739,965.00
Miscellaneous				
Guide Rail	$30.00	Linear Foot	1207	$36,210.00
Concrete Curb	$50.00	Linear Foot	0	$0.00
Bituminous Wedge Curb	$5.00	Linear Foot	0	$0.00
Concrete Island	$125.00	Square Yard	398	$49,750.00
Sidewalk	$110.00	Square Yard	0	$0.00
Shared Use Path	$50.00	Square Yard	0	$0.00
Structures				
Bridges	$200.00	Square Foot	0	$0.00
			Construction Subtotal:	$6,305,680.00
Mobilization	5.0%	Of Construction Subtotal		$315,284.00
Maintenance and Protection of Traffic	7.5%	Of Construction Subtotal		$472,926.00
Contigency	5.0%	Of Construction Total		$315,284.00
			Total Construction:	$7,409,174.00
Utility Relocation				
Utility Pole Relocation	$10,000.00	Each	8	$80,000.00
Fire Hydrant Relocation	$5,000.00	Each	0	$0.00
Underground Relocation	5.0%	Of Construction Subtotal		$315,284.00
			Total Utility Relocation:	$395,284.00
Right-of-Way				
Right-of-Way - (Commercial)	$250,000.00	Acres	1.49	$372,500.00
Right-of-Way - (Residential)	$150,000.00	Acres	0	$0.00
Construction Easement (75% of ROW)	$112,500.00	Acres	0	$0.00
			Total Right-of-Way:	$372,500.00
Engineering	12.0%	Of Construction Total		$889,100.88
Construction Inspection	8.0%	Of Construction Total		$592,733.92
Administration and Planning	1.5%	Of Construction Total		$111,137.61
	Total Project Cost Range:		**$7,820,000 to $11,720,000**	

GREATER HERSHEY REGIONAL TRANSPORTATION STUDY
COST ESTIMATE WORKSHEET

Project Number	**I-12-M-1**
Intersection 12: W Hersheypark Drive/E Hersheypark Dr & Park Drive/Sand Beach Road	Widen Park Ave to provide dual northbound left turn lanes.

Description	Cost	Unit	Quantity	Total
Construction Items				
Traffic Signals				
New Signal (4-Way)	$300,000.00	Each	1	$300,000.00
New Signal (3-Way)	$260,000.00	Each		$0.00
Signal Modifications	$35,000.00	Each		$0.00
Pavement				
1.5" Pavement Overlay and Milling	$25.00	Square Yard	1595	$39,875.00
Arterials - Roadway	$120.00	Square Yard	539	$64,680.00
Arterials - Shoulders	$40.00	Square Yard	0	$0.00
Collector Roads	$90.00	Square Yard	0	$0.00
Local Roads	$60.00	Square Yard	0	$0.00
4" PVC Underdrain	$10.00	Linear Foot	2442	$24,420.00
Excavation				
Excavation (Borrow)	$40.00	Cubic Yard	0	$0.00
Drainage				
Inlet/Manhole	$5,000.00	Each	2	$10,000.00
Pipe and Trenching	$110.00	Linear Foot	635	$69,850.00
Culvert	$660.00	Square Foot	0	$0.00
Additional Construction Costs Based on Pavement Area				
Pavement Marking/Signing	5.0%	Percentage of Pavement Cost		$6,448.75
Const. Surveying/Field Office, etc.	15.0%	Percentage of Pavement Cost		$19,346.25
Miscellaneous				
Guide Rail	$30.00	Linear Foot	0	$0.00
Concrete Curb	$50.00	Linear Foot	635	$31,750.00
Bituminous Wedge Curb	$5.00	Linear Foot	0	$0.00
Concrete Island	$125.00	Square Yard	0	$0.00
Sidewalk	$110.00	Square Yard	0	$0.00
Shared Use Path	$50.00	Square Yard	0	$0.00
Structures				
Bridges	$200.00	Square Foot	0	$0.00
			Construction Subtotal:	$566,370.00
Mobilization	5.0%	Of Construction Subtotal		$28,318.50
Maintenance and Protection of Traffic	7.5%	Of Construction Subtotal		$42,477.75
Contigency	5.0%	Of Construction Total		$28,318.50
			Total Construction:	$665,484.75
Utility Relocation				
Utility Pole Relocation	$10,000.00	Each	0	$0.00
Fire Hydrant Relocation	$5,000.00	Each	0	$0.00
Underground Relocation	5.0%	Of Construction Subtotal		$28,318.50
			Total Utility Relocation:	$28,318.50
Right-of-Way				
Right-of-Way - (Commercial)	$250,000.00	Acres	0	$0.00
Right-of-Way - (Residential)	$150,000.00	Acres	0	$0.00
Construction Easement (75% of ROW)	$112,500.00	Acres	0	$0.00
			Total Right-of-Way:	$0.00
Engineering	12.0%	Of Construction Total		$79,858.17
Construction Inspection	8.0%	Of Construction Total		$53,238.78
Administration and Planning	1.5%	Of Construction Total		$9,982.27
	Total Project Cost Range:		**$670,000 to $1,000,000**	

GREATER HERSHEY REGIONAL TRANSPORTATION STUDY
COST ESTIMATE WORKSHEET

Project Number	**I-12-M-2**
Intersection 12: W Hersheypark Drive/E Hersheypark Dr & Park Drive/Sand Beach Road	Widen Hersheypark Drive to the south to provide an additional eastbound through lane and a merge lane.

Description	Cost	Unit	Quantity	Total
Construction Items				
Traffic Signals				
New Signal (4-Way)	$300,000.00	Each	1	$300,000.00
New Signal (3-Way)	$260,000.00	Each		$0.00
Signal Modifications	$35,000.00	Each		$0.00
Pavement				
1.5" Pavement Overlay and Milling	$25.00	Square Yard	14063	$351,575.00
Arterials - Roadway	$120.00	Square Yard	6499	$779,880.00
Arterials - Shoulders	$40.00	Square Yard	0	$0.00
Collector Roads	$90.00	Square Yard	0	$0.00
Local Roads	$60.00	Square Yard	0	$0.00
4" PVC Underdrain	$10.00	Linear Foot	5981	$59,810.00
Excavation				
Excavation (Borrow)	$40.00	Cubic Yard	0	$0.00
Drainage				
Inlet/Manhole	$5,000.00	Each	5	$25,000.00
Pipe and Trenching	$110.00	Linear Foot	1470	$161,700.00
Culvert	$660.00	Square Foot	0	$0.00
Additional Construction Costs Based on Pavement Area				
Pavement Marking/Signing	5.0%	Percentage of Pavement Cost		$59,563.25
Const. Surveying/Field Office, etc.	15.0%	Percentage of Pavement Cost		$178,689.75
Miscellaneous				
Guide Rail	$30.00	Linear Foot	0	$0.00
Concrete Curb	$50.00	Linear Foot	1470	$73,500.00
Bituminous Wedge Curb	$5.00	Linear Foot	0	$0.00
Concrete Island	$125.00	Square Yard	0	$0.00
Sidewalk	$110.00	Square Yard	0	$0.00
Shared Use Path	$50.00	Square Yard	0	$0.00
Structures				
Bridges	$200.00	Square Foot	0	$0.00
			Construction Subtotal:	$1,989,718.00
Mobilization	5.0%	Of Construction Subtotal		$99,485.90
Maintenance and Protection of Traffic	7.5%	Of Construction Subtotal		$149,228.85
Contigency	5.0%	Of Construction Total		$99,485.90
			Total Construction:	$2,337,918.65
Utility Relocation				
Utility Pole Relocation	$10,000.00	Each	0	$0.00
Fire Hydrant Relocation	$5,000.00	Each	0	$0.00
Underground Relocation	5.0%	Of Construction Subtotal		$99,485.90
			Total Utility Relocation:	$99,485.90
Right-of-Way				
Right-of-Way - (Commercial)	$250,000.00	Acres	0.99	$247,500.00
Right-of-Way - (Residential)	$150,000.00	Acres	0	$0.00
Construction Easement (75% of ROW)	$112,500.00	Acres	0	$0.00
			Total Right-of-Way:	$247,500.00
Engineering	12.0%	Of Construction Total		$280,550.24
Construction Inspection	8.0%	Of Construction Total		$187,033.49
Administration and Planning	1.5%	Of Construction Total		$35,068.78
	Total Project Cost Range:		**$2,550,000 to $3,830,000**	

GREATER HERSHEY REGIONAL TRANSPORTATION STUDY
COST ESTIMATE WORKSHEET

Project Number	**I-12-L-1**
Intersection 12: W Hersheypark Drive/E Hersheypark Dr & Park Drive/Sand Beach Road	Widen Sand Beach Road to provide a southbound right turn lane.

Description	Cost	Unit	Quantity	Total
Construction Items				
Traffic Signals				
New Signal (4-Way)	$300,000.00	Each		$0.00
New Signal (3-Way)	$260,000.00	Each		$0.00
Signal Modifications	$35,000.00	Each	1	$35,000.00
Pavement				
1.5" Pavement Overlay and Milling	$25.00	Square Yard	644	$16,100.00
Arterials - Roadway	$120.00	Square Yard	445	$53,400.00
Arterials - Shoulders	$40.00	Square Yard	0	$0.00
Collector Roads	$90.00	Square Yard	0	$0.00
Local Roads	$60.00	Square Yard	0	$0.00
4" PVC Underdrain	$10.00	Linear Foot	250	$2,500.00
Excavation				
Excavation (Borrow)	$40.00	Cubic Yard	0	$0.00
Drainage				
Inlet/Manhole	$5,000.00	Each	0	$0.00
Pipe and Trenching	$110.00	Linear Foot	0	$0.00
Culvert	$660.00	Square Foot	0	$0.00
Additional Construction Costs Based on Pavement Area				
Pavement Marking/Signing	5.0%	Percentage of Pavement Cost		$3,600.00
Const. Surveying/Field Office, etc.	15.0%	Percentage of Pavement Cost		$10,800.00
Miscellaneous				
Guide Rail	$30.00	Linear Foot	0	$0.00
Concrete Curb	$50.00	Linear Foot	0	$0.00
Bituminous Wedge Curb	$5.00	Linear Foot	0	$0.00
Concrete Island	$125.00	Square Yard	0	$0.00
Sidewalk	$110.00	Square Yard	0	$0.00
Shared Use Path	$50.00	Square Yard	0	$0.00
Structures				
Bridges	$200.00	Square Foot	0	$0.00
			Construction Subtotal:	$121,400.00
Mobilization	5.0%	Of Construction Subtotal		$6,070.00
Maintenance and Protection of Traffic	7.5%	Of Construction Subtotal		$9,105.00
Contigency	5.0%	Of Construction Total		$6,070.00
			Total Construction:	$142,645.00
Utility Relocation				
Utility Pole Relocation	$10,000.00	Each		$0.00
Fire Hydrant Relocation	$5,000.00	Each	0	$0.00
Underground Relocation	5.0%	Of Construction Subtotal		$6,070.00
			Total Utility Relocation:	$6,070.00
Right-of-Way				
Right-of-Way - (Commercial)	$250,000.00	Acres	0	$0.00
Right-of-Way - (Residential)	$150,000.00	Acres	0	$0.00
Construction Easement (75% of ROW)	$112,500.00	Acres	0	$0.00
			Total Right-of-Way:	$0.00
Engineering	12.0%	Of Construction Total		$17,117.40
Construction Inspection	8.0%	Of Construction Total		$11,411.60
Administration and Planning	1.5%	Of Construction Total		$2,139.68
	Total Project Cost Range:		**$144,000 to $215,000**	

GREATER HERSHEY REGIONAL TRANSPORTATION STUDY
COST ESTIMATE WORKSHEET

Project Number	**I-12-L-2**
Intersection 12: W Hersheypark Drive/E Hersheypark Dr & Park Drive/Sand Beach Road	Widen Hersheypark Drive to the north to provide an additional westbound through lane; this will provide a total of six through lanes. Coordinate signal with Hersheypark Drive corridor.

Description	Cost	Unit	Quantity	Total
Construction Items				
Traffic Signals				
New Signal (4-Way)	$300,000.00	Each		$0.00
New Signal (3-Way)	$260,000.00	Each		$0.00
Signal Modifications	$35,000.00	Each	1	$35,000.00
Pavement				
1.5" Pavement Overlay and Milling	$25.00	Square Yard	19137	$478,425.00
Arterials - Roadway	$120.00	Square Yard	9094	$1,091,280.00
Arterials - Shoulders	$40.00	Square Yard	0	$0.00
Collector Roads	$90.00	Square Yard	0	$0.00
Local Roads	$60.00	Square Yard	0	$0.00
4" PVC Underdrain	$10.00	Linear Foot	6319	$63,190.00
Excavation				
Excavation (Borrow)	$40.00	Cubic Yard	0	$0.00
Drainage				
Inlet/Manhole	$5,000.00	Each	2	$10,000.00
Pipe and Trenching	$110.00	Linear Foot	635	$69,850.00
Culvert	$660.00	Square Foot	0	$0.00
Additional Construction Costs Based on Pavement Area				
Pavement Marking/Signing	5.0%	Percentage of Pavement Cost		$81,644.75
Const. Surveying/Field Office, etc.	15.0%	Percentage of Pavement Cost		$244,934.25
Miscellaneous				
Guide Rail	$30.00	Linear Foot	0	$0.00
Concrete Curb	$50.00	Linear Foot	635	$31,750.00
Bituminous Wedge Curb	$5.00	Linear Foot	0	$0.00
Concrete Island	$125.00	Square Yard	0	$0.00
Sidewalk	$110.00	Square Yard	0	$0.00
Shared Use Path	$50.00	Square Yard	0	$0.00
Structures				
Bridges	$200.00	Square Foot	0	$0.00
			Construction Subtotal:	$2,106,074.00
Mobilization	5.0%	Of Construction Subtotal		$105,303.70
Maintenance and Protection of Traffic	7.5%	Of Construction Subtotal		$157,955.55
Contigency	5.0%	Of Construction Total		$105,303.70
			Total Construction:	$2,474,636.95
Utility Relocation				
Utility Pole Relocation	$10,000.00	Each	0	$0.00
Fire Hydrant Relocation	$5,000.00	Each	0	$0.00
Underground Relocation	5.0%	Of Construction Subtotal		$105,303.70
			Total Utility Relocation:	$105,303.70
Right-of-Way				
Right-of-Way - (Commercial)	$250,000.00	Acres	2.1	$525,000.00
Right-of-Way - (Residential)	$150,000.00	Acres	0	$0.00
Construction Easement (75% of ROW)	$112,500.00	Acres	0	$0.00
			Total Right-of-Way:	$525,000.00
Engineering	12.0%	Of Construction Total		$296,956.43
Construction Inspection	8.0%	Of Construction Total		$197,970.96
Administration and Planning	1.5%	Of Construction Total		$37,119.55
	Total Project Cost Range:		**$2,910,000 to $4,364,000**	

GREATER HERSHEY REGIONAL TRANSPORTATION STUDY
COST ESTIMATE WORKSHEET

Project Number	**I-13-L-1**
Intersection 13: E Hersheypark Dr & Laudermilch Rd	Widen Hersheypark Drive for to the south to provide dual eastbound left turn lanes. Widen Laudermilch Road to provide a merge lane.

Description	Cost	Unit	Quantity	Total
Construction Items				
Traffic Signals				
New Signal (4-Way)	$300,000.00	Each	0	$0.00
New Signal (3-Way)	$260,000.00	Each		$0.00
Signal Modifications	$35,000.00	Each	3	$105,000.00
Pavement				
1.5" Pavement Overlay and Milling	$25.00	Square Yard	3911	$97,775.00
Arterials - Roadway	$120.00	Square Yard	3471	$416,520.00
Arterials - Shoulders	$40.00	Square Yard	0	$0.00
Collector Roads	$90.00	Square Yard	0	$0.00
Local Roads	$60.00	Square Yard	0	$0.00
4" PVC Underdrain	$10.00	Linear Foot	1546	$15,460.00
Excavation				
Excavation (Borrow)	$40.00	Cubic Yard	0	$0.00
Drainage				
Inlet/Manhole	$5,000.00	Each	0	$0.00
Pipe and Trenching	$110.00	Linear Foot	0	$0.00
Culvert	$660.00	Square Foot	0	$0.00
Additional Construction Costs Based on Pavement Area				
Pavement Marking/Signing	5.0%	Percentage of Pavement Cost		$26,487.75
Const. Surveying/Field Office, etc.	15.0%	Percentage of Pavement Cost		$79,463.25
Miscellaneous				
Guide Rail	$30.00	Linear Foot	0	$0.00
Concrete Curb	$50.00	Linear Foot	0	$0.00
Bituminous Wedge Curb	$5.00	Linear Foot	0	$0.00
Concrete Island	$125.00	Square Yard	148	$18,500.00
Sidewalk	$110.00	Square Yard	0	$0.00
Shared Use Path	$50.00	Square Yard	0	$0.00
Structures				
Bridges	$200.00	Square Foot	0	$0.00
			Construction Subtotal:	$759,206.00
Mobilization	5.0%	Of Construction Subtotal		$37,960.30
Maintenance and Protection of Traffic	7.5%	Of Construction Subtotal		$56,940.45
Contigency	5.0%	Of Construction Total		$37,960.30
			Total Construction:	$892,067.05
Utility Relocation				
Utility Pole Relocation	$10,000.00	Each	0	$0.00
Fire Hydrant Relocation	$5,000.00	Each	0	$0.00
Underground Relocation	5.0%	Of Construction Subtotal		$37,960.30
			Total Utility Relocation:	$37,960.30
Right-of-Way				
Right-of-Way - (Commercial)	$250,000.00	Acres	0	$0.00
Right-of-Way - (Residential)	$150,000.00	Acres	0	$0.00
Construction Easement (75% of ROW)	$112,500.00	Acres	0	$0.00
			Total Right-of-Way:	$0.00
Engineering	12.0%	Of Construction Total		$107,048.05
Construction Inspection	8.0%	Of Construction Total		$71,365.36
Administration and Planning	1.5%	Of Construction Total		$13,381.01
	Total Project Cost Range:		**$900,000 to $1,350,000**	

GREATER HERSHEY REGIONAL TRANSPORTATION STUDY
COST ESTIMATE WORKSHEET

Project Number	**I-13-L-2**
Intersection 13: E Hersheypark Dr & Laudermilch Rd	Widen Hersheypark Drive west of Laudermilch to provide a 6-lane section west of the intersection. East of the intersection will still be a 4-lane section on Hersheypark Drive. Coordinate signal with Hersheypark Drive corridor.

Description	Cost	Unit	Quantity	Total
Construction Items				
Traffic Signals				
New Signal (4-Way)	$300,000.00	Each	0	$0.00
New Signal (3-Way)	$260,000.00	Each		$0.00
Signal Modifications	$35,000.00	Each	1	$35,000.00
Pavement				
1.5" Pavement Overlay and Milling	$25.00	Square Yard	17227	$430,675.00
Arterials - Roadway	$120.00	Square Yard	7443	$893,160.00
Arterials - Shoulders	$40.00	Square Yard	0	$0.00
Collector Roads	$90.00	Square Yard	0	$0.00
Local Roads	$60.00	Square Yard	0	$0.00
4" PVC Underdrain	$10.00	Linear Foot	7052	$70,520.00
Excavation				
Excavation (Borrow)	$40.00	Cubic Yard	0	$0.00
Drainage				
Inlet/Manhole	$5,000.00	Each	0	$0.00
Pipe and Trenching	$110.00	Linear Foot	0	$0.00
Culvert	$660.00	Square Foot	0	$0.00
Additional Construction Costs Based on Pavement Area				
Pavement Marking/Signing	5.0%	Percentage of Pavement Cost		$69,717.75
Const. Surveying/Field Office, etc.	15.0%	Percentage of Pavement Cost		$209,153.25
Miscellaneous				
Guide Rail	$30.00	Linear Foot	0	$0.00
Concrete Curb	$50.00	Linear Foot	0	$0.00
Bituminous Wedge Curb	$5.00	Linear Foot	0	$0.00
Concrete Island	$125.00	Square Yard	0	$0.00
Sidewalk	$110.00	Square Yard	0	$0.00
Shared Use Path	$50.00	Square Yard	0	$0.00
Structures				
Bridges	$200.00	Square Foot	0	$0.00
			Construction Subtotal:	$1,708,226.00
Mobilization	5.0%	Of Construction Subtotal		$85,411.30
Maintenance and Protection of Traffic	7.5%	Of Construction Subtotal		$128,116.95
Contigency	5.0%	Of Construction Total		$85,411.30
			Total Construction:	$2,007,165.55
Utility Relocation				
Utility Pole Relocation	$10,000.00	Each	0	$0.00
Fire Hydrant Relocation	$5,000.00	Each	0	$0.00
Underground Relocation	5.0%	Of Construction Subtotal		$85,411.30
			Total Utility Relocation:	$85,411.30
Right-of-Way				
Right-of-Way - (Commercial)	$250,000.00	Acres	0	$0.00
Right-of-Way - (Residential)	$150,000.00	Acres	0	$0.00
Construction Easement (75% of ROW)	$112,500.00	Acres	0	$0.00
			Total Right-of-Way:	$0.00
Engineering	12.0%	Of Construction Total		$240,859.87
Construction Inspection	8.0%	Of Construction Total		$160,573.24
Administration and Planning	1.5%	Of Construction Total		$30,107.48
	Total Project Cost Range:		**$2,020,000 to $3,030,000**	

GREATER HERSHEY REGIONAL TRANSPORTATION STUDY
COST ESTIMATE WORKSHEET

Project Number	**I-14-L**
Intersection 14: E Hersheypark Dr & N Lingle Ave	Reconfigure the intersection so the eastbound (Hersheypark Drive) and northbound (N. Lingle Avenue) approaches become the through movement. The southbound approach is re-aligned to make a T-intersection. The existing westbound approach is re-aligned to create a new intersection to the north. Coordinate signal with Hersheypark Drive corridor.

Description	Cost	Unit	Quantity	Total
Construction Items				
Traffic Signals				
New Signal (4-Way)	$300,000.00	Each	0	$0.00
New Signal (3-Way)	$260,000.00	Each	2	$520,000.00
Signal Modifications	$35,000.00	Each	0	$0.00
Pavement				
1.5" Pavement Overlay and Milling	$25.00	Square Yard	1429	$35,725.00
Arterials - Roadway	$120.00	Square Yard	7914	$949,680.00
Arterials - Shoulders	$40.00	Square Yard	0	$0.00
Collector Roads	$90.00	Square Yard	4158	$374,220.00
Local Roads	$60.00	Square Yard	0	$0.00
4" PVC Underdrain	$10.00	Linear Foot	3250	$32,500.00
Excavation				
Excavation (Borrow)	$40.00	Cubic Yard	0	$0.00
Drainage				
Inlet/Manhole	$5,000.00	Each	10	$50,000.00
Pipe and Trenching	$110.00	Linear Foot	2225	$244,750.00
Culvert	$660.00	Square Foot	0	$0.00
Additional Construction Costs Based on Pavement Area				
Pavement Marking/Signing	5.0%	Percentage of Pavement Cost		$69,606.25
Const. Surveying/Field Office, etc.	15.0%	Percentage of Pavement Cost		$208,818.75
Miscellaneous				
Guide Rail	$30.00	Linear Foot	0	$0.00
Concrete Curb	$50.00	Linear Foot	100	$5,000.00
Bituminous Wedge Curb	$5.00	Linear Foot	0	$0.00
Concrete Island	$125.00	Square Yard	193	$24,125.00
Sidewalk	$110.00	Square Yard	0	$0.00
Shared Use Path	$50.00	Square Yard	0	$0.00
Structures				
Bridges	$200.00	Square Foot	0	$0.00
			Construction Subtotal:	$2,514,425.00
Mobilization	5.0%	Of Construction Subtotal		$125,721.25
Maintenance and Protection of Traffic	7.5%	Of Construction Subtotal		$188,581.88
Contigency	5.0%	Of Construction Total		$125,721.25
			Total Construction:	$2,954,449.38
Utility Relocation				
Utility Pole Relocation	$10,000.00	Each	8	$80,000.00
Fire Hydrant Relocation	$5,000.00	Each	0	$0.00
Underground Relocation	5.0%	Of Construction Subtotal		$125,721.25
			Total Utility Relocation:	$205,721.25
Right-of-Way				
Right-of-Way - (Commercial)	$250,000.00	Acres	0.34	$85,000.00
Right-of-Way - (Residential)	$150,000.00	Acres	0	$0.00
Construction Easement (75% of ROW)	$112,500.00	Acres	0	$0.00
			Total Right-of-Way:	$85,000.00
Engineering	12.0%	Of Construction Total		$354,533.93
Construction Inspection	8.0%	Of Construction Total		$236,355.95
Administration and Planning	1.5%	Of Construction Total		$44,316.74
	Total Project Cost Range:		**$3,100,000 to $4,660,000**	

GREATER HERSHEY REGIONAL TRANSPORTATION STUDY
COST ESTIMATE WORKSHEET

Project Number	**I-15-M**
Intersection 15: Park Ave & E. Derry Rd	Signalize after diverting Northeast Drive traffic to E. Derry Road by constructing a connector E. Derry Road and Northeast Drive.

Description	Cost	Unit	Quantity	Total
Construction Items				
Traffic Signals				
New Signal (4-Way)	$300,000.00	Each	1	$300,000.00
New Signal (3-Way)	$260,000.00	Each		$0.00
Signal Modifications	$35,000.00	Each		$0.00
Pavement				
1.5" Pavement Overlay and Milling	$25.00	Square Yard		$0.00
Arterials - Roadway	$120.00	Square Yard		$0.00
Arterials - Shoulders	$40.00	Square Yard		$0.00
Collector Roads	$90.00	Square Yard		$0.00
Local Roads	$60.00	Square Yard		$0.00
4" PVC Underdrain	$10.00	Linear Foot		$0.00
Excavation				
Excavation (Borrow)	$40.00	Cubic Yard		$0.00
Drainage				
Inlet/Manhole	$5,000.00	Each		$0.00
Pipe and Trenching	$110.00	Linear Foot		$0.00
Culvert	$660.00	Square Foot		$0.00
Additional Construction Costs Based on Pavement Area				
Pavement Marking/Signing	5.0%	Percentage of Pavement Cost		$0.00
Const. Surveying/Field Office, etc.	15.0%	Percentage of Pavement Cost		$0.00
Miscellaneous				
Guide Rail	$30.00	Linear Foot		$0.00
Concrete Curb	$50.00	Linear Foot		$0.00
Bituminous Wedge Curb	$5.00	Linear Foot		$0.00
Concrete Island	$125.00	Square Yard		$0.00
Sidewalk	$110.00	Square Yard		$0.00
Shared Use Path	$50.00	Square Yard		$0.00
Structures				
Bridges	$200.00	Square Foot	0	$0.00
			Construction Subtotal:	$300,000.00
Mobilization	5.0%	Of Construction Subtotal		$15,000.00
Maintenance and Protection of Traffic	7.5%	Of Construction Subtotal		$22,500.00
Contigency	5.0%	Of Construction Total		$15,000.00
			Total Construction:	$352,500.00
Utility Relocation				
Utility Pole Relocation	$10,000.00	Each	0	$0.00
Fire Hydrant Relocation	$5,000.00	Each		$0.00
Underground Relocation	5.0%	Of Construction Subtotal		$15,000.00
			Total Utility Relocation:	$15,000.00
Right-of-Way				
Right-of-Way - (Commercial)	$250,000.00	Acres	0	$0.00
Right-of-Way - (Residential)	$150,000.00	Acres		$0.00
Construction Easement (75% of ROW)	$187,500.00	Acres	0	$0.00
			Total Right-of-Way:	$0.00
Engineering	12.0%	Of Construction Total		$42,300.00
Construction Inspection	8.0%	Of Construction Total		$28,200.00
Administration and Planning	1.5%	Of Construction Total		$5,287.50
	Total Project Cost Range:		**$350,000 to $530,000**	

GREATER HERSHEY REGIONAL TRANSPORTATION STUDY
COST ESTIMATE WORKSHEET

Project Number	**I-17-M**
Intersection 17: SR 422 (W. Chocolate Ave) & University Ave	Widen University Drive to provide dual northbound left turn lanes and a channelized northbound right turn lane.

Description	Cost	Unit	Quantity	Total
Construction Items				
Traffic Signals				
New Signal (4-Way)	$300,000.00	Each		$0.00
New Signal (3-Way)	$260,000.00	Each		$0.00
Signal Modifications	$35,000.00	Each	2	$70,000.00
Pavement				
1.5" Pavement Overlay and Milling	$25.00	Square Yard	1467	$36,675.00
Arterials - Roadway	$120.00	Square Yard		$0.00
Arterials - Shoulders	$40.00	Square Yard		$0.00
Collector Roads	$90.00	Square Yard	1480	$133,200.00
Local Roads	$60.00	Square Yard		$0.00
4" PVC Underdrain	$10.00	Linear Foot	550	$5,500.00
Excavation				
Excavation (Borrow)	$40.00	Cubic Yard		$0.00
Drainage				
Inlet/Manhole	$5,000.00	Each	2	$10,000.00
Pipe and Trenching	$110.00	Linear Foot	550	$60,500.00
Culvert	$660.00	Square Foot		$0.00
Additional Construction Costs Based on Pavement Area				
Pavement Marking/Signing	5.0%	Percentage of Pavement Cost		$8,768.75
Const. Surveying/Field Office, etc.	15.0%	Percentage of Pavement Cost		$26,306.25
Miscellaneous				
Guide Rail	$30.00	Linear Foot		$0.00
Concrete Curb	$50.00	Linear Foot	550	$27,500.00
Bituminous Wedge Curb	$5.00	Linear Foot		$0.00
Concrete Island	$125.00	Square Yard	210	$26,250.00
Sidewalk	$110.00	Square Yard		$0.00
Shared Use Path	$50.00	Square Yard		$0.00
Structures				
Bridges	$200.00	Square Foot		$0.00
			Construction Subtotal:	$404,700.00
Mobilization	5.0%	Of Construction Subtotal		$20,235.00
Maintenance and Protection of Traffic	7.5%	Of Construction Subtotal		$30,352.50
Contigency	5.0%	Of Construction Total		$20,235.00
			Total Construction:	$475,522.50
Utility Relocation				
Utility Pole Relocation	$10,000.00	Each	6	$60,000.00
Fire Hydrant Relocation	$5,000.00	Each		$0.00
Underground Relocation	5.0%	Of Construction Subtotal		$20,235.00
			Total Utility Relocation:	$80,235.00
Right-of-Way				
Right-of-Way - (Commercial)	$250,000.00	Acres	0.452	$113,000.00
Right-of-Way - (Residential)	$150,000.00	Acres		$0.00
Construction Easement (75% of ROW)	$187,500.00	Acres	0.339	$63,562.50
			Total Right-of-Way:	$176,562.50
Engineering	12.0%	Of Construction Total		$57,062.70
Construction Inspection	8.0%	Of Construction Total		$38,041.80
Administration and Planning	1.5%	Of Construction Total		$7,132.84
	Total Project Cost Range:		**$670,000 to $1,000,000**	

GREATER HERSHEY REGIONAL TRANSPORTATION STUDY
COST ESTIMATE WORKSHEET

Project Number	**I-19-M**
Intersection 17: SR 422 (W. Chocolate Ave) & University Ave	Widen Homestead Rd for a NB right turn lane with an overlapping right turn signal phase.

Description	Cost	Unit	Quantity	Total
Construction Items				
Traffic Signals				
New Signal (4-Way)	$300,000.00	Each		$0.00
New Signal (3-Way)	$260,000.00	Each		$0.00
Signal Modifications	$35,000.00	Each	1	$35,000.00
Pavement				
1.5" Pavement Overlay and Milling	$25.00	Square Yard	246	$6,150.00
Arterials - Roadway	$120.00	Square Yard	92	$11,040.00
Arterials - Shoulders	$40.00	Square Yard		$0.00
Collector Roads	$90.00	Square Yard		$0.00
Local Roads	$60.00	Square Yard		$0.00
4" PVC Underdrain	$10.00	Linear Foot	220	$2,200.00
Excavation				
Excavation (Borrow)	$40.00	Cubic Yard		$0.00
Drainage				
Inlet/Manhole	$5,000.00	Each	1	$5,000.00
Pipe and Trenching	$110.00	Linear Foot	220	$24,200.00
Culvert	$660.00	Square Foot		$0.00
Additional Construction Costs Based on Pavement Area				
Pavement Marking/Signing	5.0%	Percentage of Pavement Cost		$969.50
Const. Surveying/Field Office, etc.	15.0%	Percentage of Pavement Cost		$2,908.50
Miscellaneous				
Guide Rail	$30.00	Linear Foot		$0.00
Concrete Curb	$50.00	Linear Foot	220	$11,000.00
Bituminous Wedge Curb	$5.00	Linear Foot		$0.00
Concrete Island	$125.00	Square Yard	65	$8,125.00
Sidewalk	$110.00	Square Yard		$0.00
Shared Use Path	$50.00	Square Yard		$0.00
Structures				
Bridges	$200.00	Square Foot		$0.00
			Construction Subtotal:	$106,593.00
Mobilization	5.0%	Of Construction Subtotal		$5,329.65
Maintenance and Protection of Traffic	7.5%	Of Construction Subtotal		$7,994.48
Contigency	5.0%	Of Construction Total		$5,329.65
			Total Construction:	$125,246.78
Utility Relocation				
Utility Pole Relocation	$10,000.00	Each	0	$0.00
Fire Hydrant Relocation	$5,000.00	Each		$0.00
Underground Relocation	5.0%	Of Construction Subtotal		$5,329.65
			Total Utility Relocation:	$5,329.65
Right-of-Way				
Right-of-Way - (Commercial)	$250,000.00	Acres	0.034	$8,500.00
Right-of-Way - (Residential)	$150,000.00	Acres		$0.00
Construction Easement (75% of ROW)	$187,500.00	Acres	0.026	$4,875.00
			Total Right-of-Way:	$13,375.00
Engineering	12.0%	Of Construction Total		$15,029.61
Construction Inspection	8.0%	Of Construction Total		$10,019.74
Administration and Planning	1.5%	Of Construction Total		$1,878.70
	Total Project Cost Range:		**$140,000 to $210,000**	

GREATER HERSHEY REGIONAL TRANSPORTATION STUDY
COST ESTIMATE WORKSHEET

Project Number	**I-22-M**
Intersection 22: Hockersville Road and W Areba Avenue	Construct a traffic signal. Additionally, geometric improvements are necessary to provide sufficient stopping sight distance along the crest vertical curve on Hockersville Rd, north of Areba Avenue.

Description	Cost	Unit	Quantity	Total
Construction Items				
Traffic Signals				
New Signal (4-Way)	$300,000.00	Each	1	$300,000.00
New Signal (3-Way)	$260,000.00	Each		$0.00
Signal Modifications	$35,000.00	Each		$0.00
Pavement				
1.5" Pavement Overlay and Milling	$25.00	Square Yard		$0.00
Arterials - Roadway	$120.00	Square Yard		$0.00
Arterials - Shoulders	$40.00	Square Yard		$0.00
Collector Roads	$90.00	Square Yard	3539	$318,510.00
Local Roads	$60.00	Square Yard		$0.00
4" PVC Underdrain	$10.00	Linear Foot	1300	$13,000.00
Excavation				
Excavation (Borrow)	$40.00	Cubic Yard		$0.00
Drainage				
Inlet/Manhole	$5,000.00	Each	6	$30,000.00
Pipe and Trenching	$110.00	Linear Foot	854	$93,940.00
Culvert	$660.00	Square Foot		$0.00
Additional Construction Costs Based on Pavement Area				
Pavement Marking/Signing	5.0%	Percentage of Pavement Cost		$16,575.50
Const. Surveying/Field Office, etc.	15.0%	Percentage of Pavement Cost		$49,726.50
Miscellaneous				
Guide Rail	$30.00	Linear Foot		$0.00
Concrete Curb	$50.00	Linear Foot	1300	$65,000.00
Bituminous Wedge Curb	$5.00	Linear Foot		$0.00
Concrete Island	$125.00	Square Yard		$0.00
Sidewalk	$110.00	Square Yard	722	$79,420.00
Shared Use Path	$50.00	Square Yard		$0.00
Structures				
Bridges	$200.00	Square Foot		$0.00
			Construction Subtotal:	$966,172.00
Mobilization	5.0%	Of Construction Subtotal		$48,308.60
Maintenance and Protection of Traffic	7.5%	Of Construction Subtotal		$72,462.90
Contigency	5.0%	Of Construction Total		$48,308.60
			Total Construction:	$1,135,252.10
Utility Relocation				
Utility Pole Relocation	$10,000.00	Each	7	$70,000.00
Fire Hydrant Relocation	$5,000.00	Each		$0.00
Underground Relocation	5.0%	Of Construction Subtotal		$48,308.60
			Total Utility Relocation:	$118,308.60
Right-of-Way				
Right-of-Way - (Commercial)	$250,000.00	Acres		$0.00
Right-of-Way - (Residential)	$150,000.00	Acres		$0.00
Construction Easement (75% of ROW)	$187,500.00	Acres	0	$0.00
			Total Right-of-Way:	$0.00
Engineering	12.0%	Of Construction Total		$136,230.25
Construction Inspection	8.0%	Of Construction Total		$90,820.17
Administration and Planning	1.5%	Of Construction Total		$17,028.78
	Total Project Cost Range:		**$1,200,000 to $1,800,000**	

GREATER HERSHEY REGIONAL TRANSPORTATION STUDY
COST ESTIMATE WORKSHEET

Project Number	**I-23-M**
Intersection 23: SR 322 (W Governor Rd) & University Dr	Construct an eastbound right turn lane and remove the lane drop to provide an additional eastbound through lane. Widen Governor Road to provide an additional eastbound receiving lane.

Description	Cost	Unit	Quantity	Total
Construction Items				
Traffic Signals				
New Signal (4-Way)	$300,000.00	Each		$0.00
New Signal (3-Way)	$260,000.00	Each		$0.00
Signal Modifications	$35,000.00	Each	2	$70,000.00
Pavement				
1.5" Pavement Overlay and Milling	$25.00	Square Yard	5710	$142,750.00
Arterials - Roadway	$120.00	Square Yard	2229	$267,480.00
Arterials - Shoulders	$40.00	Square Yard		$0.00
Collector Roads	$90.00	Square Yard		$0.00
Local Roads	$60.00	Square Yard		$0.00
4" PVC Underdrain	$10.00	Linear Foot	900	$9,000.00
Excavation				
Excavation (Borrow)	$40.00	Cubic Yard		$0.00
Drainage				
Inlet/Manhole	$5,000.00	Each	12	$60,000.00
Pipe and Trenching	$110.00	Linear Foot	900	$99,000.00
Culvert	$660.00	Square Foot		$0.00
Additional Construction Costs Based on Pavement Area				
Pavement Marking/Signing	5.0%	Percentage of Pavement Cost		$20,961.50
Const. Surveying/Field Office, etc.	15.0%	Percentage of Pavement Cost		$62,884.50
Miscellaneous				
Guide Rail	$30.00	Linear Foot		$0.00
Concrete Curb	$50.00	Linear Foot	900	$45,000.00
Bituminous Wedge Curb	$5.00	Linear Foot		$0.00
Concrete Island	$125.00	Square Yard	20	$2,500.00
Sidewalk	$110.00	Square Yard	970	$106,700.00
Shared Use Path	$50.00	Square Yard		$0.00
Structures				
Bridges	$200.00	Square Foot		$0.00
			Construction Subtotal:	$886,276.00
Mobilization	5.0%	Of Construction Subtotal		$44,313.80
Maintenance and Protection of Traffic	7.5%	Of Construction Subtotal		$66,470.70
Contigency	5.0%	Of Construction Total		$44,313.80
			Total Construction:	$1,041,374.30
Utility Relocation				
Utility Pole Relocation	$10,000.00	Each	2	$20,000.00
Fire Hydrant Relocation	$5,000.00	Each	1	$5,000.00
Underground Relocation	5.0%	Of Construction Subtotal		$44,313.80
			Total Utility Relocation:	$69,313.80
Right-of-Way				
Right-of-Way - (Commercial)	$250,000.00	Acres	0.1837	$45,925.00
Right-of-Way - (Residential)	$150,000.00	Acres		$0.00
Construction Easement (75% of ROW)	$187,500.00	Acres	0.138	$25,875.00
			Total Right-of-Way:	$71,800.00
Engineering	12.0%	Of Construction Total		$124,964.92
Construction Inspection	8.0%	Of Construction Total		$83,309.94
Administration and Planning	1.5%	Of Construction Total		$15,620.61
	Total Project Cost Range:		**$1,130,000 to $1,690,000**	

GREATER HERSHEY REGIONAL TRANSPORTATION STUDY
COST ESTIMATE WORKSHEET

Project Number	**I-23-L**
Intersection 23: SR 322 (W Governor Rd) & University Dr	Widen Governor Road to provide an additional westbound through lane. Construct sidewalk on the north side of SR 322.

Description	Cost	Unit	Quantity	Total
Construction Items				
Traffic Signals				
New Signal (4-Way)	$300,000.00	Each		$0.00
New Signal (3-Way)	$260,000.00	Each		$0.00
Signal Modifications	$35,000.00	Each	2	$70,000.00
Pavement				
1.5" Pavement Overlay and Milling	$25.00	Square Yard	13534	$338,350.00
Arterials - Roadway	$120.00	Square Yard	3784	$454,080.00
Arterials - Shoulders	$40.00	Square Yard		$0.00
Collector Roads	$90.00	Square Yard		$0.00
Local Roads	$60.00	Square Yard		$0.00
4" PVC Underdrain	$10.00	Linear Foot	2040	$20,400.00
Excavation				
Excavation (Borrow)	$40.00	Cubic Yard		$0.00
Drainage				
Inlet/Manhole	$5,000.00	Each	5	$25,000.00
Pipe and Trenching	$110.00	Linear Foot	1320	$145,200.00
Culvert	$660.00	Square Foot		$0.00
Additional Construction Costs Based on Pavement Area				
Pavement Marking/Signing	5.0%	Percentage of Pavement Cost		$40,641.50
Const. Surveying/Field Office, etc.	15.0%	Percentage of Pavement Cost		$121,924.50
Miscellaneous				
Guide Rail	$30.00	Linear Foot		$0.00
Concrete Curb	$50.00	Linear Foot	2040	$102,000.00
Bituminous Wedge Curb	$5.00	Linear Foot		$0.00
Concrete Island	$125.00	Square Yard	30	$3,750.00
Sidewalk	$110.00	Square Yard	120	$13,200.00
Shared Use Path	$50.00	Square Yard		$0.00
Structures				
Bridges	$200.00	Square Foot		$0.00
			Construction Subtotal:	$1,334,546.00
Mobilization	5.0%	Of Construction Subtotal		$66,727.30
Maintenance and Protection of Traffic	7.5%	Of Construction Subtotal		$100,090.95
Contigency	5.0%	Of Construction Total		$66,727.30
			Total Construction:	$1,568,091.55
Utility Relocation				
Utility Pole Relocation	$10,000.00	Each	7	$70,000.00
Fire Hydrant Relocation	$5,000.00	Each	1	$5,000.00
Underground Relocation	5.0%	Of Construction Subtotal		$66,727.30
			Total Utility Relocation:	$141,727.30
Right-of-Way				
Right-of-Way - (Commercial)	$250,000.00	Acres	0.2043	$51,075.00
Right-of-Way - (Residential)	$150,000.00	Acres		$0.00
Construction Easement (75% of ROW)	$187,500.00	Acres	0.153	$28,687.50
			Total Right-of-Way:	$79,762.50
Engineering	12.0%	Of Construction Total		$188,170.99
Construction Inspection	8.0%	Of Construction Total		$125,447.32
Administration and Planning	1.5%	Of Construction Total		$23,521.37
	Total Project Cost Range:		**$1,700,000 to $2,550,000**	

GREATER HERSHEY REGIONAL TRANSPORTATION STUDY
COST ESTIMATE WORKSHEET

Project Number	**I-24-M**
Intersection 24: SR 322 (W Governor Rd) & Centerview Dr	Convert NB approach from a shared left/through lane and a right turn lane to a left turn lane and a shared through/right lane.

Description	Cost	Unit	Quantity	Total
Construction Items				
Traffic Signals				
New Signal (4-Way)	$300,000.00	Each		$0.00
New Signal (3-Way)	$260,000.00	Each		$0.00
Signal Modifications	$35,000.00	Each	2	$70,000.00
Pavement				
1.5" Pavement Overlay and Milling	$25.00	Square Yard		$0.00
Arterials - Roadway	$120.00	Square Yard		$0.00
Arterials - Shoulders	$40.00	Square Yard		$0.00
Collector Roads	$90.00	Square Yard		$0.00
Local Roads	$60.00	Square Yard		$0.00
4" PVC Underdrain	$10.00	Linear Foot		$0.00
Excavation				
Excavation (Borrow)	$40.00	Cubic Yard		$0.00
Drainage				
Inlet/Manhole	$5,000.00	Each		$0.00
Pipe and Trenching	$110.00	Linear Foot		$0.00
Culvert	$660.00	Square Foot		$0.00
Additional Construction Costs Based on Pavement Area				
Pavement Marking/Signing	5.0%	Percentage of Pavement Cost		$0.00
Const. Surveying/Field Office, etc.	15.0%	Percentage of Pavement Cost		$0.00
Miscellaneous				
Guide Rail	$30.00	Linear Foot		$0.00
Concrete Curb	$50.00	Linear Foot		$0.00
Bituminous Wedge Curb	$5.00	Linear Foot		$0.00
Concrete Island	$125.00	Square Yard		$0.00
Sidewalk	$110.00	Square Yard		$0.00
Shared Use Path	$50.00	Square Yard		$0.00
Structures				
Bridges	$200.00	Square Foot		$0.00
			Construction Subtotal:	$70,000.00
Mobilization	5.0%	Of Construction Subtotal		$3,500.00
Maintenance and Protection of Traffic	7.5%	Of Construction Subtotal		$5,250.00
Contigency	5.0%	Of Construction Total		$3,500.00
			Total Construction:	$82,250.00
Utility Relocation				
Utility Pole Relocation	$10,000.00	Each		$0.00
Fire Hydrant Relocation	$5,000.00	Each		$0.00
Underground Relocation	5.0%	Of Construction Subtotal		$3,500.00
			Total Utility Relocation:	$3,500.00
Right-of-Way				
Right-of-Way - (Commercial)	$250,000.00	Acres		$0.00
Right-of-Way - (Residential)	$150,000.00	Acres		$0.00
Construction Easement (75% of ROW)	$187,500.00	Acres	0	$0.00
			Total Right-of-Way:	$0.00
Engineering	12.0%	Of Construction Total		$9,870.00
Construction Inspection	8.0%	Of Construction Total		$6,580.00
Administration and Planning	1.5%	Of Construction Total		$1,233.75
	Total Project Cost Range:		**$80,000 to $120,000**	

GREATER HERSHEY REGIONAL TRANSPORTATION STUDY
COST ESTIMATE WORKSHEET

Project Number	**I-24-L**
Intersection 24: SR 322 (W Governor Rd) & Centerview Dr	Widen Governor Road to provide additional eastbound and westbound through lanes to provide a 5-lane section. Widen the northbound approach of Centerview Drive to provide an exclusive right turn lane. This will result in a four lane section on Centerview Drive (three northbound lanes and one southbound lane). Construct sidewalk on the north side of SR 322.

Description	Cost	Unit	Quantity	Total
Construction Items				
Traffic Signals				
New Signal (4-Way)	$300,000.00	Each		$0.00
New Signal (3-Way)	$260,000.00	Each		$0.00
Signal Modifications	$35,000.00	Each	4	$140,000.00
Pavement				
1.5" Pavement Overlay and Milling	$25.00	Square Yard	8103	$202,575.00
Arterials - Roadway	$120.00	Square Yard	10601	$1,272,120.00
Arterials - Shoulders	$40.00	Square Yard		$0.00
Collector Roads	$90.00	Square Yard		$0.00
Local Roads	$60.00	Square Yard		$0.00
4" PVC Underdrain	$10.00	Linear Foot	4944	$49,440.00
Excavation				
Excavation (Borrow)	$40.00	Cubic Yard		$0.00
Drainage				
Inlet/Manhole	$5,000.00	Each	17	$85,000.00
Pipe and Trenching	$110.00	Linear Foot	3492	$384,120.00
Culvert	$660.00	Square Foot		$0.00
Additional Construction Costs Based on Pavement Area				
Pavement Marking/Signing	5.0%	Percentage of Pavement Cost		$76,206.75
Const. Surveying/Field Office, etc.	15.0%	Percentage of Pavement Cost		$228,620.25
Miscellaneous				
Guide Rail	$30.00	Linear Foot		$0.00
Concrete Curb	$50.00	Linear Foot	4944	$247,200.00
Bituminous Wedge Curb	$5.00	Linear Foot		$0.00
Concrete Island	$125.00	Square Yard		$0.00
Sidewalk	$110.00	Square Yard	2120	$233,200.00
Shared Use Path	$50.00	Square Yard		$0.00
Structures				
Bridges	$200.00	Square Foot		$0.00
			Construction Subtotal:	$2,918,482.00
Mobilization	5.0%	Of Construction Subtotal		$145,924.10
Maintenance and Protection of Traffic	7.5%	Of Construction Subtotal		$218,886.15
Contigency	5.0%	Of Construction Total		$145,924.10
			Total Construction:	$3,429,216.35
Utility Relocation				
Utility Pole Relocation	$10,000.00	Each	10	$100,000.00
Fire Hydrant Relocation	$5,000.00	Each	1	$5,000.00
Underground Relocation	5.0%	Of Construction Subtotal		$145,924.10
			Total Utility Relocation:	$250,924.10
Right-of-Way				
Right-of-Way - (Commercial)	$250,000.00	Acres	0.6227	$155,675.00
Right-of-Way - (Residential)	$150,000.00	Acres		$0.00
Construction Easement (75% of ROW)	$187,500.00	Acres	0.467	$87,562.50
			Total Right-of-Way:	$243,237.50
Engineering	12.0%	Of Construction Total		$411,505.96
Construction Inspection	8.0%	Of Construction Total		$274,337.31
Administration and Planning	1.5%	Of Construction Total		$51,438.25
	Total Project Cost Range:		**$3,730,000 to $5,590,000**	

GREATER HERSHEY REGIONAL TRANSPORTATION STUDY
COST ESTIMATE WORKSHEET

Project Number	**I-25-L-1**
Intersection 25: SR 322 (W Governor Rd) & Cherry Dr	Widen Governor Road to provide additional eastbound and westbound through lanes to provide a 5-lane section.

Description	Cost	Unit	Quantity	Total
Construction Items				
Traffic Signals				
New Signal (4-Way)	$300,000.00	Each		$0.00
New Signal (3-Way)	$260,000.00	Each		$0.00
Signal Modifications	$35,000.00	Each	4	$140,000.00
Pavement				
1.5" Pavement Overlay and Milling	$25.00	Square Yard	7434	$185,850.00
Arterials - Roadway	$120.00	Square Yard	10399	$1,247,880.00
Arterials - Shoulders	$40.00	Square Yard		$0.00
Collector Roads	$90.00	Square Yard		$0.00
Local Roads	$60.00	Square Yard		$0.00
4" PVC Underdrain	$10.00	Linear Foot	4445	$44,450.00
Excavation				
Excavation (Borrow)	$40.00	Cubic Yard		$0.00
Drainage				
Inlet/Manhole	$5,000.00	Each	15	$75,000.00
Pipe and Trenching	$110.00	Linear Foot	3123	$343,530.00
Culvert	$660.00	Square Foot		$0.00
Additional Construction Costs Based on Pavement Area				
Pavement Marking/Signing	5.0%	Percentage of Pavement Cost		$73,909.00
Const. Surveying/Field Office, etc.	15.0%	Percentage of Pavement Cost		$221,727.00
Miscellaneous				
Guide Rail	$30.00	Linear Foot		$0.00
Concrete Curb	$50.00	Linear Foot	4445	$222,250.00
Bituminous Wedge Curb	$5.00	Linear Foot		$0.00
Concrete Island	$125.00	Square Yard		$0.00
Sidewalk	$110.00	Square Yard	1858	$204,380.00
Shared Use Path	$50.00	Square Yard	407	$20,350.00
Structures				
Bridges	$200.00	Square Foot		$0.00
			Construction Subtotal:	$2,779,326.00
Mobilization	5.0%	Of Construction Subtotal		$138,966.30
Maintenance and Protection of Traffic	7.5%	Of Construction Subtotal		$208,449.45
Contigency	5.0%	Of Construction Total		$138,966.30
			Total Construction:	$3,265,708.05
Utility Relocation				
Utility Pole Relocation	$10,000.00	Each	5	$50,000.00
Fire Hydrant Relocation	$5,000.00	Each	3	$15,000.00
Underground Relocation	5.0%	Of Construction Subtotal		$138,966.30
			Total Utility Relocation:	$203,966.30
Right-of-Way				
Right-of-Way - (Commercial)	$250,000.00	Acres	0.6947	$173,675.00
Right-of-Way - (Residential)	$150,000.00	Acres		$0.00
Construction Easement (75% of ROW)	$187,500.00	Acres	0.521	$97,687.50
			Total Right-of-Way:	$271,362.50
Engineering	12.0%	Of Construction Total		$391,884.97
Construction Inspection	8.0%	Of Construction Total		$261,256.64
Administration and Planning	1.5%	Of Construction Total		$48,985.62
	Total Project Cost Range:		**$3,550,000 to $5,330,000**	

GREATER HERSHEY REGIONAL TRANSPORTATION STUDY
COST ESTIMATE WORKSHEET

Project Number	**I-25-L-2**
Intersection 25: SR 322 (W Governor Rd) & Cherry Dr	Provide a connection between the crosswalk and the existing trail. This would tie in the trail west of Cherry Drive with the trail along Governor Road east of Cherry Drive. Construct sidewalk on the north side of SR 322.

Description	Cost	Unit	Quantity	Total
Construction Items				
Traffic Signals				
New Signal (4-Way)	$300,000.00	Each		$0.00
New Signal (3-Way)	$260,000.00	Each		$0.00
Signal Modifications	$35,000.00	Each		$0.00
Pavement				
1.5" Pavement Overlay and Milling	$25.00	Square Yard		$0.00
Arterials - Roadway	$120.00	Square Yard		$0.00
Arterials - Shoulders	$40.00	Square Yard		$0.00
Collector Roads	$90.00	Square Yard		$0.00
Local Roads	$60.00	Square Yard		$0.00
4" PVC Underdrain	$10.00	Linear Foot		$0.00
Excavation				
Excavation (Borrow)	$40.00	Cubic Yard		$0.00
Drainage				
Inlet/Manhole	$5,000.00	Each		$0.00
Pipe and Trenching	$110.00	Linear Foot		$0.00
Culvert	$660.00	Square Foot		$0.00
Additional Construction Costs Based on Pavement Area				
Pavement Marking/Signing	5.0%	Percentage of Pavement Cost		$0.00
Const. Surveying/Field Office, etc.	15.0%	Percentage of Pavement Cost		$0.00
Miscellaneous				
Guide Rail	$30.00	Linear Foot		$0.00
Concrete Curb	$50.00	Linear Foot		$0.00
Bituminous Wedge Curb	$5.00	Linear Foot		$0.00
Concrete Island	$125.00	Square Yard		$0.00
Sidewalk	$110.00	Square Yard		$0.00
Shared Use Path	$50.00	Square Yard	89	$4,450.00
Structures				
Bridges	$200.00	Square Foot		$0.00
			Construction Subtotal:	$4,450.00
Mobilization	5.0%	Of Construction Subtotal		$222.50
Maintenance and Protection of Traffic	7.5%	Of Construction Subtotal		$333.75
Contigency	5.0%	Of Construction Total		$222.50
			Total Construction:	$5,228.75
Utility Relocation				
Utility Pole Relocation	$10,000.00	Each		$0.00
Fire Hydrant Relocation	$5,000.00	Each		$0.00
Underground Relocation	5.0%	Of Construction Subtotal		$222.50
			Total Utility Relocation:	$222.50
Right-of-Way				
Right-of-Way - (Commercial)	$250,000.00	Acres	0.0000	$0.00
Right-of-Way - (Residential)	$150,000.00	Acres		$0.00
Construction Easement (75% of ROW)	$187,500.00	Acres	0	$0.00
			Total Right-of-Way:	$0.00
Engineering	12.0%	Of Construction Total		$627.45
Construction Inspection	8.0%	Of Construction Total		$418.30
Administration and Planning	1.5%	Of Construction Total		$78.43
	Total Project Cost Range:		**$5,000 to $8,000**	

GREATER HERSHEY REGIONAL TRANSPORTATION STUDY
COST ESTIMATE WORKSHEET

Project Number	**I-26-M**
Intersection 26: SR 322 (W Governor Rd) & SR 743 Fishburn Rd/Hockersville Rd	Widen Governor Road to provide additional eastbound and westbound through lanes. The Brownstone Building on the southeast quadrant of the intersection should be relocated to the rear end of the lot to provide sufficient room for the proposed widening, bicycle lane, and sidewalk.

Description	Cost	Unit	Quantity	Total
Construction Items				
Traffic Signals				
New Signal (4-Way)	$300,000.00	Each	1	$300,000.00
New Signal (3-Way)	$260,000.00	Each		$0.00
Signal Modifications	$35,000.00	Each		$0.00
Pavement				
1.5" Pavement Overlay and Milling	$25.00	Square Yard	8329	$208,225.00
Arterials - Roadway	$120.00	Square Yard	6246	$749,520.00
Arterials - Shoulders	$40.00	Square Yard		$0.00
Collector Roads	$90.00	Square Yard		$0.00
Local Roads	$60.00	Square Yard		$0.00
4" PVC Underdrain	$10.00	Linear Foot	3527	$35,270.00
Excavation				
Excavation (Borrow)	$40.00	Cubic Yard		$0.00
Drainage				
Inlet/Manhole	$5,000.00	Each	12	$60,000.00
Pipe and Trenching	$110.00	Linear Foot	2484	$273,240.00
Culvert	$660.00	Square Foot		$0.00
Additional Construction Costs Based on Pavement Area				
Pavement Marking/Signing	5.0%	Percentage of Pavement Cost		$49,650.75
Const. Surveying/Field Office, etc.	15.0%	Percentage of Pavement Cost		$148,952.25
Miscellaneous				
Guide Rail	$30.00	Linear Foot		$0.00
Concrete Curb	$50.00	Linear Foot	3527	$176,350.00
Bituminous Wedge Curb	$5.00	Linear Foot		$0.00
Concrete Island	$125.00	Square Yard		$0.00
Sidewalk	$110.00	Square Yard	414	$45,540.00
Shared Use Path	$50.00	Square Yard	394	$19,700.00
Structures				
Bridges	$200.00	Square Foot		$0.00
			Construction Subtotal:	$2,066,448.00
Mobilization	5.0%	Of Construction Subtotal		$103,322.40
Maintenance and Protection of Traffic	7.5%	Of Construction Subtotal		$154,983.60
Contigency	5.0%	Of Construction Total		$103,322.40
			Total Construction:	$2,428,076.40
Utility Relocation				
Utility Pole Relocation	$10,000.00	Each	12	$120,000.00
Fire Hydrant Relocation	$5,000.00	Each	1	$5,000.00
Underground Relocation	5.0%	Of Construction Subtotal		$103,322.40
			Total Utility Relocation:	$228,322.40
Right-of-Way				
Right-of-Way - (Commercial)	$250,000.00	Acres	1.7218	$430,450.00
Right-of-Way - (Residential)	$150,000.00	Acres		$0.00
Construction Easement (75% of ROW)	$187,500.00	Acres	1.291	$242,062.50
			Total Right-of-Way:	$672,512.50
Engineering	12.0%	Of Construction Total		$291,369.17
Construction Inspection	8.0%	Of Construction Total		$194,246.11
Administration and Planning	1.5%	Of Construction Total		$36,421.15
	Total Project Cost Range:		**$3,080,000 to $4,620,000**	

GREATER HERSHEY REGIONAL TRANSPORTATION STUDY
COST ESTIMATE WORKSHEET

Project Number	**I-26-L**
Intersection 26: SR 322 (W Governor Rd) & SR 743 Fishburn Rd/Hockersville Rd	Widen Hockersville for an exclusive southbound right turn lane. Modify the traffic signal to include right turn overlaps for all right turn lanes.

Description	Cost	Unit	Quantity	Total
Construction Items				
Traffic Signals				
New Signal (4-Way)	$300,000.00	Each		$0.00
New Signal (3-Way)	$260,000.00	Each		$0.00
Signal Modifications	$35,000.00	Each		$0.00
Pavement				
1.5" Pavement Overlay and Milling	$25.00	Square Yard	1726	$43,150.00
Arterials - Roadway	$120.00	Square Yard	531	$63,720.00
Arterials - Shoulders	$40.00	Square Yard		$0.00
Collector Roads	$90.00	Square Yard		$0.00
Local Roads	$60.00	Square Yard		$0.00
4" PVC Underdrain	$10.00	Linear Foot	500	$5,000.00
Excavation				
Excavation (Borrow)	$40.00	Cubic Yard		$0.00
Drainage				
Inlet/Manhole	$5,000.00	Each	2	$10,000.00
Pipe and Trenching	$110.00	Linear Foot	370	$40,700.00
Culvert	$660.00	Square Foot		$0.00
Additional Construction Costs Based on Pavement Area				
Pavement Marking/Signing	5.0%	Percentage of Pavement Cost		$5,593.50
Const. Surveying/Field Office, etc.	15.0%	Percentage of Pavement Cost		$16,780.50
Miscellaneous				
Guide Rail	$30.00	Linear Foot		$0.00
Concrete Curb	$50.00	Linear Foot	500	$25,000.00
Bituminous Wedge Curb	$5.00	Linear Foot		$0.00
Concrete Island	$125.00	Square Yard		$0.00
Sidewalk	$110.00	Square Yard		$0.00
Shared Use Path	$50.00	Square Yard		$0.00
Structures				
Bridges	$200.00	Square Foot		$0.00
			Construction Subtotal:	$209,944.00
Mobilization	5.0%	Of Construction Subtotal		$10,497.20
Maintenance and Protection of Traffic	7.5%	Of Construction Subtotal		$15,745.80
Contigency	5.0%	Of Construction Total		$10,497.20
			Total Construction:	$246,684.20
Utility Relocation				
Utility Pole Relocation	$10,000.00	Each	0	$0.00
Fire Hydrant Relocation	$5,000.00	Each	0	$0.00
Underground Relocation	5.0%	Of Construction Subtotal		$10,497.20
			Total Utility Relocation:	$10,497.20
Right-of-Way				
Right-of-Way - (Commercial)	$250,000.00	Acres	0.172	$43,050.00
Right-of-Way - (Residential)	$150,000.00	Acres		$0.00
Construction Easement (75% of ROW)	$187,500.00	Acres	0.129	$24,187.50
			Total Right-of-Way:	$67,237.50
Engineering	12.0%	Of Construction Total		$29,602.10
Construction Inspection	8.0%	Of Construction Total		$19,734.74
Administration and Planning	1.5%	Of Construction Total		$3,700.26
	Total Project Cost Range:		**$300,000 to $450,000**	

GREATER HERSHEY REGIONAL TRANSPORTATION STUDY
COST ESTIMATE WORKSHEET

Project Number	**I-28-M**
Intersection 28: SR 743 (Fishburn Rd) & Sand Hill Rd	Relocate Sand Hill Road to incorporate Hope Drive Extension. Install exclusive eastbound left and right turn lanes. Widen Fishburn Road to install a northbound left turn lane and a southbound right turn lane. Construct trail along Hope Drive Extension and Fishburn Road.

Description	Cost	Unit	Quantity	Total
Construction Items				
Traffic Signals				
New Signal (4-Way)	$300,000.00	Each	1	$300,000.00
New Signal (3-Way)	$260,000.00	Each	1	$260,000.00
Signal Modifications	$35,000.00	Each		$0.00
Pavement				
1.5" Pavement Overlay and Milling	$25.00	Square Yard	7253	$181,325.00
Arterials - Roadway	$120.00	Square Yard		$0.00
Arterials - Shoulders	$40.00	Square Yard		$0.00
Collector Roads	$90.00	Square Yard	6613	$595,170.00
Parking Lot	$60.00	Square Yard	1023	$61,380.00
4" PVC Underdrain	$10.00	Linear Foot	2748	$27,480.00
Excavation				
Excavation (Borrow)	$40.00	Cubic Yard		$0.00
Drainage				
Inlet/Manhole	$5,000.00	Each	10	$50,000.00
Pipe and Trenching	$110.00	Linear Foot	1974	$217,140.00
Culvert	$660.00	Square Foot		$0.00
Additional Construction Costs Based on Pav				
Pavement Marking/Signing	5.0%	Percentage of Pavement Cost		$43,267.75
Const. Surveying/Field Office, etc.	15.0%	Percentage of Pavement Cost		$129,803.25
Miscellaneous				
Guide Rail	$30.00	Linear Foot		$0.00
Concrete Curb	$50.00	Linear Foot	2748	$137,400.00
Bituminous Wedge Curb	$5.00	Linear Foot		$0.00
Concrete Island	$125.00	Square Yard	45	$5,625.00
Sidewalk	$110.00	Square Yard		$0.00
Shared Use Path	$50.00	Square Yard	5516	$275,800.00
Structures				
Bridges	$200.00	Square Foot		$0.00
			Construction Subtotal:	$2,284,391.00
Mobilization	5.0%	Of Construction Subtotal		$114,219.55
Maintenance and Protection of Traffic	7.5%	Of Construction Subtotal		$171,329.33
Contigency	5.0%	Of Construction Total		$114,219.55
			Total Construction:	$2,684,159.43
Utility Relocation				
Utility Pole Relocation	$10,000.00	Each		$0.00
Fire Hydrant Relocation	$5,000.00	Each		$0.00
Underground Relocation	5.0%	Of Construction Subtotal		$114,219.55
			Total Utility Relocation:	$114,219.55
Right-of-Way				
Right-of-Way - (Commercial)	$250,000.00	Acres	1.99	$497,500.00
Right-of-Way - (Residential)	$150,000.00	Acres		$0.00
Construction Easement (75% of ROW)	$187,500.00	Acres	1.493	$279,937.50
			Total Right-of-Way:	$777,437.50
Engineering	12.0%	Of Construction Total		$322,099.13
Construction Inspection	8.0%	Of Construction Total		$214,732.75
Administration and Planning	1.5%	Of Construction Total		$40,262.39
	Total Project Cost Range:		**$3,320,000 to $4,980,000**	

GREATER HERSHEY REGIONAL TRANSPORTATION STUDY
COST ESTIMATE WORKSHEET

Project Number	**I-29-M**
Intersection 29: SR 322 (W Governor Rd/E Governor Rd) & Cocoa Ave	Widen Governor Road to provide an additional eastbound westbound through lane

Description	Cost	Unit	Quantity	Total
Construction Items				
Traffic Signals				
New Signal (4-Way)	$300,000.00	Each	1	$300,000.00
New Signal (3-Way)	$260,000.00	Each		$0.00
Signal Modifications	$35,000.00	Each		$0.00
Pavement				
1.5" Pavement Overlay and Milling	$25.00	Square Yard	6974	$174,350.00
Arterials - Roadway	$120.00	Square Yard	9869	$1,184,280.00
Arterials - Shoulders	$40.00	Square Yard		$0.00
Collector Roads	$90.00	Square Yard		$0.00
Local Roads	$60.00	Square Yard		$0.00
4" PVC Underdrain	$10.00	Linear Foot	2213	$22,130.00
Excavation				
Excavation (Borrow)	$40.00	Cubic Yard		$0.00
Drainage				
Inlet/Manhole	$5,000.00	Each	8	$40,000.00
Pipe and Trenching	$110.00	Linear Foot	1587	$174,570.00
Culvert	$660.00	Square Foot		$0.00
Additional Construction Costs Based on Pavement Area				
Pavement Marking/Signing	5.0%	Percentage of Pavement Cost		$69,038.00
Const. Surveying/Field Office, etc.	15.0%	Percentage of Pavement Cost		$207,114.00
Miscellaneous				
Guide Rail	$30.00	Linear Foot		$0.00
Concrete Curb	$50.00	Linear Foot	2213	$110,650.00
Bituminous Wedge Curb	$5.00	Linear Foot		$0.00
Concrete Island	$125.00	Square Yard		$0.00
Sidewalk	$110.00	Square Yard	922	$101,420.00
Shared Use Path	$50.00	Square Yard		$0.00
Structures				
Bridges	$200.00	Square Foot		$0.00
			Construction Subtotal:	$2,383,552.00
Mobilization	5.0%	Of Construction Subtotal		$119,177.60
Maintenance and Protection of Traffic	7.5%	Of Construction Subtotal		$178,766.40
Contigency	5.0%	Of Construction Total		$119,177.60
			Total Construction:	$2,800,673.60
Utility Relocation				
Utility Pole Relocation	$10,000.00	Each	11	$110,000.00
Fire Hydrant Relocation	$5,000.00	Each		$0.00
Underground Relocation	5.0%	Of Construction Subtotal		$119,177.60
			Total Utility Relocation:	$229,177.60
Right-of-Way				
Right-of-Way - (Commercial)	$250,000.00	Acres	1.7677	$441,925.00
Right-of-Way - (Residential)	$150,000.00	Acres		$0.00
Construction Easement (75% of ROW)	$187,500.00	Acres	1.326	$248,625.00
			Total Right-of-Way:	$690,550.00
Engineering	12.0%	Of Construction Total		$336,080.83
Construction Inspection	8.0%	Of Construction Total		$224,053.89
Administration and Planning	1.5%	Of Construction Total		$42,010.10
	Total Project Cost Range:		**$3,460,000 to $5,190,000**	

GREATER HERSHEY REGIONAL TRANSPORTATION STUDY
COST ESTIMATE WORKSHEET

Project Number	**I-30-M**
Intersection 30: SR 322 (E Governor Rd) & Homestead Rd	Widen Governor Road to provide an additional eastbound westbound through lane

Description	Cost	Unit	Quantity	Total
Construction Items				
Traffic Signals				
New Signal (4-Way)	$300,000.00	Each	1	$300,000.00
New Signal (3-Way)	$260,000.00	Each		$0.00
Signal Modifications	$35,000.00	Each		$0.00
Pavement				
1.5" Pavement Overlay and Milling	$25.00	Square Yard	5951	$148,775.00
Arterials - Roadway	$120.00	Square Yard	9518	$1,142,160.00
Arterials - Shoulders	$40.00	Square Yard		$0.00
Collector Roads	$90.00	Square Yard		$0.00
Local Roads	$60.00	Square Yard		$0.00
4" PVC Underdrain	$10.00	Linear Foot	1900	$19,000.00
Excavation				
Excavation (Borrow)	$40.00	Cubic Yard		$0.00
Drainage				
Inlet/Manhole	$5,000.00	Each	7	$35,000.00
Pipe and Trenching	$110.00	Linear Foot	1370	$150,700.00
Culvert	$660.00	Square Foot		$0.00
Additional Construction Costs Based on Pavement Area				
Pavement Marking/Signing	5.0%	Percentage of Pavement Cost		$65,496.75
Const. Surveying/Field Office, etc.	15.0%	Percentage of Pavement Cost		$196,490.25
Miscellaneous				
Guide Rail	$30.00	Linear Foot		$0.00
Concrete Curb	$50.00	Linear Foot	1900	$95,000.00
Bituminous Wedge Curb	$5.00	Linear Foot		$0.00
Concrete Island	$125.00	Square Yard		$0.00
Sidewalk	$110.00	Square Yard		$0.00
Shared Use Path	$50.00	Square Yard		$0.00
Structures				
Bridges	$200.00	Square Foot		$0.00
			Construction Subtotal:	$2,152,622.00
Mobilization	5.0%	Of Construction Subtotal		$107,631.10
Maintenance and Protection of Traffic	7.5%	Of Construction Subtotal		$161,446.65
Contigency	5.0%	Of Construction Total		$107,631.10
			Total Construction:	$2,529,330.85
Utility Relocation				
Utility Pole Relocation	$10,000.00	Each	10	$100,000.00
Fire Hydrant Relocation	$5,000.00	Each		$0.00
Underground Relocation	5.0%	Of Construction Subtotal		$107,631.10
			Total Utility Relocation:	$207,631.10
Right-of-Way				
Right-of-Way - (Commercial)	$250,000.00	Acres	1.5266	$381,650.00
Right-of-Way - (Residential)	$150,000.00	Acres		$0.00
Construction Easement (75% of ROW)	$187,500.00	Acres	1.145	$214,687.50
			Total Right-of-Way:	$596,337.50
Engineering	12.0%	Of Construction Total		$303,519.70
Construction Inspection	8.0%	Of Construction Total		$202,346.47
Administration and Planning	1.5%	Of Construction Total		$37,939.96
	Total Project Cost Range:		**$3,100,000 to $4,650,000**	

GREATER HERSHEY REGIONAL TRANSPORTATION STUDY
COST ESTIMATE WORKSHEET

Project Number	**I-31-L**
Intersection 31: SR 743 (Fishburn Rd) & Cocoa Ave	Widen Fishburn Road to provide a northbound right turn lane.

Description	Cost	Unit	Quantity	Total
Construction Items				
Traffic Signals				
New Signal (4-Way)	$300,000.00	Each		$0.00
New Signal (3-Way)	$260,000.00	Each		$0.00
Signal Modifications	$35,000.00	Each	1	$35,000.00
Pavement				
1.5" Pavement Overlay and Milling	$25.00	Square Yard	1049	$26,225.00
Arterials - Roadway	$120.00	Square Yard	711	$85,320.00
Arterials - Shoulders	$40.00	Square Yard		$0.00
Collector Roads	$90.00	Square Yard		$0.00
Local Roads	$60.00	Square Yard		$0.00
4" PVC Underdrain	$10.00	Linear Foot	370	$3,700.00
Excavation				
Excavation (Borrow)	$40.00	Cubic Yard		$0.00
Drainage				
Inlet/Manhole	$5,000.00	Each		$0.00
Pipe and Trenching	$110.00	Linear Foot		$0.00
Culvert	$660.00	Square Foot		$0.00
Additional Construction Costs Based on Pavement Area				
Pavement Marking/Signing	5.0%	Percentage of Pavement Cost		$5,762.25
Const. Surveying/Field Office, etc.	15.0%	Percentage of Pavement Cost		$17,286.75
Miscellaneous				
Guide Rail	$30.00	Linear Foot		$0.00
Concrete Curb	$50.00	Linear Foot	370	$18,500.00
Bituminous Wedge Curb	$5.00	Linear Foot		$0.00
Concrete Island	$125.00	Square Yard		$0.00
Sidewalk	$110.00	Square Yard		$0.00
Shared Use Path	$50.00	Square Yard		$0.00
Structures				
Bridges	$200.00	Square Foot		$0.00
			Construction Subtotal:	$191,794.00
Mobilization	5.0%	Of Construction Subtotal		$9,589.70
Maintenance and Protection of Traffic	7.5%	Of Construction Subtotal		$14,384.55
Contigency	5.0%	Of Construction Total		$9,589.70
			Total Construction:	$225,357.95
Utility Relocation				
Utility Pole Relocation	$40,000.00	Each	2	$80,000.00
Fire Hydrant Relocation	$5,000.00	Each		$0.00
Underground Relocation	5.0%	Of Construction Subtotal		$9,589.70
			Total Utility Relocation:	$89,589.70
Right-of-Way				
Right-of-Way - (Commercial)	$250,000.00	Acres		$0.00
Right-of-Way - (Residential)	$150,000.00	Acres		$0.00
Construction Easement (75% of ROW)	$187,500.00	Acres	0	$0.00
			Total Right-of-Way:	$0.00
Engineering	12.0%	Of Construction Total		$27,042.95
Construction Inspection	8.0%	Of Construction Total		$18,028.64
Administration and Planning	1.5%	Of Construction Total		$3,380.37
	Total Project Cost Range:		**$290,000 to $440,000**	

GREATER HERSHEY REGIONAL TRANSPORTATION STUDY
COST ESTIMATE WORKSHEET

Project Number	**I-33-L**
Intersection 33: Main St & Hanover St	Widen Hanover St two feet and remove the parking lane to provide an exclusive northbound right turn lane.

Description	Cost	Unit	Quantity	Total
Construction Items				
Traffic Signals				
New Signal (4-Way)	$300,000.00	Each		$0.00
New Signal (3-Way)	$260,000.00	Each		$0.00
Signal Modifications	$35,000.00	Each	1	$35,000.00
Pavement				
1.5" Pavement Overlay and Milling	$25.00	Square Yard	714	$17,850.00
Arterials - Roadway	$120.00	Square Yard	284	$34,080.00
Arterials - Shoulders	$40.00	Square Yard		$0.00
Collector Roads	$90.00	Square Yard		$0.00
Local Roads	$60.00	Square Yard		$0.00
4" PVC Underdrain	$10.00	Linear Foot	225	$2,250.00
Excavation				
Excavation (Borrow)	$40.00	Cubic Yard		$0.00
Drainage				
Inlet/Manhole	$5,000.00	Each	1	$5,000.00
Pipe and Trenching	$110.00	Linear Foot	225	$24,750.00
Culvert	$660.00	Square Foot		$0.00
Additional Construction Costs Based on Pavement Area				
Pavement Marking/Signing	5.0%	Percentage of Pavement Cost		$2,709.00
Const. Surveying/Field Office, etc.	15.0%	Percentage of Pavement Cost		$8,127.00
Miscellaneous				
Guide Rail	$30.00	Linear Foot		$0.00
Concrete Curb	$50.00	Linear Foot	225	$11,250.00
Bituminous Wedge Curb	$5.00	Linear Foot		$0.00
Concrete Island	$125.00	Square Yard		$0.00
Sidewalk	$110.00	Square Yard		$0.00
Shared Use Path	$50.00	Square Yard		$0.00
Structures				
Bridges	$200.00	Square Foot		$0.00
			Construction Subtotal:	$141,016.00
Mobilization	5.0%	Of Construction Subtotal		$7,050.80
Maintenance and Protection of Traffic	7.5%	Of Construction Subtotal		$10,576.20
Contigency	5.0%	Of Construction Total		$7,050.80
			Total Construction:	$165,693.80
Utility Relocation				
Utility Pole Relocation	$10,000.00	Each	2	$20,000.00
Fire Hydrant Relocation	$5,000.00	Each		$0.00
Underground Relocation	5.0%	Of Construction Subtotal		$7,050.80
			Total Utility Relocation:	$27,050.80
Right-of-Way				
Right-of-Way - (Commercial)	$250,000.00	Acres		$0.00
Right-of-Way - (Residential)	$150,000.00	Acres		$0.00
Construction Easement (75% of ROW)	$187,500.00	Acres	0	$0.00
			Total Right-of-Way:	$0.00
Engineering	12.0%	Of Construction Total		$19,883.26
Construction Inspection	8.0%	Of Construction Total		$13,255.50
Administration and Planning	1.5%	Of Construction Total		$2,485.41
	Total Project Cost Range:		**$180,000 to $270,000**	

GREATER HERSHEY REGIONAL TRANSPORTATION STUDY
COST ESTIMATE WORKSHEET

Project Number	**I-34-M**
Intersection 34: Main St & Quarry Rd	Install a traffic signal.

Description	Cost	Unit	Quantity	Total
Construction Items				
Traffic Signals				
New Signal (4-Way)	$300,000.00	Each	1	$300,000.00
New Signal (3-Way)	$260,000.00	Each		$0.00
Signal Modifications	$35,000.00	Each		$0.00
Pavement				
1.5" Pavement Overlay and Milling	$25.00	Square Yard		$0.00
Arterials - Roadway	$120.00	Square Yard		$0.00
Arterials - Shoulders	$40.00	Square Yard		$0.00
Collector Roads	$90.00	Square Yard		$0.00
Local Roads	$60.00	Square Yard		$0.00
4" PVC Underdrain	$10.00	Linear Foot		$0.00
Excavation				
Excavation (Borrow)	$40.00	Cubic Yard		$0.00
Drainage				
Inlet/Manhole	$5,000.00	Each		$0.00
Pipe and Trenching	$110.00	Linear Foot		$0.00
Culvert	$660.00	Square Foot		$0.00
Additional Construction Costs Based on Pavement Area				
Pavement Marking/Signing	5.0%	Percentage of Pavement Cost		$0.00
Const. Surveying/Field Office, etc.	15.0%	Percentage of Pavement Cost		$0.00
Miscellaneous				
Guide Rail	$30.00	Linear Foot		$0.00
Concrete Curb	$50.00	Linear Foot		$0.00
Bituminous Wedge Curb	$5.00	Linear Foot		$0.00
Concrete Island	$125.00	Square Yard		$0.00
Sidewalk	$110.00	Square Yard		$0.00
Shared Use Path	$50.00	Square Yard		$0.00
Structures				
Bridges	$200.00	Square Foot		$0.00
			Construction Subtotal:	$300,000.00
Mobilization	5.0%	Of Construction Subtotal		$15,000.00
Maintenance and Protection of Traffic	7.5%	Of Construction Subtotal		$22,500.00
Contigency	5.0%	Of Construction Total		$15,000.00
			Total Construction:	$352,500.00
Utility Relocation				
Utility Pole Relocation	$10,000.00	Each	2	$20,000.00
Fire Hydrant Relocation	$5,000.00	Each		$0.00
Underground Relocation	5.0%	Of Construction Subtotal		$15,000.00
			Total Utility Relocation:	$35,000.00
Right-of-Way				
Right-of-Way - (Commercial)	$250,000.00	Acres		$0.00
Right-of-Way - (Residential)	$150,000.00	Acres		$0.00
Construction Easement (75% of ROW)	$187,500.00	Acres	0	$0.00
			Total Right-of-Way:	$0.00
Engineering	12.0%	Of Construction Total		$42,300.00
Construction Inspection	8.0%	Of Construction Total		$28,200.00
Administration and Planning	1.5%	Of Construction Total		$5,287.50
	Total Project Cost Range:		**$370,000 to $560,000**	

GREATER HERSHEY REGIONAL TRANSPORTATION STUDY
COST ESTIMATE WORKSHEET

Project Number	**I-35-M-1**
Intersection 35: SR 2003 (Middletown Rd) & Proposed Connector Rd	Construct connector road to improve east-west flow from Middletown Road to Hershey Medical Center. Install a traffic signal. Construct a westbound left turn lane and a northbound right turn lane. Restripe the two-way left turn lane to provide a southbound left turn lane. Widen for additional NBT and SBT lanes additional through lanes.

Description	Cost	Unit	Quantity	Total
Construction Items				
Traffic Signals				
New Signal (4-Way)	$300,000.00	Each	1	$300,000.00
New Signal (3-Way)	$260,000.00	Each		$0.00
Signal Modifications	$35,000.00	Each		$0.00
Pavement				
1.5" Pavement Overlay and Milling	$25.00	Square Yard	1049	$26,225.00
Arterials - Roadway	$120.00	Square Yard	933	$111,960.00
Arterials - Shoulders	$40.00	Square Yard		$0.00
Collector Roads	$90.00	Square Yard	14222	$1,279,980.00
Local Roads	$60.00	Square Yard		$0.00
4" PVC Underdrain	$10.00	Linear Foot	2407	$24,070.00
Excavation				
Excavation (Borrow)	$40.00	Cubic Yard		$0.00
Drainage				
Inlet/Manhole	$5,000.00	Each	14	$70,000.00
Pipe and Trenching	$110.00	Linear Foot	2855	$314,050.00
Culvert	$660.00	Square Foot		$0.00
Additional Construction Costs Based on Pavement Area				
Pavement Marking/Signing	5.0%	Percentage of Pavement Cost		$72,111.75
Const. Surveying/Field Office, etc.	15.0%	Percentage of Pavement Cost		$216,335.25
Miscellaneous				
Guide Rail	$30.00	Linear Foot		$0.00
Concrete Curb	$50.00	Linear Foot		$0.00
Bituminous Wedge Curb	$5.00	Linear Foot		$0.00
Concrete Island	$125.00	Square Yard		$0.00
Sidewalk	$110.00	Square Yard		$0.00
Shared Use Path	$50.00	Square Yard		$0.00
Structures				
Bridges	$200.00	Square Foot		$0.00
			Construction Subtotal:	$2,414,732.00
Mobilization	5.0%	Of Construction Subtotal		$120,736.60
Maintenance and Protection of Traffic	7.5%	Of Construction Subtotal		$181,104.90
Contigency	5.0%	Of Construction Total		$120,736.60
			Total Construction:	$2,837,310.10
Utility Relocation				
Utility Pole Relocation	$10,000.00	Each	14	$140,000.00
Fire Hydrant Relocation	$5,000.00	Each		$0.00
Underground Relocation	5.0%	Of Construction Subtotal		$120,736.60
			Total Utility Relocation:	$260,736.60
Right-of-Way				
Right-of-Way - (Commercial)	$250,000.00	Acres		$0.00
Right-of-Way - (Residential)	$150,000.00	Acres	4.6	$690,000.00
Construction Easement (75% of ROW)	$112,500.00	Acres	3.45	$388,125.00
			Total Right-of-Way:	$1,078,125.00
Engineering	12.0%	Of Construction Total		$340,477.21
Construction Inspection	8.0%	Of Construction Total		$226,984.81
Administration and Planning	1.5%	Of Construction Total		$42,559.65
	Total Project Cost Range:		**$3,830,000 to $5,740,000**	

GREATER HERSHEY REGIONAL TRANSPORTATION STUDY
COST ESTIMATE WORKSHEET

Project Number	**I-35-M-2**
Intersection 35: SR 2003 (Middletown Rd) & Proposed Connector Rd	Widen Middletown Road to a Four lane section between the Route 322 EB Off Ramp and Gramercy Place. The second northbound through lane will terminate in the north at the NBR turn lane onto the Service Road. The widening to the south will terminate at the southbound right turn lane onto Deer Run until the rest of Middletown Road is widened toward S.R. 283.

Description	Cost	Unit	Quantity	Total
Construction Items				
Traffic Signals				
New Signal (4-Way)	$300,000.00	Each		$0.00
New Signal (3-Way)	$260,000.00	Each		$0.00
Signal Modifications	$35,000.00	Each	2	$70,000.00
Pavement				
1.5" Pavement Overlay and Milling	$25.00	Square Yard	1049	$26,225.00
Arterials - Roadway	$120.00	Square Yard	19522	$2,342,640.00
Arterials - Shoulders	$40.00	Square Yard		$0.00
Collector Roads	$90.00	Square Yard		$0.00
Local Roads	$60.00	Square Yard		$0.00
4" PVC Underdrain	$10.00	Linear Foot		$0.00
Excavation				
Excavation (Borrow)	$40.00	Cubic Yard		$0.00
Drainage				
Inlet/Manhole	$5,000.00	Each	25	$125,000.00
Pipe and Trenching	$110.00	Linear Foot	8821	$970,310.00
Culvert	$660.00	Square Foot		$0.00
Additional Construction Costs Based on Pavement Area				
Pavement Marking/Signing	5.0%	Percentage of Pavement Cost		$118,443.25
Const. Surveying/Field Office, etc.	15.0%	Percentage of Pavement Cost		$355,329.75
Miscellaneous				
Guide Rail	$30.00	Linear Foot		$0.00
Concrete Curb	$50.00	Linear Foot		$0.00
Bituminous Wedge Curb	$5.00	Linear Foot		$0.00
Concrete Island	$125.00	Square Yard	17	$2,125.00
Sidewalk	$110.00	Square Yard		$0.00
Shared Use Path	$50.00	Square Yard		$0.00
Structures				
Bridges	$200.00	Square Foot		$0.00
			Construction Subtotal:	$4,010,073.00
Mobilization	5.0%	Of Construction Subtotal		$200,503.65
Maintenance and Protection of Traffic	7.5%	Of Construction Subtotal		$300,755.48
Contigency	5.0%	Of Construction Total		$200,503.65
			Total Construction:	$4,711,835.78
Utility Relocation				
Utility Pole Relocation	$10,000.00	Each	14	$140,000.00
Fire Hydrant Relocation	$5,000.00	Each		$0.00
Underground Relocation	5.0%	Of Construction Subtotal		$200,503.65
			Total Utility Relocation:	$340,503.65
Right-of-Way				
Right-of-Way - (Commercial)	$250,000.00	Acres		$0.00
Right-of-Way - (Residential)	$150,000.00	Acres	2.1	$315,000.00
Construction Easement (75% of ROW)	$112,500.00	Acres	1.575	$177,187.50
			Total Right-of-Way:	$492,187.50
Engineering	12.0%	Of Construction Total		$565,420.29
Construction Inspection	8.0%	Of Construction Total		$376,946.86
Administration and Planning	1.5%	Of Construction Total		$70,677.54
	Total Project Cost Range:		**$5,250,000 to $7,870,000**	

GREATER HERSHEY REGIONAL TRANSPORTATION STUDY
COST ESTIMATE WORKSHEET

Project Number	**I-39-M-1**
Intersection 39: T-576 (Homestead Rd)/(Caracas Ave) and Proposed Java Ave	Reconfigure the intersection of Java Ave, Areba Ave, & Homestead Road such that Java Ave is not used to access Homestead Road. This can be accomplished by extending Caracas Ave to intersect with Homestead Road. Java Ave can be made a one-way roadway with traffic flowing toward Caracas Ave.

Description	Cost	Unit	Quantity	Total
Construction Items				
Traffic Signals				
New Signal (4-Way)	$300,000.00	Each		$0.00
New Signal (3-Way)	$260,000.00	Each		$0.00
Signal Modifications	$35,000.00	Each		$0.00
Pavement				
1.5" Pavement Overlay and Milling	$25.00	Square Yard	1524	$38,100.00
Arterials - Roadway	$120.00	Square Yard		$0.00
Arterials - Shoulders	$40.00	Square Yard		$0.00
Collector Roads	$90.00	Square Yard		$0.00
Local Roads	$60.00	Square Yard	1041	$62,460.00
4" PVC Underdrain	$10.00	Linear Foot		$0.00
Excavation				
Excavation (Borrow)	$40.00	Cubic Yard		$0.00
Drainage				
Inlet/Manhole	$5,000.00	Each		$0.00
Pipe and Trenching	$110.00	Linear Foot		$0.00
Culvert	$660.00	Square Foot		$0.00
Additional Construction Costs Based on Pavement Area				
Pavement Marking/Signing	5.0%	Percentage of Pavement Cost		$5,028.00
Const. Surveying/Field Office, etc.	15.0%	Percentage of Pavement Cost		$15,084.00
Miscellaneous				
Road Removal, Top Soil and Seeding	$75.00	Square Yard	994	$74,550.00
Concrete Curb	$50.00	Linear Foot	1180	$59,000.00
Bituminous Wedge Curb	$5.00	Linear Foot		$0.00
Concrete Island	$125.00	Square Yard		$0.00
Sidewalk	$110.00	Square Yard	89	$9,790.00
Shared Use Path	$50.00	Square Yard	621	$31,050.00
Structures				
Bridges	$200.00	Square Foot		$0.00
			Construction Subtotal:	$295,062.00
Mobilization	5.0%	Of Construction Subtotal		$14,753.10
Maintenance and Protection of Traffic	7.5%	Of Construction Subtotal		$22,129.65
Contigency	5.0%	Of Construction Total		$14,753.10
			Total Construction:	$346,697.85
Utility Relocation				
Utility Pole Relocation	$10,000.00	Each		$0.00
Vault Relocation	$50,000.00	Each	1	$50,000.00
Underground Relocation	5.0%	Of Construction Subtotal		$14,753.10
			Total Utility Relocation:	$64,753.10
Right-of-Way				
Right-of-Way - (Commercial)	$250,000.00	Acres		$0.00
Right-of-Way - (Residential)	$150,000.00	Acres		$0.00
Construction Easement (75% of ROW)	$187,500.00	Acres		$0.00
			Total Right-of-Way:	$0.00
Engineering	12.0%	Of Construction Total		$41,603.74
Construction Inspection	8.0%	Of Construction Total		$27,735.83
Administration and Planning	1.5%	Of Construction Total		$5,200.47
	Total Project Cost Range:		**$390,000 to $580,000**	

GREATER HERSHEY REGIONAL TRANSPORTATION STUDY
COST ESTIMATE WORKSHEET

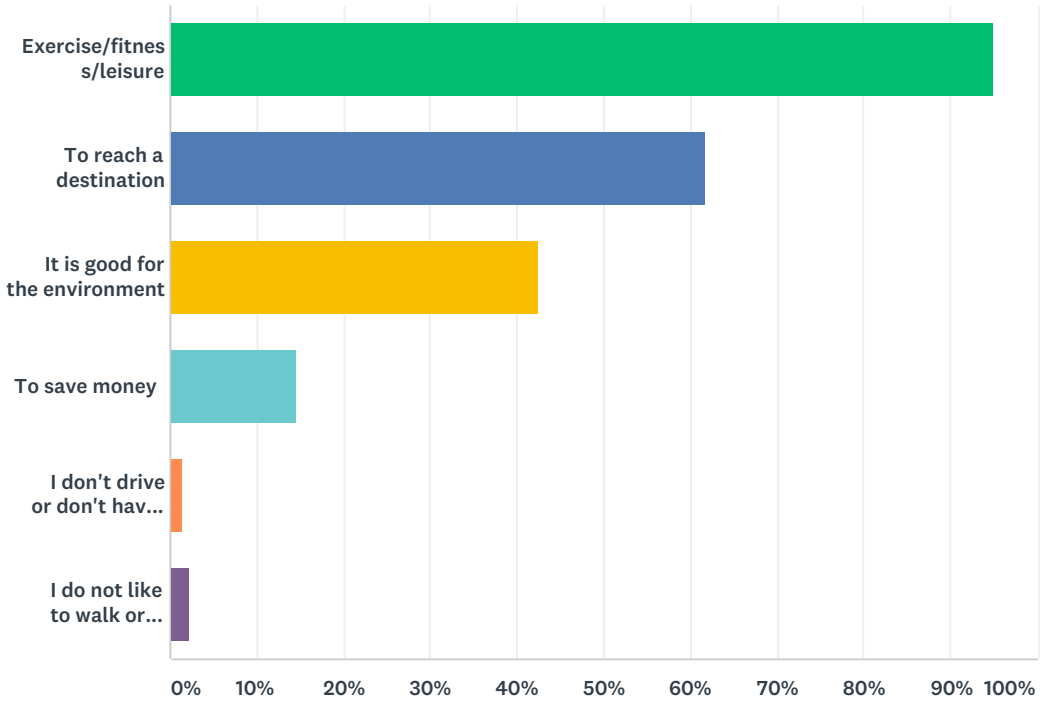
Project Number	**I-39-M-2**
Intersection 39: T-576 (Homestead Rd)/(Caracas Ave) and Proposed Java Ave	Reconfigure the intersection of Java Ave, Areba Ave, & Homestead Road such that Java Ave is not used to access Homestead Road. This can be accomplished by extending Caracas Ave to intersect with Homestead Road. Java Ave can be removed and replaced with green space, multi-use trail and add parking along Homestead Road.

Description	Cost	Unit	Quantity	Total
Construction Items				
Traffic Signals				
New Signal (4-Way)	$300,000.00	Each		$0.00
New Signal (3-Way)	$260,000.00	Each		$0.00
Signal Modifications	$35,000.00	Each		$0.00
Pavement				
1.5" Pavement Overlay and Milling	$25.00	Square Yard	269	$6,725.00
Arterials - Roadway	$120.00	Square Yard		$0.00
Arterials - Shoulders	$40.00	Square Yard		$0.00
Collector Roads	$90.00	Square Yard		$0.00
Local Roads	$60.00	Square Yard	1197	$71,820.00
4" PVC Underdrain	$10.00	Linear Foot		$0.00
Excavation				
Excavation (Borrow)	$40.00	Cubic Yard		$0.00
Drainage				
Inlet/Manhole	$5,000.00	Each		$0.00
Pipe and Trenching	$110.00	Linear Foot		$0.00
Culvert	$660.00	Square Foot		$0.00
Additional Construction Costs Based on Pavement Area				
Pavement Marking/Signing	5.0%	Percentage of Pavement Cost		$3,927.25
Const. Surveying/Field Office, etc.	15.0%	Percentage of Pavement Cost		$11,781.75
Miscellaneous				
Road Removal, Top Soil, Seeding Mixture	$75.00	Square Yard	2339	$175,425.00
Concrete Curb	$50.00	Linear Foot	820	$41,000.00
Bituminous Wedge Curb	$5.00	Linear Foot		$0.00
Concrete Island	$125.00	Square Yard		$0.00
Sidewalk	$110.00	Square Yard	271	$29,810.00
Shared Use Path	$50.00	Square Yard	606	$30,300.00
Structures				
Bridges	$200.00	Square Foot		$0.00
			Construction Subtotal:	$370,789.00
Mobilization	5.0%	Of Construction Subtotal		$18,539.45
Maintenance and Protection of Traffic	7.5%	Of Construction Subtotal		$27,809.18
Contigency	5.0%	Of Construction Total		$18,539.45
			Total Construction:	$435,677.08
Utility Relocation				
Utility Pole Relocation	$15,000.00	Each	3	$45,000.00
Vault Relocation	$50,000.00	Each	1	$50,000.00
Underground Relocation	5.0%	Of Construction Subtotal		$18,539.45
			Total Utility Relocation:	$113,539.45
Right-of-Way				
Right-of-Way - (Commercial)	$250,000.00	Acres		$0.00
Right-of-Way - (Residential)	$150,000.00	Acres		$0.00
Construction Easement (75% of ROW)	$187,500.00	Acres		$0.00
			Total Right-of-Way:	$0.00
Engineering	12.0%	Of Construction Total		$52,281.25
Construction Inspection	8.0%	Of Construction Total		$34,854.17
Administration and Planning	1.5%	Of Construction Total		$6,535.16
	Total Project Cost Range:		**$510,000 to $770,000**	

APPENDIX P
DERRY TOWNSHIP BIKE AND PEDESTRIAN ALLIANCE SURVEY RESULTS

Q1 Select all of the reasons that you choose to walk or bicycle.

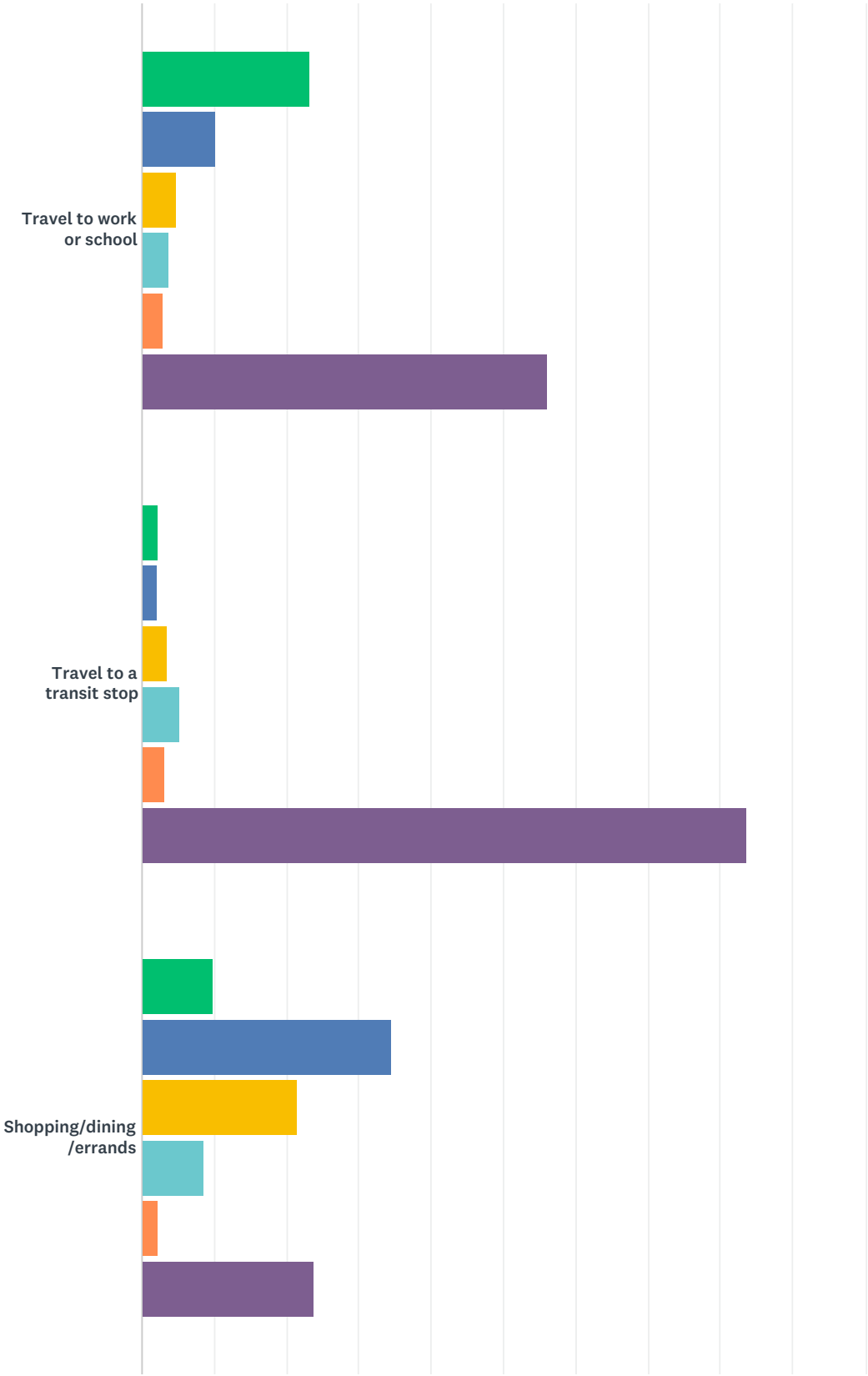
Answered: 452 Skipped: 0

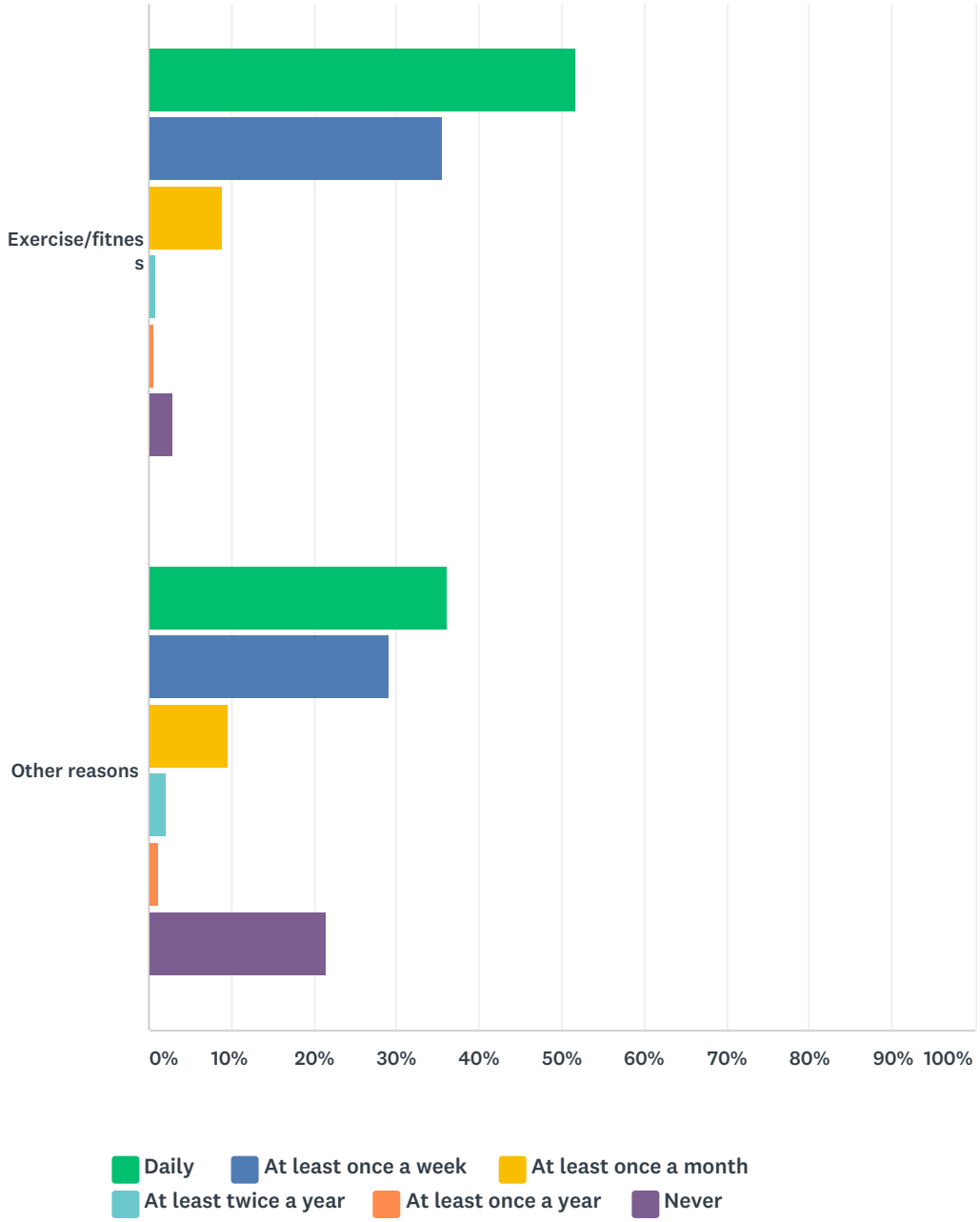


ANSWER CHOICES	RESPONSES	
Exercise/fitness/leisure	94.91%	429
To reach a destination	61.73%	279
It is good for the environment	42.48%	192
To save money	14.60%	66
I don't drive or don't have access to a personal vehicle	1.55%	7
I do not like to walk or bicycle	2.21%	10
Total Respondents: 452		

Q2 On average, how frequently do you WALK outside for the following reasons?

Answered: 452 Skipped: 0

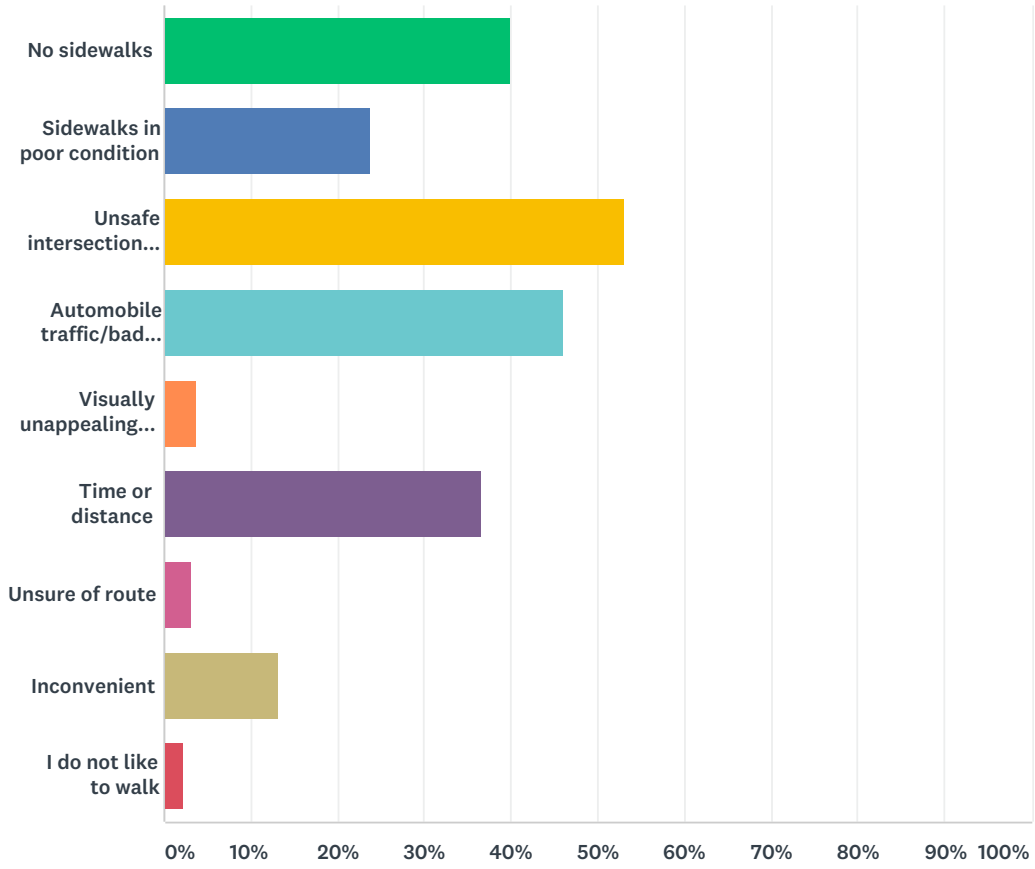




	DAILY	AT LEAST ONCE A WEEK	AT LEAST ONCE A MONTH	AT LEAST TWICE A YEAR	AT LEAST ONCE A YEAR	NEVER	TOTAL RESPONDENTS
Travel to work or school	23.23% 82	10.20% 36	4.82% 17	3.68% 13	2.83% 10	56.09% 198	353
Travel to a transit stop	2.33% 8	2.04% 7	3.50% 12	5.25% 18	3.21% 11	83.67% 287	343
Shopping/dining/errands	9.77% 38	34.45% 134	21.59% 84	8.48% 33	2.31% 9	23.91% 93	389
Exercise/fitness	51.70% 228	35.60% 157	9.07% 40	0.91% 4	0.68% 3	2.95% 13	441
Other reasons	36.29% 86	29.11% 69	9.70% 23	2.11% 5	1.27% 3	21.52% 51	237

Q3 Select all of the reasons that you do not WALK more frequently

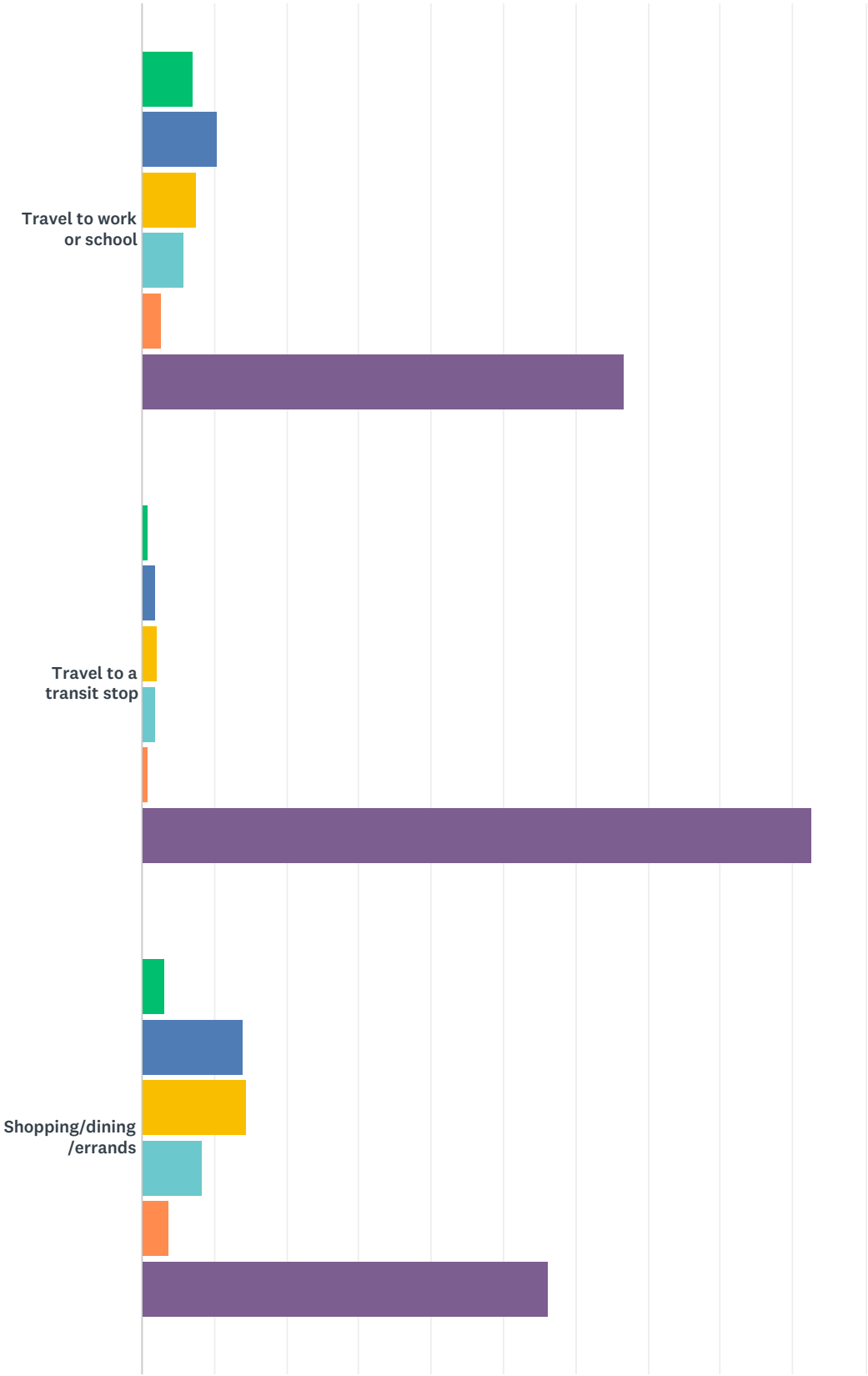
Answered: 423 Skipped: 29

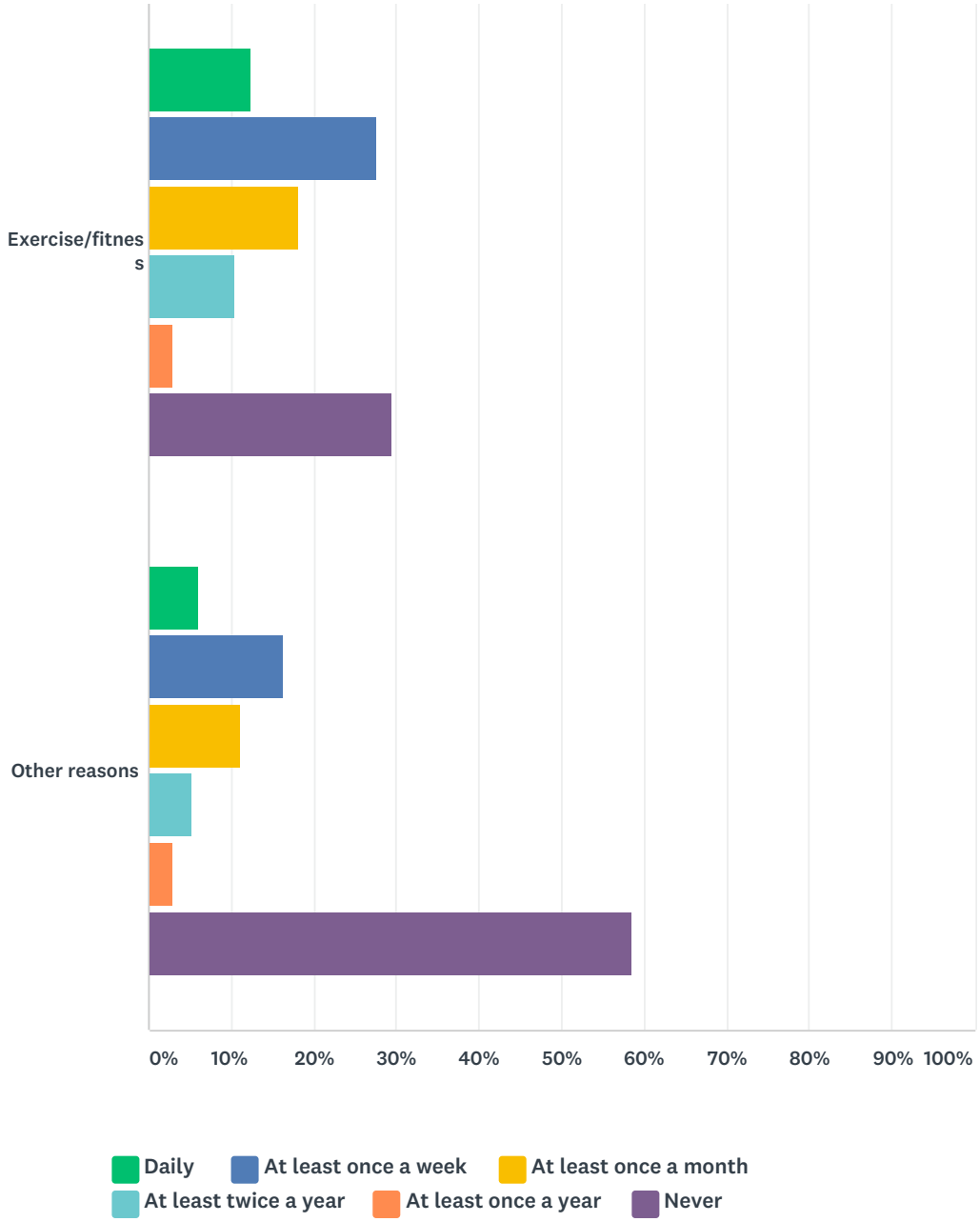


ANSWER CHOICES	RESPONSES	
No sidewalks	39.95%	169
Sidewalks in poor condition	23.88%	101
Unsafe intersections/crossings	53.19%	225
Automobile traffic/bad driver behaviors	46.10%	195
Visually unappealing surroundings	3.78%	16
Time or distance	36.64%	155
Unsure of route	3.07%	13
Inconvenient	13.24%	56
I do not like to walk	2.36%	10
Total Respondents: 423		

Q4 On average, how frequently do you BICYCLE outside for the following reasons?

Answered: 446 Skipped: 6

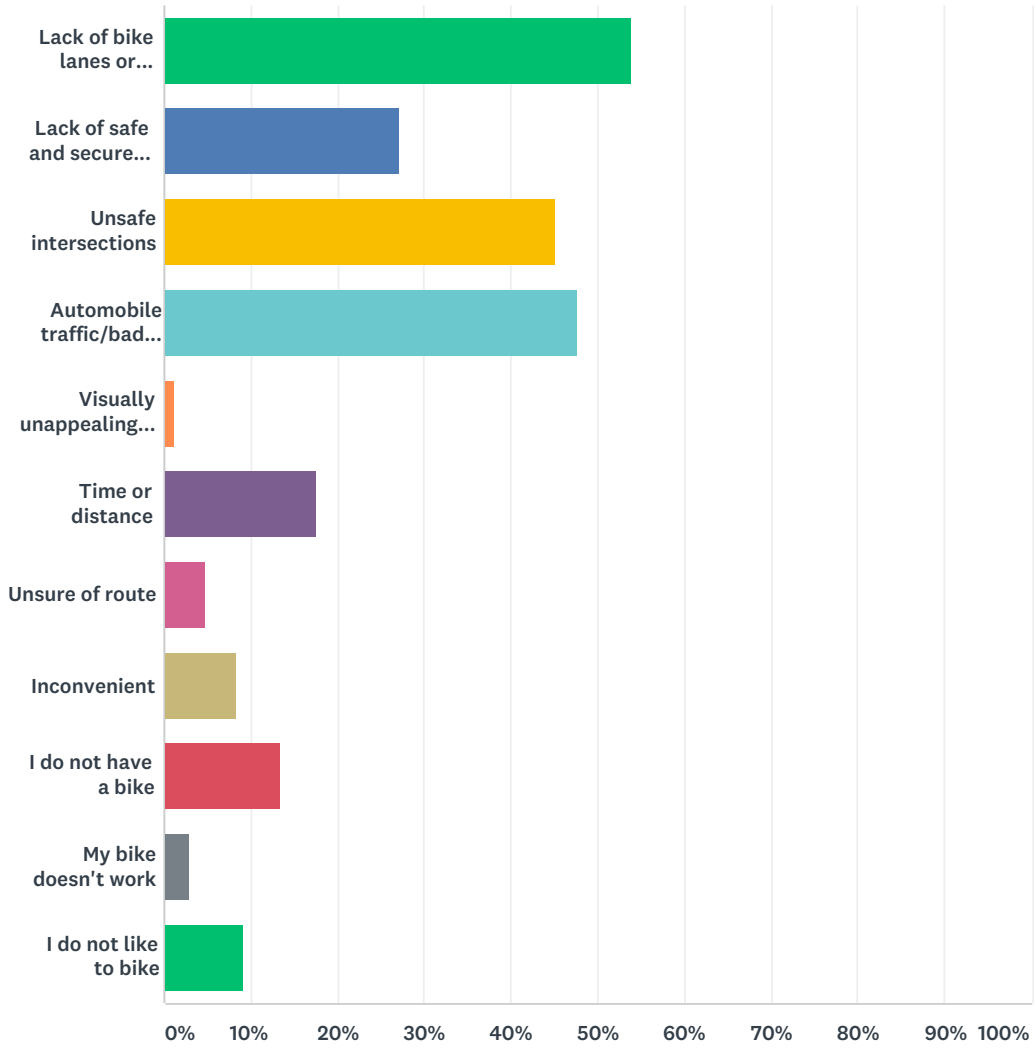




	DAILY	AT LEAST ONCE A WEEK	AT LEAST ONCE A MONTH	AT LEAST TWICE A YEAR	AT LEAST ONCE A YEAR	NEVER	TOTAL RESPONDENTS
Travel to work or school	7.07% 27	10.47% 40	7.59% 29	5.76% 22	2.62% 10	66.75% 255	382
Travel to a transit stop	0.81% 3	1.88% 7	2.15% 8	1.88% 7	0.81% 3	92.74% 345	372
Shopping/dining/errands	3.05% 12	13.99% 55	14.50% 57	8.40% 33	3.82% 15	56.23% 221	393
Exercise/fitness	12.33% 54	27.63% 121	18.26% 80	10.50% 46	2.97% 13	29.45% 129	438
Other reasons	6.15% 15	16.39% 40	11.07% 27	5.33% 13	2.87% 7	58.61% 143	244

Q5 Select all of the reasons that you do not BICYCLE more frequently

Answered: 444 Skipped: 8

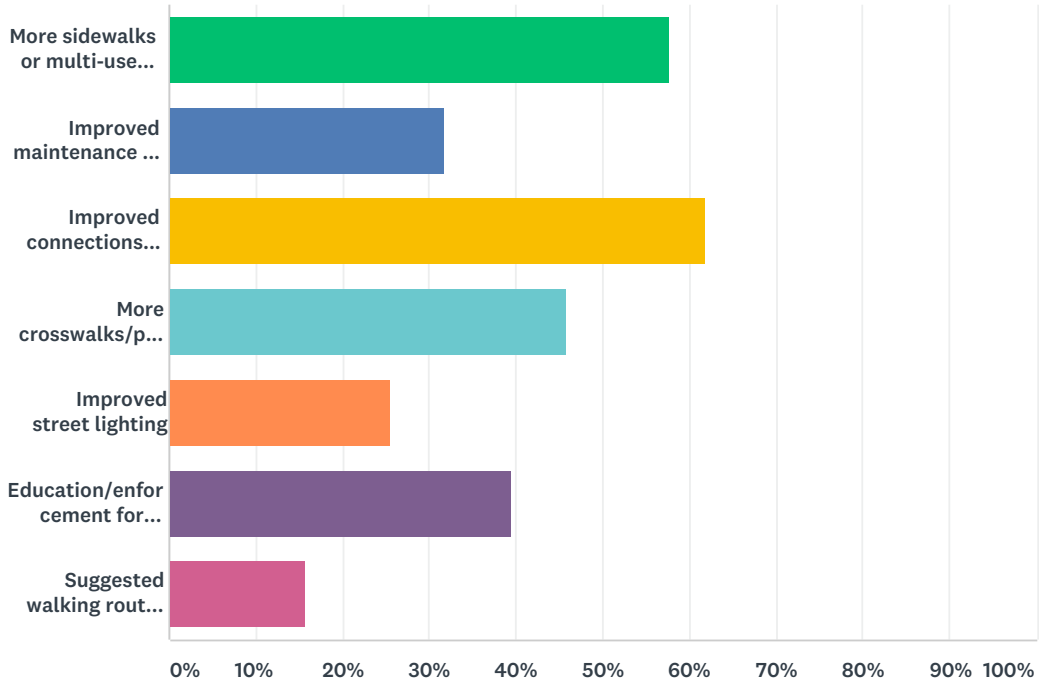


ANSWER CHOICES	RESPONSES	
Lack of bike lanes or sufficient shoulders	54.05%	240
Lack of safe and secure bicycle parking	27.25%	121
Unsafe intersections	45.27%	201
Automobile traffic/bad driver behaviors	47.75%	212
Visually unappealing surroundings	1.35%	6
Time or distance	17.57%	78
Unsure of route	4.73%	21
Inconvenient	8.33%	37
I do not have a bike	13.29%	59
My bike doesn't work	2.93%	13

I do not like to bike	9.23%	41
Total Respondents: 444		

Q6 Which of the following improvements are most important to supporting pedestrian mobility in Derry Township and the greater Hershey region? (Select your top three)

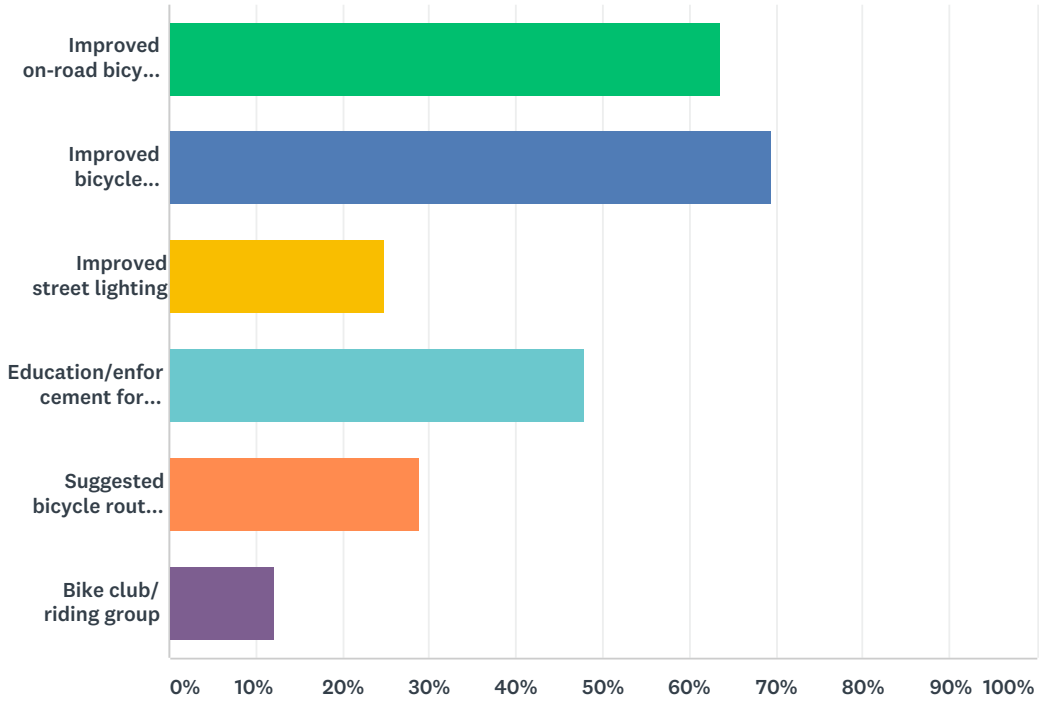
Answered: 447 Skipped: 5



ANSWER CHOICES	RESPONSES	
More sidewalks or multi-use paths	57.72%	258
Improved maintenance of sidewalks	31.77%	142
Improved connections between neighborhoods and destinations	61.97%	277
More crosswalks/pedestrian crossings at intersections	45.86%	205
Improved street lighting	25.50%	114
Education/enforcement for motorists, pedestrians, and bicyclists	39.60%	177
Suggested walking route map	15.66%	70
Total Respondents: 447		

Q7 Which of the following improvements are most important to supporting bicycle mobility in Derry Township and the greater Hershey region? (Select your top three)

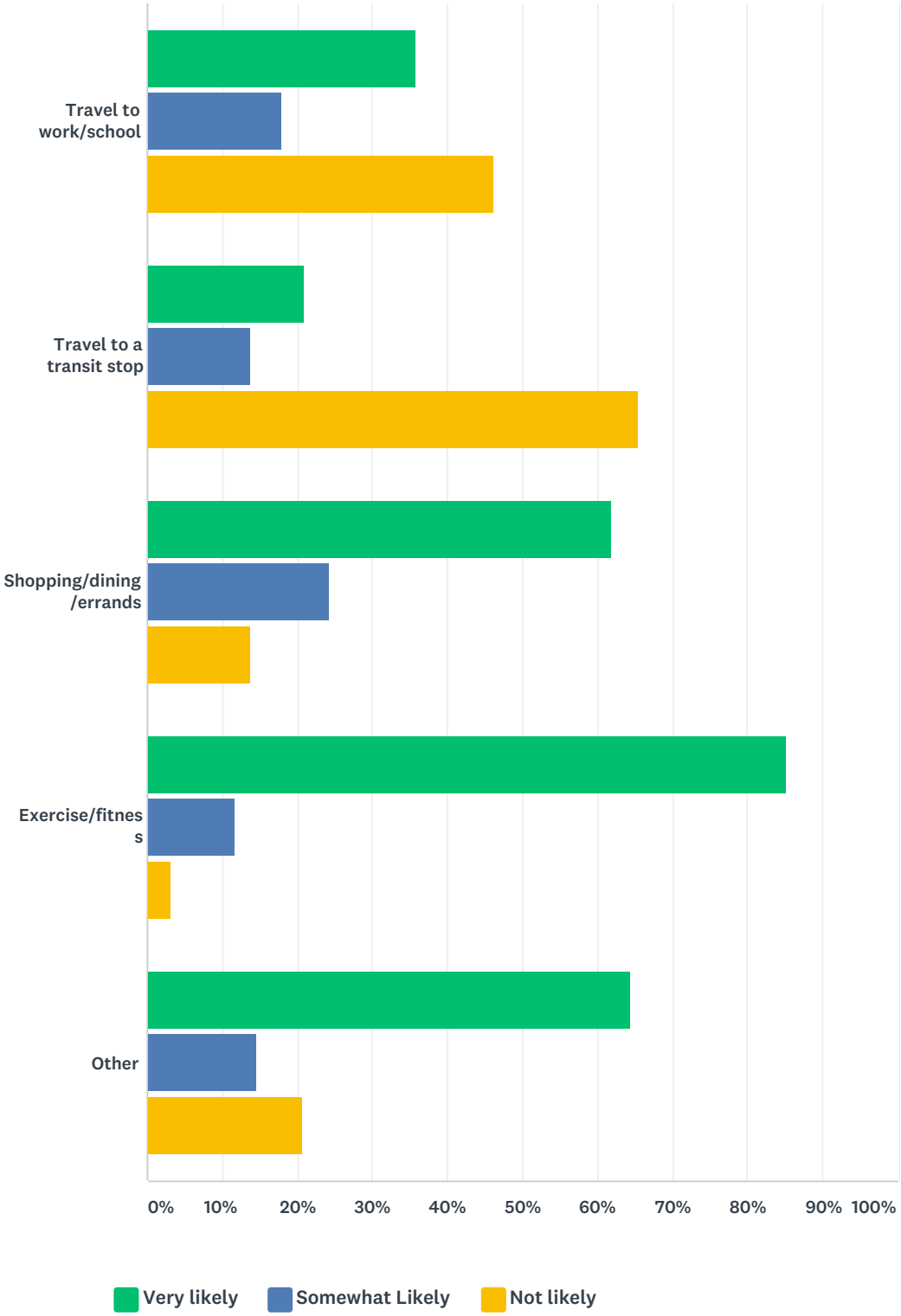
Answered: 432 Skipped: 20



ANSWER CHOICES	RESPONSES	
Improved on-road bicycle infrastructure	63.66%	275
Improved bicycle connections between neighborhoods and destinations	69.44%	300
Improved street lighting	25.00%	108
Education/enforcement for motorists, pedestrians, and bicyclists	47.92%	207
Suggested bicycle route map	28.94%	125
Bike club/ riding group	12.04%	52
Total Respondents: 432		

Q8 If it were safe and convenient, how likely would you be to walk for the following reasons?

Answered: 448 Skipped: 4

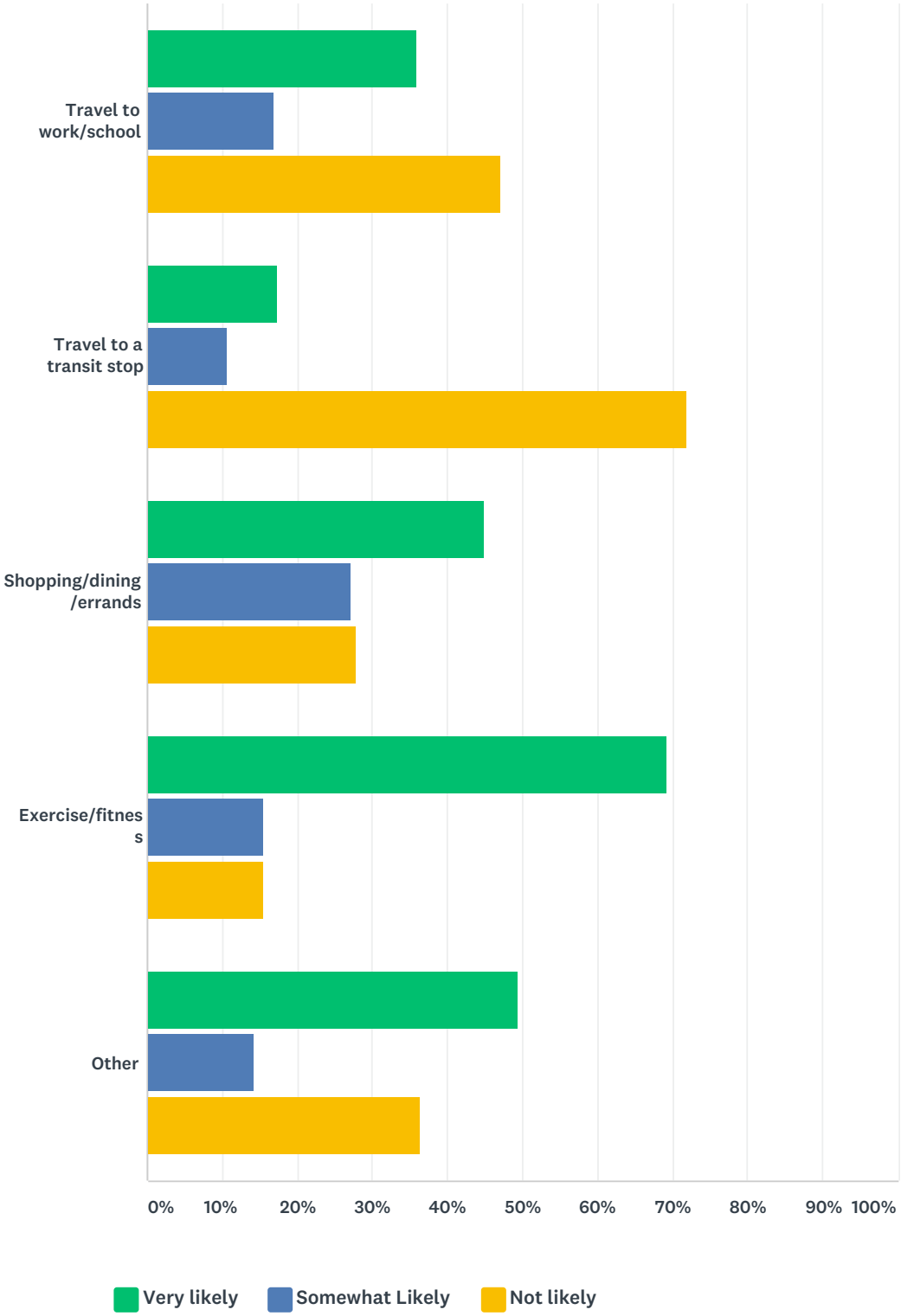


	VERY LIKELY	SOMEWHAT LIKELY	NOT LIKELY	TOTAL

Travel to work/school	35.86% 142	17.93% 71	46.21% 183	396
Travel to a transit stop	20.84% 79	13.72% 52	65.44% 248	379
Shopping/dining/errands	61.97% 264	24.18% 103	13.85% 59	426
Exercise/fitness	85.16% 373	11.64% 51	3.20% 14	438
Other	64.47% 127	14.72% 29	20.81% 41	197

Q9 If it were safe and convenient, how likely would you be to bicycle for the following reasons?

Answered: 436 Skipped: 16

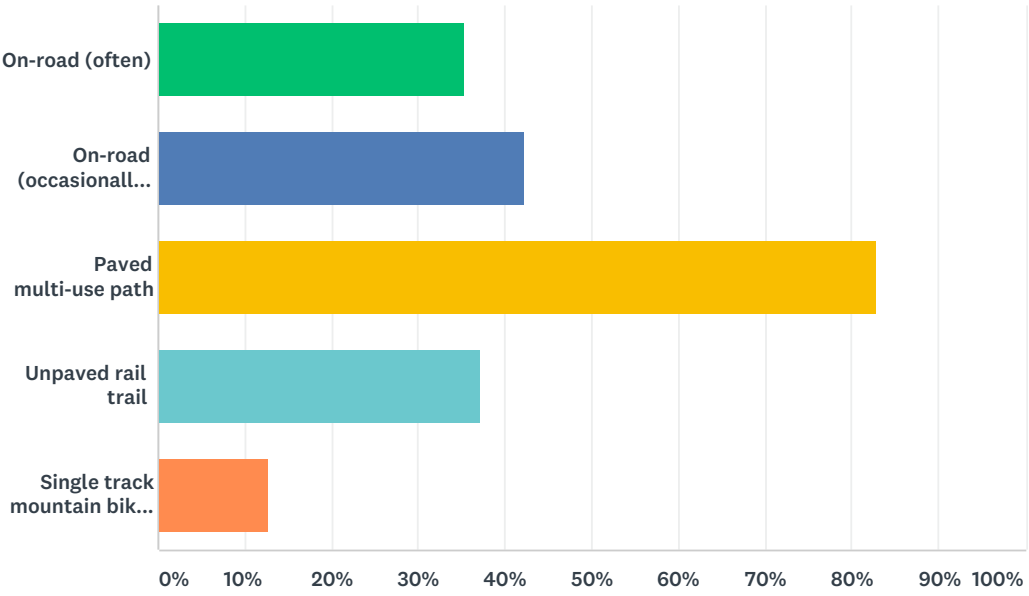


	VERY LIKELY	SOMEWHAT LIKELY	NOT LIKELY	TOTAL

Travel to work/school	35.95% 142	16.96% 67	47.09% 186	395
Travel to a transit stop	17.28% 66	10.73% 41	71.99% 275	382
Shopping/dining/errands	44.90% 185	27.18% 112	27.91% 115	412
Exercise/fitness	69.16% 296	15.42% 66	15.42% 66	428
Other	49.29% 104	14.22% 30	36.49% 77	211

Q10 If you bicycle, where do you ride? (Select all that apply)

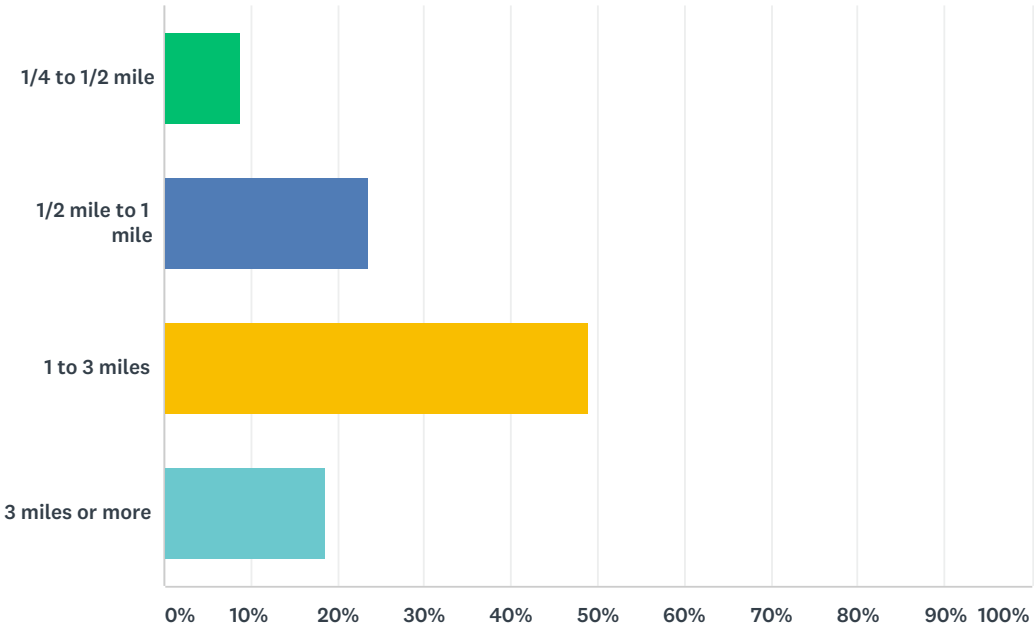
Answered: 367 Skipped: 85



ANSWER CHOICES	RESPONSES	
On-road (often)	35.42%	130
On-road (occasionally/limited)	42.23%	155
Paved multi-use path	82.83%	304
Unpaved rail trail	37.33%	137
Single track mountain bike trails	12.81%	47
Total Respondents: 367		

Q11 On average, how far do you travel on a walking trip?

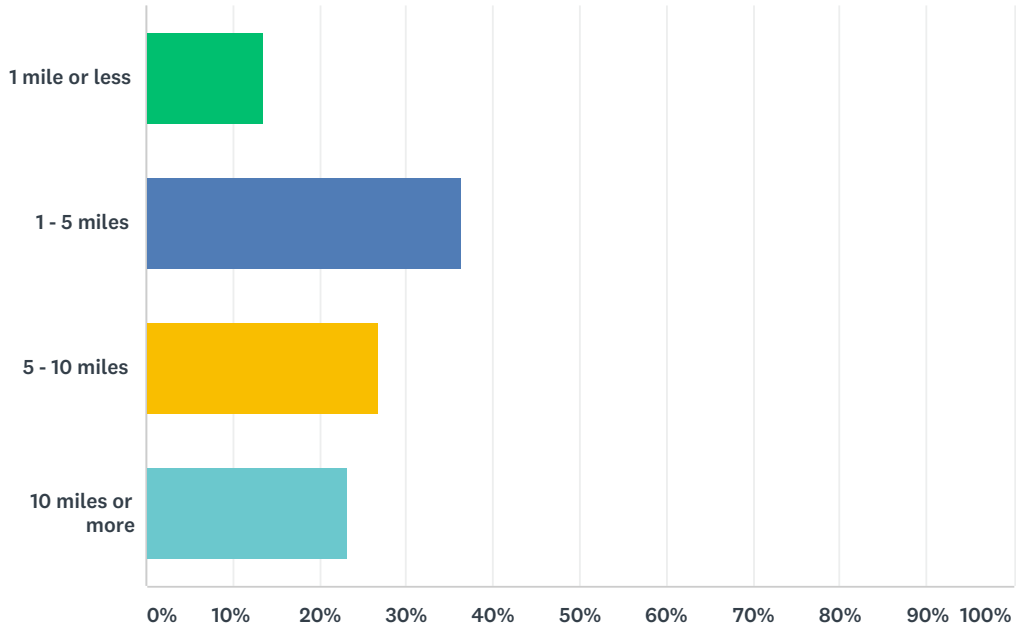
Answered: 441 Skipped: 11



ANSWER CHOICES	RESPONSES	
1/4 to 1/2 mile	8.84%	39
1/2 mile to 1 mile	23.58%	104
1 to 3 miles	48.98%	216
3 miles or more	18.59%	82
TOTAL		441

Q12 On average, how far do you travel on a bicycling trip?

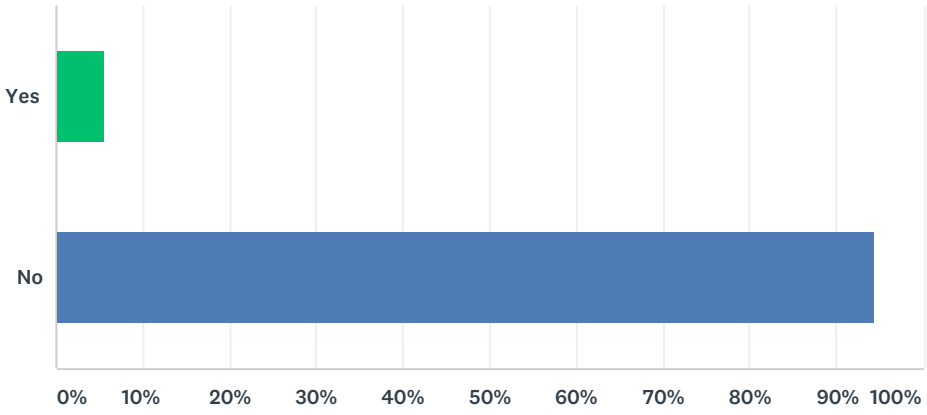
Answered: 370 Skipped: 82



ANSWER CHOICES	RESPONSES	
1 mile or less	13.51%	50
1 - 5 miles	36.49%	135
5 - 10 miles	26.76%	99
10 miles or more	23.24%	86
TOTAL		370

Q13 Have you used a Zagster bike-share bike in the past year?

Answered: 440 Skipped: 12



ANSWER CHOICES	RESPONSES	
Yes	5.68%	25
No	94.32%	415
TOTAL		440

Q14 Please enter up to five streets and/or intersections you would like to see become more PEDESTRIAN friendly. Please feel free to describe in detail your desired improvement at each location.

Answered: 338 Skipped: 114

ANSWER CHOICES	RESPONSES	
Priority 1	100.00%	338
Priority 2	74.26%	251
Priority 3	50.30%	170
Priority 4	36.98%	125
Priority 5	23.67%	80

Q15 Please enter up to five locations where you feel sidewalk maintenance or vegetation management is negatively impacting PEDESTRIAN mobility. Please feel free to describe your concerns or stated issue.

Answered: 209 Skipped: 243

ANSWER CHOICES	RESPONSES	
Priority 1	100.00%	209
Priority 2	41.63%	87
Priority 3	17.70%	37
Priority 4	10.53%	22
Priority 5	7.66%	16

Q16 Please enter up to five streets and/or intersections you would like to see become more BICYCLE friendly. Please feel free to describe in detail your desired improvement at each location.

Answered: 250 Skipped: 202

ANSWER CHOICES	RESPONSES	
Priority 1	100.00%	250
Priority 2	58.00%	145
Priority 3	34.80%	87
Priority 4	23.60%	59
Priority 5	15.20%	38

Q17 What municipality do you live in?

Answered: 407 Skipped: 45

Q18 What is your home zip code?

Answered: 429 Skipped: 23

Q19 What neighborhood do you live in?

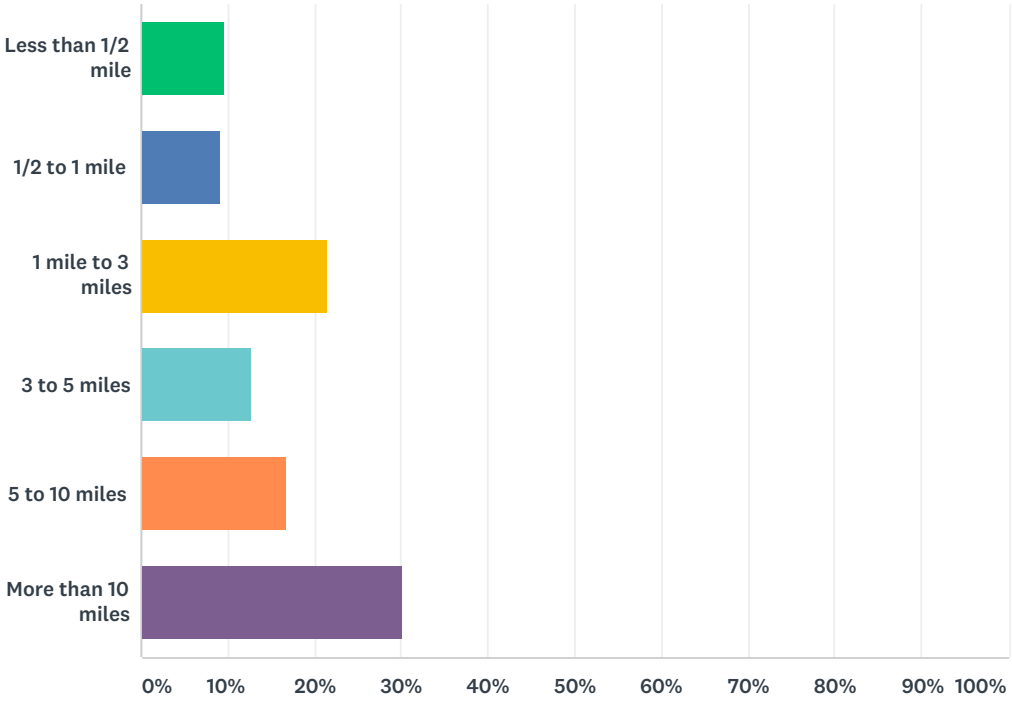
Answered: 388 Skipped: 64

Q20 If you are interested in staying up to date with Derry Township Bike and Pedestrian Alliance information, please provide your email address here.

Answered: 233 Skipped: 219

Q21 If you are employed or are a student, how far do you live from your primary job/school?

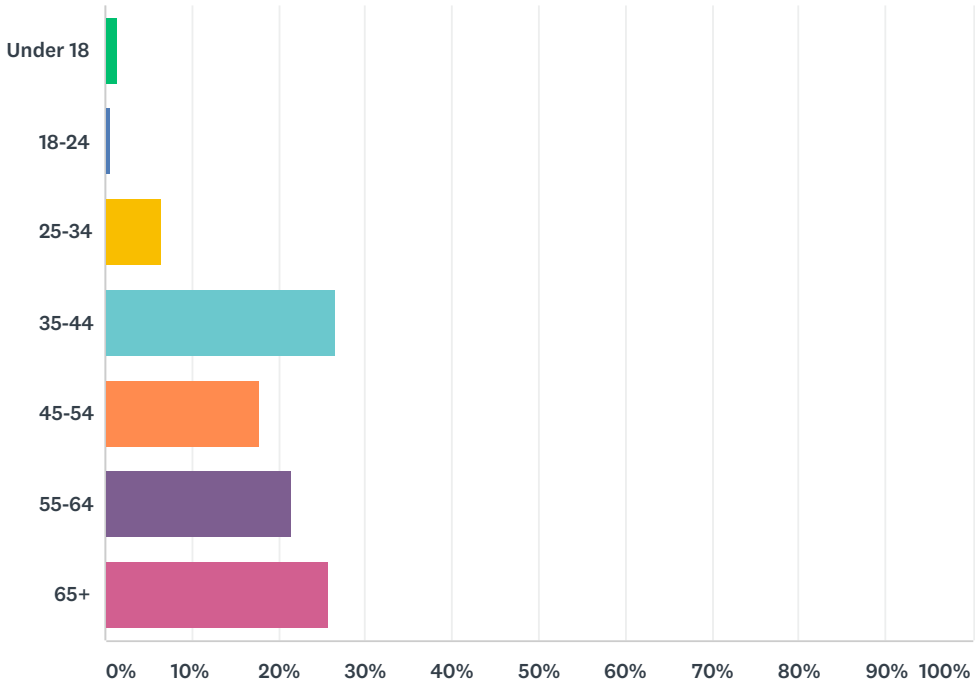
Answered: 292 Skipped: 160



ANSWER CHOICES	RESPONSES	
Less than 1/2 mile	9.59%	28
1/2 to 1 mile	9.25%	27
1 mile to 3 miles	21.58%	63
3 to 5 miles	12.67%	37
5 to 10 miles	16.78%	49
More than 10 miles	30.14%	88
TOTAL		292

Q22 What is your age range?

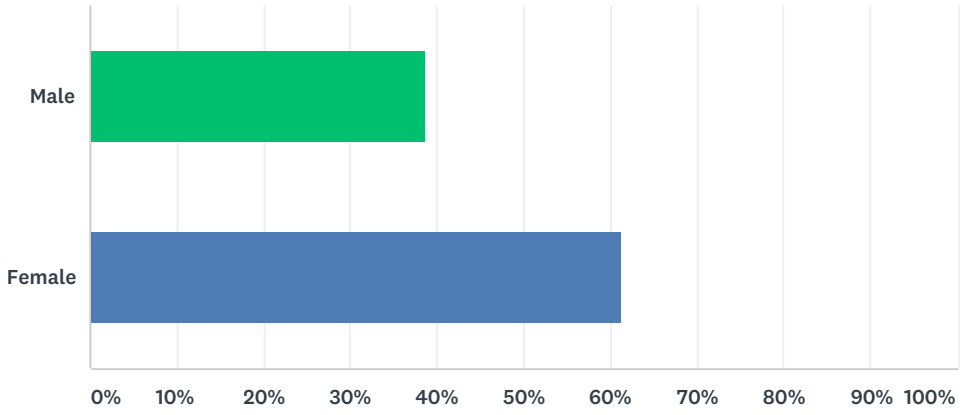
Answered: 433 Skipped: 19



ANSWER CHOICES	RESPONSES	
Under 18	1.39%	6
18-24	0.69%	3
25-34	6.47%	28
35-44	26.56%	115
45-54	17.78%	77
55-64	21.48%	93
65+	25.64%	111
TOTAL		433

Q23 What is your gender?

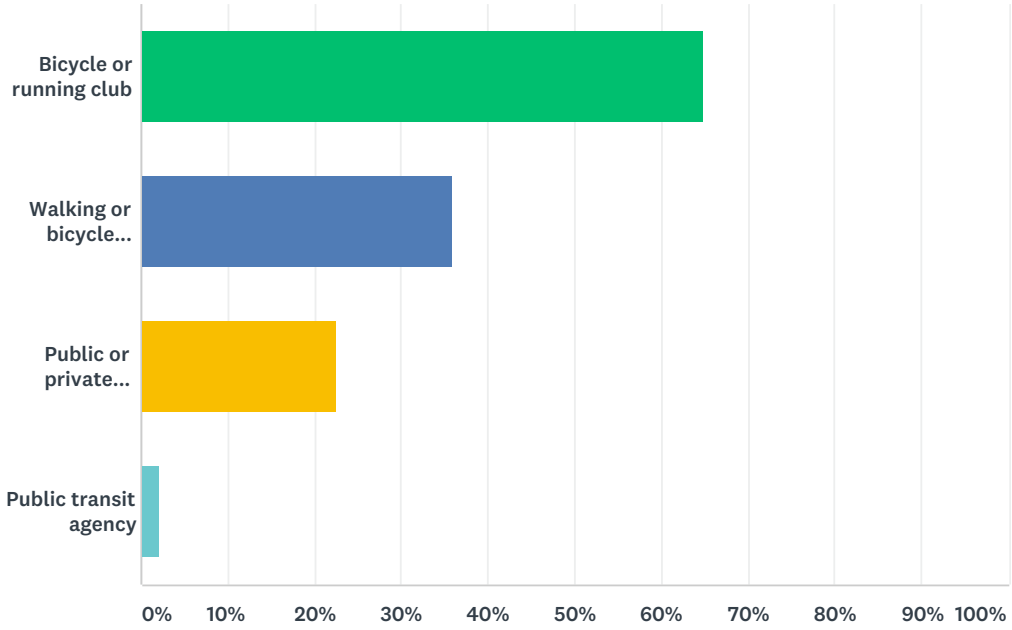
Answered: 432 Skipped: 20



ANSWER CHOICES	RESPONSES	
Male	38.66%	167
Female	61.34%	265
TOTAL		432

Q24 Do you or a member of your household participate in any of the following? (Select all that apply.)

Answered: 97 Skipped: 355



ANSWER CHOICES	RESPONSES	
Bicycle or running club	64.95%	63
Walking or bicycle advocacy group	36.08%	35
Public or private planning or engineering department, agency, firm, or commission	22.68%	22
Public transit agency	2.06%	2
Total Respondents: 97		

Q25 Is there anything else you would like to share with us regarding bicycle and pedestrian mobility in and around Derry Township and the greater Hershey area?

Answered: 177 Skipped: 275

APPENDIX Q
PUBLIC COMMENT

Township of Derry
600 Clearwater Road
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www.derrytownship.org

Administration
Community Development
Parks and Recreation
Police
Public Works
Hershey Public Library

December 1, 2020

The following statement shall be included in the public comment section of the Greater Hershey Transportation Study (GHTS) published in December 2020 and will be included as an attachment to the official township minutes for the board of supervisor's meeting held on November 24, 2020:

Since the first draft of the Greater Hershey Transportation Study was shared with the full board of supervisors in August 2020, board members and residents have raised significant concerns about the recommended solutions contained in the study. We do not question the locations studied in the analysis, but we do object to the solutions set forth in the study as "recommendations", rather than "options" or "actions for consideration". As an example, we specifically challenge the recommendations to widen Rt. 322 (Governor Rd.) and Middletown Rd. Widening those roads at the designated locations would only serve to create bottlenecks of traffic further down these roads. Without meaningful attempts to reduce the day to day traffic on these roads thru the use of recognized demand-side traffic reduction strategies, these recommendations would be costly, provide only short term relief and do nothing to address the environmental and public health impacts associated with traffic congestion. These solutions might be options for consideration, but without further demand side analysis, they should not be considered recommendations.

We believe the use of the word "recommendation" elevates this study into the realm of a "plan". This is unacceptable to board members because we do not believe this plan reflects the will of the community to retain our small town charm, as expressed over many years and thru our most recent process to update the township's Comprehensive Plan. It is our responsibility to protect and carefully manage our downtown, our green space, our open space, and our neighborhoods (including the Governor and Middletown road corridors). Traffic mitigation measures which threaten the vision for our community need to be vetted very carefully and with significant public input.

We support smart and sustainable growth. We understand that smart growth will require some of the traffic mitigation efforts identified in this plan. We do not, however, support the widening of roads through our neighborhoods or creating new access roads through farmland merely so motorists can speed through Derry Township.

We are concerned that future boards might use this study to defend the implementation of traffic mitigation measures that would change the small-town charm our residents' desire. We

acknowledge that none of the recommendations contained in this study could be pursued without considerable and additional public hearings, permitting, and funding. However, it is important that we make our concerns about this study very public and very clear.

We cannot accept the study's proposed solutions as recommendations without first having identified the causes of the increased traffic and exploring possible traffic reduction solutions. Although not required for every recommended solution, the larger proposed projects would benefit from a more in-depth demand-side analysis. Such an analysis would give the board and the community a clearer picture of the challenges and the appropriate solutions. It is regrettable that the scope of this project did not require such an analysis. We do not fault the engineering firm for our disappointment in this study. They have professionally fulfilled their obligations to the township in this matter.

Our concerns expressed in this statement are supported by the many residents who offered public comment during this process and whose comments are included in the study. We are grateful for their efforts to inform the board of their concerns.

Respectfully submitted,

E. Christopher Abruzzo, Chairman

Natalie Nutt, Vice Chairman

Carter Wyckoff, Treasurer

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December 01, 2020

Please include the following statement in the addendum of the final Greater Hershey Regional Transportation Study.

The Greater Hershey Regional Transportation Study (GHRTS) is a high-level, long-range planning study and as such, none of the suggested projects contained in the study could ever move forward in the future without further analysis, engineering, design, and permitting.

The GHRTS is designed to help Derry Township and the major stakeholders that most impact traffic to make plans now to improve traffic and avoid needing to make some of the suggestions made in the study. The study should help stakeholders look at transportation holistically and make demand-side improvements in the short-term that can help avoid long-term supply side strategies. In other words, what can businesses do together to improve mass transportation, increase work-from-home options, and seek out off-site parking/shuttle options to reduce the need for drastic road changes that would alter the character of our Township?

It is only through advance planning by all stakeholders, and continued involvement of the public, that we can address traffic issues in the Township and make plans to avoid unwanted road widening and additional roads, as an example.

The suggestions in this plan should be viewed as options and not as recommendations. Many of the options outlined in this study are not solutions any of us would ever want to see in our community. Thanks to our very involved community members, approximately 130 comments from the public helped shape the final draft of this report. It is my hope that the options outlined in this study will help the Township and businesses identify trouble spots and work to find solutions in an organized, coordinated, systematic way.

The Hershey area will continue to experience growth and development in the coming years that will clearly impact our transportation infrastructure. It is my hope that the GHRTS serves as a wake-up call that all area businesses (in particular our major employers - The Hershey Company, Penn State Health, and Hershey Entertainment & Resorts) work within their organizations and together with the Township to identify solutions to facilitate better traffic flow, reduce traffic when possible, and help maintain the small-town feel that attracts people to live, work and play in our community.

Susan Cort

Derry Township Supervisor

2015-2021

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December 01, 2020

Dear Chairman Abruzzo:

Thanks for the opportunity to enjoin with the rest of the Supervisors in providing comment to the GHTS however, I must respectfully decline to do so. Let me first state that, as a member of the Steering Committee group that assembled this document, I am satisfied with the conclusions/ concepts enshrined in the GHTS that were made through rigorous statistical analysis of contemporary and historical traffic data in addition to a significant number of anecdotal comments made by the members of the committee...I feel that the goals of the committee were attained ("The study will identify necessary transportation improvements in the greater Hershey area to accommodate the projected long-range plans, with consideration to additional development anticipated based on historic development trends and existing zoning. The overall planning effort will help to facilitate the implementation of identified improvements in a coordinated, systematic manner."). I take issue with any party that may insinuate that there was anything pernicious in the assembly of the GHTS.

My preference for the future of our town is to retain a small-town feel and follow a "smart" construction philosophy. Derry Township continues to grow and prosper, for good or ill, we are a tourist town and the economic driver for the entire county that, in normal times, draws hundreds of thousands of visitors every year...we need a means of moving them through the community safely with overarching consideration to the health and safety of our populace by mitigating exhaust and noise pollution in addition to the traffic congestion we all complain about. I agree that finding additional ways to mitigate the issue of traffic is important and that HE&R along with the MSHMC and Trust should be major contributors to finding resolutions to the issues we will face in the coming years...pressure should be exerted on them to assist, not just verbally but financially as well.

In consideration to your proposed statement concerning "demand-side analysis", the concepts enshrined within the GHTS will require a specific course of events to even initiate a plan to proceed which would include a "demand-side analysis" I feel that the mention of this term in conjunction with your disagreement with the premise of the bulk of the report is somewhat of a "red-herring". The GHTS is a "concept" of what may be needed given a specific set of circumstances in a future that is distant(I could almost agree with you if we were looking at a static future, but as we've seen it is anything but)...since the GHTS is a concept for some future resolution of statistically analyzed traffic issues and the future being dynamic a demand-side

analysis would be one of a number of actions needed to not only initiate any of the projects withing this document but to assuage the township and its residents, as a whole, that the concept, now a plan, has been adequately vetted by all the parties involved and is needed to mitigate a certain specific predicament....at the time of its consideration and not at present.

As always, I respect the opinion you have proposed but disagree with certain points and tenor. Please include a copy of this email with your submission to the addenda of the GHTS.

Richard D. Zmuda
Derry Township Supervisor
600 Clearwater Rd.
Hershey, PA 17033

PUBLIC COMMENTS

6/19/20
By chance, because I receive a copy of the Derry Township Newsletter, I discovered the Greater Hershey Area Transportation Study and in skimming through, I noted that LVBC comments are in Q. This was most fascinating as no one has been in touch with the Coalition while working on this significant study.

The Q record is very incomplete as the initial concern from LVBC came about with the Park Boulevard work and how bicyclists are expected to travel.

5 additional concerns/recommendations are attached; each is a different concern. I think that some of them are being addressed.

It was quite tragic in regard to the Park Boulevard project realignment where the multi use path was constructed as now there is no shoulder for cyclists who use the road. And the extreme danger remains between Hersheypark Drive intersection and continuing onto Park.

Certainly, with time, some issues may have been improved and some of our nonprofessional suggestions proven to be out of date or simply not correct.
We are pleased that with our input the design of the roundabouts on SR 322 were significantly modified to enable bicyclists and pedestrians to travel through/around.

It would be most helpful if a meeting could be convened to "go over" the recommendations for improving bicycling conditions in the study area. Another advocacy group which monitors the Hershey area is Bicycle South Central Pa. I've copied Jim Buckheit who bikes many of these roads frequently. There is so much included in this Study that a presentation would be very helpful.

6/23/20
Good afternoon,

I was looking over the proposed plans for Middletown road near South Point. Are you able to share any information on how the noise will be handled for homeowners along the road. My family and I currently own a home with the back of our year against Middletown road. The noice is not great as is, so imagining a 5 lane road is a cause for concern. I would appreciate anything details you can provide.

We are located between Turkey Hill and Sheetz, I believe Zone 4 on the drawings.

Thank you for your time.

6/25/20

These are quite ambitious improvements! I hope these improvements relieve some of the congestion. However, I would love to see the integration of more multi-use and biking trails as I firmly believe removing people from the road will ultimately reduce traffic more than anything else.. I currently reside in the Borough of Hummelstown and have considered biking, running, or walking to Hershey or Bullfrog Valley. There are no passably easy ways to get to Hershey or Bullfrog as a pedestrian and I think having clearly defined 'lanes' (sidewalks, trails, and/or striped bike lanes) would be hugely beneficial to all residents.

The attached KMZ offers three routes:

1. The most ambitious and greatest potential: connect the borough to the Eshenauer trail system and the residential community to the south of 322 via a rail to trail conversion of the exempt/un-used railroad which would cross over or under 322.
2. A designated trail for pedestrians to cross the interchange of Hanover/Middletown road and 322.
3. A designated trail for pedestrians to cross the interchange of Quarry/Waltonville road and 322.

Thank you for your consideration, and if you or your team have any questions I would be happy to entertain them.

6/26/20

I saw you are taking comments on the Greater Hershey Regional Transportation Plan. I looked through the plans and had a few thoughts based on my experience every day. I live in Deer Run and travel RT 322 to Lebanon and back every day.

1. Hanover Street at 322 EB Off Ramp, Middletown Rd and Service Rd should have a left turn late onto Service Rd.
2. Rerouting 422 and building the multi-level interchange at 322/422/39 is a great idea. A new interchange there will greatly help traffic flow, especially during events at the Hershey Entertainment Complex.
3. Traffic gets really backed up at Bullfrog Valley Rd and Wood Rd during rush hour since the all way stop was installed. Maybe the new connector rd will eliminate some of that traffic, but just a point to consider.
4. Bullfrog Valley Rd at 322 should have improved sight distance for right turns onto 322 or make the right turn a "No turn on red"
5. Great idea to remove Java Ave and extend Caracas to Homestead. The intersection with Java, Areba and Homestead is very awkward now.
6. There should be a dedicated right turn lane from RT 322 onto Centerview Dr. During rush hour, half of all cars turn right into the Med. Center. Even with 2 through lanes (one being also a right turn) you will get awkward back ups in the right lane from turning vehicles that could cause accidents. It should have a dedicated right turn lane, in my opinion.

6/29/20
How is widening Middletown Road and installing sidewalks going to affect my property located at [redacted] Middletown Road, on the corner of Middletown Road and Echo Street?????

6/30/20
Hello Chuck and Lauren,

When we biked the Hershey area recently, we biked through the underpass on Ridge and turned left on Park. We were reminded that there is no shoulder on Park and then when we continued onto the intersection with Hersheypark Drive, we had to cross travel lanes to reach the shoulder. There were NO motor vehicles when we were on Park; this will end very soon.

When this project was undertaken, LVBC sought to explain why an off road path for pedestrians and bicyclists would not suffice.

Were bicyclists expected to come from the underpass and use the path? Pedestrians and bicyclists traveling in both directions. And, the path stops where bicyclists would have to dismount and then cross over to the Road to continue north.

I do not find Park included in the study for bicyclist travel. However, it is challenging for me to use the computer screen and read every detail. Maybe I missed something.

Certainly, in the Q Appendix, our analysis of the Park Road project should be included.

322/Governor Road: We pointed out to Roy Gothie and prior to Roy the bike ped person at 8-0 about the lack of shoulder on 322 immediately after the intersection with 743. It is an upgrade. Bicyclists turn right from 743 onto 322 going east and there is no place to go but the travel lane. If luckily, there is no vehicle stopped in the left turn lane, there is space for motorists to pass bicyclists. Usually, there are vehicles in the left turn lane. Years ago when there was major construction underway to address flooding/drainage, the curb was removed. We tried to get the attention of Penn DOT and the Township to adjust the curb when replacing it, but we received no responses. This risky section for a very short distance is not noted in the Study unless I'm not reading it well.

Will you arrange for a bike ped meeting or a bicyclist meeting to go over the Study or should we try HRG or TCRPC or ?

I've asked for the 3 maps to be available in a way that I can print them. Maybe you can provide hard copies for me at a larger more readable size.

It was rather disconcerting to find two LVBC documents in Q but no one had ever from HRG contacted us. See email below.

7/1/20
Good day HRG and Derry Township Staff

As I review on behalf of LVBC the Greater Hershey Area Transportation Study, I do not find a reference to the Dauphin County Bicycle Transportation Map which was undertaken for planning purposes.
The link to the map is at
https://www.penndot.gov/TravelInPA/RideaBike/Pages/Bicycle-Planning-and-Design.aspx.
I can also send the PDF directly.

It was critical to include generators/destinations as well as conditions of the roads and improvements needed on the Map.

Attached is the list also found on the Map that was required by Penn DOT Central Office. The rationale for the listed problem areas is attached. You will find several located in the study area. Considerable effort was made to compile this list by consulting many people who bike extensively in various areas of the County.

Also attached is the document used to meet with Mr. Brandon, Derry Township.

LVBC has tried for many years to advocate for safer bicycling conditions in the Hershey area as bicyclists need to travel to and from and through whether starting in Lebanon County or Dauphin County.
Many bike fundraiser rides start in Hershey but they travel many miles in Lebanon County for the tour routes.

7/3/2020
What traffic on 322??? Ever since they fixed the light at the intersection of 322 and Hockersville Road, the traffic has significantly decreased! Why change something that is already working? Oh wait...money.

7/4/2020
Dear Derry Township Board of Supervisors:

I regret that I will not be able to attend the July 28 Supervisor's meeting so I am sending my comments and concerns to you directly about the Greater Hershey Regional Transportation Study. I am also sending these comments to Alyx Gallagher at HRG.

As I see it, there are at least three overarching conceptual and procedural problems before you get to any specific problems with details. The three are:

1. The study does not in any way consider mitigating climate change as part of the plan. Its focus is on individual cars and with them their emissions that will increase all the problems related to climate change. I recommend the report be reworked to consider how transportation development in the township can mitigate climate change.
2. The study is not current or up to date in that, due to COVID-19 changes, it's anticipated that a large number of workers will continue to work from home rather than commute to work. Rush hour car travel may diminish rather than increase, as this study assumes. I recommend that no action be taken on this plan for at least a year to see exactly how road travel changes and then rework the study to address those changes.
3. The study refers to it covering "multimodal" transportation. However, it turns out that the only three modes are by car travel, bicycling and walking. While it's great to build bike lanes and make more pedestrian friendly intersections, there is no mention of developing rail, increasing local bus routes, creating park and ride centers or any other method of using public transportation to address transportation development. In that sense this study is at least incomplete if not extremely short sighted and lacking in vision. I recommend that no action be taken on this study until it is reworked with a vision of utilizing public transportation systems to the township's advantage.

Additionally, because many of the grants promoted to fund the roadwork planned in this study require matching local funds, implementing these plans will not be a cheap enterprise. I didn't

see and would like to be told what the estimated total cost would likely be to the local taxpayers to implement the changes proposed in the study.

From a planning perspective I am floored at the ease with which the study is willing to tear apart neighborhoods and erode our community for the sake of drivers who want to get through town faster. For example, residential homes compose the entire area along both sides of West Governor Road between Cocoa Avenue and Elm Avenue; it is part of the Hershey Village that the study claims to protect. Up until now, that has been respected and the plan was to develop Fishburn Road into a commercial area with traffic to be encouraged south along Fishburn from Governor Road to Route 743. Now, however, the planners want to strip all of those families along Governor Road of their homes, break apart that neighborhood and destroy part of the Village in the name of protecting it by widening Governor Road and turning that section into a five-lane highway.

Were other ideas explored? For example, turning Hershey Park Drive jointly into Rt 422 and Rt 322 to get all of the traffic flow around Hershey instead of through it? Then Route 322 could be channeled off onto one expanded, developed route to reconnect with the continuation of the highway in Campbelltown? All of the construction along Rt 322 in Hershey could be scaled back and not cost so much either in money or to people's lives and homes.

The important work needs to be addressing the three overarching problems I noted above. When those three areas have been addressed, it may well be that the amount taxpayers would be paying would be reduced and neighborhoods may not need to be torn apart. A reworked study based on the considerations I point out would likely save taxpayers and residents money and aggravation by eliminating unnecessary road construction. And, overall, it should help make the Hershey regional area more livable and a healthier, happier community.

Thus, I reiterate, please defer any action on this study for at least a year, address all of the three overarching problems I raise and then rework the study as needed before it's presented again to the community for comment.

7/9/2020
After immediate response - I would really appreciate if you would forward my entire message to the project manager. And please could you also give me their name and title so I know who to expect to be hearing from please.

I am looking at the on-line GREATER HERSHEY REGIONAL TRANSPORTATION STUDY and I see you are on the Steering Committee.

This is my house (see ATTACHMENT). Why am I only hearing about this for the first time today and from a neighbor?

I have questions and I want to talk to someone about this plan and map tomorrow Friday 07-08-2020, BEFORE THE WEEKEND.

I do know that the plan will be formally presented at the upcoming 07-28-2020 Board of Supervisors meeting; I will be there.

7/10/2020
Your plan has many strengths.

Here are some important thoughts which I hope will lead to additions to your plans.

1) The neighborhood immediately to the south of the Hershey Medical Center is isolated and not tied into your various improvements.

SUGGEST ADDITIONS TO YOUR CURRENT PLAN

New sidewalk (or bike/sidewalk) on Sunnyside

New sidewalk (or bike/sidewalk) on Hillchurch and then down Sandhill to tie into trail on the south side of the med center property

The Hershey Med Center owns the large tract of land behind it (to the south) Build an offroad bike connection to tie into the terrific and highly used trail on Bullfrog Valley that traverses that large field behind the med center. What a great idea for a growing area while the land is available

TRAFFIC is bad and getting worse. PennDOT states that their number one preferred solution for upgrades to roads is the building of new traffic circles. Traffic circles move more cars, are safer for pedestrian traffic and calm traffic. What's not to like?

SUGGEST your plan include new traffic circles at some of the already failing intersections as well as at those nearly capacity where significant new development is on your plan. Add traffic circles at:

1. Intersection of LIngle Ave and Hersheypark Dr
2. Fishburn and Sandhill
3. Wood and Middletown
4. the service road and Waltonville Rd

I look forward to your response

7/11/2020

To Derrytownship Supervisors & Alyx Gallagher, HRG:

Just a few years back, the Township was considering "smart growth" ideas, but now all these forward-looking, leaner (for taxpayers) and greener notions of reducing individual car trips appear to have been set aside.

In this study, "multi-modal" is mentioned, but there are no ideas put forward about utilizing the CAT systems or creating local based "jitney" or more People Mover type transport to assist elders in getting around town on errands.

The unexpected advent of COVID-19 has had an impact on this study. More commuters will be able to work from home permanently, because this method now has a track record with employers. This will impact traffic volume.

The biggest worry for me is the problem of induced traffic caused by the widening of residential roads. When we bought our house, there was an alley behind it. Some time ago, it was widened and now the Township calls it a "road." Where we'd had the occasional neighbor pass in order to reach their parking, we now experience through traffic entering from the cross street at speed. There is more noise and odors more urban than suburban. Kids used to play back there, but no more.

Rushing to adopt an already out of date plan and spending taxpayer money on widening roads -- and leaving us with new reoccurring obligations of upkeep--does not seem like the wisest course of action when we have other costly projects already underway.

This study should be tabled until next year after new numbers on traffic volume become available.

7/12/2020
Good day,

Dave Buffington's article in the SUN caught my attention as I had not noted the optimal collector routes and Palmyra Road and S Lingle Avenue being used.

This is not "neighborly" for our two Villages, and I'll be using my other hat as a Campbelltown Community Alliance member in a separate communication.

Meanwhile, I've attached 2014 documents/news article about the bicycling conditions of S Lingle then and they have only gotten worse.
The Lebanon County Bicycle Transportation Map shows this road as a critically important bicycle road for commuters and shoppers as well as enabling persons to bike to and from their neighborhoods that connect to S Lingle.
This includes Derry township's portion of Rockledge. The only way out of this development is on S Lingle.

7/13/2020
I am a resident at [redacted] West Governor Road in Hershey. I wanted to see if I could get some clarification to your map exhibit @ Intersection 26?
With regards to the ROW, is the existing southside ROW staying the same?
What is the existing ROW dimension?
Looking at the proposed ROW increase it appears it will all take place on the north side of Governors Road? Is this correct?
On the southside of Governors Road you show a jog after the Brownstone to accommodate the two 11 foot lanes and the 5 foot bike lane. With the new sidewalk going in how much does this get pushed towards the southside ROW in relation to the existing sidewalk?
Is it anticipated then that the powerpoles along this southside of Governor Road will need to be relocated? About how much further to the southside will they go or is it anticipated to go from overhead to underground service?
Will the new sidewalk on the southside extend all the way down to Cocoa Ave? Currently some portions of this area do not have sidewalk.
Are you aware of any discussions of Eminent Domain and/or purchasing of additional ROW for this project? I know residents along the northside of Governors Road are very concerned about losing their properties or being forced to sell.
Thank you for your time and any answers you can provide.

7/13/2020
Please see the two attached files for our comments in regards to proposed traffic improvements in the area as reported in The Sun, in particular the improvements proposed in the Campbelltown area of South Londonderry Township. Thanks very much.

[FROM ATTACHMENT:]

> The leadership at Brownstone Real Estate Company would like to comment on the proposed local road changes published in The Sun on June 25. In particular, we would like to discuss one of the bullet points in that article that states "Rerouting event traffic coming from the southeast on Route 322 onto Palmyra Road and Lingle Avenue". Our development company has developed over 1,000 homes and their improvements in the Campbelltown area of South Londonderry Township over the past 25 years. We are extremely familiar with the area's road system as well as the history of road improvement approvals in South Londonderry Township. We believe we can provide some insight that will assist you in the decision making process in the future.

To provide a future plan to alleviate the strain of east-west traffic on route 322 through the heart of Campbelltown, South Londonderry Township had a proposed east-west bypass on their comprehensive plan since 1987, located to the north of route 322. Our development company purchased the first of two farms in this area in 1995. We eventually owned land reaching from Forge Road to Lingle Avenue. This gave us the opportunity to work with the township to provide the east-west bypass they desired. We entered into a public-private partnership with South Londonderry Township to build the Campbelltown Connector Road in 2008. This road, now called Northside Drive, is just over a mile long and goes from the traffic circle at Forge Road (route 117) to a signalized intersection at Palmyra Road and continues on to Lingle Avenue.

In addition to building the Northside Drive by-pass to help eliminate the traffic congestion in Campbelltown and make the by-pass more accessible and easier to use, we did the following:

1. Improved and widened the traffic light at Forge Road – Route 322.
2. Built a traffic circle at the Forge Road – Northside Drive connection.
3. Installed a traffic light at Northside Drive – Palmyra Road.

At the time, the Campbelltown Connector project received the approval and financial support of our two U.S. Senators (Santorum and Spector) and our U.S. Congressman (Holden). One of the major stated purposes of the Northside Drive bypass was to lessen Hersheypark and Hershey events traffic coming from the Turnpike and the southeast that had previously traveled through Campbelltown and Hershey on route 322. The intention was to have event traffic coming from the southeast turn right on Forge Road (117) and proceed to the traffic circle where it would make a left onto Northside Drive and continue 1 mile to make a right on Lingle Avenue. Lingle Avenue would take this traffic to Hersheypark Drive.

This by-pass around Campbelltown is ready for this purpose right now. The installation of signage, directing Hersheypark and events traffic in this area would be advantageous. To direct traffic through Campbelltown to the traffic light at Palmyra Road and 322, as was stated in The Sun article, would increase traffic through the heart of Campbelltown and effectively by-pass the constructed by-pass. In our opinion this would be a mistake and it would not use Northside Drive as was intended, nor would it be the most efficient use of the current road system that was built at great expense.

If you have any questions for us or would like to review plans and specifications, engineering, geological and environmental studies, or past project costs, please let us know. Mackin Engineering and GTS Technologies performed much of this work. Thanks for your consideration to this matter.

7/16/2020

The Greater Hershey Transportation Study appears to cover a great number of current problem areas and should relieve many existing problems. But the emphasis everywhere is on widening paved intersections and roadways to allow and encourage even more carbon-emitting-gas vehicles with little to no discussion of promoting a greener form of mass transit which would take advantage of the efficiency and cost savings of existing and future technologies. The study wisely includes pedestrian and bike paths (and that is fantastic) but only mentions a possible expansion of bus transportation. Even at that, CAT should be incentivized to change current busses for electric ones.

High speed, light rail, electric options should have been included in the plan as it is past time when we must reduce our carbon footprint – not increase it. Derry Township had the foresight to install solar panels at the township building a number of years ago. That plan had vision and has worked well. We need to improve our world for future generations. Solar panels can be placed

in fields, on tops of buildings, over parking lots and, yes, even used as the roadway itself (in which case, plowing snow and icy pavements are eliminated).

We all know light rail would be expensive but we have ignored the cost of our increasing carbon emissions for too long and now we are rapidly approaching the tipping point. If this plan has an expiration date of 2038, are we to believe there will be no new modes of transportation that address the serious crisis that we, as a society, face in the next 18 years?

Milton Hershey had the vision to build trolley lines down the middle of Chocolate Avenue which transported people from Lebanon to Hummelstown and from Hershey to Elizabethtown. Those tracks are long gone but the concept remains. Today's version of the trolley could make use of the Intermodal Transportation Center behind The Hershey Press building and use high speed light rail to whisk patrons around time consuming traffic. It may be elitist but people prefer high speed options to traffic hassles.
When that transportation center was built, about 15 years ago, someone had the idea that light rail could be a reality. Such a plan could be resurrected and the facility used for more than busses. University Drive could be a North-South cross-access to the Hershey Medical Center. Light rail could also make use of the middle of Governor Road.

Creation of a Business-422 is brilliant and would reduce traffic through town. But other arteries are still in trouble. Please consider alternatives for 743, 322, and Middletown Road. With the full build out of the Rutherford train yards, the expanded FedEx facilities in Lower Swatara Township and the coming Amazon mega-facility in Londonderry Township, other highways should be used to avoid our town. These highways are already completed. We should slow down, not encourage, traffic using our town and residential areas as a throughway.

In addition to the new home developments that we see on the projected maps, both HersheyPark and the Med Center control plenty of land that is yet to be developed. Are we to expect more and ever widening, paved-connector roadways and even more giant parking structures? If we can widen roads and construct new roadways, can't we use some of that space instead for high-speed, light rail transportation that reduce our reliance on fossil fuels? We need a vision for the future that does not expand the destructive efforts of the past. Our children are watching and counting on us to erase some of the damage we have already done.

7/19/2020
Thanks for the thoughtful email response. I'm so frustrated with the HRG Study that my fuse keeps getting shorter, especially when I find so many LVBC efforts in the past 7 years to address concerns that focus on safety of cyclists. I just found the below email to 2 Supervisors with Chuck copied and for which there never was a response. We made every effort to get in "front" of anticipated Penn DOT projects.
I've not attached the documents that were sent to Engle, Foley, Emerick.

Last night I threw together a page on the path that extends from Areba through alleys and Palmdale Park and then today I found the original. I've attached the 2017 and 2020 versions. This path is shown on the map of existing facilities. It is disturbing that a path with many deficiencies is shown as though it is acceptable. It was very sad , I think last year, when two LVBC members used shovels and removed mud and gravel from the path in the Park section.

07/20/2020
To Herbert, Rowland & Gurbic, Inc.

I am writing representing members of the Derry Township Climate Change Advisory Committee (CCAC). Attached here is a letter containing our comments regarding the Transportation Study recently presented on the Township website. Our letter is co-signed by additional community members. At this time we are also forwarding our comments to the Township Board of Supervisors in anticipation of their presentation at the special meeting on July 28.

As stated in our letter, we hope that during your presentation to the Board on the 28th that you will explicitly address our concerns about the adverse climate impacts that are expected as a result of growth in transportation sector, especially gasoline powered cars, over the coming decades.

Because of it obvious relevance to the transportation study, I am also attaching a copy of the report of the greenhouse gas inventory for Derry Township that our group (CCAC) has recently completed and which we are submitting to the Township for your review. We are anticipating making a formal presentation of the GHG inventory report during the regular July 28th meeting.

If you have questions in advance of the meeting, please feel free to contact me.

[FROM ATTACHMENT:]

July 18, 2020

TO: Herbert, Rowland & Gurbic, Inc.

Derry Township Board of Supervisors

RE: Greater Hershey Regional Transportation Study

The Derry Township Climate Change Advisory Committee (CCAC) was tasked in the 2018 Township Resolution #1555 with advising the Board of Supervisors on matters of township planning that impact our ability to adapt to and mitigate the impacts of climate change. The CCAC recently completed a community-scale greenhouse gas (GHG) emissions report for the township. Our findings highlight the major contribution of vehicle emissions from the transportation sector to our community's GHG output. The steadily increasing output of emissions expected from the anticipated growth in fossil-fuel burning vehicles will only worsen the *demonstrated negative effects on our environment and the health and well-being of our community.*

The draft of the *Greater Hershey Regional Transport Study* fails to adequately consider an alternate future for our community that includes critical reductions in the intensity of GHG emissions associated with transport, in particular passenger vehicles. We are encouraged by the proposed expansion of sidewalks and bike lanes in the region which will be an incremental but still important step toward a more complete street system. However, this falls far short of what is needed. For example, missing from this report is any consideration of developing infrastructure to encourage electric vehicle use in the township or any serious consideration of expanding clean public transport within the greater Hershey area, as well as to and from regional population hubs, with the goal of reducing growth in vehicle miles traveled.

With this letter we request that HRG address the climate impacts of the projected transportation growth in the Greater Hershey area during their July 28 presentation to the Board of Supervisors. Furthermore, we stress the need for the Board to commit to aggressively pursue alternative visions for the management of growth in the transportation sector. Without such action, the intention stated in the HRG study to preserve the character of Hershey will be an unattainable goal.

Respectfully,

Rebecca Craven Wills
Andrew Geronimo
Kate Toczek
Charles Gassert
Matthew Weir
Patricia Foster
Melvin Colins
and the Derry Township Climate Change Advisory Committee

07/20/2020
Could you please confirm receipt of this email and attachments? Thanks.

07/24/2020
I know I must be compensated for any land taken.

But who is going to compensate me for the decrease in the value of my remaining property, once it no longer has a front yard?

Please advise. Because I do want to know.

And I am 79 years old, with diabetes, a weakened immune system, and am overweight. So because of the virus, I do not think I should attend the anticipated crowded meeting.

07/24/2020
How many houses do you plant to take down along Middletown Road. I live at [redacted] across from the Dartmouth Development. I don't want to put too much money in the upkeep of my house if you are planning to tear it down.

07/24/2020
There are two attachments. A cover letter and the written LVBC response to the Greater Hershey Region Transportation Study.

You were interested in having this as soon as possible.

Lauren, if you will advise that you received this email and attachments, I'll figure that the others also received them.

Response to Greater Hershey Region Transportation Study
When LVBC became aware of the Greater Hershey Region Transportation Study in June, 2020, we began at once to review the Study and its appendages and delve into our Derry Township files.
For many years, LVBC has directed attention to the Hershey area because of its vital importance for traveling through and to and from.
County residents biked or bike to the Med Center for employment and for medical treatment, visiting patients, even caring for premature babies as a volunteer. Others bike to the dentist, the grocery store, the Market on Chocolate, the Library, etc. Hershey area residents bike Lebanon County roads and Coalition members live in the Study region.
Several bike fundraiser rides design their routes from their starts in Hershey and then into Lebanon County and they appear from road markings to finish by going through the Village of Campbelltown.
Developing a commuting route to connect Harrisburg, Hummelstown, Hershey and Lebanon County has been and is of critical importance. Bicycling tourism can succeed in southcentral Pennsylvania. Connectivity crosses municipal and county "lines".
The time frame for receiving responses has been a serious limitation for LVBC to comply. Consequently, the attached response may not be as accurate, thorough or as "well formatted" as we prefer. LVBC is available for follow up.

[FROM ATTACHMENT:]

121 Lawn Road
Palmyra, PA 17078

July 25, 2020

Response to Greater Hershey Region Transportation Study

When LVBC became aware of the Greater Hershey Region Transportation Study in June, 2020, we began at once to review the Study and its appendages and delve into our Derry Township files.

For many years, LVBC has directed attention to the Hershey area because of its vital importance for traveling through and to and from.

County residents biked or bike to the Med Center for employment and for medical treatment, visiting patients, even caring for premature babies as a volunteer. Others bike to the dentist, the grocery store, the Market on Chocolate, the Library, etc. Hershey area residents bike Lebanon County roads and Coalition members live in the Study region.

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Connectivity crosses municipal and county “lines”.

The time frame for receiving responses has been a serious limitation for LVBC to comply. Consequently, the attached response may not be as accurate, thorough or as “well formatted” as we prefer.

LVBC is available for follow up.

Pat Krebs

Pat Krebs
Representative, Planning

Mike Sheehan

Mike Sheehan
Vice President

Juliet Waldron

Juliet Waldron
Hershey Member
S. Lingle Avenue and Regional Connections Study

July 25, 2020

Comments, Concerns and Recommendations regarding HRG - Greater Hershey Regional Transportation Study's Inclusion of Bicycling as a Component of Complete Streets

Introduction

Why is a safe, convenient bicycle network important for Greater Hershey Region? and Whom will it serve?

-----Residents of the Greater Hershey Region who want to bike the short distances within their communities and between their communities for many reasons including visiting, shopping, employment, services.

-----Residents of the Greater Hershey Region who want to bike from their homes beyond their communities for shopping, entertainment, recreation, fitness, visiting, services, employment.

-----People who live elsewhere but need to bike to and from the Greater Hershey Region and through these communities for the above same purposes.

The close by communities and clusters of populated areas are knit together by sports, recreation, dining, shopping, health services and jobs throughout, with the largest employers in Hershey. Political borders mean nothing. Residents of Campbelltown shop at Giant on Cocoa Avenue; residents of Hershey play volleyball at Flightpath Sports Park. Palmdale residents shop and dine at Campbelltown's Northside Shopping Center. Hummelstown and Campbelltown residents bike to the AAA. A non motorized network can serve thousands of people in these communities.

AND

-----Visitors who come to Hershey destinations including the Park, Giant Center, Butterfly House, Hershey Story, Zoo and others. Visitors who dine and lodge in the Study area or just across the County line in Palmyra and Campbelltown. These destinations are very close to each other.

Many hundreds if not thousands of these visitors are from cities, states, countries where bicycling is a very acceptable and anticipated mode of transportation for short distances. Hershey should be a "mecca" for getting around by bike/scooter. Some will stay longer if they are shown how to connect to rural areas and/or visit other tourism locales that are within their bicycling range of recreating. Some family members may prefer biking over golfing while others are at the same time enjoying the Park or shopping.

Shared Bike and Scooter services are available throughout urban areas in the US and campuses. E Bikes and E Scooters are the next stage of shared use. Docking stations are not needed for new technologies. Many visitors **will not** want to use motor vehicles. They are accustomed to having these shared services available where they live.

The Greater Hershey Region Transportation Study should show how Hershey will be a great place to visit as well as to live.

There needs to be a pleasant way to bring touring cyclists from Harrisburg, via Hummelstown, to Hershey and beyond. (also in reverse direction) as well as serve the local population daily.

Impressive highway crossings will reflect well on Hershey as a national tourism destination.

Elevated shared use crossing may be possible at Hersheypark Drive at Park Boulevard/SR 39 intersection.
Perhaps, not at Walton Avenue and Mae; crossing West Chocolate at Mae and Lucy, or at University and SR 422; however, "visioning" can be inspirational. This is HERSHEY.

Apopka, Florida crossing SR 441

Throughout the US, there are many shared use paths crossing above highways. Many of these spans cross much greater distances than needed in Hershey.

Note: Hersheypark and other Hershey Entertainment & Resorts enterprises contract with foreign workers and hire local young people. Employees who fit these categories often have no motor vehicles.

How to develop a functional bicycle network

--Surveys:

Surveys are one way to gain input but have limitations. Many do not know there is a survey available. Developing the questions that will provide a full understanding of what is important to cyclists and *want to be* cyclists is difficult.

People with limited incomes often use bikes for their only personal transportation or combine bike/transit. They are not surveyed. They don't belong to bicyclists' organizations. They are referred to as "invisible cyclists". This is a critically important population to be served for not only their personal benefit but for the economy and taxable incomes.

--Revitalizing the Alliance which was organized by the Township to gain more information about bicyclists and pedestrians' concerns. Build the list of the attractors/generators to which residents want or need to reach by cycling. This is an important step in identifying where bicycling facilities should be improved or added.

--Harrisburg Bicycle Club (HBC)

Briarcrest in Hershey is used as a meeting place by HBC twice a week for several months. There are multiple rides that are determined by level of speed and distance that cyclists prefer. The rides span out over different streets and roads. HBC can be consulted for their contributions to laying out a "network". HBC members did contribute to the *Dauphin County Bicycle Transportation Map* and this includes streets and roads that are used for group rides. HBC Friday Night Socials are held in the area after a bike ride. Dining establishments benefit from these social rides. Twenty or more people who park their bikes to enjoy a meal is an economic gain.

Engage HBC through their group ride leaders and their publication*, The Spokesman*. HBC can identify their members who live in the Study area or close by and reach out to them directly.

Lebanon Valley Bicycle Coalition and Bicycle South Central PA

LVBC and BSCPA have been and are actively engaged in advocating for safer, better bicycling in the Study area and the wider region. Representatives of both organizations have participated in the Derry Township Alliance group. LVBC sponsored with TCRPC a workshop on the AASHTO Bicycle Facilities Guide 2012 edition with Toole Design Group conducting. LVBC financed municipal contributions to assure that North and South Londonderry Townships and Palmyra Borough participated in the Regional Connections study that was undertaken in 2013-2014 with Derry Township's serving as the lead with TCRPC. The Greater Hershey Study "region" is crucial to Lebanon County residents for biking and for regional tourism that will benefit the County's enterprises that value bicycling visitors.

In what ways does a safe, convenient bicycling network bring value to a municipality/community?

---Improving air quality -- bicyclists and pedestrians do not contribute to air pollution

---Striving for a healthier community – Active Transportation provides daily opportunities to walk, bike, roll to destinations

--Reducing motorized traffic and traffic congestion and its impact on the climate

---Lessening the need for major road improvements, any of which might cost much more than bicycle/pedestrian improvements and disrupt more properties for ROW

---Being able to live where there is no need to own a second car which is a significant financial plus.

---Enabling young people to travel within their community without being driven by an adult; biking and walking to school, to work, to friends' homes, to sports….

The HRG Greater Hershey Region Transportation Study

LVBC Observations, Comments, Recommendations

Excerpts from the Study that only address pedestrian mobility and safety where both pedestrians and bicyclists' mobility should be addressed

"Improve pedestrian mobility between Hummelstown and Derry Township as development closes the spacing between the two municipalities – Main Street, Walton Avenue, Waltonville Road, and Hanover Street. "

"Preserve the safety of pedestrians around school campuses – Lower Dauphin Middle and High Schools, Derry Township School complex, Milton Hershey School."

Recommendation: improve pedestrian and bicyclists' mobility; preserve and improve the safety of pedestrians and bicyclists around….
More is needed than just "preserve"

The statement on page 31 about LVBC needs revised. LVBC recommendations were only made to Derry Township, not other municipalities in the Study area except as a member of the Regional Connections Study. The focus of the submitted concerns has always been on improving safety. Usually, it has been a matter of fixing or improving, not adding.

Page 31 suggestion for a rewrite:
title: Engaging Bicyclists' Advocacy Organizations

Lebanon Valley Bicycle Coalition has provided concerns and recommendations for improving bicyclists' safety to Derry Township and Penn DOT District 8 for many years. LVBC was engaged in the *Regional Bicycle Connections Study* and development of the *Dauphin County Bicycle Transportation Map* which includes the Study region. Bicycle South Central PA has served since 2013 to improve bicyclists' safety within PennDOT District 8. Representatives of LVBC and Bicycle South Central PA (BSCPA) met with staff to provide information and recommendations for the Study.

THE MAPS

Map 2: Existing Sidewalks and Bicycle Facilities is the title

The legend states "On Road Bicycle Network". There are few roads identified which bicyclists use frequently/regularly. This is not a true "network".

The Dauphin County Bicycle Transportation Map identifies most of the roads that compose a network and also shows safety concerns. The map developers engaged many bicyclists who know and bike the area to provide their information. The Study does address the underpass on Old West Chocolate and

the intersection of SR 39 and Hersheypark Drive BUT does not address the Park Boulevard dangers for cyclists. These dangers are identified as barriers. PennDOT Central Office staff required the listing of priority barriers on the Map.

The two roundabouts on SR322 and the roadway in between the roundabouts were built to accommodate bicyclists (and pedestrians only at the roundabouts). LVBC was instrumental in this design. Map 2 does not identify these roundabouts with bike facilities (and pedestrian).

Map 2 includes, we surmise, the Horseshoe Trail which is a historical trail used for visiting/exploring. It is not "transportation". It is "hiking". It crosses private properties.

Map 2 shows the path, Eshenour segment, between Areba and through Palmdale Park; this can be very useful for less skilled cyclists and families, but it has not been improved or made safer for a very long time despite LVBC's registered concerns. A document with photos was submitted in 2017; a second has been updated in July, 2020, and submitted.

Map 6: Widening Summary

It seems that all widening recommendations include bike lanes and through bike lanes at intersections. This is, of course, important for accommodating cyclists. However, more lanes of motor vehicle traffic will in itself deter the less skillful cyclists, families who want to cycle, from using these roads. Noise and pollution are negative factors.

Note: Hersheypark Drive does presently have wide shoulders between Walton/Mae intersection and N. Lingle Avenue and is used by bicyclists for many purposes including taking them to more rural roads for recreation, fitness, fundraiser bike rides.

South Lingle Avenue (and village of Campbelltown SR 322 and Palmyra Road) is not recommended for widening on this map, in spite of the fact that this road is proposed as a preferred road/s to events. This is apparently the result of not being in the Study region. As part of the LVBC response to this Study, the 2014 documents about the unsafe conditions of South Lingle Avenue for bicyclists was provided.

Map 7 Proposed Sidewalks and Bicycle Facilities

Hersheypark Drive, Hershey Road and sections of Governor's Road (322) are shown with bike facilities, bike lanes and through bike lanes.

Route 322 Concern – "Provide bike lanes where off road trail is not available" (page 42) This implies that bike lanes will not be continuous on Governor Road. Bicyclists should not be expected to move between off road and on road.

Recommendation: This statement should be removed. Bike lanes should be continuous. (July 22 meeting)

Walton Avenue at the Hersheypark intersection with Walton and Mae

There is no proposed bike lane or improved shoulders on Walton. Walton going west is a steep climb; going east, there are 2 right turns into the commercial area. There is only one bicycle sign posted at one of these right turns. Turning left from Walton Avenue at the intersection onto Hersheypark Drive requires moving from the right side of the roadway/shoulder to the first left turn lane. Also, turning left from Hersheypark Drive to reach Mae Street is very difficult to bicycle from the shoulder into a left turn lane.

The Study recommends only pedestrian improvements.

Recommendation: Bicycle facilities provided on both south and west sides of Walton Avenue and address issues described above. Utilize NACTO and AASHTO bicycle guides as well as FHWA updates on allowable bike facilities. Presume that Hersheypark Drive improvements will address the intersection safety issues for bicyclists.

Recommendation: determine if an elevated shared use path is possible

Intersection of Hersheypark Drive with SR 39/Hershey Road and Park Boulevard:

No bike facilities provided on Park Boulevard. This is a very dangerous section of road with multi lanes and motorists who are changing lanes to follow directions to Hershey World or Giant Center. Often, these drivers are new to this roadway and uncertain as to which lane they should be using. A separate document was provided about Park Boulevard in 2013 where there are no shoulders on the road and a path that is expected to accommodate two way traffic for bicyclists and pedestrians and does not continue to Hersheypark Drive. A related problem is that no longer bicyclists can use Ridge Road as a south connector to Chocolate Avenue or cross over to other streets like Areba. They can use Ridge to travel north on Park Boulevard in the roadway. **LVBC raised concerns with HRG early in the design stage of realignment of Park Boulevard and the proposed sidewalk.** The following is our initial email.

From: President LVBC
Sent: Monday, May 13, 2013 1:42 PM
To: mlena@hrg-inc.com
Subject: Park Boulevard project/ Derry T.

Good day Matthew,

As I am not a transportation engineer/planner, I have to rely on others to explain specifics in plans that address bicycling infrastructure. This is the case for the Park Boulevard project that HRG is contracted to design for Derry Township. Supervisor Fedeli provided me with your email and attachment of the plan.

Does the multi use path, 10' width, extend to Hersheypark Drive/SR 39 intersection?

Bill Jones raised a concern at a recent HATS meeting and we at Lebanon Valley Bicycle Coalition are following up on this concern.

Presently, Park Boulevard is very dangerous for bicyclists until the split for traffic to go either to the Giant Center or towards Chocolate World and adjacent parking lot, and beyond to travel through the underpass to reach SR 422.

Bicyclists are in the travel lane with motorists who often are not acquainted with the roadway as they are infrequent visitors. There is no BMUFL or Share the Road signage or shared lane road markings.

If the path does not enable bicyclists to access it from the intersection of 39/Hersheypark Drive, it does not solve the present problem.

Bill is concerned about bicyclist-transit riders who will need to reach the multi modal transportation center from SR39/Hersheypark Drive while LVBC is also interested in enabling cyclists to reach many destinations including the station for CAT.

In regards to the shared use path:

We use AASHTO Guide for the Development of Bicycle Facilities, 2012/4th edition. Chapter 5 is Design of Shared Use Paths; 5.2.1 recommends a wider width, 11-14 ' under certain conditions. Considering the crowds of people, with children, often with strollers, other conveyances, who come to the Park in the season/s, we encourage HRG to consider a width greater than 10'.

The answer to my question as well as any other information as to how bicyclists are being accommodated by this plan will be very helpful for those of us who are advocating for safer, better roads for bicyclists in the region.

Thank you.

Pat Krebs
President www.bikelebanon.org

The convergence of State routes 322, 422, Hersheypark Drive with underpass

Bike facilities on Hersheypark Drive go no farther south than just beyond the Mae/Walton Avenue intersection.

Bicyclists need to reach 322 from Hersheypark Drive and in reverse travel from 322 to Hersheypark Drive

A document was provided several years ago in regard to the safety of cyclists who must endure this segment. LVBC was spurred to study the situation because a physician employed at Hershey Med Center wanted to be able to bike from his home to and from work. The underpass conditions prevented him from taking the risks.

Pedestrians have been observed in the underpass. Reference to this "barrier" is made in the Study section about the survey responses.

Bike facilities on SR 322 commence/end at Bullfrog Road; this is beyond where bicyclists on road need to travel from Hersheypark Drive.

Concern: There is no provision in the Study to address this gap and develop a network.

Recommendation: The Study has a pedestrian proposal to cross 422/W Chocolate between Mae and Lucy – this could become a bicyclist connection between Hersheypark Drive and SR 322/Governor Road.

Recommendation: Envision an elevated shared use path at Lucy/Mae. The Netherlands has constructed amazing facilities to move bicyclists through complicated, dangerous multiple road crossings. Arlington County, Virginia, has also made significant headway in building bike commuter routes.

Alternative: the Mae Street connection between Hersheypark Drive to the Hershey technology center where a path borders the fence. This will require Hershey approval to bring a path to University, cross 422, and bicyclists will be able to travel east on West Chocolate, reach the Medical Center complex, Briarcrest shopping and services, and Hershey Lodge or continue east to their destinations on SR 322 or the Eshenour path.

Alternative/ Update July 22: Jim Buckheit identified in the Study a proposed sidewalk between University Drive and Sipes. If this was revised to be a shared use path, bicyclists would have the needed east west link. This will hopefully be a short term solution.

W and E Chocolate Avenue show no bike facilities. **This is very worrisome.**

SR/US 422 is a regional bicycle road that connects several counties and especially important for residents of Lebanon County to reach destinations in Hershey, Hummelstown, Harrisburg, etc. and the reverse. This road is also serviced by Lebanon Transit. The attractors/generators in Downtown Hershey area, including dining and lodging, are many. Two drug stores are on SR 422 and the Post Office as well as the office of the PA House Representative. 422/ Chocolate Avenue intersects with SR 743/Cocoa. The Intermodal Center is reached from Chocolate Avenue.

The Eshenour path through the alleyways and Palmdale Park does not substitute for E Chocolate Avenue, where the shoulders are wide.

With a proposed roundabout at Old West Chocolate and West Chocolate, bicyclists will access this on SR 422. Presently, they access Old West Chocolate by biking west on Chocolate.

*Read more information about roundabout design.

There are risks on W and E Chocolate; such as left on Mansion when going east. Motorists are coming over the rise and bicyclists must execute the left turn quickly.

An island at Para on SR 422/Chocolate was constructed a few years ago for pedestrians and this narrows the west bound lane dramatically. The shoulder for westbound had already diminished prior to Mansion. The pedestrian island was brought to LVBC's attention at an Alliance meeting by residents who bike and live on Caracas.

The Path behind the businesses on E Chocolate in two segments of alleys and Palmdale Park requires much work to improve the "path". (post July 22 meeting, Path improvements document provided)

East Chocolate abruptly loses the shoulder at E. Derry where a curb cuts off the shoulder and there is no through bike lane. Next, is the right turn lane onto S Lingle and no through bike lane. Coming west, there is no shoulder between Lingle and E Derry; a shoulder should be restriped. A multi page document was submitted in 2017 and a predated version as well with PennDOT Central Office staff and Hershey resident Glenn Rowe as part of the group. (The Study addresses safety issues at Lingle.)

Areba does not serve the through bicyclists or the bicyclists who have destinations on W or E Chocolate. It will and does serve casual cyclists. It serves HBC as they leave or return to Briarcrest where they have assembled for group rides.

Concern for those who bike on Areba:

There are only Stop signs at Areba and Homestead; at 743/Cocoa and Areba; at Hockersville Road and Areba. It is neither convenient nor safe for cyclists to cross these busy roads without a 4 way stop or other TCD. It is worrisome when a motorist stops to let a cyclist/s go through. The question arises will the motorist behind the stopped car pay attention and also stop?

Middletown Road crossing SR 322: and

Quarry and Waltonville Roads crossing SR 322:

Discussion on July 22, led by Buckheit about each of these traffic situations

*There is a proposed roundabout and the discussion at the meeting was that the roundabouts on SR 322 are acceptable as is.

LVBC recommends that future roundabouts include the most recent designs developed by NACTO or AASHTO bike facilities guides. As an example, Gainesville, Florida, is constantly improving their bicycling infrastructure. The photos at a roundabout show the use of SLMS in green that alert motorists and show bicyclists what to do if they are staying in the road. LVBC's representative for the roundabout designs on 322 <u>was unable to convince the parties that SLMs should be included.</u>

MULTI MODAL -

Transit / bus service -

How do bicyclists arriving from all directions access the Intermodal Center?
Raised this issue at July 22 meeting.

Bicycle parking facilities at the Hummelstown and Hershey transit locations should meet APBP and AASHTO standards. Are there bike parking facilities at the transit stops? Sheltered?

Note: LVBC purchased and installed a multi bike rack at the Public Library to demonstrate our appreciation for the cooperation provided by Derry Township in redesigning the 2 roundabouts for bike/ped access, and as an example of a bike rack constructed to meet national standards.

The Village of Campbelltown is a bedroom community for many who work in Hershey. Should the Study include a reach out to LT and/or CAT to test shuttle services with Campbelltown, Palmyra and Hershey stops? Bicyclists should be able to reach these stops. It would be less likely that residents would have to drive and park their motor vehicles if they could walk or bike to the stops.

EVENT TRAFFIC:

Recommended roads include SR 39 and SR 743 – both routes are designated as bicycle regional roads on the Dauphin County Bicycle Transportation Map.

SR 39 Linglestown Road: project to improve bicycling is "in progress" HRG is engaged.

SR 743 (north of Hershey) lacks shoulders in many sections and has curves.

SR 743 (south) has a dangerous section in Conewago Township where deep, wide rumbles were installed many years ago and bicyclists are forced into the travel lanes. Efforts to have these removed or covered have failed to date. While SR 743 is identified as a regional road on the County Bike Transportation Map, bicyclists often don't use the road due to heavy traffic where these dangerous rumbles remain.

Event Traffic Lebanon County:

"From the east, along Route 322/422 to Lingle Avenue onto Hersheypark Drive"

Specifically,
the recommendation is to use SR 322 in the Village of Campbelltown as well as Palmyra Road and South Lingle Avenue before crossing SR 422 with a new linkage/new SR 422 to Hersheypark Drive.

These are roads used extensively by bicyclists and Palmyra Road also has gaps in sidewalks. South Lingle has no sidewalks in N or S Londonderry Townships. Shoulders are minimal or nonexistent. South Lingle is identified as a major bicycle road on the *Lebanon County Bicycle Transportation Map.*

For many years, some visitors/attendees to Hershey events have been using S. Lingle Avenue, including touring buses and RVs. LVBC has provided documents, dated 2014, that show the needs and problems for bicyclists who use S. Lingle Avenue. Rockledge residents who live in either Derry Township or North Londonderry Township have only S Lingle Avenue as the road to enter/leave their neighborhood.

PennDOT's plans for S. Lingle Avenue have been provided.

SR/US 422 as an event access. It will be very helpful if Palmyra Borough is engaged in this Study. The possibilities of using Cherry Street and the alley (North) which is presently in poor condition might be identified with wayfaring signage to encourage through bicyclists to leave Main Street for part of their route. If the new 422 link is constructed, a bicyclist route could possibly take them to and from on the alley/North.

NOTE: The urban area of North Londonderry Township, South Londonderry Township and Palmyra Borough are part of the Harrisburg Urbanized Corridor. HATS/TCRPC provides a level of funding (STU) annually to LEBCO MPO to be used for improvements this area.

Implementation Recommendations from LVBC

"Develop implementation strategy for **low-cost** bicycle improvements (bike lanes, markings and signing improvements)"

The use of "low cost" is quite troubling. The scope is also very limiting with just the items listed in parentheses.

This is what the Study says: *"while motor vehicles account for most trips in the region, bicycle and pedestrian mobility is paramount to meet the needs of the community and provide a safe alternate transportation infrastructure. Improved bicycle mobility is a primary goal of this study throughout the Greater Hershey community.."*

Recommendation: This Study has shown that to improve bicycle mobility in the region a bicycle transportation plan is needed beyond what was possible with this multi modal Study. When completed, the Bicycle Transportation Plan can become an appendage to the Study. (short term) See page 15 for possible funding source for a plan.

This is also a recommendation in Penn DOT's Active Transportation Plan.

"Local Government Responsibilities • Interjurisdictional Planning – Plan municipal wide and cross jurisdictional active transportation networks, in conjunction with bicycle and pedestrian advocacy and community groups, identifying gaps and key connector routes that connect to neighboring jurisdictions and/or regional active transportation networks." *Page 43*

---The most significant bicycle/pedestrian expenditures may be elevated bike/ped shared use crossings of highways which presently hinder or prevent safe crossing due to width, high volume traffic and motorists who are visiting and unfamiliar with the road/s and potential bicyclists/pedestrians present. Adding traffic lanes will worsen bike/ped crossings if not elevated. Such a crossing/s can be an exciting entrance to Hershey activities and venues.

Photos were provided previously of a bridge across SR 441 in Apopka. The following is in Frankfurt, Germany. It is much "plainer" but works wonderfully.

----Improving the Eshenour path connection between Areba and Palmdale.

-----Bike boxes installed at major intersections.

Bike boxes are included in the Penn DOT Design Manual according to R. Gothie. The revised Manual is going through final approvals.

-----Determine which TCDs do not recognize bicyclists and begin to adapt these TCDs with the technology that detects bicyclists.

----Identify all inlet grates that are dangerous for bicyclists to cross and begin to replace them. Do not wait for a road project. LVBC has witnessed turnaround replacements.

This was reported by LVBC member to Derry Township and it was replaced within a few days

---The Study emphasizes ***"complete streets".*** Is it possible to make SR 743 (Park Road) on approach from the north to SR 422 more complete?

"Complete streets" are designed and operated to enable safe access for all users, including pedestrians, bicyclists, motorists, and transit users of all ages and abilities. Complete streets make it easy to cross the street, walk to shops, and bicycle to work. " from Smart Growth America and page 43 of Penn DOT Active Transportation Plan

As discussed at the July 22 meeting, SR 743/ Park Road from the north curves, has a steep slope to the overpass bridge (no shoulders until reaching the overpass; and then produces multiple traffic lanes on the approach to the intersection with Chocolate. LVBC provided documentation. From a non - traffic engineer's view, it seems that restriping could allow for a through bike lane. Perhaps, the 2019 AASHTO bike facilities guide or the NACTO Urban Bikeways Guide has recommendations.

Recommendation: Review the road dimensions to determine if signage and/or restriping will provide bicyclists with a safer way to maneuver at this SR743 / SR 422 intersection.

The sidewalk is shown in the photo on left, but prior to the appearance of the sidewalk, there is a "goat path". See photo to the right below. It was troubling to watch a young man pushing his bike in making his way along this narrow piece of land. Apparently, biking in the road with no shoulder was not acceptable for him. Nor was there a shoulder where he could push his bike on the steep approach to the overpass.
This is not a complete street.

---Highway Occupancy Permits HOPs can result in increased dangers for cyclists unless municipalities pay attention for all users/complete streets when providing their recommendations for such an application to PennDOT 8-0 if a state road and also if a municipal road. The good news is that Derry Township did pay attention to LVBC's request to review the HOP by a manufacturer for North Lingle Avenue. A through bicycle lane was included.

Recommendation: The municipalities engage representatives of bicyclists when reviewing HOPs. Consult bike transportation maps and other information regarding bicyclists' use of such a road to ascertain whether the HOP should include bicyclist/pedestrian facilities.

----Have a demo protected bike lane - Roy Gothie has recommended this on Cocoa Avenue.

-----Install wayfaring signage to assist visitors and newcomers on how to bike to destinations within the Study area and other destinations, i.e. to Harrisburg, to Palmyra, to Elizabethtown Include mileage. (discussed July 22 meeting)

-----Publish a bicycle suitability map for visitors and new residents; distribute to lodgings and include an electronic version that can be downloaded from Derry Township and Hummelstown websites.

---- Be visionaries

Imagine a Floating Roundabout over the convergence of Hersheypark Drive, 322 and 422 .

visit a city's vision that became a reality https://bicycledutch.wordpress.com/2012/08/23/spectacular-new-floating-cycle-roundabout/

Please watch the video of the opening event. The point of sharing this is that the Netherlands and the cities in this country like Eindhoven keep working on safer, better bike/ped infrastructure. They sometimes make mistakes and then redesign. They don't think "low cost". They reap great economic benefits with cycling tourism companies and cycling visitors and take heed of their residents' needs. They can't afford to build roads for motor vehicles as there is no space. The Netherlands fears the consequences of climate change.

Stay up to date with latest design recommendations during the many years that the projects in the Study are being planned and designed

Include in the Study resources that will assure the use of up to date bicycle facilities. Some of these are

---Penn DOT Active Transportation Plan, April 2019

----AASHTO Guide for the Design of Bicycle Facilities 2019

https://tooledesign.com/project/update-to-the-aashto-guide-for-the-design-of-bicycle-facilities-2019/

-----NACTO Urban Bikeway Design Guide

https://nacto.org/publications/design-guides/

Dauphin County Bicycle Transportation Map requires scheduled updates but the present edition is accurate for the Greater Hershey Study Area.

Revive the 2014 Connections Study by Alta as a discussion point.

*Grant possibility for funding a bicycle connectivity study/plan: PA Department of Health provides grants with no required local matching funds. These are competitive Walk Work Grants.

https://www.health.pa.gov/topics/programs/WalkWorks/Pages/WalkWorks.aspx

Note: This response was prepared to meet a deadline. LVBC may need to make corrections or additions. If this situation arises, the additional comments or corrections will be submitted to Derry Township for appropriate distribution to others.

07/24/2020
Jim raised the idea of connecting S Lingle Avenue with Crest Lane.

Last Fall, 2019, I was working with Don at Brownstone Real Estate Company in regard to figuring out an off road shared use path from Northside Drive to Lingle Elementary School and we have also envisioned how to connect to Hershey.

The Krebs went on an exploration bike ride as did Jim more recently.

Yes, indeed, these are "private roads"/MHS, but this should not stop a visioning session with all parties including Hershey Trust to determine if there is a way to develop an off road shared use path.
There are fields and farm lanes and not necessarily using Crest Lane. Maybe a linkage to Palmdale Park.

There are off road shared use paths in many parts of America where attractive and not so attractive fencing keeps users on the paths and assures privacy of property owners whether institutions, businesses or residences.

Attached is what I prepared but I don't think that I sent it to anyone but Don.

This is not in the LVBC response, but the idea was raised at the meeting. The sad part is that when we first moved to Campbelltown, we biked this connection and then it was CLOSED. Rockledge residents were especially dismayed.

[FROM ATTACHMENT:]

Connecting the Villages of Hershey and Campbelltown with a shared use path ———- walking, scootering, biking

Making it possible for young people without cars to reach the many summer jobs available in Hershey. Making it possible to connect to other paths in Hershey. South Londonderry Township Flight Path sports facilities can be connected. People will exercise, shop, commute. It is amazing how far the younger set of Campbelltown residents walk/jog/run. Zagster bike share could be possible. Observations by Pat Krebs, October 8, 2019

Above 2 photos: Yorkshire Road from S Lingle Avenue. The paved road bears right into a homestead with horse barn. Grass cut area in right photo continues straight where bicyclist is located in middle photo. Straight ahead is a MHS residence and gravel road, but cannot be seen from this location.

View from Yorkshire Road that shows roof of Lingle Elem. School and Stone Brook at Northside Crossing

We explored Crest Lane in MHS and biked Men o Lane where the private property sign is located. See photos. Lower Left. At the curve where a MHS residence is seen, we turned around.

Suggestion:

By using a Google Satellite Map view, you can see Yorkshire Road, the grass cut section and then the field , the MHS residence and the gravel road.

There are other possibilities for connecting a path to Hershey from a path to reach the Elementary School if the Hershey Trust were to allow a route.

Thistledown Subdivision is supposed to have a shared use connection to Northside and Hershey Trust Land borders Thistledown. See 2006 official map for bike/ped.

Suggestion: Reach out to Derry Township staff who are focused on bike/ped possibilities and both Townships engage with Brownstone, MHS, TCRPC/HATS/LEBCOMPO, others. Engage professionals who do this type of work as their *bread and butter*. Lauren Zumbrun at Derry Township has a background in this type of planning. Perhaps both municipalities apply jointly for a 2020 Walk Works Grant. This could be award winning.

Make use of the 2014 Connections study funded by TCRPC and municipalities including South Londonderry Township and Derry Township.

07/26/2020
I am writing as a concerned citizen of the village of Hershey, specifically Linden Rd, about the Greater Hershey Regional Transportation Study prepared by HRG Engineering. My specific concerns are:

1. Given the current design of the project, it appears that properties on Governor Road, from Fishburn Rd to Cocoa Ave., will lose a significant portion of their front yards. Is the plan to seize those homes based on imminent domain? If so, will the homes be removed and what will be put in their place? Another gas station or hotel? Or both? If the plan is not to seize those homes, will they be realistically inhabitable given the proposed four lane road a few feet from their front doors?
2. Is there a plan to install noise barriers to mitigate the increased noise for homes on Linden Rd?
3. Has consideration been given to the impact of this project on the value of homes on Governor Rd and Linden Rd? It seems that the only impact this project could have on those home values is to decrease them significantly.

This project seems ill advised and detrimental to the Village of Hershey and its residents. Is decreasing commuting time by a few minutes and making it a little easier for visitors to get to a concert worth altering the integrity of our Village? I respectfully request that my comments be made part of the public comments record for this proposed project.

07/26/2020
I completely oppose the HRG plan in regards to 322. It is not necessary. Covid has changed the nature of commuter traffic and it is not likely to return to the way it once was in the near future, if ever. There are two things you could do much cheaper than taking of properties, widening the road and all for only 1/2 mile, to return back to 2 lanes in both directions.
You could simply put a no left turn on to Elm Avenue on 322 facing East.
You could have two signs put up stating no left turn, one at light warning people and one closer to Elm enforcing it.
These two pictures attached are taken at 5:30 and 6:05 on a Tuesday and a Wednesday evening during "commuter traffic." It is NOTHING like it once was. It is not worth 186 Million and ruining people's lives, (the people you are supposed to be representing and taking care of). Also I disagree with your study using a group from the School board, representatives from Medical Center, Hershey Company, etc. you should have a citizen board taken from residents who live here. That is who you should be catering to, not out of touch business people who might not even live here.
Over the years, one by one, people in charge have taken down Milton Hershey's buildings and little side businesses. It honestly shocks me that people think they know better than a man who started 3 successful businesses. If completely arrogant people had not destroyed many of the things Milton Hershey had set up for the residents we'd still have trolley works to travel from one end to the other - similar to New Orleans, a butcher shop, an orchard with fruits and vegetables in our town for fresh local produce, a dairy for local milk, a bakery, the downtown would have beautiful buildings and shops and restaurants already we wouldn't have to have the "down town planning board," to reconstruct a down town that was dead for over 30 years, but one just to keep up with it. supplementing and evolving.
I will tell you I adore seeing people walking all over down town again on Chocolate, I love that there is foot traffic and life! But we would have always had it had we not destroyed what was once in place. It took a lot of tax payer dollars to ruin a town then to build it back up.
How is taking properties and putting one more lane in (only one) promoting livability? Walkability? Resident's interests? It is not. It will lead to a commercial zoning sitiuation similar to what will happen soon on Fishburn and what is going to happen on the West End of Chocolate

when that gets destroyed by the new hotel. It's not about the residents. It'a about egos and big projects approved by out of touch people and big business, not residents and livability.
The properties on 322/ Governor Road and Fishburn will become worthless. The people will leave. You will have a greater divide of super rich and super poor and a non inclusive, non diverse society. Taxes will need to be raised. People will be suffering. Think.
Please use your hearts and heads and make decisions with the residents you are here to protect and represent in mind. This is about the present residents, not the future traffic from Amazon warehouses, or hotel businesses - you must see now that decisions basted upon that might not hold up. Mother nature kept them empty this year and may do so again. Even if "Hershey tax dollars," aren't used, it essentially comes from "tax payer dollars."

07/27/2020
I am 80 years old and live in Cocoa Townes. Quite frequently, it is difficult now to turn left from Glen Road onto Governor Road to exit Cocoa Townes. It would be extremely difficult to turn left onto a five-lane road and very hazardous. Widening the road would put our lives in jeopardy. Also, it would leave us (the residents of Cocoa Townes) with only one viable exit in case of an emergency. The project should consider people's lives and not just traffic flow!

07/27/2020
Thank you for the opportunity to comment on the Greater Hershey Transportation Study plans. Bicycle South Central PA's letter is attached.

[FROM ATTACHMENT:]

Marilyn Chastek
President
Bicycle South Central Pennsylvania
c/o 19 White Oak Road
Mechanicsburg, PA 17050
www.bicyclesouthcentralpa.org
July 27, 2020

Alyx Gallagher
Herbert, Rowland & Grubic, Inc.
Via email: agallagher@hrg-inc.com

Dear Alyx Gallagher:

On behalf of Bicycle South Central Pennsylvania (BSCPA), a regional coalition of bicycling advocacy organizations, I submit comments regarding the draft Greater Hershey Regional Transportation Study (June 16, 2020 draft). BSCPA is a coalition of bicycling advocacy organizations that works to strengthen the collective voice of bicyclists throughout PennDOT District 8. BSCPA advocates for safe cycling infrastructure and facilities for all riders. Our vision is to make this region a place where cycling is commonplace for both transportation and recreation that is safe for riders of all ages and levels of experience.

We applaud this effort to study and consider options for improving multi-modal transportation infrastructure, that includes pedestrian and bicycle rider access, throughout Derry and Londonderry Townships and Hummelstown Borough. We support recommendations outlined in the study that seek to improve pedestrian and bicycle access and safety by targeting investments in important improvements that include:

- Marked bicycle lanes on Hersheypark Drive from Walton Ave./Mae St. to Lingle Ave.
- Marked bicycle lanes on West Governor Road (Route 322) from University Drive to Homestead Road.
- Marked bicycle lanes on Middletown Road from Route 322 to Swatara Creek Road.
- Areba Ave. marked as a bicycle route with sharrows and signage.
- Marked bicycle lanes on Hershey Road (Route 39) from the Swatara Creek bridge to intersection with Hersheypark Drive/Park Boulevard), which would link with bicycle infrastructure recommended in the Route 39/743 Study.
- New bicycle trail connecting Fishburn Rd. to Cherry Dr. at Hope Dr.
- Improved lighting and sidewalk through Norfolk-Southern underpass on Old West Chocolate Ave.
- Review and enhancement of street lighting along proposed marked bicycle lanes.
- Replacement of non-bicycle safe inlet grates throughout the project area.
- Other improvements that improve safety and access for bicycle riders on area multi-use trails and roadways.

Bicycle riders, like motor vehicle users, travel to the Hershey region from communities throughout the region. Many bicycle riders travel to/from Harrisburg via Derry Street, Old Derry Street, Pleasant View Road, Bridge Road (Main St.) to Hummelstown and Hershey. From the north Bicycle riders travel to/from the Hershey area via S. Hanover Street, Hershey Road, Sand Beach Road, Laudermilch Road (Route 743) and North Lingle Ave. From the East riders travel via Ridge Road to Lingle or Laudermilch, Route 422, the signed bike route along E. Caracas Ave. that connects to South Street then onto East Areba Ave., Route 322, Eby Road and Bachmanville Road. From the South riders take Hershey Road (Route 743), Old Hershey Road, Steinruck Road to Sand Hill (northbound) or Bullfrog Valley Road, Shopes Church Road to Bullfrog Valley Road, and Middletown Road.

There are several bottlenecks and intersections within the study area that pose safety/access challenges to all but the most experienced bicycle riders. These must be addressed in order to make the area accessible to those who wish to travel using alternatives to motorized transportation vehicles. Improvements to these items will both improve safety and access that likely will expand the number of those who commute and travel by bicycle in the region, thereby reducing motor vehicle traffic congestion.

To that end we recommend the study address the following:

1. Intersection 10: Route 39 (W. Hersheypark Drive) and Walton Ave./Mae St. – Bicycle riders traveling to Hershey from points west generally travel through Hummelstown to this intersection, where they generally will turn left onto Hersheypark Drive and continue on Hersheypark Drive or turn onto Old West Chocolate Ave. Given the volume of traffic and congestion at this intersection, including many tourists unfamiliar with the area, bicycle riders wishing to either turn left or continue straight onto Mae St. must be extremely assertive by taking the traffic lane in order to safely maneuver through the intersection. All but the most confident bicycle riders are not able to do so. The intersection must include bicycle boxes or other safety features.
2. Intersection 11: Route 39 (W. Hersheypark Drive) and Hershey Road (Route 39) and Park Blvd. – Planned marked bike lanes on Hersheypark Drive and Hershey Road at a very busy intersection require safety designs for bicycle riders to transit through the intersection including making left turns. Many bicycle riders riding east on Hersheypark Drive turn left onto Hershey Road to travel north to Boathouse Road, East Canal Road or continue north on Route 39. The intersection should include bicycle boxes or marked bicycle turn lanes.
3. There is currently no safe means for bicycle riders to transit the 1.7 distance along Route 322/422 between Waltonville Road and University Drive. The underpass through which Hersheypark Drive merges with Route 322 (W. Governor Road) is unsafe for pedestrians and bicycle riders to use. Currently bicycle riders coming from Hummelstown (Walton Ave. & Hersheypark Dr.) must go four miles out of their way to cross Route 422 at University Drive. A short-term solution to improve access and shorten the distance bicycle riders must currently travel is to substitute a multi-use path in place of the

proposed new sidewalk from University Drive to Sipe Ave. and Lucy Ave. This would provide bicycle riders the ability to travel from Walton Ave. to Mae Street onto Sipe Ave. then travel along the multi-use path to University Drive or Reese Ave. providing a new, shortened route for bicycle riders (1.0 mile) providing improved access to/from the Hershey Medical Center, Hershey Lodge, Briarcrest Square, etc.

4. Intersection 13: Hersheypark Drive (Route 743) and Laudermilch Road (Route 743). The intersection should include bicycle boxes or marked bicycle turn lanes to accommodate bicycle riders turning at this intersection.
5. Park Blvd. Between Chocolate World Way and Hersheypark Drive. Both southbound and northbound bicycle riders face serious safety challenges attempting to safely transit between the multi-purpose path, which ends at Chocolate World Way and Hersheypark Drive. Southbound there is NO shoulder and bicycle riders taking the right lane must cross three lanes of traffic turning into the Giant Center/Hershey Park to continue onto Park Blvd. to downtown Hershey. Northbound bicycle riders must cross two lanes of traffic exiting Hershey Park to access the shoulder to continue on to Hersheypark Drive/Hershey Road. The safety concerns of section of roadway must be addressed, either on road or via a multi-use path as this section presents serious safety issues for pedestrians as well.
6. Intersection 1: Middletown Road and Route 322 East Bound service road. Northbound traffic on Middletown Road turning right onto the Route 322 east service road poses safety challenge for bicycle riders wishing to continue straight heading north on Middletown into Hummelstown. Vehicles turning right are often traveling at high speed making it a challenge for bicycle riders to move from the shoulder across the right turn lane onto the through lane. A bicycle box or marked through bike lane would improve safety for bicycle riders traveling through this interchange.
7. Intersection 23: West Governor's Road and University Drive – Vehicles exiting the main entrance to the Medical Center on University Drive turning right onto West Governor's Road pose a safety issue for pedestrians and bicycle riders traveling along the multi-use path that crosses the intersection. Vehicles frequently turn on red without looking to their right which creates a dangerous situation for path users. This situation will only worsen when a bike lane is added starting at this intersection. We suggest prohibiting right turns on red at this corner.
8. We suggest exploring the possibility of linking Crest Lane (MHS road), which is currently a dead end, accessible from Meadow Lane, to South Lingle Ave. via an approximate ½ mile multi-use path across a field. This link would provide a safe, low traffic connection between east Hershey, Palmyra/Campbelltown and points east.

We would be pleased to answer any questions regarding our suggested improvements or further discuss ways to make this region a place where cycling is commonplace for both transportation and recreation that is safe for riders of all ages and levels of experience.

On behalf of BSCPA, thank you for the opportunity to provide comments on the draft Greater Hershey Regional Transportation Study.

Sincerely,

Marilyn Chastek
President
Bicycle South Central Pennsylvania

07/27/2020
These studies were completed in 2018 when the nation/state/community was moving and living at normal life. Today we living with COVID-19 where more people are working remote so any traffic issues today may be attributed to the Hershey Medical Center workers…….

Has everything been considered before expanding RT 322, West Governor Road?

Can the directions to HersheyPark be updated on their official website to suggest a better route than to travel through the Hershey Village?

Were there any plans to work on better synchronization/timing of traffic signals for the intersections of Cocoa Avenue and W. Governor Road,; Hockersville Road and W. Governor Road.; and Cherry Drive/W.Governor Road?

We don't even know the impact of the completion of the Hope Drive connector to Fishburn Road.

Was a roundabout considered for the Cherry Drive/Governor Road intersection?

It would be good to know all of the considerations which were suggested/reviewed/dismissed before finally settling on the expansion of Governor Road. After all it is a residential area.

07/28/220
I listened to report but was unable to get "my hand raised"
As President of Cocoa Townes Homeowners Assoc we have several comments and questions. We will send a written paper to HRG by 8-7-20 but the most important comment has to do with your Core study goals – This impacts the entire Township, NOT just the Village – we also pay the taxes. The traffic issue impacts Middletown Road, Briarcrest, Glen Acres, the South Hills, Cocoa Townes and everyone South of Route 322. I believe your "core study goal" which is to focus on the "Village" is unfair – it should involve the entire township! You need to rewrite and expand the 20 year study/plan for the entire Township.

Your goal to "preserve the safety of pedestrians around school campuses" seems to be forgotten or ignored when you suggest a 5 lane expansion of Governor Road past Township of Derry recreation facilities, high school, and athletic fields. You should consider also making Route 322 a business route, same as suggested for Route 422 – and re=route ALL commercial, event and pass through traffic onto Hersheypark Drive. The Medical Center traffic problem is a separate issue and a 5 lane expansion of Governor Road will not solve that issue. Straighten Hope Drive will help the jam at Cherry & Sand Hill; a five lane "highway " to Homestead will just create another bottleneck and greatly increase the problems at Hockersville, Elm, Glen, Cocoa and Homestead intersections.

07/28/2020
GREATER HERSHEY REGIONAL TRANSPORTATION STUDY
If you add up all the listed projects, you come up with a range from $133 million to $186 million. Although some of the money will come from federal, state and county sources (all of which are experiencing their own financial problems now due to Covid 19) much will have to come from Derry Township.
At the June 23 meeting of the township's Board of Supervisors, Derry Township Manager Chris Christman warned of a shortfall of up to $1.1 million.
Much of that deficit comes from the closure of Hersheypark, Giant Center and other Hershey Entertainment and Resorts Company (HE&R) facilities.

"The lack of revenue will be felt for years to come," Christman said. "It will ultimately result in a reduction of services…. It will result in cuts in staff and use of some fund balance to hold the line on taxes."
The report also talks about new construction and businesses coming to Derry Township. Since the report was completed many businesses in the area have closed permanently. Others are required to operate at less than half capacity.
Many businesses have discovered that they can have employees work from home cutting expenses of large offices with the added benefit of keeping workers at home and off the roads.
Most of the schools in our area are going to have less students attending school in-person every day and more doing on-line work. This will also keep more cars and busses off the road.
Based on the above facts above and the changes in lifestyle/business model that have occurred in the last 6 months I think this study was made worthless and should at the very least be shelved for at least a full year and then reworked with the information that is current at that time.

07/28/2020
Thank you for asking for feedback. Below are my suggested edits (mine are ALL CAPS) lower case words are from original.

I suggest you build on the Township's strengths and focus on efficient and effective Protected Bike Lanes (and Safe Pedestrian Facilities, for that matter) that promote safe, healthy, active transportation that is currently available for all ages and abilities (thanks to rapid technological growth and new options like e-bike share and motorized scooters that my Dad used for years before his recent passing).

Please consider forthcoming options that will improve active transportation's accessibility and efficiency for our growing and actively aging community .

The County has set a great example. Derry Township needs to think creatively outside the box (or asphalt, in this case) and limit any pricey projects (that Engineers and other professionals prefer due to payment structures) like road expansions (that will eat up our federal, state and local taxes with maintenance costs for decades). We should focus on more effective and efficient modes of transportation.

In addition, I recommend that all future capital projects include ongoing use and maintenance expenses – notwithstanding which taxpayer dollars are used to pay those costs.

I suggest you use the recently-adopted, award-winning Community Vision (and resulting Strategic Plan) and regional Bike Connections Report to help guide the Township.

Finally, I suggest all future drafts are shared with the Townships recently-added, easily-available
• CCAC
• Bike / Ped Committee
• Tree Committee
Thank you for your time and I look forward to the Community Participation in the Study Discussion tonight at 6 PM.

PUBLIC MEETING COMMENTS
PUBLIC COMMENTS

1. **Kathryn Byrnes**
    a. Disappointed not contacted

        i. Negative impacts on home and neighbors
    b. Safety issue
    c. Ped Issues – Children walking to school
    d. Environmental Impacts
        i. Stormwater
        ii. Snow Removal
    e. Financial
        i. Property Values go down
        ii. Taxes go up
    f. Speed Limits
    g. SR322 – 5 lanes road will work?
        i. Can people actually live along this road?
    h. Request:
        i. Extension of Comment period
        ii. Special meeting for homeowners
        iii. No residents included in committee
        iv. Want to be fully included

2. **Sandy Ballard**
    a. Extending Comment period
    b. Build on Bike Lanes and Ped – Active Transportation
    c. E-share – Motorized Scooters
    d. More High-Tech Options
    e. Think outside the box – limit pricey projects
        i. Engineers like due to $$$
    f. Community Vision – S. Plan
    g. Draft – shared with Ped and bike committee, Tree, Climate
    h. Capital Improvement Project – Maintenance and Use Expenses
    i. How much $$ was used?

3. **Maria Memmi**
    a. Java Ave – Discussed concept improvement plan
        i. Appreciate about plan – cleaning up dangerous intersection
        ii. Like – Java Ave. Removal – Prefers over one-way
            1. Do not want to lose name "Java Ave"
            2. Access Road

4. **Corinne Edris**
    a. Helpful to see plan – Thank you
    b. Promote walkability in Town
    c. Cocoa and Fishburn – Worried about 5 lane road
        i. Many Ped crossing – will be dangerous
        ii. All residential
        iii. Will change complexity of neighborhood
    d. Traffic Accidents – with expanded road (35 mph current)

5. **Andy Andrews**
    a. Questions
        i. HersheyPark Drive – SR 422 – Still called "Hersheypark Drive"

6. **Anne Searer**
    a. Relive a lot of traffic issues

b. Lots of paving
    i. Carbon Emission
    ii. Not enough Mass Transit (Bus Trans)
    iii. High Speed Light Rail
c. Solar Panels on Township Building – Great Vision
d. Crisis – 18 years – Emission
e. Trolley – Tracks were built
    i. Intermodal transportation center
        1. High speed light rail
        2. Used more than just buses
f. Rutherford Train Yards + Warehouses
    i. Highways to avoid "our town"
        1. Do not be used as a throughway
g. HMC – lots of land to be developed
h. Need Vision for Future

7. Rich Gamble
a. Study is impressive
b. Truth
    i. Benefit for residents?
    ii. Or Benefit other entities?
c. Work proposed is expensive
d. Destroy "Village" for benefit of others that do not live here
e. Take it step by step
f. Milton Hershey planned community with safety in mind

8. Ray Manari – (Rep Mother)
a. Personal – Mother is 90+ years' old
b. All inform via a local piece of paper
c. Is any further development – will residents be consulted?
d. Safety
e. Drainage

9. Wayne Rivers
a. Slip Road – Derry Township – To Bypass Downtown
b. 5 lanes into 2 lanes heading East into Campbelltown
c. Crossing 5 lanes of lanes
d. Middletown Road – Mid Term – Alternatives – Refurbish – Slip Road

10. Mary Beth Backenstose
a. Built 1806
b. Brownstone Building – Does not want building torn down

1. Dave Weaver – During 7:00 BOS Meeting
a. Listen to comments on YouTube Video
b. Don't want Java removed. Want vehicular access to the front of homes, but don't care about front parking. Improvements to E St would enhance parking options. Java could be designated as use for delivery, emergency, cul-de-sac at N of Java. Brick Pavers. Move parking to the east side of the one-way option.

2. Corinne Edris – During 7:00 BOS Meeting
a. Listen to comments on YouTube Video

b. Did measurements, don't want to lose their neighborhood

BOARD COMMENTS

1. **Rick Zmuda**
    a. Living Document – Subject to Change - YES
    b. Long Range – 20 years – No funding in place now - CORRECT
    c. Easier to get grant and other funding because of plan? – YES
    d. Air Pollution – Why was not addressed?

2. **Susan Cort**
    a. Inference – May negative impact home values
    b. How stakeholders were involved?
    c. How will HRG compile comments and how will the final document be shared?
    d. Timing – August 31 – Revised Report

3. **Natalie Nutt**
    a. Good Safety
    b. What timeframe is Short/Mid/Long?
    c. Concern – Aesthetics of Village of Hershey – Open Space (Grammery and Indian Run onto Waltonville) – Once of last area is Ag and Conservation – West End – Should be long range
    d. Sidewalks to add – Jill Drive near Waltonville
    e. Alternatives to paving over farmland

4. **Carter Wyckoff**
    a. Derry is dynamic
    b. Work from Home; School – How much things have changed
    c. Concern – East/West Connection
        i. Waltonville Road
    d. Protect Ag/Farmland

5. **Chris Abruzzo**
    a. No decisions to be made – it's a discussion
    b. What is cause of increased traffic congestion today?
        i. Where is coming from and to?
    c. Climate Change Report – Was not considered as part of plan.
    d. Changes to traffic as COVID and new normal has not been considered
    e. Concern – Goals need to be broaden to traffic congestion throughout the community not just village; smart growth – increase size of road, we aren't mitigation growth, we are encouraging new growth
    f. Some recommendation – How would Board ever approve?
    g. BOS is safe guard against any future projects
    h. Concern – Traffic into Derry, every single day of the year is to one employer – before I would widen road, I would need large employers have ride share – to take traffic off the road – to help multiple benefits. Stakeholders – be more creative – reflect 21st century life – maintain charm of Derry Township.
    i. Additional Stakeholders – Local Small Business; residents
    j. Missed Target – to Broaden Goals
    k. Keep emails as part of Final Report – public submitted comments

07/29/2020
Attached please find comments regarding the draft Greater Hershey Regional Transportation Study.

[FROM ATTACHMENT:]

As a multi-modal user of roadways in Derry and Londonderry Townships and Hummelstown Borough I wish to provide comments regarding the draft Greater Hershey Regional Transportation Study. As an active member and ride leader of the Harrisburg Bicycle Club, which sponsors numerous scheduled rides from Briarcrest Square every Monday and Thursday evenings, and other days each week, which attract between 30 – 50 bicycle riders, I am well versed in the safety and accessibility challenges of the road network in the greater Hershey/Hummelstown area.

Given the continued growth of the region, together with the addition of at least five new megawarehouses which will add both automobile and heavy truck traffic, it is all together fitting and prudent to undertake this study, before traffic congestion and safety issues become intolerable.
Given the continued growth of Hershey area as a wonderful residential community, major center of employment, manufacturing and distribution, together with its unique position as a major tourism and special event center present unusual challenges to efficiently moving people and goods throughout the region.
I applaud this effort to study and present options for discussion on ways to improve pedestrian and bicycle rider access throughout Derry and Londonderry Townships and Hummelstown Borough into surrounding communities. I support recommendations outlined in the study that seek to improve pedestrian and bicycle access and safety by targeting investments in important improvements that include:

- Marked bicycle lanes on Hersheypark Drive from Walton Ave./Mae St. to Lingle Ave.
- Marked bicycle lanes on West Governor Road (Route 322) from University Drive to Homestead Road.
- Marked bicycle lanes on Middletown Road from Route 322 to Swatara Creek Road.
- Areba Ave. marked as a bicycle route with sharrows and signage.
- Marked bicycle lanes on Hershey Road (Route 39) from the Swatara Creek bridge to intersection with Hersheypark Drive/Park Boulevard), which would link with bicycle infrastructure recommended in the Route 39/743 Study.
- New bicycle trail connecting Fishburn Rd. to Cherry Dr. at Hope Dr.
- Improved lighting and sidewalk through Norfolk-Southern underpass on Old West Chocolate Ave.

These improvements will dramatically improve bicycle rider safety and access in the region.

However, there are several intersections within the study area that pose safety/access challenges to all but the most experienced bicycle riders. These must be addressed in order to make the area accessible to those who wish to travel using alternatives to motorized transportation vehicles. Improvements to these items will both improve safety and access that likely will expand the number of those who commute and travel by bicycle in the region, thereby reducing motor vehicle traffic congestion.

To that end I recommend the study address the following:
1. Intersection 10: Route 39 (W. Hersheypark Drive) and Walton Ave./Mae St. – Bicycle riders traveling to Hershey from points west generally travel through Hummelstown to this intersection, where they generally will turn left onto Hersheypark Drive and continue on Hersheypark Drive or turn onto Old West Chocolate Ave. Others continue straight onto Mae St. The intersection must include bicycle boxes or marked turn and through lanes for bicycle riders, or other safety features.
2. There is currently no safe means for bicycle riders to transit the 1.7 distance along Route 322/422 between Waltonville Road and University Drive. The underpass through which Hersheypark Drive merges with Route 322 (W. Governor Road) is unsafe for pedestrians and bicycle riders to use. Currently bicycle riders coming from Hummelstown (Walton Ave. & Hersheypark Dr.) must go four miles out of their way to cross Route 422 at University Drive. A short-term solution to improve access and shorten the distance bicycle riders must currently travel is to substitute a multi-use path in place of the proposed new sidewalk from University Drive to Sipe Ave. and Lucy Ave. This would provide bicycle riders the ability to travel from Walton Ave. to Mae Street onto Sipe Ave. then travel along the multi-use path to University Drive or Reese Ave. providing a new, shortened route for bicycle riders (1.0 mile) providing improved access to/from the Hershey Medical Center, Hershey Lodge, Briarcrest Square, etc. 3. Intersection 11: Route 39 (W. Hersheypark Drive) and Hershey Road (Route 39) and Park Blvd. – Planned marked bike lanes on Hersheypark Drive and Hershey Road at a very busy intersection require safety designs for bicycle riders to transit through the intersection including making left turns. The intersection should include bicycle boxes or marked bicycle turn lanes.
4. Park Blvd. Between Chocolate World Way and Hersheypark Drive. Both southbound and northbound bicycle riders face serious safety challenges attempting to safely transit between the multi-purpose path, which ends at Chocolate World Way and Hersheypark Drive. Southbound there is NO shoulder and bicycle riders taking the right lane must cross three lanes of traffic turning into the Giant Center/Hershey Park to continue onto Park Blvd. to downtown Hershey. Northbound bicycle riders must cross two lanes of traffic exiting Hershey Park to access the shoulder to continue on to Hersheypark Drive/Hershey Road. The safety concerns of section of roadway must be addressed, either on road or via a multi-use path as this section presents serious safety issues for pedestrians as well.
5. Intersection 13: Hersheypark Drive (Route 743) and Laudermilch Road (Route 743). The intersection should include bicycle boxes or marked bicycle turn lanes to accommodate bicycle riders turning at this intersection.
6. Intersection 1: Middletown Road and Route 322 East Bound service road. Northbound traffic on Middletown Road turning right onto the Route 322 east service road poses safety challenge for bicycle riders wishing to continue straight heading north on Middletown into Hummelstown. Vehicles turning right are often traveling at high speed making it a challenge for bicycle riders to move from the shoulder across the right turn lane onto the through lane. A bicycle box or marked through bike lane would improve safety for bicycle riders traveling through this interchange.
7. Intersections 23 and 24: West Governor's Road and University Drive/West Governor's Road and Centerview Road – Vehicles exiting the Hershey Medical Center on University Drive and Centerview Road turning right onto West Governor's Road pose a safety issue for pedestrians and bicycle riders traveling along the multi-use path that crosses the intersection. Vehicles frequently turn on red without looking to their right which creates a dangerous situation for path users. This situation will only worsen when a bike lane is added starting at this intersection. We suggest prohibiting right turns on red at these intersections.

Thank you for the opportunity to provide comments on the draft Greater Hershey Regional Transportation Study.

07/29/2020
I am writing in response to the Derry Township Traffic Study and the request for comments by August 7, 2020. An area that I do not believe was addressed during your meeting is the propensity of flooding in Derry Township. I have included a map of flood zone areas in the Hershey area below. Additionally, the following Penn Live link from July 2018, demonstrates Derry Township's continued vulnerability to flooding.
https://www.pennlive.com/news/2018/07/derry_township_issues_disaster.html

With the current situation as it is, adding additional paved roadways in a noted flood zone is concerning. Reducing green space and increasing the amount of impervious surfaces will exacerbate flooding. Future impact from climate changes are unpredictable and complex, and to compromise an existing vulnerability by further limiting green space and drainage will most certainly lead to an increase in disaster declarations.
For the many reasons noted by community members during your meeting, along with reasons cited in this email, I encourage the board and future board members to reconsider the expansion of Governor Road, specifically the area of Governor Road at the intersection of Cocoa Ave, a noted flood zone and residential area.
I look forward to being kept abreast of development plans. Thank you for your time and service to our community.

07/31/2020
My concern is related to the Middletown Road corridor.
While I support moving the Wood Road intersection to Gramacy and installing a traffic signal. I do not support the widening of Middletown Road.
Rather than widening Middletown Road to four lanes, what would be the legal ramifications of limiting truck traffic to local delivery. I understand the new planned warehouses in Londonderry Township and the truck stops in the PA-283 area.
The warehouses and truck stops would be well served by the existing high speed, multi lane infrastructure of US-322, I-83, I-283, and PA-283.
This would relieve a potentially dangerous situation of increased truck traffic while preserving the property values of the protest owners along the road.
Additional traffic control could be implemented, in the way of signals or roundabouts, to control flow, allow residents access, and limit the area as a throughway.
I would be happy to engage further conversation as necessary.
Thank you for any consideration you may take from this email.

07/31/2020
First, let me say - thank you for listening to ALL the public comments on the "Study" this week. I know each of you have given a great deal of time *(and BTW blood, sweat and tears)* for the Township. Being a Supervisor is difficult.

My comments and (frankly anger), are NOT directed at you as individuals or a group. My frustration is at the HIghway Construction System that powers through quaint communities, divides neighborhoods, and disregards almost all but the most powerful community input. No disrespect to the professionals involved who ARE good people. As a lawyer, I know my profession is part of the system.

After Tuesday's first *(and only?)* community presentation and only opportunity for discussion, the Township's engineer HRG has limited any public comments or feedback to LESS THAN TWO

WEEKS due Friday August 7, (during the middle of an epidemic and the height of vacation season - before students need to return to whatever school is going to be)....
Upon receipt of comments as of Aug 7 , WITH NO ADDITIONAL ACTION CURRENTLY PLANNED BY THE SUPERVISORS, HRG will

1. evaluate them,
2. update the plan as required, and
3. distribute a FINAL Report by August 31, 2020.

Once the report is FINAL , the road expansions will be built (because the Med Ctr & Hershey wants it) - not tomorrow but 5 to 15 years. The bulldozers will start their slow roll forward powered by the political contributions of the Powerful Interests. Those big bulldozers will roll right over our little voices while future politicians ask (as "they" have before), why didn't we speak up sooner.

Thus, I have sent the following message to others:

NOW is the time to please:

A. Ask Supervisors for 30-day extension on comments on this Highway Expansion Plan- so folks have time to add all these wonderful thoughts that I have been seeing on emails to other residents. *I fear that all the individual, passionate emails have not been shared with HRG and Supervisors.*

- *Again, I hope I am wrong - please PROVE me wrong.*

B. Ask Supervisors to REMOVE the Governor Rd Expressway *(where the Medical Center and HE&R take the front of people's homes)*

C. Send all your wonderful thoughts to

1. to Alyx Gallagher, HRG, via email at agallagher@hrg-inc.com
2. comments@derrytownship.org
3. "chrisabruzzo@derrytownship.org"
4. "natalienutt@derrytownship.org"
5. "susancort@derrytownship.org"
6. "carterwyckoff@derrytownship.org"
7. "rickzmuda@derrytownship.org"
8. "cchristman@derrytownship.org"

To be overly frank, *which is my tendency in this turbulent time,* your beautiful words mean NOTHING, unless you share them with the above.

07/31/2020
Dear Derry Township Board of Supervisors:

Thank you for opening the discussion about transportation needs for Derry Township for community input. With all due respect, while I believe that the Medical Center (and other employers including Hershey entities) could and should encourage car-pooling to reduce the number of cars coming into the township each day, this, most likely, would only result in a slight reduction in CO2 production and only a temporary one. We are at a climate crossroads crisis in addition to a highway crossroads crisis.

I continue to strongly encourage the Board of Supervisors to create a broader vision for the future than just continuation of merely retrograde modes of transportation. Maybe it really could be "Back to the Future" with the use of an electric "trolley." Perhaps high-speed electric "trolleys" crisscrossing the township (even if they cause a slight delay for truck traffic using our residential roads as throughways) might encourage truck drivers to find alternate routes. These

"trolleys" could also transport school students, greatly reducing the need for school buses and MHS vans.

These high-speed "trolleys" could also be scheduled to arrive at the Middletown train station or the Harrisburg Airport with sufficient regularity/scheduling that driving to, and parking at, the train station or airport would become a thing of the past. Allen Walton used trains to transport brownstone from his Waltonville quarries to Hummelstown; that trail formed the original segment of the Jonathan Eshenour Memorial Trail. Milton Hershey used his trolley system to bring workers to his factory, hotel and other properties from adjoining towns. School students used the trolley to travel from the various hamlets to the Consolidated School in town. Mass transit may be a thing of the past but it must also be a vision of the future.

The foresight of our founder, Milton Hershey, could be upgraded to begin the vision of a carbon-free footprint not just one that reduces emissions by half by 2030. Let's lead the way! Renewable energy, think solar panels, could power a high-speed "trolley" system that would keep Hershey not just the sweetest place on Earth but, maybe, one of the greenest places on Earth.

07/31/2020

Referencing the additional lanes proposed for Governor Road between Cocoa Avenue and Hockersville Road, more lanes means more capacity, and more capacity means more development and more traffic to fill the capacity. More traffic means more congestion and dirtier air. Truly, if you build it, they will come. HERCO management would confirm this truism. They count on it.

Light rail should not be overlooked for commuters in the east-west corridor. Pursue efforts to take commuter traffic off local highways.

Construct remote parking lots outside Hershey proper with light rail or monorail connecting the parking areas with the tourist attractions. This would keep the GPS crowd out of our residential streets. WAYS routinely routes Hersheypark and Giant Center traffic through residential neighborhoods.

The same concept of remote parking could be applied to the Hershey Medical Center, which has become a fair size city during each workday of the week. Shift changes dump lots of traffic onto local roads.

07/31/2020

To Eric Stump and the Derry Township Board of Supervisors:

I am writing to you to urge you to take the expansion of Governor Rd, from Fishburn Rd to Homestead Ave, out of the The Greater Hershey Regional Transportation Study for the following reasons:

1. It is profoundly deleterious to the current homeowners and residents of Governor Rd.
2. It is profoundly deleterious to the proximate residents of Cocoa Townes, Linden Rd, and other nearby areas.
3. It WILL NOT serve to protect or preserve the Hershey Village, and in fact will introduce new dangers and unintended consequences. In no context is a line circumscribing an area going to be protective; there must be a buffer!
4. Its efficacy for traffic flow has not been properly demonstrated.
5. As the scale of the project is grossly inappropriate to the environs, it will be a constant safety hazard to pedestrians (especially children), vehicles, bicycles, and animals.

6. As an inappropriately scaled project, it will create a geographic divide in the greater Derry Township community which is a COMMUNITY that should be viewed and groomed as such as well!.
5. It will be costly financially, environmentally, and to quality of life without commensurate benefit.
7. It will propagate the need for further roadways with the same losses in the above areas.
8. Insofar as this piece of the expansion is not a good plan locally, it will not serve the greater areas or the state well either.

Please note that the section of the Governor Road Expansion from Fishburn to Homestead can not be adjusted or tweaked by lessening the width a little or adding a roundabout: THE WHOLE PIECE NEEDS TO GO.

I will be submitting further comments about the plan but I am limiting this correspondence, due its urgency, to just this point.

Please consider the removal of the expansion of Governor Rd, from Fishburn Rd to Homestead Ave, from the Greater Hershey Regional Transportation Study.

07/31/2020
I am writing to understand the process upon which the HRG Plan goes from "proposal" to "final" or "adopted". I live along West Governor Road, one of the roads significantly impacted by road expansion along our residential street of 43 homes. If the majority of Hershey village residents strongly oppose such a negative impact to our town road and community, how do we amend the HRG plan? What steps need to happen?

I have also attached my letter with concerns about the proposal that went directly to HRG and Chris Abruzzo. Please take the time to read and understand the real-life impacts that this plan would have on us. My husband and I have spent the past 20 years pouring time, effort, and money into our property at [redacted] West Governor Road. We are currently in the midst of another major renovation project at our home. It is the only home that our 3 children have ever known and countless memories are at this place.

Please detail specifically what steps need to occur to enact a change and permanently remove the expansion of West Governor Road from Fishburn Road to Homestead Road. This idea was floated out there about 10 years ago, we do not ever want this as a future possible development.

07/31/2020
Thanks so much, Rick, for your considered response. In the opinion of expert scientists, it is now or never in terms of the environment. We have ignored science for the last four years and even with a new administration in Washington in January, the situation will still be dire. If, on the other hand, we retain the current administration, it really won't matter one way or the other. As a trained scientist, I believe the data. I believe in science. I believe climate change is real and it is past time to reverse course. This could be started as a pilot project in the new West End development and expanded segment by segment. The Medical Center will only exacerbate the situation as it continues to grow and it could develop its own segment.

Milton Hershey had a vision in the late 1920s and the town of Hershey never knew a day without work. This could be a shovel ready project ready to go and put people to work when infrastructure finally gets its day. Perhaps the Hershey trustees could again rise to the occasion.

The realist in me knows this is a tall ask but the ideologist and environmentalist in me knows there is no future in the direction we are headed. I won't be around to see how it all turns out but the tipping point is very close and I do wish all well.

08/02/2020
To Whom it May Concern:

Just a note with regard to the transportation study/plan for Derry Township. Thank you for all your efforts. As for us ...

In the past at several events, including with a previous Township Supervisor, we expressed our interest/concern over the lack of safe accessibility for bikes from the entrance of Shank Park to Roush Road on Bullfrog Valley Road. This may seem minor but it is a major safety concern for many of us who bike but do not feel we can safely get to and from town by reaching the bike path in Shank Park. That small section has steep areas, immediate shoulder drop-offs on both side, somewhat poor visibility - dangerous.

We were quite disappointed when the upgrade to Bullfrog Valley Road did not address this problem, which impacts many, including many who could commute this way, be it for work, shopping, restaurants, etc. Once we hit Shank Park we can easily access the bike path and go everywhere. We no longer bike the roads out back from us (also hilly with, unfortunately, also drop off or no shoulders), this small improvement would allow us to get everywhere locally and beyond, adding significantly to our repertoire of ride possibilities which now include Rails-to-Trails, etc. It would vastly improve quality of transportation and life!

We realize that most are focused on the downtown area, traffic etc, but we do our best to promote safety and environmental concerns for all residents. This small section would be a major boost for many many of us, be it on the road or another solution. We get the importance of the big picture but it is often the many small improvements which can truly add up and improve the overall picture. We're sorry it continues to be a non priority after all these years.

Please feel free to contact us if you'd like more input, ideas. Thanks very much and best regards,

08/02/2020
Thank you for your comments at the Zoom Supervisors' meeting about the Greater Hershey Region Transportation Study. You focused, if my memory works, on stakeholder involvement. This struck a "chord" with me.

I only knew there was a study to review because I subscribe to the Derry Township (Friday) e newsletter. It caught my attention since as a member of LVBC (Lebanon Valley Bicycle Coalition) I had led the effort to comment about many concerns for bicyclists' safety between 2013 - 2017. I was dumbfounded to find in the Study reference to LVBC and Appendix Q which contains one of my "sents" and a portion of another about SR 422.
I made inquiry of Derry staff and HRG and recommended a meeting which did occur. I also asked that Bicycle South Central PA be included and this was welcomed by staff. On behalf of the LVBC Board I sent a lengthy written response and BSCPA also responded. Both organizations were represented at the bike/ped alliance group when it met.

A big worry that I had and have was in regard to stakeholder involvement.

Stakeholder Roy Gothie is the bike ped coordinator at Penn DOT Central Office. You may have met him. His family lived for several years in the Bullfrog Road area.

I contacted him as to what he recommended in the Study and will be reaching out to him again. His knowledge of the bicycling situation can't measure with what residents and those of us who need to bike to and from the Region know with firsthand experiences.

After our phone conversation, Roy provided me with the forwarded newsletter to which I've since subscribed. If you skim through, you'll learn that new technologies for individual transportation are fast arriving. I have encouraged a more visionary element in the Study.

I was actually excited when I heard Chairman Abruzzo speak about the need to include the largest employers as they have an important role in lessening traffic congestion. Stakeholders did include Hershey Company, Hershey Trust, MHS, School District. I think that Chairman Abruzzo expects more diving into how each can alleviate employees' driving individually.

Missing from the stakeholders was Commuter Services of PA. I'm thinking that they may have knowledge and information on commuter patterns and possible options.

Here in the Village of Campbelltown, I've learned only from conversations about the many residents who travel to and from Hershey for employment. Three families who live on my street work for Hershey Company and Derry Township School District/high school.

I've poked at Lebanon Transit to explore a bus route between Campbelltown, Palmyra, Greater Hershey. There is no service offered in Campbelltown with thousands of adult residents who may test such a service.
Maybe there is a possibility of a shuttle service. If the large employers can supply areas from which many of their employees travel to work, this could be very helpful. Perhaps they can help finance test efforts.

I've explored with Brownstone Real Estate Group the possibility of connecting Hershey with Campbelltown/Palmyra via the existing path (which needs improvements). This would require crossing MHS/Trust land but might be doable.

An important piece of the Study eluded me but the SUN article gave the alert.

This is the EVENT route proposed through Campbelltown via 322/Palmyra Road and South Lingle Ave. These roads are crossed and walked/biked frequently even without adequate safe crossings and sidewalks. The South Lingle PennDOT project is under design right now and it does not include widening the roadway. I've checked with the bike/ped coordinator of District 8. LVBC is pressing for shoulders and even these are in question. Your constituents who live in Rockledge have only S. Lingle as an in /out of the housing development.

I meant only to send you a short email about the value of local stakeholders. Also, photos of your riding the Zagster bike let me know that you appreciate new technologies. Dock less e bikes and e scooters are on the way.

08/02/2020
Dear Board of Supervisors:

This letter follows the emailed letter I sent to the Derry Township Board of Supervisors in July in which I expressed my concerns about the 'Greater Hershey Regional Transportation Study' prepared by HRG. I will be sending similar letters to each Board member and to Ms. Gallagher of HRG. I am writing to ensure that you and the Board understand the magnitude of the

decision you will be making and the negative effect it will have on the residents of the township and the region.

The process for this study has not been made public. I assume, but do not know, whether the supervisors need to approve it before it can be implemented. Given that, I write to you, as officials elected to safeguard the citizens of Derry Township, **to ask that you either vote down the study as is or act to delay any formal action on the plan until the following are done**:

1. **Ask HRG to take the coming year to rework the study so that transportation plans actively mitigate climate change.** I note that the Climate Change Advisory Committee for the township has voiced similar concerns about the study. If the vast majority of scientists tell us our world is burning up, we need to do everything in our power to stop it. This study doesn't even try.
2. **Ask HRG to take the coming year to see if traffic volume projections will have changed because people are working from home or schools are functioning online due to COVID-19 concerns, and then rework the study based on the updated information.** All the road expansion and construction currently in the study may not be needed.
3. **Ask HRG to take the coming year to expand its vision of transportation to include public transportation options to address development.** Would electric trolleys be viable? Park and ride centers with van transports between destinations? Train? Bus expansion? There are many options that have not even been considered in this study for which public transportation may be used to the township's advantage and reduce costs.
4. **Remove from consideration and from the study altogether right now the portion of Governor Road planned for expansion to five lanes between Fishburn Road and Cocoa Avenue due to the great degree of harm that would be caused to the residents that live all along both sides of the road.** Homes would be lost or damaged and the neighborhood shattered. One of my neighbors notes that the red line denoting the expanded new width goes right through her front porch. When were you going to tell the residents that their land and homes would be taken away or destroyed? This study violates in every way the goal of 'protecting the Hershey village' as professed by the study. Harming so many families should not be considered, let alone be tolerated as morally acceptable. I expect ethical and respectful treatment from elected officials.
5. **Remove also from consideration and from the study right now the portion of Governor Road planned for expansion to five lanes from Fishburn Road to Homestead Road for safety reasons.** The hazards that would result from the planned expansion are not noted in the study, such as risking the safety of children entering and exiting school buses along the expanded road, the bottleneck of five lanes trying to go back to two lanes at Homestead Road where school buses will be passing much of the day, air pollution, noise pollution, light pollution and the list goes on. Increased hazards for children should not be built into the plan.
6. **Delay approving or accepting the study until these changes are made so that the township can save money, so taxpayers will know how much it will cost and residents will not be pushed for additional taxes or funding on top of the cost of the new recreation center.** Many of the grants which HRG promotes to fund the planned roadwork require matching local funds. All effort should be made to reduce expansion and construction costs, and taxpayers/residents should be told at the outset how much this study would cost each of us to implement all that is planned.

Ultimately, I am wondering who benefits from the plans in this study. Not homeowners and taxpayers who will end up having to pay more for all of the unnecessary construction. Not families who live along Governor Road, especially not those with school children trying to get on and off school buses. Not the residents who live in the Hershey Village or the school district who

wish to access Governor Road. And definitely not the environment with increased air pollution and concomitant addition to climate change.

Please act on behalf of the citizens of Derry Township and the region to reject the study as is or to require the changes I note above.

08/02/2020

Thank you for providing a plan to address transportation needs for Derry Township and an opportunity to comment.

First, I'm requesting for your consideration an extension of 30 days for public comment regarding this transportation study, given summer vacations and back to school planning, especially in light of COV-19.

I appreciate and agree on creating a business 422 to smooth the transition onto Hersheypark Drive for visitors traveling to Hershey from the west.

I have three subjects of concern; the expansion of Rt. 322 between Hockersville Rd. and Homestead Rd., straightening of N. Hockersville Rd., and the absence of consideration for mass transit planning.

Rt. 322 is an historic road comprising views of open farmland, businesses, and residential homes. We should be embracing solutions to slow down traffic, protect the neighborhood, and encourage more walk-able business activity. Milton Hershey School did a nice job utilizing round-abouts to slow vehicles on 322. Have you considered a round-about for the intersection of Homestead and 322? Campbelltown has a group of dedicated residents that want to improve their downtown and their main street is 322....can you imagine what widening 322 would do to their town? We need to start cultivating a society where the motorist is not #1.

There are two historic properties along 322 that will be impacted by the proposed widening: Horseshoe Pike Tollhouse at 914 Cocoa Ave c.1819, the proposed plan will remove this dwelling and the Backenstose House c.1806 at the corner of 322 and Fishburn Rd. is at risk with the recommendation to move this dwelling and it's historic foundation and location compromised. Please remove the 322/Governor Rd. expansion from the transportation plan.

North Hockersville is a short windy road and I use this route at times for traveling to the recycling center and Union Deposit Village. It's not well known to visitors and at the height of tourist season or events, it's nice to know there is an option at traveling at a slower pace without cars whizzing by. Straightening this road will encourage more use, faster drivers, not to mention the increased risk for wildlife that cross this area. HE&R uses the old golf course on the west side of this road for outdoor events and increased traffic would be more safety concerns for people crossing this road. I enjoy the curves of this road and the recommendation to straighten is a cost to avoid.

If any community has the power and will to showcase and model social and environmental responsibility....It's Hershey! Please consider engaging engineering firms that have experience with eco-friendly mass transit solutions. Electric street railway systems or light rail have an appeal, it's fun to ride, and if you give mass transit the right of way, making it faster for people to get to their destination, they will park their cars and ride. Make it inconvenient for automobiles! Work with the surrounding communities to create station hubs from Lebanon County, Annville, Palmyra, Campbelltown, etc., to Hershey employer destinations. Stations hubs become opportunities for business, housing, and community.

Attached is a concept from "Friends of the Hershey Trolley" put together in 2012 for 1.5 miles of trolley track in downtown Hershey with a leg to the giant Center. Keep in mind this was right after the Comprehensive plan for downtown and survey was completed, and also prior to the factory tear down. I presented this either at a Derry Comp Plan meeting or early DHA meeting, but that's as far as it went. It includes adaptive reuse of the Hershey Car Barn, FOHT has two Hershey streetcar bodies onsite, with restoration started on one. This concept could be extended to run rail from downtown to outlying neighborhoods in Derry Township, Med Center/West Hershey, and as Hershey Transit did in the past, connection to Hummelstown, Palmyra, Campbeltown, Lebanon, and Elizabethtown.

08/02/2020

I am writing to you to urge you to take the expansion of Governor Rd, from Fishburn Rd to Homestead Ave, out of the The Greater Hershey Regional Transportation Study for the following reasons:

The traffic has decreased since COVID and quarantine, and the companies in the area have learned that remote work is efficient and they are not likely to go back to the way things were entirely before the quarantine, therefore the traffic has diminished! All that is necessary is a NO LEFT HAND TURN sign on 322 facing East at Elm Avenue and possibly one at the traffic light facing 322 East (stating NO LEFT TURN AT ELM AVENUE) for instances when traffic should back up. The Greater Hershey Regional Transportation Study is out of date and irrelevant. It must be redone at a later day if ever, to be considered a proper study of the traffic flow in that particular area (if not the whole entire study). Do not make a terrible mistake on an out of date study with irrelevant data.

Leaving the Greater Hershey Regional Transportation Study, 322 / Governor Road portion in particular, up as is will likely put a death sentence on the homes that will be taken by Eminent Domain and or Condemnation when the ground is broken- therefore, currently lowering the property values and probably affecting the possibility of future sales of the properties. A DEATH SENTENCE to the properties of the residents and tax payers of Derry Township who reside along the stretch of 322 / Governor Road that you would allow to be considered a HIGHWAY should the traffic study not be removed.

In addition to the residents of 322, the residents of all of, "the Village," will be effected detrimentally and the nature of Milton Hershey's Model town will be destroyed. It was a rural area to build a factory, where the residents would work, and for that factory and for those residents Hershey built the trolley works and every amenity the residents and Chocolate Factory would need, and then a park with a pool to enjoy on their days off. The houses were unique and diversified - the town of Hershey after a freeway will be McMansions and nicer homes and then condos/ apartments and commercial areas. Creating a HUGE DIVIDE leaving commercial places and super rich folks who can afford to live away from those commercial areas. Instead of diversity with all kinds of housing, cottages to mansions and condos and everything. The FREEWAY will take and destroy the cottages lining Governor Road. It will affect the Village. It will forever change Hershey life as we know it.

The concerns for biking and walkability will not be promoted as Hershey residents have shown they adore. A FREEWAY for a mile is not a way to promote biking to school, or walking to school, it is dangerous and likely to lead to more commercialism and more traffic. No one will want to live along a highway. Take into consideration Harrisburg city: years ago an entire exit lane of

Front Street was removed for most of Front Street in addition to the Riverfront Park bike/pedestrian path that already existed, Harrisburg put another bike path in place of the third row for cars exiting the city. It did not destroy the commute for outsiders, and it promoted biking and walkability for residents and biking commuters. It is progressive and green and forward thinking. A freeway is a pollutant, out of date, and dangerous - it is noisy and ugly and anything but green. It is not promoting the good life for residents.

Most of the boards and government units in Hershey are mostly men, with token women. Most of them are outdated, antiquated and not diverse. I tried to join a few and to be a Supervisor not because I adore politics, but because I adore this town and choose to raise my family here. I, like the residents of Hershey, love this town. Growth is inevitable - it is a fantastic place- but it must be sustainable and it must treat the residents who are relying upon you for protection and representation with the utmost of ethical standards. How would you like your mother to be treated if she lived on 322/Governor Road? How about your child?

Please consider the taxpayers and the residents of our town and redo the study at a later time when it is transparent - i.e. we know what really is driving it, what big businesses are going to profit from this expansion - it is not the residents - the lack of the entire 322 expansion from end to end ensures that- (or a bypass); and also when the traffic has returned to the new normal (it is not normal at this time), and it was not normal prior to COVID - COVID changed everything. Life will not go back to the way it was before entirely, remote / telecommute is part of the new normal and it works.

Please remove the 322 / Governor Road Expansion portion of the Greater Hershey Regional Transportation Study (if not the whole study) from the plans for development and being accepted as "approved plans" for our future.

08/03/2020
I live in Hershey and request **EVERY SINGLE ROAD** marked in blue on your proposal map be constructed to provide a designated bike lane/pedestrian lane for that traffic. Middletown road, Hershey Park Drive, Governor road or **any road that has a speed limit of 35 mph or higher** should have a physical barrier to protect both car drivers and bike riders/pedestrians from traffic.

https://www.hrg-inc.com/wp-content/uploads/2020/06/greaterhershey/Draft%20Maps.pdf

08/03/2020
I am writing in response to the transportation study that has been proposed for the Hershey area. First of all let me say that I am not only a resident of Derry Township but a business owner as well. I have resided in Derry Township since 1993. I am a member of the Cocoa Townes homeowner community which sits near to Governor Road and right on the edge of the village. I strongly oppose the widening of Governor Road to 5 lanes with bicycle and walking paths. This change would further disconnect our area from the village and decrease our ability to walk to the village safely. Governor Road already has issues with safety and speeding with a two lane highway. I only see this problem worsening with expansion. In addition, there would be a large bottleneck at Homestead leading into the MHS campus. That traffic will back up throughout Governor Road and make traffic more clogged than it is today. Five lanes combining down to two would be a mess to say the least. As an insurance agent, I am certainly concerned about the added blacktop to be added near our home. Less permeable surface area will make our area more prone to flooding. The community should be finding other ways to keep the area

storm water management in check. Adding more impermeable surfaces will be a detriment to the local area. I am also very concerned about the noise level if the road is expanded so drastically. We currently hear a great deal of traffic noise from the 2 lane highway. More lanes and more traffic makes more noise. Although I do not live directly on Governor Road, I feel that the property owners on Governor Road should not have their front yards removed for the expansion of the roadway. Not only does it put this residential neighborhood right on the highway, but it will result in losses in property values for all in the neighborhood.

In regard to the idea of moving traffic off of Chocolate Avenue, I am in favor of removing through truck traffic via Hersheypark Drive. As a member of the Downtown Core Design Board for many years, we have been advised that the idea was to take traffic on Chocolate Avenue and slow it down to promote a more family friendly, walkable community. The recent changes on Chocolate Avenue with street parking, etc. have been put into place specifically for that reason. Many businesses purchase or lease property in the downtown area specifically because it is a major traffic route. The idea to moving most traffic off of Chocolate could be detrimental to many of the businesses that are on that route.

Thank you for the work you have done for the study. I truly hope that the community input is considered strongly before changes are made.

08/03/2020

I'm writing this letter of record for my mother Lena Manari of [redacted] West Governor Road. She's a 92 years old widow and was shocked to hear of the study to widen Governor road. Her immediate reaction was "what's going to happen to my home". We are extremely concerned and are in total disagreement of the proposed plan for many reasons. It appears that this proposal's sole purpose is to benefit a larger corporate interest without real consideration for the taxpaying residents. These concerns are why we cannot support such a plan that would deeply affect, destroy people's livelihoods and quality of life.

- Safety issues, pedestrian and accidents.
- Impervious surface causing more problems with drainage, adding to an already existing sinkhole issue on our property. Which to date, no one claims responsibility
- No speed limit for proposal but guarantee with five lanes, fifty plus miles per/hour will be the norm.
- Decreased property value.
- Increased taxes for a plan that negatively affects current residents.
- Noise and environmental pollution.
- Separation from the Village of Hershey.
- Traffic relief has not been proven.
-Traffic study east and westbound at various times of the day, not proven.

Please DO Not continue this plan for the reasons outlined.

08/04/2020

Please see the attachment for comments regarding the Route 322 Transportation Study.

[FROM ATTACHMENT:]

> We have lived at our current address on Linden Road in Hershey for 50 years, ever since moving to Hershey from the Philadelphia area in 1970. We have made some modifications and improvements in our home and lot over the years, but it is still the basic beautiful home on a beautiful village street in a wonderful neighborhood in Hershey, PA,

that it was in 1970 when we moved here. There are many wonderful families of all ages who live in our neighborhood.
Governor Road (Route 322) runs behind our alley and the homes which front directly on Governor Road. All of us are in the village of Hershey. This transportation study is quite "forward-looking" and very expansive. We do compliment HRG for this work and all the effort which has gone into this study. But, we are horrified to consider the great harm which will come to this part of our village, and the total destruction of the many homes on both sides of Governor Road if this part of the overall plan for our village is actually implemented. Many other homeowners have already eloquently expressed the overwhelming damage and destruction of this end of the village if this plan is ever seriously considered. Many homes will be destroyed, and many others will lose considerable value (including our home). Also, funneling 5 lanes of traffic back to 2 lanes and 2 roundabouts just down the road to the east in the Milton Hershey School campus seems absolutely ridiculous. Route 322 runs right through the Milton Hershey School campus!!

We join the chorus of many other homeowners in this part of the village of Hershey in requesting condemnation of this current plan for the construction of 5 lanes of roadway and shoulders between Route 322/422 interchange in the west to the intersection with Homestead Road in the east. There has to be another solution for managing the presumed increased traffic on this span of Governor Road. We love this village, our neighborhood, and all of the families who live around us! It is the "Sweetest Place on Earth."
Thank you for your interest in our comments.

08/04/2020
Hello,

Attached are my personal comments regarding the Greater Hershey Region Transportation Study.

Thank you for this opportunity.

[FROM ATTACHMENT:]

Having spent many years in the trenches to improve bicycling conditions and bicyclists' safety, I recognize that the GHRTS has major significance as a planning tool for over two decades. Consequently, it is critical that all modes of existing transportation and modes that are on the cusp of arrival in south central Pennsylvania be identified, and considered for their potential impact, within the Study. From a personal standpoint, my biking for practical purposes is often west to Hershey and then return. Or I bike through Hershey to Harrisburg and return by as direct a route as possible. I'd make this 18 mile trip more frequently if there were fewer barriers. Biking, for me, is about mental and physical health and fitness and not contributing to air pollution. Parking a motor vehicle in Harrisburg is very expensive. These trips by bike are not recreational. As a former legislator and member of KTFC, I recognize that Penn DOT has severe funding shortages for many reasons and Act 89 didn't solve the gap between needs and available revenue. The Governor and the Legislature are only nibbling at the revenue losses to assure that the PSP can service many municipalities as their law enforcement. Congress and the President are slow to legislate increased funding and determine new revenue sources for improving surface transportation modes. Consequently, I don't see a rosy picture for significant transportation funding availability during the next decade. However, actions are needed as soon as possible. There are ways to mitigate motor vehicle congestion

without more road lanes, and Chairman Abruzzo is, I think, correct that the largest employers should be engaged. I think that there can be an effort on how to incentivize employees' using ride share, van sharing, lending e bikes, subsidizing shuttle bus service. Finding out what employees would consider using instead of driving their single occupant cars is important. Many hundreds, if not thousands of employees live within a few miles of their employers in Hershey. Disincentives can include paying for parking if this is not yet an employee expense. Milton Hershey required his employees to use the trolleys because he had built the transit system at his expense. Personal vehicles were not allowed at the factory. There is an anecdotal recording about this in the archives. I share this as it is quite draconian and not fathomable today. Practicality and prudent spending are two factors that are needed for at least the next five years and progress can still happen.

When biking through MHS property, we travel over speed humps. Everyone slows down – motorists and bicyclists. My quick search says there are pros and cons with speed bumps/humps, but maybe an experiment on one or two streets will demonstrate if this can be used to reduce the number of through motorists who are using specific neighborhood streets. Enterprises that provide rentals of bikes/scooters have transitioned to e bikes and e scooters with no docking stations. Bike Ped Coordinator Gothie connected me with the micro-mobility e news that includes information on the expansion of these two modes. I can envision many residents and visitors' making use of these vehicles for short trips/commutes. They may purchase their own or, perhaps, some employers will lease them to employees. In regard to improving safety for bicyclists of varying skill levels and ages, I strongly urge you to undertake a township + neighboring communities bicycle transportation plan. I have shared the Walk Works grant possibility which if successful in applying will provide significant funding for contracting an Active Transportation Plan. Bicyclists, Pedestrians and transit can all be included. Certainly, with advice from locals who bike regularly the most obvious dangers and needs can be identified and a priority list of fixes be developed. This will, of course, require District 8's cooperation where state roads are involved. For example, I was biking with my spouse who suddenly hollered to watch out at the bridge on Sand Beach Road. I looked quickly for the danger; it is a very bad storm water grate. When traveling east on Chocolate to reach the "market", I watched for a storm water grate that we had pointed out to Penn DOT in 2017. There it is. Nothing was done. It is easy for me to be observant based on experience, but not a visitor or stranger who is biking on a roadway to the right of traffic and near the curb. Local bicyclists can rather easily identify the directions – streets, roads, paths - that they travel to reach destinations. Wayfaring signage noting destinations and mileage is another inexpensive way to help those who are new to the area. The signs also remind motorists to be watchful for cyclists. Wayfaring signage should direct bicyclists on how to reach the Intermodal Transportation Center and where bike parking is located. It is possible to make progress with many small scale improvements. The TCRPC region has a significant advantage, because of the HATS population threshold which provides additional federal funds that can be spent for other uses besides roads and bridges. As a tourism destination for thousands daily in normal times, the many enterprises that comprise the tourism industry in the Greater Hershey Region can be shown that it is in their economic interest to assist in financing improved/new bike/ped facilities. Surveying their employees, many who may be without motor vehicles, can be a first step.

08/04/2020

We are writing to you as the owners and residents at [redacted] West Governor Road in Hershey. We purchased this home 12 years ago with the dream of raising a family in a walkable, small town

environment. Our dreams have been a reality as we have discovered the great value to living in, and in the case of our daughter, growing up in, the downtown Hershey village.

We are writing to urge you to take the expansion of Governor Road, from Fishburn Road to Homestead Avenue, out of the the Greater Hershey Regional Transportation Study. As the study currently presents, the plan takes the two-lane road directly in front of our home to five traffic lanes and two bike lanes. This would bring the right of way approximately five feet from our front door. This stretch of the study covers just over one mile of residential homes on both sides. It is bordered by schools and community buildings, and in one direction is met with two lanes and traffic circles (Milton Hershey School property) and in the other direction, six traffic lights until reaching the Rt 322/422 highway. While the plan states to "protect the village area", this plan would have a profound effect in the opposite direction for the following reasons.

1. Safety Hazards. With five lanes of traffic in close proximity to our home, the risk of accidents involving homeowners and residents, pedestrians, bikers, animals, and vehicles would increase dramatically. Passenger vehicles and trucks already speed and drive aggressively through this one-mile stretch, we cannot imagine the license they would take if given the opportunity to speed up for the one mile of extra lanes this plan puts into place.

2. Quality of Life. Residents will be losing the majority, if not the whole, of their front yards and access to driveways. Roadways and sidewalks running so close to our homes will drastically increase noise pollution, air pollution, littering, storm water run-off issues, and could increase crime. It will also serve to decrease privacy, access into and out of our homes, and desirable walkability. The benefits of owning a home in this portion of the Hershey village would be eliminated.

3. Property Value. As mentioned previously, we stand to lose most of our front yard and driveway. That coupled with living on a five-lane highway and all above-mentioned concerns, will drastically decrease the property value of our home and will significantly complicate future ability to sell. As our street serves as the last street of the village and therefore acts as the "buffer", those directly behind us on Linden Road and side streets such as Cocoa Avenue, Glen Road and Elm Avenue stand to lose property value and quality of life as well.

4. Lack of Support. There is no evidence that increasing the number of lanes for this small stretch would adequately address any current traffic issues. In fact, it may very well serve to encourage/increase traffic and backups through the downtown area. We urge you and all stakeholders to instead look at alternatives such as ride share programs and bypasses in non-residential areas. We also ask that you take into consideration the recent increase in work-from-home employment and Derry Township School District schedule changes that take effect for the 2021-2022 school year. Both factors could substantially decrease morning and afternoon traffic issues along Governor Road.

   In short, this plan hurts residents. It is unconscionable to think this town would put a traffic plan into place that serves large employers and tourists only, without any regard to those who live, work, play, attend school and pay taxes here. We feel it is imperative to remove Governor Road expansion from the study, and to protect home owners and residents so that any future stake holders, supervisors, and/or township officials do not attempt to take away the very fabric and charm of life in downtown Hershey.

08/05/2020

Please add this commentary to the public comment.

1. When will the Environmental Impact Study and resulting Environmental Impact Statement be published for this rather controversial plan? It seems to me no thought was given to this aspect of the study. Certainly, it could not be easy to show a positive aspect.

2. Where is the Financial Impact Study results for the residents living along Governor Road between Cherry Drive to Cocoa Ave? Again your study was rather callus with respect to those property owners.

3. Where is the psychological study results for those impacted by the plan?

Have you looked as a route South of and behind the Medical Center and through much of the vacant land to a new interchange at Rt. 743 and the turnpike? Yes, this would impact the "West End Project" (which will only increase the East bound traffic on Rt 322). It would be better to modify the "West End Project which isn't started yet and revise it to accommodate an interchange at Rt 322 and create a Rt 322 Business Bypass to Rt 743 where a Turnpike interchange could be constructed and then continue on to Rt 72 where existing Rt 322 merges with Rt 72. Yes, there will be residential areas impacted but must less than the impact of widening Rt 322 and putting it back to 2 lanes at Homestead Ave. All the current plan does is move a FUNNEL neck from the Medical center to Homestead Ave.at a terrible cost to lives and property of many Village residents. I believe the Village extents South of Governor Road and does not end on the North side of Governor Rd as the study defines it.

08/05/2020
Attached is a copy of the Cocoa Townes Homeowners Association response, questions and concerns to your Greater Hershey Regional Transportation Study DRAFT.

In addition to e-mailing this document to HRG, I am sending a copy to each Derry Township Supervisor.

We request a copy of the Final Report, which per the DRAFT is to be distributed by August 31, 2020

[FROM ATTACHMENT:]

Cocoa Townes Homeowners Association
P.O. Box 732
Hershey, Pennsylvania 17033

August 4, 2020

TO: agallagher@hrg.inc.com, Derry Township Supervisors
FROM: James Gould, President, Board of Directors, Cocoa Townes HOA
SUBJ: Comments in Response to Greater Hershey Regional Transportation Plan (Plan)

I represent the owners of 82 homes (Association) who make up the Cocoa Townes development. After much debate and consideration, what follows are both positive and negative reactions along with questions on the part of the Association to the proposals presented in the Plan. In particular, I ask that you read, understand, and incorporate our concerns and questions into your final decisions with the same depth of objective thought and concern with which we make them known.

We compliment the Township of Derry for being pro-active regarding planning, studying and addressing current and future transportation infrastructure. We understand this is a study, but are concerned that once it is approved, the concept and conclusions will be the basis of future planning and development. While we agree with most of the recommendations and conclusions, we have serious reservations and concerns pertaining to two aspects of the study:

1. We believe your "core study goals" should encompass and include the ENTIRE Township of Derry and NOT focus on the "Village". All Township residents pay taxes and support the financial costs of operating the township, plus there are more residents living South of Route 322 than in the Village. We have no problem supporting the downtown corridor, but final recommendations involve and impact the entire community.

2. We have a major safety and "life-style" concern regarding widening Governor Road from two lanes to five lanes from University Drive to Homestead Lane. We strongly believe that making such a change will NOT preserve the safety of pedestrians around school campuses and of the residents of Hershey, especially those residents who live south of Route 322. We believe the design, which reverts to two lanes at Homestead, will in fact create a bottleneck causing even bigger traffic issues.

   Perhaps most importantly, the proposed expansion of Governor Road from 38 feet to 70 feet between Fishburn and Cocoa Avenue would forever destroy the residential look and feel of that portion of Governor Road. All one has to do to get a sense and feel for the resultant degraded look is to drive through the

residential portion of New Kingstown on the West Shore. The front doors of those homes open up onto the Carlisle Pike (Rt. 11). All of the homes in question suffer from neglect largely because the current owners have no interest in investing money to maintain or improve properties which have lost value. We expect that same outcome and resultant blight would occur along the residential portion of Governor Road.

Also, egress from Cocoa Townes and turning either east or west or going straight across a five-lane highway would be extremely challenging and dangerous. Attempting to cross a 70-foot wide highway on foot or with a bicycle would be even more perilous. The implications for children trying to walk to nearby schools are horrifying, but must nevertheless be contemplated.

In his 1974 Pulitzer Prize-winning book, The Power Broker, Robert A. Caro chronicled how Robert Moses forced divided highways through thriving, well-established residential neighborhoods in New York City, utterly destroying their character and integrity in the process. We cannot allow what happened there to happen in Milton S. Hershey's utopian small town. Surely we can learn from such well-documented past mistakes.

We believe that the traffic issues and solutions related to Hershey Medical Center employees should be studied further. Other potential alternatives make more sense than widening a road and then creating a bottleneck that will negatively impact the Milton Hershey Campus, the Hershey Public Library, the new Community Recreation facility, Founders Fields, and local residents. Such a highway thruway slicing through the middle of "southern" Hershey (Township of Hershey) is not an acceptable solution, nor do we believe traffic from the Medical Center, South (Route 743) or East (Route 322) will follow or adhere to your proposed concept.

Question: Why doesn't the study include other surrounding municipalities? Conewago Twp. (Route 743); South Hanover Twp. (Route 39); and East Hanover Twp. (Route 743) are all Dauphin County municipalities. The Tri-County Regional Commission includes these three "neighbors" and are part of the 20-year RTP? We understand Palmyra, Campbelltown, and South and North Londonderry are in a different county, but they are part of the Greater Hershey Region and definitely are part of the issue.

We understand your rationale but disagree that the study should primarily focus on what you call the "Hershey Village". Traffic is a problem for every tax paying resident of Derry Township.

You note and mention that several of the intersection studies were not conducted during peak Hersheypark times, but we would also add that some of the studies are dated five years ago – circa 2015. Since then, the newly-constructed warehouses have increased the volume of semi-tractor trailer truck traffic, and we question whether the North-South

truck traffic has been adequately projected, including the impact of the Love truck stop/terminal on Middletown Road.

We support and agree that the use of and expansion of Hersheypark Drive is the most logical, and safest route for pass-through and redirect traffic away from downtown AND Hershey Medical Center. We believe your expansion of Route 322, Governor Road will not solve traffic issues but rather make them much worse.

Question: Why do the six lanes of Hersheypark Drive stop at Laudermilch Road (Route 743)?

We believe Route 322 should ALSO be a Business Route, the same as you suggest for Route 422. To widen Governor Road, Route 322 through residential neighborhoods (East of University Drive) will only encourage East—West use that will negatively impact the entire Hershey community. We believe expanding to a five-lane road between University Drive and Homestead Road will encourage additional usage and traffic that will negatively impact the Derry Township Schools, recreation facilities, and the Milton Hershey School campus.

Currently, it is difficult for vehicles, pedestrians and bicycles to cross Route 322, Governor Road at Hockersville Road, Glen Road and Cocoa Avenue. Expansion to five lanes will make it next to impossible! Do you plan to install a traffic light and walk-way at Glen Road?

Currently, truck brake retarders are not limited on the slight downhill slope from Glen Road to Cocoa Avenue, and as a result, the trucks make considerable braking noise heard day and night by residents.

We support a PA Turnpike Exit on Route 743, but that adds another problem and increases the North-South traffic.

We are concerned about the storm water run-off from a wider Governor Road. Cocoa Townes is currently negatively impacted from water run-off and is very concerned about the increase of water into our retention pond.

On behalf of the Cocoa Townes Homeowners Association, I appreciate your willingness to review and incorporate these concerns and questions into the final design of the Plan. The Plan is complex. It has long-term, significant impacts on property and people. If I can provide any additional clarity, please do not hesitate to call me at 717-533-6753.

Thank you.

James R. Gould, President
Cocoa Townes Homeowners Association

CC Township of Derry – Each Supervisor

08/05/2020
I am responding to your request for thoughts from property owners affected by the proposed expansion of Governor Road to five lanes from West Governor Road to Homestead Road, and for the expansion of Fishburn Road.

1. I vigorously urge you to remove the expansion of Governor and Fishburn Roads from the Greater Hershey Regional Transportation Study.

2. As the owner of [redacted] W. Governor Road, the Brownstone Building on the corner of Fishburn and Governor Roads, built in 1806 by Matthew Hocker 100 years before M. S. Hershey began designing and constructing the town of Hershey, I am asking you to rethink this plan. It would result in cancelling the history of Hockersville and a part of Hershey. The red lines through this property, as depicted in the illustration in the Hummelstown Sun, do not support the preservation of this building, which, according to the plan, would be relocated, if even possible.

3. This wonderful, historical Brownstone Building is the home of my professional office, as well as the office of my colleague, Steven Lindenberg, PH.D. The Brownstone building is where we make our livelihood.

4. My father, the late D. Lee Backenstose, M.D., had his Family Medicine practice in this building as well. In 1966, he purchased the Brownstone Building in an effort to preserve it for generations to come. He was a consummate historic preservationist.

5. Please remove the Rt. 322 five lane expansion from West Governor Rd. to Homestead Rd., since it has already caused so much pain and sorrow for the residents of Governor Rd., and taken any joy that can possibly exist in the era of Covid-19 and severe economic distress.

08/05/2020
I am writing in support of the Greater Hershey Regional Transportation plan as published by HRG Inc. I am a resident of the Indian Run community, with an address at [redacted] Melrose Drive, Hummelstown. I live at this address with my spouse and my elderly father, and I work at the medical center in the College of Medicine. I commute on the bike path daily to work (except now, when I work remotely).

The proposed changes have two advantages for my community and more generally. First, the proposed changes add needed bike paths on Middletown Road, as well as a turn lane. If I bike to Hummelstown, which I do almost daily in the summer to swim, the left turn home off Middletown is dangerous. A turn lane would help, as would the bike lane.

Second, the added road would provide for more direct access to the medical center and college of medicine, especially useful once the parcel of land now in crops is developed. This is especially important in the winter, when the bike path is not plowed. This new road between Bullfrog Valley and Middletown Road, with access to Indian Run, will lead to easier and more direct access east from the community.

My one caveat is that the access road to the Indian Run community from the new road could become a back pass-through to Middletown Rd., which would be inappropriate for the community. We have lots of small children and also older children who bike in the community and enjoy safe spaces with little traffic. Steps should be taken to ensure that the access road to Indian Run from the new connector road is not easily traversed as a back pass-through to Middletown road. It is possible that speed bumps will be necessary to ensure community safety. The residential road, with lots of driveways, should not become a pass-through road.

I would like to add that the current storm sewers in the shoulder are dangerous for bicycles, given the orientation of the grates. They are positioned to catch tires. It would be very helpful to have these fixed so that biking along all roads in the area, but especially Middletown Road, could be safer.

08/05/2020
We are writing to express our extreme opposition to the plan to connect a through road to the cul de sac at Cortland Circle in the Indian Run development. This proposed road would increase traffic in our peaceful neighborhood and disrupt our way of life. The cul de sac is a favorite recreation spot for the children in our neighborhood. Placing a through road here would ruin this. It would also adversely affect our property values.

We respectfully ask that you reconsider this proposed road and refrain from destroying our cul de sac.

08/05/2020
I understand you are the contact for public input regarding a new road proposed to enter the Indian Run neighborhood.

As a my domicile is at [redacted] Indian Run Drive in Derry Township, I object to the wasteful, inefficient and neighborhood destroying concept of adding another entry road into the development.

The people of the development have no need for another road in and out. Running traffic through our quiet neighborhood is a quick answer to a planner's problem. It is not a disciplined one. It will destroy the privacy that attracted those who live here to the area. It will cause property value to drop over time as people will not be willing to invest as much to live here when compared to other neighborhoods. The economic abilities of people who choose to live here will change. The neighborhood will decay. Tax assessments will drop.

Traffic noise is bad enough with what we hear in our back yards coming from Middletown road. Those who live here, walk the neighborhood for health, walk their dogs, and let their kids bicycle around do not want cars racing through the neighborhood as a shortcut to somewhere else.

New York City destroyed whole communities in the 60's by running throughways through the middle of them.

Adding another road to cross the bike path is another bad idea. It will add expense with multiple mandatory crosswalk enhancements, add risk to those who use the trail that was invested in and designed to provide safety; and reduce the enjoyment of the community that enjoys it.

We just fixed the problem with traffic backing up at the 322 light by widening northbound Middletown Road for a right turn lane. This proposal would add further congestion to Middletown Road approaching that light with more cars turning right out of the Indian Run development. Left turns to go in the other direction onto Middletown road are already a challenge at times. Do we really want to route people that way? Risk more accidents? Is it planned to add yet another stop light? This would make it more difficult for the people in the neighborhood to get to work as traffic backs up trying to exit?

Let's not make a bad situation worse by turning to easy answers. Dedicate to being truthful, assume responsibility for the problem, look for the best answer and not the easy answer,

and...balance the needs of those most effected. These principles are necessary to finding the best solution. This is discipline.

08/05/2020
I am a resident of and also the developer of the Indian Run Development in Derry Township. When we built Indian Run in 1991 we promised all home-buyers a nice 39-home community with no traffic congestion in the development. Therefore, after talking to several of my neighbors, they agreed none of us want an additional road near our development.

08/05/2020
As you instructed, I am writing and sending this email message to address the proposed road that would enter the Indian Run Development, in which I currently reside.

I strongly oppose this road. My wife and I purchased our home about twenty-seven years ago mainly due to the limited number of homes in the Indian Run Development, and it's secluded location. Your proposed road would ruin all that we have worked for.

Furthermore, the Indian Run Development, which I am the Homeowner's Association President, is comprised of families with small children, who utilize the area at the end of Cortland Circle for playing, and riding their bicycles, which is where it appears your road is to enter our development. Can you imagine a small child being struck by a vehicle from the proposed road, I can, and it would be a tragedy. Also, have you considered the effect it would have upon the exsisting Pedestrian / Bicycle path? This path is used frequently by runners, dog walkers, bicyclists, and elderly people just walking for exercise, and you want to introduce vehicle traffic into this area? It's a disaster waiting to happen.

If you should have any questions, please contact me.

08/05/2020
AS the Executor of an estate that is impacted to a major level, I would like to request a copy of the mentioned item above. I can print the remainder of the study but the Maps are not printable.

08/06/2020

I am the longest original homeowner in Indian Run. Four homes settled on the same day in Aug. 1992 and I am the last remaining of the those original owners. The planned cul de sac, beautiful farmland behind the development, and small amount of planned homes were selling points. The unfortunate death of 12 year old Jonathan Eshenour spurred a bike path accessible from our cul de sac giving us access to miles of safe path to jog, bike, and walk. Families pushing strollers, people walking dogs, bikers, joggers, and walkers use this daily and I am one of them.

The proposed connecting road puts that trail in jeopardy. In addition the certain increased traffic through our development poses a safety risk and lowered property values. I am vehemently against a connector road in Indian Run and urge you to delete that from your plan.

Thank you for your consideration.

08/06/2020
As the Executor of the Melvin E. Ricker Estate, I am perplexed that no one has contacted me or anyone else affiliated with estate to discuss the proposed connector road running from Quarry Road West to Middletown Road. This bisects the Northern section of the Ricker Estate from the Eastern boundary to the Western boundary.

Certainly, someone has assumed that this proposed road is a given reality. I question if any concern was given to the impact such a road will have upon the usage of the Ricker land for farming. The current zoning for this land is designated conservation which includes farming activities.

Compensation for loss of land usage would obviously be a major consideration and access to both portions of the bisected acreage would need to be accommodated.

I would appreciate that both HRG and the Derry Township Supervisors contact me directly about these concerns.

08/06/2020
I live in Deer Run Commons right off of Middletown Road. I have lived in Derry Township for about 10 years. I run on the Jonathan Eshenour trail at least 5 times a week if not more along with other roads through the township. I am also an employee of Penn State Health therefore my opinions/comments here do not necessarily reflect their opinions or ideas and are solely my own.

- An extension/creation of a road from Middletown Road to Waltonville Road would not only have a negative impact on the environment but also the trail that many use every day. Hundreds of residents and others use this trail on a daily basis. This is a key feature for this area and any road would surely destroy or disrupt this feature.
- The widening of Middletown Road would also have a negative impact to those of us who live in this general area. There are many homes, institutions and businesses that would be negatively impacted. The expansion would encroach close to their properties and some may not be habitable depending on the depth of expansion.
- The widening of Middletown Road would also encourage more traffic along this road way that would not benefit anyone in this area. There are many other alternate routes such as 322, 39 and 743 which can be used to get to the park and other attractions that it is clear that this study benefits. These road ways were already built to handle this traffic and should be considered for improvement before needless expansion.

I would not want the residents of this area of Deer Run, Southpoint, etc. to be forgotten when this plan is possibly implemented in the future. There are many people here who live and work in Hershey whether it is for the Medical Center, Penn State Health, or the Hershey Company. This study would negatively affect their every day lives and would have a negative impact on the environment in this area. I love my town and love this trail, please take this into consideration as I know many others feel the same.

08/06/2020
I am writing to you as a resident on Governor Road. I want to thank Mr. Eric Stump for taking time to supervise and present the study in an effort to meet the traffic needs in our area. While I do recognize that the roads and traffic patterns mentioned in the study may need to be adjusted due to the current everyday use expected increase in traffic in the future; I feel that more options should be considered prior to acting on the suggested changes according to the study. In my location specifically, the proposed five-lane road would return to a two-lane road as Governor Rd meets the Milton Hershey Campus. I think the expansion in this case, simply moves

heavy traffic from one location to another, rather than alleviating current traffic patterns. As was brought up during the township meeting, residents of Governor Rd are concerned with the safety issues that would arise living on a five-lane road. Many residents of Hershey/Derry Township enjoy the small town charm that it has and we do not want to lose that to a major highway that, generally, will not serve us as residents of this community. I appreciate you time and transparency and look forward to discussing projects that will better our community in the future.

08/06/2020
I am writing in opposition to the proposed road that would connect Melrose Drive and the proposed road connecting the Hershey Medical Center and Middletown Road that is pictured in the Greater Hershey Regional Transportation StudyMap 5.
The residential community of the Indian Run Development would be adversely affected by the high volume of traffic that this new road would bring. The community was built with narrow streets, such that parking is on only one side. The narrow streets that will not be able to handle traffic to and from the Medical Center. The traffic will destroy the peaceful ambiance of our community,
The proposed road would connect to a cul-de-sac in Melrose Drive that is a virtual playground for children riding bikes and scooters. The narrow streets and commuters rushing to and from work will endanger our children playing in the streets.

08/06/2020
I am a resident of Derry Township. I live at [redacted] Indian Run Drive, Hummelstown, PA 17036. I am providing public comment on the Greater Hershey Area Traffic Study. Building a new road across from Grammercy Place in order to reduce traffic on Middletown Road seems to be a reasonable idea; however, I strongly oppose adding a connector or spur to Cortland Circle. Cortland Circle is a beautiful cul-de-sac. It and this neighborhood, are filled with young children. There is no benefit to turning a quiet neighborhood into a thoroughfare. Waze and other traffic apps would direct Hershey Park and concert traffic through a quiet neighborhood. Tractor trailers would use the neighborhood as a shortcut. The streets of this neighborhood could not handling the traffic and parking. The children could not safely play in their own yards. If the people of this neighborhood wanted to buy houses along Middletown Road, they would have done so. Do not turn this neighborhood into a second Middletown Road. There is no benefit to connecting this quiet neighborhood to the newly proposed Middletown Road bypass. It would destroy the character of the neighborhood, would go against the wished of the people who live here, and would endanger our children.

This proposal appears to be a traffic study only. There does not appear to be anything in the study about the effect on the Eshenour Trail. Do any of the proposals contemplate or include moving the trail? We oppose any change to the location of the trail. We specifically purchased a home in this neighborhood so that we had access to a walking path, as did many others.

08/06/2020
Here are some important thoughts which I hope will lead to additions to your plans.

COVID-19 has made it abundantly clear that walking and bicycling is healthy. Derry Township in general and Hershey in particular can do much more to encourage that. Please see specific suggestions, below. In general, it is abundantly clear that the proposed plan give short shrift to walking and biking. That must change.

It is clear that the sidewalk/bike system in our community is far from complete. The new plan takes only token steps to address that problem. This is ironic: the biggest employer in the area is

a healthcare system. Don't take it from me, ask them: walking and biking is good for your health. Driving only contributes to gridlock and global warming. Why should you devote massive amounts of square footage to new roads when each walker or biker that you might accommodate would take something like 1/24th as much infrastructure. First things first would dictate that you would encourage quality of life choices. The Bullfrog Valley Trail should be your exhibit one. It is enormously successful. Expand it - expand it massively. Immediately below is one example of how to expand drawn upon my neighborhood. The example I give was a real one: my son was on the swim team - he could not safely walk to practice. Today, he lives in Washington DC and routinely walks and bikes greater distances than from my house to the new rec center being built. If you are going to build a new rec center in the amount of 8 figures, then why oh why would you not want to make it readily accessible to kids?

1) The neighborhood immediately to the south of the Hershey Medical Center,"Shady Hill Estates," is completely isolated and not tied into your various improvements. It is only accessible by car. Doesn't seem to matter that the neighborhood is full of kids -- they cannot access the parks off of Bullfrog Valley Rd even though it is just a couple of tenths of a mile away. Likewise, adults cannot bike out of the neighborhood or walk anywhere except around the block. UGH.

SUGGEST ADDITIONS TO YOUR CURRENT PLAN

New sidewalk (or bike/sidewalk) on Sunnyside

New sidewalk (or bike/sidewalk) on Hillchurch and then down Sandhill to tie into trail on the south side of the med center property

The Hershey Med Center owns the large tract of land behind it (to the south) Build an offroad bike connection to tie into the terrific and highly used trail on Bullfrog Valley that traverses that large field behind the med center. What a great idea for a growing area while the land is available -- NOTE: the neighborhood in discussion here is the closest one to downtown Hershey that is <u>completely isolated and cut-off</u> from town except by car. Kids cannot walk or bike to school (it's not very far). They cannot walk or bike to the rec center or the library. None of us can access the bike/hike trail along Bullfrog Valley Rd. Yet, our neighborhood pays enormous taxes. This oversight is understandable from a 1950's to 1970's anachronistic point of view. In today's world it is neither understandable nor acceptable.

TRAFFIC is bad and getting worse. PennDOT states that their number one preferred solution for upgrades to roads is the building of new traffic circles. Traffic circles move more cars, are safer for pedestrian traffic and calm traffic. What's not to like?

SUGGEST your plan include new traffic circles at some of the already failing intersections as well as at those nearly capacity where significant new development is on your plan. Add traffic circles at:

1. Intersection of LIngle Ave and Hersheypark Dr
2. Fishburn and Sandhill
3. Wood and Waltonville Rd
4. the service road and Waltonville Rd

The Wood Rd/Waltonville Rd proposed circle is enormously important. Hershey West will add thousands of people to that exact intersection which is already failing. Hershey West will include shops & recreational areas. It is imperative to make that upgrade now. A traffic light is, of course, a poor solution. The current all-way stop solution is unsafe. Get it right: build a circle there.

08/06/2020
I am seeing a proposed road coming through Cortland Circle. I believe this would be extremely dangerous for the Derry Township Residents in Indian Run and anyone who uses the walking trail. All of the trees would need to be removed along the walking path so cars and pedestrians could have proper visibility to see each other to safely cross the walking trail. Please note that I use this trail almost daily and have trouble crossing the street at the crosswalk on Waltonville road. Cars travel too fast on Waltonville Road now and many do not yield to pedestrians already in the crosswalk. I had a very close call the other day. One lane of traffic stopped but the other one lane didn't. Police, just last week, had a speed check device up and as I was on my walk at least 90% of the cars were traveling over 10 miles an hour over the posted speed limit. The speed device didn't even slow them down. We don't need the same situation through Cortland Circle. The roads in Indian Run were not built to handle a through traffic. The roads aren't wide enough and a lot of traffic would put the kids at risk that live in the neighborhood. Please reconsider this road as the risks far outweigh the potential benefit.

I believe Indian Run residents would not benefit enough for a road to be built out of Cortland Circle enough to justify the risks associated with the additional road and additional widening of roads in the current development for the expected increase in through traffic.

08/06/2020
I am a resident of Indian Run in Derry Township.
In reviewing study map 5, I am opposed to the proposed road that would connect Melrose Drive and the proposed road connecting to the Hershey Medical Center and Middletown Road as shown in the greater Hershey Regional Transportation Study Map 5.
As a resident of Indian Run this proposed connector to Melrose would result a huge Safety concern and increased traffic volume in our development. Our streets are very narrow with one side of street parking only. The narrow streets will not handle the increased volume this connector will bring with people commuting back and forth to the Medical Center not to mention other commuters hurrying to and from work.
The proposed road would connect to the cul de sac on Melrose where our children pay, ride bikes and scooters.
With that said, the combination of narrow streets, one side street parking only, commuters & Medical Center traffic will endanger our children and residents. Please, No connector road to Indian Run Drive Development now or Ever.

08/06/2020
After reading about these tentative plans in The Sun, I have some concerns, particularly about the proposed uses for North and South Lingle Avenues. Neither part of that road appears now to me to be large or straight enough to become part of Route 422, and both parts terminate in an intersection on Route 422 not well suited for a large volume of traffic. Further, they run through a rural part of the two counties, which already include warehouses and a railroad bridge (North) and an elementary school (South). S. Lingle is notorious for flooding during any substantial rain and would require considerable attention before it could be a reliable route. If the Palmyra Road were to be the one used to re-route event traffic from Rte. 322, it would have to join 422 at the Palmyra Square, already a busy intersection, or be routed through some residential street.

As a life-long resident of a neighborhood within sight of part of N. Lingle Ave. and within a quarter-mile of the 422 / Lingle intersection, I would like neither to see any more traffic and inevitable commercial build-up in that area nor to have to contend with the congestion that, I expect, would frequently assail those roads, if converted to be part of a Route 422.

Thank you for the opportunity given to the community to offer our thoughts and concerns regarding this proposal.

08/06/2020
I would like to oppose the road from our Indian Run Development to Waltonville Road. We live is a very quiet development and feel with this new road it will increase traffic with folks cutting through our development. I'm also an avid road cyclist and using the bike path to get past some of the roads is very helpful...too many folks already speeding on our current roads.

I would like to propose that Wood Road be expanded with a traffic light at Wood and Middletown Road. Middletown Road has become a speed zone and poses many challenges trying to exit and enter out development already. Let's fix the current issues before adding issues to the community.

08/06/2020
We are emailing you regarding the Indian Run Road proposal. We live at [redacted] Melrose Drive Hummelstown and we are unable to sign the petition but we are opposed to the Indian Run Road proposal.

08/06/2020
I would like to speak to the proposed road connecting Courtland Circle in the Indian Run Development to an unnamed future road.

1. Any road connected to Courtland Circle would create another intersection on the Jonathan Eshenour Memorial Trail, named for a man who was killed in a biking accident. The hypocrisy of putting another motor vehicle crossing on a trail meant to decrease the interaction between pedestrians/cyclists and motor vehicles should be obvious.

2. Indian Run is getting younger. At 25 years old, the development is in a transition period where the original owners are selling to younger couples with pre-school and elementary school aged children. Our development has continuous representation in grades K through 7 with children ages 1-4 coming along to lengthen the trend. As the streets of Indian Run fill with young children over the next 5-10 years, the last thing we need is more impatient drivers from Middletown Road trying to find a short cut in front of our homes.

Our development is a loop comprised of less than 40 homes and we all moved here to be away from high traffic areas and have safe access to the Jonathan Eshenour Memorial Trail.

08/06/2020
In reference to the Proposed Transportation Plan - specifically the widening of West Governor Road from Hockersville Road heading east:
WHAT is the ultimate goal? It just doesn't make sense.
MOVE Mary Beth Backenstose's 200+ year old house?

What would be gained?
It won't ultimately alleviate congestion.
It won't make it any easier to get to Hershey Medical Center or Hershey Park.
It won't make the homeowners happy.
It won't make the town of Hershey more attractive.
It won't help storm water mitigation issues.

It will severly cut off people's yards
It will produce more exhaust and noise polution
It will entice higher traffic speeds
It will produce debris from the increase of cars and trucks
It will make it less desirable to walk down the street
It will offer less room for snow removal
It will increase traffic - then frustratingly squeeze it back down further east at Milton Hershey School
It will be VERY difficult to get out of the driveways
It will decrease home values
It will increase taxes
It will be a lot of money for very little reward.

This is not what living in Hershey is supposed to look like.

08/06/2020
I'm hoping the committee can revisit the design of the Interchange Ramps -
The renders on pages 34 - 36 are no doubt stucturally sound, but the solid massed concrete stacking blocks seem such a heavy, generic solution that lack any reference to or recognition of the unique beauty of the surrounding area - natural & built.

I believe there's an opportunity to better echo and amplify meaningful elements of the Greater Hershey site - its geography, industry and history - rolling hills & valleys, fields & farm & factory, silos, rollercoasters, arch bridges, etc. - to imagine a more functional, graceful & inspired solution, a bit of "civic scupture." https://www.nytimes.com/2009/11/08/automobiles/08inter.html

Appreciate your consideration.

08/07/2020
As the Executor of the Melvin E. Ricker Estate, I am perplexed that no one has contacted me or anyone else affiliated with the estate to discuss the proposed connector road running from Quarry Road to Middletown Road. This road bisects the northern section of the Ricker Estate from the eastern boundary to the western boundary.

Certainly, someone has assumed that this proposed road is a given reality. I question if any concern was given to the impact that such a road will have upon the usage of the Ricker land for farming. The current zoning for this land is designated conservation which includes farming activities.

Compensation for loss of land usage would obviously be a major consideration and access to both portions of the bisected acreage would need to be accommodated.

I would appreciate being contacted directly about this proposed road on private land.

08/07/2020
Comments regarding The Greater Hershey Regional Transportation Study DRAFT
August 7, 2020

Dear Derry Township Supervisors and HRG,

In reading the transportation report and listening to the Supervisors meeting, it appears to have been a massive undertaking in which much time and effort has been put forth. As a result, those

of us who have recently been given access to it, need a greater amount of time to "sift through" it in order to provided productive feedback to the board. When the plan was being formed "stake holders" were included. As brought out in the supervisors meeting, those stake holders did not include the people who live in the community (Derry Twp, Hummelstown, and beyond). And, those people are very much stake holders. Now is their time to add to the plan. Please do not rush this process.

We would like to address the two new proposed roads between Waltonville Rd and Middletown Rd. If all of the roads are approved as proposed, it will break the up the farms located along Wood Road (Two owned by Hershey Trust and the other is the Ricker farm). These are already broken into two by Wood Road. This would definitely change the character of the farms.

We also noted that the present plan would have four east/west roads concentrated within a small area. They are Route 322, it's feeder road immediately beside it, the proposed road just south of that, and then Wood Road slightly south of it. The question to ask is; Does the township need or want that many east/west roads in that area? We feel three good roads would probably be adequate for this area.
As we brainstormed, there seems to be two options for this to happen. You may already be quite aware of them. One choice would be to improve Wood Road and change the location for it's connection on to Middletown Road. The new intersection could be to the north where the new proposed road is to intersect or to the south, bringing it behind the new strip mall and out at the light at that intersection. The second choice would be to close the west section of Wood Road (possibly using it as a bike path) and building the proposed road from Hershey West. There would likely need to be some shifting of the east section of Wood Road to improve interconnects with the new proposed road.

Another comment that came up in our discussions regarding the four proposed roads, reflects comments made by others at the supervisors meeting. With so many things changing right now (technology, work patterns, etc.), in the future we may not need as many roads.

The above are our comments regarding the farmland across 322 from the Lower Dauphin High School. Below are comments related to other sections of the study.

Left turns are common from east bound Governor Road onto Elm Avenue and can cause a sudden back up of traffic. This poses a threat to the turning vehicle as well as the vehicles coming up behind it, who may not be able to stop or find a place to shift over to the outside lane quickly enough. Is there a way to make this situation safer? Is it possible to have a turning lane if that turn could be pushed a little east by extending Elm Ave also to the east?

The plan calls for much of the traffic arriving from the west to be directed onto Hershey Park Drive and includes a reconfigured intersection on to Lingle Ave south at Hershey Park Drives termination. Are there any considerations given towards improvements at the intersection of Lingle Ave and E. Chocolate Ave? Also, will Hershey Park Drive be used for access to Route 322 east of Hershey? If so, Lingle Ave from E. Chocolate Ave can not handle extra traffic and it is often flooded. Plans should be made for this road in conjunction with Palmyra borough and South Londonderry Twp.

We thank you for initiating this plan, it speaks to a healthy future we desire for the community as a whole.

08/07/2020
FOLLOW - UP

Today's newspaper had an interesting article. Among other things, it states that 130,000,000 ebikes are expected to be sold (worldwide) in the near future. It detailed in part how in our COVID world, bikes were a superb choice. In short, this article (copied below) serves to further make the case that the plans for Hershey's transportation need to more fully include biking (and walking)

Many, many cities have closed streets - or lanes in streets - during this pandemic to accommodate more pedestrian traffic and more bicycles. Why not Hershey?

Yes, we are a small town but that is no reason why we should be backwards.

The transportation plan should be improved:

- ADD SIDEWALKS
- ADD BIKE LANES

The Teenage Tinkerer Behind an E-Bike Revolution
Mike Radenbaugh dreamed up Rad Power Bikes over a decade ago in his family's garage and now sets the pace for affordable battery-propelled bicycles.

08/07/2020
This email is a follow up to my email from yesterday. I believe that you will be receiving a petition signed by many members of the Indian Run development. I have circled in blue the section of the proposed roadway that our community, almost without exception, opposes. A road in this location will not reduce significant traffic on Middletown Road. It will destroy the character of our quiet neighborhood. The road is unnecessary, a waste of taxpayer money, and is unwanted. Please remove this road from your traffic plan.

08/07/2020
Years ago I attended one of the first, if not the first, COMPREHENSIVE PLAN meetings held at the Hershey Free Church. Dan Peffley, among others, was a Township supervisor at the time. One of the central themes presented was that the roadways in Derry Township were not much more than "cowpaths".Now they're just paved. Years have passed, and not much has changed.

Now, however, there is a traffic "study"(?) completed by HRG to improve (?) the situation. This is merely a thinly veiled attempt to cram more people per mile, per minute into the community for "events". The events referred to are NOT family and neighborhood picnics. The proposed changes, if implemented, will appear as if someone extracted all the freeways around Los Angeles, airlifted them to Hershey and dropped them down. A drive from the Eisenhower Interchange to Colonial Park will provide a preview of what Hershey will look like.

The study gives negligible consideration to the citizens/stakeholders of the community and how their lives will be affected. Because of COVID public meetings are conducted in an emotion-free ZOOM environment. This may satisfy technical requirements for conducting meetings, but it cannot convey the angst and frustration of the citizenry not having a voice.

The property owners along Rte. 322/Governor Road are excellent examples of this. Their homes and any semblance of homelife, to say nothing of property values, will be obliterated. Public comments at the ZOOM meeting were given short shrift, and the deadline for input to HRG was SET as August 7. Even though the study was presented as fluid and its implementation to be well into the future, public requests for a comments extension beyond August 7 were rebuffed.

It's hard not to feel that "this cake is already baked" or that "this train has already left the station".

Take a deep breath and STOP this rush to improvement(insanity).

08/07/2020
I have attached the comments on the Greater Hershey Regional Transportation Plan for your review and consideration. We own a property at [redacted] W. Governor Road. If there are questions or comments, please feel free to contact me.

[FROM ATTACHMENT:]

This letter is in response to the June 16, 2020 draft "Greater Hershey Regional Transportation Plan" prepared by HRG and submitted to the Tri-County Regional Planning Commission. We own a home on W. Governor Road and were surprised to learn from a neighbor that this study existed. Additionally, we are disheartened by the negative impact on our property and the Governor Road neighborhood based on the proposed widening from a two-lane road to a five-lane highway. The mere mention of such a project has already decreased property values along the W. Governor Road corridor addressed in this study. **In** addition to negative financial implications, this study and potential project also negatively impacts safety, the environment, health, quality of life, and for the residents the project completely destroys the houses that that they call home.

In general, we are appreciative that the planning commission initiated a study of the greater Hershey area, as there are notable traffic challenges in the area. Of particular interest to us is the portion of the study pertaining to Route 322 (Governor Road). The plan to widen/improve the 322 corridor from the 422 interchange to the intersection with Homestead Road, is quite ambitious and may be partially warranted in some specific areas and equally unwarranted in other segments of this study area.

Before addressing some of the specific aspects of the study, we would like to comment on the lack of communication by the planning commission and Derry Township. Unless, specifically tasked by the planning commission or the municipality, it is not the responsibility of the engineering firm (in this case HRG) to notify residents of such a study. However, it is unfortunate for the engineers to receive negative comments from residents related to the lack of communication to the community by the planning commission and Derry Township. The Derry Township Board of Supervisors (BOS) and the Community Development department should have notified property owners that the study was taking place since the resulting recommendations would have a dire impact on the property owners and residents along the 322 corridor. Notification from the issuing entities is a professional and neighborly courtesy that we of Hershey were not afforded.

The interchange of 322 and 422 needs to be improved to better facilitate traffic flow, increase safety, and assist with GPS and other navigation tools to direct tourist/visitor traffic to main arteries instead of local roads. A dedicated and identified route from 322 to Hersheypark Drive/422 and a Business 422 route will definitely increase the Level of Service (LOS) for vehicles travelling to Hershey from the west. Hopefully, such a change in the roadway would reduce tourist/visitor traffic that currently use 322 and 422 to access Hershey attractions such as Hersheypark and the Giant Center, by directing vehicles away from the Penn State Milton S. Hershey Medical Center (Medical Center), downtown Hershey, and residential streets.

The segment of the 322 corridor in the immediate proximity to the Medical Center is also in need of improved traffic flow. These intersections are, as noted in the study, 1-23, 1-24, 1-25, and 1-26. However, the proposed widening of this segment of the roadway as outlined in the study, will negatively impact the homes and businesses in various ways. Most notably are the encroachment on properties due to the proposed width of the road and the relocation of the recognized historic brownstone at 1-26, and for these reasons, alternatives to the construction of five travel lanes should be explored. Consider only constructing intersection improvements and updating traffic Signaling. Dedicated bicycle lanes should not be added as part of the "road" since there is an existing trail/path that runs adjacent to 322 in this area. The Medical Center must increase the use of staggered employee work schedules to reduce the number of vehicles on the road at the same time. It is imperative that the Medical Center reflect on their role in the increased traffic on the 322 corridor, as well as, other major routes (422 and 743) and nearby smaller roads and even residential streets. The Medical Center must take action to mitigate the negative impact of their operations and staff instead of preying on the well-being and finances of the residents and businesses of Hershey. Simply offering some monetary assistance for the construction of a massive five lane road, if that has even been discussed, is irresponsible and ultimately will not improve the traffic congestion identified in the study and negatively impacts the community.

The 322 segment between intersections 1-26 and 1-29 is the most atrocious aspect of the study. The study and proposed construction show no regard for property, life, or safety of the homeowners in this segment. Several factors associated with such a study and project were not addressed. One of the more obvious omissions was that the study did not demonstrate how the proposed five-lane highway will improve traffic along the segment, nor did it address how traffic will be impacted at Homestead Road when the five lanes are reduced back to two lanes. That junction will inherently cause a vehicle bottleneck and as such the LOS will not improve as projected by the study. So, if the goal of the study and associated construction project is to alleviate traffic congestion, it is truly unclear that this in fact will happen. Additionally, the study has no consideration for the impact on the residents and home owners along Governor Road or the adjacent streets (Elm Avenue, Linden Road, Glen Road, Oak Road) and neighborhoods (Cocoa Townes). The study showed an irresponsible concrete highway overtaking the entire area. Further, the study has not addressed the financial, environment, safety, health, and many other considerations. Property values have already dropped as a result of this study being released and will ultimately continue to decline with the construction of a five-lane highway as land/property will be seized and homes will condemned along this neighborly section of Governor Road. The homes in this area are conveniently located near the schools, library, community center and recreational facilities, as well as, downtown Hershey. Easy and safe access to these amenities make our section of Governor Road attractive homes for families and others who enjoy what Hershey has to offer. However, if Governor Road becomes a five-lane highway, no one will want to live in the area and those who currently own a home there will likely move or be forced out of their homes as the area will be uninhabitable and unsafe. As a home owner on West Governor Road, we absolutely do not support the conversion of the existing two-lane road into a five-lane highway. There are too many negative impacts that would result from such a project.

On a number of occasions, we access 322 eastbound from southbound 743/Cocoa Avenue on a weekday between 2:30 and 3:30 PM. It is frustrating to wait for several light cycles to complete a turn. However, our inconvenience and short delay do not warrant

the loss of homes, property, safety, and financial resources of the residents who live in the vicinity of 1-29.

For 1-30, the Hershey middle and high school start times are planned to be modified, which will change the traffic volume and flow in the area of Homestead Road. This information may nor may not have been available to the engineers conducting the study. Regardless, this is important for the study to present an accurate picture of future traffic patterns at this intersection and the others along Governor Road.

Thank you for the opportunity to review and comment on the draft "Greater Hershey Regional Transportation Plan." The report contains some proposed projects that could responsibly improve traffic flow, bicycle access, and pedestrian safety; however, no project should be performed to the detriment of the livelihood, finances, property, health, welfare, or safety ofthe residents and property owners. Again, we are on record stating that we do not support the construction to convert Governor Road from a two-land road to a five-lane highway. Just because you can, does not mean you should.

08/07/2020

My wife, [redacted] and I are residents of Indian Run Development and have been living in the home we built here since 1995. We love our quiet, safe and undisturbed life in Derry Township and this neighborhood.
We are both retired now from Hershey Medical Center and The Hershey Company/Penn State University.
The location is perfect for raising a family just removed from the busy world that surrounds us in a prosperous community like Hershey.
After reviewing the Greater Hershey Regional Transportation Study, we have some concerns that we would appreciate you share as part of the review for this proposal.
We oppose any connector road from the Indian Run Development as shown on the HRG Map 6. We feel this would provide an easy access/shortcut for non-residents to use to avoid the traffic at the nearby intersection at Route 322 and Middletown Road and put unnecessary traffic into our neighborhood streets which were never designed for that amount of traffic. This additional traffic would present a major safety concern to the residents and their children who use the streets for bike riding and walking. The streets in the development are very narrow and so safe line-of-sight vision is not sufficient for through traffic.
The Vista School also has a group home on Melrose Drive and the increased traffic through the development by people unfamiliar with its location could pose a safety concern to the residents of the home since they are often outside walking in the neighborhood.
We have already noticed a significant increase in foot and bike traffic from non-residents from the walking trail since it was connected to our development several years ago. There have been many instances reported to Derry Township Police about suspicious persons and cars in the neighborhood.
The remainder of the proposed study looks good since it should help to alleviate some of the traffic congestion on the Middletown Road. We do not object to the proposed connector road which is shown crossing the open field from Middletown Road/Gramercy Place toward Waltonville Road since it should provide a better access to the proposed development of that area.
We see no advantage to having that proposed connector road connect to Indian Run Development.
Thank you for your consideration on our behalf.

08/07/2020
As a lifelong resident of the Township, I would like to express my disappointment with the plan to widen the passage of Route 322 from Cherry Drive to Homestead Road.

Much of what has made Hershey what it is today is its Founder's philosophy of interest in the needs of and amenities for its inhabitants and his generosity in seeing that those concerns were provided for. This plan ignores not only the expectations of the property owners who will be immediately affected, but also those who live elsewhere in the Township but love the community as a whole.

My property is not at all affected by this proposal, but I am greatly aggrieved by it as are many others in the community. This action would leave an irreparable scar on the psyche of the town.

There is also the significant issue of the historicity of several buildings that will be directly affected by the plan. Earlier road work took into consideration protection of the early Toll House at the intersection of 322 and 743. The brownstone building on the southeast corner of 322 and South Hockersville Road was built in 1806 by Martin Hocker after whom the village of Hockersville was named. This community was later one of the area villages absorbed into what is known as Hershey today. The building was slated to be destroyed in the 1960s, but Dr. D. Lee Backenstose purchased the building in 1966 within days of its impending destruction, being done to make space for a gas station. Removing or relocating the two aforementioned historic buildings destroys pieces of the area's historical integrity.

Those most likely to benefit from the HRG plan will be travelers who are not even part of the community. Those of us who live here know how to avoid high traffic areas. That makes this plan one that benefits outsiders at the expense of those who make Hershey their home. It is my hope that you will remove this from the plan, and that you will also consider the desire of the residents in any other projected alterations to the fabric of the community.

08/07/2020
I am writing to let you know my concerns regarding the proposed 5 lane highway on 322, Governor Rd between Homestead and University Drive. I feel this would be a negative impact for the residents and I oppose it. I believe it would decrease property values and create safety issues. Taxes will go up and right now we are already waiting for the impact of the new Plaza/Pool project not to mention the uncertainty for all residents and businesses during this pandemic. Things have changed and more will continue as we see if businesses will even be able to reopen in Hershey. Why weren't residents who will be impacted along 322 ever contacted before publishing a draft of this study? It seems there is no transparency with plans for Hershey until it's almost a done deal. I believe you definitely need a longer period of review and public input to review the plans for the future.

08/07/2020
As the chairperson of Historic Preservation for the Hershey Derry Township Historical Society, I would like to address the moving of the Hocker House at [redacted] West Governor Road, Hershey, on the corner of Fishburn and Governor Road. The moving of historic buildings threatens the loss of the historic fabric for a community. The original context of a structure is changed thereby violating the fundamental tenets of historical preservation. Additionally, in consideration of this particular building's age and composition, the moving of fragile buildings can have disastrous results.

In 2018, the Hocker House received our Preservation Award. The traditional brownstone farmhouse was built in 1806 by Martin Hocker. Once rural farmland, the property in the small town of Hockersville sat on the main road from Harrisburg to Ephrata, a busy thoroughfare for farmers. In addition to farming, Martin was in the hotel business for 40 years. He was one of the builders of the 1815 limestone German Evangelical Church in Hummelstown – known as the Parish House and now owned by the Hummelstown Area Historical Society. He is buried in the adjoining cemetery. Dr. Daniel Lee Backenstose purchased the property at the last hour in order to prevent its demolition for the purpose of making way for the Sunoco Station which then was established on the northwest corner of the intersection. The house has been used for over 40 years as medical and counseling offices of the Backenstose family.

Brownstone rock is native to our area and was first quarried in the 1700's by the Berst family in 4 quarries south of Hershey. Many of the iconic Brownstone buildings in New York and Philadelphia came from these quarries. In 2003, the Brownstone Quarries were placed on the National Register of Historical Places.

It is our mission to embrace and protect these intrinsic parts of our community. Unfortunately, preservation is a one-way street and there is no going back once it is lost forever. We, at the Society, would like to see this part of the HRG proposal removed, and would be happy to have a dialogue for this structure and any future plans.

08/07/2020

Hello! I have lived in Derry Township since 1992 after moving here from Texas. Not a change for the better as far as roads go. For an area this small, it is ridiculous how difficult it is to get around.

I have comments on two areas of your plan:

First, is 1-22-M, a traffic signal at Areba and Hockersville. For those of us who live in the Briardale/Briarcrest area, we jeopardize our safety every time we go to CVS. This light and road-leveling is much-needed for cars. I have also wanted something to slow cars down that are making the right turn from eastbound 422 to southbound Hockersville because they just fly around that corner. I would like to see added to the plan is a sidewalk from Areba to CVS on the west side of Hockersville. If that isn't possible, we at least need a sidewalk from 3rd Ave. to CVS (in front of just one house). If anyone from this neighborhood wants to walk to CVS, we either have to trespass on the property of this house or the motel, or walk in the road on Hockersville. Another part of this project needs to make that first block of Areba just west of the intersection "no parking". It is really dangerous when you make a turn from SE Bound Hockersville to SW Bound Areba and someone is parallel parked right there, especially if they are getting in and out of their car.

My other area of concern is the widening of 322 to five lanes. This is another way-overdue project. I'm not sure if feedback here can stop the residents of the handful of homes on 322 between Hockersville and Cocoa Ave. from derailing this project. Their houses are on a HIGHWAY (see every PA map) which is desperately in need of widening. Hershey is no longer the last populated area in the line and we have to get these commuters through here (and out of here). Our other east/west corridor, 422, is never going to be widened after Hershey let them build with no setbacks. Also complicating 322 congestion is the unfortunate decision years ago to build the early childhood center instead of putting a neighborhood elementary school on Middletown Rd like they should have done, so now every kid has to be bused to Homestead Rd. I don't really have any feedback on changes to the plan, just worries that it won't be done due to resident objections.

08/07/2020
Attached find Part 1 of Petition signed by Indian Run Residents, Part 2 to Follow.

If you have any questions or comments, pleas call or email me.

08/07/2020

Attached find Part 2 of Petition signed by Indian Run Residents.

If you have any questions or comments, please call or email me.

[FROM ATTACHMENT: A petition signed by 37 residents of the Indian Run neighborhood was submitted in opposition of the Indian Run Connector Road from the Gramercy Connector to Cortland Circle.]

08/07/2020
I am writing to provide public comment on the Greater Hershey Area Traffic Study. I am a resident of Derry Township. I read the draft study proposal as well as watched the recorded presentation. I understand the concern for traffic on Middletown road. I support turning lanes, sidewalks, and additional exploration of either a connector road from Gramercy to Waltonville Rd. I am strongly opposed to the construction of a road to Cortland Circle or Melrose Dr. I live in the Indian Run Development which would be significantly impacted by a road entering into Cortland Circle.
Our neighborhood is quiet with narrow tree lined streets. Many families with young children like ours chose this particular neighborhood due to the extra safety that the cul de sac, limited traffic, limited car access, and access to the bike path. This was a crucial piece of our decision to purchase our home. These features lead to a neighborhood that is active with children riding bicycles and running between backyards to play with each other. In addition to children, the adults of the neighborhood are active walking dogs, road cycling, jogging and using the path for transportation to work. Our family utilizes the bike path daily.
Again, I understand the concerns for congestion on Middletown Road especially south of our neighborhood near the larger neighborhoods. I do not feel that a road in any form from the back end of the neighborhood will eliminate those concerns or the traffic volume on Middletown Rd. I do have concerns that a road connecting us to Waltonville or to a connector road, will funnel traffic through our neighborhood either by local drivers looking for a shortcut or individuals utilizing navigation apps. I am concerned especially as additional housing is added in the Waltonville/Bullfrog Rd area, that our neighborhood will become a shortcut to Middletown Road. There is no benefit to turning this quiet neighborhood into a thoroughfare.

08/07/2020

[FROM ATTACHMENT:]
This letter follows the emailed letter I sent to the Derry Township Board of Supervisors in July in which I expressed my concerns about the 'Greater Hershey Regional Transportation Study' prepared by HRG. I will be sending similar letters to each Board member and to Ms. Gallagher of HRG. I am writing to ensure that you and the Board understand the magnitude of the decision you will be making and the negative effect it will have on the residents of the township and the region.

The process for this study has not been made public. I assume, but do not know, whether the supervisors need to approve it before it can be implemented. Given that, I write to you, as

officials elected to safeguard the citizens of Derry Township, to ask that you either vote down the study as is or act to delay any formal action on the plan until the following are done:

1. Ask HRG to take the coming year to rework the study so that transportation plans actively mitigate climate change. I note that the Climate Change Advisory Committee for the township has voiced similar concerns about the study. If the vast majority of scientists tell us our world is burning up, we need to do everything in our power to stop it. This study doesn't even try.
2. Ask HRG to take the coming year to see if traffic volume projections will have changed because people are working from home or schools are functioning online due to COVID-19 concerns, and then rework the study based on the updated information. All the road expansion and construction currently in the study may not be needed.
3. Ask HRG to take the coming year to expand its vision of transportation to include public transportation options to address development. Would electric trolleys be viable? Park and ride centers with van transports between destinations? Train? Bus expansion? There are many options that have not even been considered in this study for which public transportation may be used to the township's advantage and reduce costs.
4. Remove from consideration and from the study altogether right now the portion of Governor Road planned for expansion to five lanes between Fishburn Road and Cocoa Avenue due to the great degree of harm that would be caused to the residents that live all along both sides of the road. Homes would be lost or damaged and the neighborhood shattered. One of my neighbors notes that the red line denoting the expanded new width goes right through her front porch. When were you going to tell the residents that their land and homes would be taken away or destroyed? This study violates in every way the goal of 'protecting the Hershey village' as professed by the study. Harming so many families should not be considered, let alone be tolerated as morally acceptable. I expect ethical and respectful treatment from elected officials.
5. Remove also from consideration and from the study right now the portion of Governor Road-planned for expansion to five lanes from Fishburn Road to Homestead Road for safety reasons. The hazards that would result from the planned expansion are not noted in the study, such as risking the safety of children entering and exiting school buses along the expanded road, the bottleneck of five lanes trying to go back to two lanes at Homestead Road where school buses will be passing much of the day, air pollution, noise pollution, light pollution and the list goes on. Increased hazards for children should not be built into the plan.
6. Delay approving or accepting the study until these changes are made so that the township can save money, so taxpayers will know how much it will cost and residents will not be pushed for additional taxes or funding on top of the cost of the new recreation center. Many of the grants which HRG promotes to fund the planned roadwork require matching local funds. All effort should be made to reduce expansion and construction costs, and taxpayers/residents should be told at the outset how much this study would cost each of us to implement all that is planned.
Ultimately I am wondering who benefits from the plans in this study. Not homeowners and taxpayers who will end up having to pay more for all of the unnecessary construction. Not families who live along Governor Road, especially not those with school children trying to get on and off school buses. Not the residents who live in the Hershey Village or the school district who wish to access Governor Road. And definitely not the environment with increased air pollution and concomitant addition to climate change.
Please act on behalf of the citizens of Derry Township and the region to reject the study as is or to require the changes I note above.

08/07/2020
I am a resident of IndianRun opposed to proposal of a road connector from HMC to Middletown Road through our development - also Susan Cort's mother lived in our quiet awesome

development for many years and I am sure she knows how unique our smaller development is. Definitely put my name on the "not happy" list about the road connector. Thank you

08/07/2020
A few days ago, I was made aware of the proposal for a road to be created to the Indian Run development. The move is to allow a secondary road to the Medical Center. My family and I highly oppose this proposal for a number of reasons. Indian Run Drive will become a major thoroughfare as cars, stopped at the traffic light, will not wish to wait for the red light. Instead, they will turn into the development and speed through. The location of the road will also affect the Eshenour Trail that leads into the cul de sac and put the numerous pedestrians, especially children, at risk. I imagine, Mrs. Eshenour, who worked so hard to establish a safe trail to prevent other children from being killed, would be disappointed that this is even an offer being considered. It is a quiet neighborhood and those of us who bought homes in this neighborhood purchased the homes for that very reason. One of you on the board had family who lived in this neighborhood for many years, so you may be able to attest to this. We were also assured that because Hershey Trust owned the farmland, there would not be further development. Although we are just a family of three eligible voters and are voicing our opposition against this proposal, I do hope you will reconsider. Thank you for your consideration.

08/07/2020
I am an heir to the Melvin Ricker Estate, located on Wood Road in Derry Township. Therefore, I would like to offer some concerns regarding the proposed construction of a connector road through the Ricker farm.

To my knowledge, there has been no direct contact/communication from HRG, Derry Township, or any affiliates of Derry Township to the Estate or Melvin Ricker, while living, regarding this proposed road. There has only been the recent article in the Hummelstown Sun which publicly announced the plan to build a road. I would have hoped for a more up-front approach, whereby the governing parties and associates involved in the planning process would have been more communicative out of respect for the property owners of the township. The lack of communication could imply the intention to "push things through" with a disregard for the wellbeing of the community and their deserved input. Moving forward, I suggest that the Township would consider soliciting the opinions of residents, particularly those owning property affected by this proposed plan, and respecting those opinions by acting accordingly.

Currently the farm is active and is leased to local farmers for the production of crops. Furthermore, it is located adjacent to and to the west of the proposed "Hershey West" development plans. Seemingly, it is one of the few farms offering open land so close to proposed major development in the township. On one hand, I appreciate that this scenic "gem" might remain undeveloped among the "progress". On the other hand, I realize that there can be advantages to progress. So, I am not completely opposed to a road through the farm, but would expect fair financial consideration to the Ricker Estate for the right-of-way and loss of land usage.

In addition, my wife and I are residents of Campbelltown, South Londonderry Twp, Lebanon County. The proposed plan will highly impact our village and township. It is of great concern to us that there has been no apparent communication from HRG or Derry Township officials with our township officials or residents. Nor is there evidence of consideration being given to the major changes the plan would have on our community. Although just a small section of the entire plan, we would ask that all townships, school districts, and residents of affected areas be given equal consideration in the development of this plan.

Thank you for your consideration of these matters.

08/09/2020
My house sits on the corner of the Cortland Circle cul de sac. I am opposed to a road being built that connects Cortland Circle with Waltonville Road. The cul de sac is a main entrance to the Hershey bike trail for Indian Run and Orchard Run so a road going in there would cause major disruption to the trail. The neighborhoods are not that big so I do not feel the road is necessary.

08/10/2020
I'd like to ask if there are any improvements planned for either the intersection of Church Rd and Fishburn Rd or Harvey Rd and Fishburn Rd. We live on Harvey Rd and crossing or entering Fishburn is currently VERY difficult. During school commute hours, teen drivers crossing that road have a terrible time. I would ask that you consider some measure to improve the traffic flow at both of these locations.

It seems from the maps I've looked at, that very little will be done in the Stafford Heights area (Harvey Rd etc). If the proposed new residential construction takes place on Hilltop Road, much of that traffic will come down through Stafford Heights and/or Church Rd in order to get to town or the schools.

08/10/2020
I live on Jonathan Court in Orchard Run, just off Middletown Road. My row of houses runs parallel to 322 and the adjacent service road. My back yard backs onto the empty woodland along the service road.

I moved here in November 2019 and am quite surprised by how much speeding takes place, of the 'boy racer' type, on this section of 322 and the service road in the evening and at weekends. I don't see it but I can hear it inside my house with the windows closed. I've been to enough motorsports events to know the sound. It's loud. And fast. Mostly cars but sometimes motorcycles.

I have been studying your maps and concept sketches. The first thing that comes to mind is the field day the boy racers are going to have with all those new roads and additional lanes.

While I am shocked by the increase in traffic along Middletown Road and appreciate the investigation, having only two lanes keeps people honest. In my experience driving to Middletown several times a week, people obey the speed limit and are conscientious. Once you get to the four lane section by the 283 access roads, the speeding starts. It's a day at the races to beat the multiple traffic lights there. Everyone is in the left lane (except me) trying to go faster and the really impatient ones pass on the right to move to the front of the queue. Basically, a lot of dumb driving occurs when there are more lanes.

The problem here is that Middletown Road isn't a highway like 322. It is a road with neighborhoods all along; and the plan is to put cyclists on that road too. I am a cyclist and all for increased provision; but I am also deeply concerned about the safety of putting a bike lane along what is sadly going to become a highway in a residential area.

I have four questions:

1. Is anyone aware of the racing/speeding problem along this section of 322 and the service road?

2. What will you do to mitigate additional racing and speeding along these new and bigger roads?

3. What will you do to protect cyclist from the increase in traffic and (if my predictions are true) danger presented by speeding cars?

4. Are you consulting with cycling groups and advocates? I used to live and cycle to work in a very large city and have experienced a wide variety of cycle provision, some good and some very poor and hence dangerous.

Thank you for your time. Best wishes on this ambitious and potentially controversial project.

08/10/2020

I've been a resident of Hershey since July 2001 and have seen twenty years of changes.

On Friday, 7 August, I drove to Delaware and back. As always, I drove down route 30 after exiting the bypass around Lancaster.

If you haven't seen it, route 30 between Lancaster and Gap is a nightmare of multiple lanes of heavy traffic, surrounded by multiple opportunities for cars to turn in and out and in and out of shopping centers, restaurants, hotels, and tourist attractions. At the same time, there are plenty of pedestrians trying to cross those multiple lanes of traffic while not getting smeared all over the asphalt.

The LAST thing Hershey needs is a stroad through town. That combines the worst aspects of a high-speed, high-volume road designed to move cars quickly while at the same time having plenty of shops, restaurants, family home driveways, and what have you.

I do NOT want to see any more widening of Chocolate Avenue or Governor's Road.

I DO want to see more traffic calming measures like pedestrian islands, sidewalks, bike lanes, plenty of street trees, and crosswalks that are actually long enough to cross the street safely.

If we are going to encourage tourists to come to Hershey, it needs to be safe for them to walk around!

08/11/2020

I am sending you this with great optimism that you will help modify the transportation plan just submitted for review so that it will better serve the good people of Hershey. IMHO, the plan that was put forth read like something out of the 1950's. It was all about cars, cars, cars. Alas. The plan should have been about people. As I noted, folks like me with kids in the high school (now graduated) could only get to the school, library or rec center by car. That is nuts. We live only a bit over a mile away! The plan absolutely must address needs like that.

Below is a copy of the thoughts which I passed on to the company doing the work on the plan. Of course, I barely scratched the surface when it comes to building a case for non-motorized transportation. I sure hope that you can help push them forward to at least the year 2000 when it comes to their thinking.... Come to think of it - why not be proactive and plan for the year 2040? By then we know that Ozzie and Harriet will no longer be driving a station wagon with six kids, one dog and a stay-at-home mom who can double as a limo driver all day

long. As submitted that seems to be the thinking behind the plan. Again, thank you in advance for anything that you can do for those of us who live here.

###########
Here are some important thoughts which I hope will lead to additions to your plans.

COVID-19 has made it abundantly clear that walking and bicycling is healthy. Derry Township in general and Hershey in particular can do much more to encourage that. Please see specific suggestions, below. In general, it is abundantly clear that the proposed plan gives short shrift to walking and biking. That must change.

It is clear that the sidewalk/bike system in our community is far from complete. The new plan takes only token steps to address that problem. This is ironic: the biggest employer in the area is a healthcare system. Don't take it from me, ask them: walking and biking is good for your health. Driving only contributes to gridlock and global warming. Why should you devote massive amounts of square footage to new roads when each walker or biker that you might accommodate would take something like 1/24th as much infrastructure. First things first would dictate that you would encourage quality of life choices. The Bullfrog Valley Trail should be your exhibit one. It is enormously successful. Expand it - expand it massively. Immediately below is one example of how to expand drawn upon my neighborhood. The example I give was a real one: my son was on the swim team - he could not safely walk to practice. Today, he lives in Washington DC and routinely walks and bikes greater distances than from my house to the new rec center being built. If you are going to build a new rec center in the amount of 8 figures, then why oh why would you not want to make it readily accessible to kids?

1) The neighborhood immediately to the south of the Hershey Medical Center,"Shady Hill Estates," is completely isolated and not tied into your various improvements. It is only accessible by car. Doesn't seem to matter that the neighborhood is full of kids -- they cannot access the parks off of Bullfrog Valley Rd even though it is just a couple of tenths of a mile away. Likewise, adults cannot bike out of the neighborhood or walk anywhere except around the block. UGH.

SUGGEST ADDITIONS TO YOUR CURRENT PLAN

New sidewalk (or bike/sidewalk) on Sunnyside

New sidewalk (or bike/sidewalk) on Hillchurch and then down Sandhill to tie into trail on the south side of the med center property

The Hershey Med Center owns the large tract of land behind it (to the south) Build an offroad bike connection to tie into the terrific and highly used trail on Bullfrog Valley that traverses that large field behind the med center. What a great idea for a growing area while the land is available -- NOTE: the neighborhood in discussion here is the closest one to downtown Hershey that is <u>completely isolated and cut-off</u> from town except by car. Kids cannot walk or bike to school (it's not very far). They cannot walk or bike to the rec center or the library. None of us can access the bike/hike trail along Bullfrog Valley Rd. Yet, our neighborhood pays enormous taxes. This oversight is understandable from a 1950's to 1970's anachronistic point of view. In today's world it is neither understandable nor acceptable.

TRAFFIC is bad and getting worse. PennDOT states that their number one preferred solution for upgrades to roads is the building of new traffic circles. Traffic circles move more cars, are safer for pedestrian traffic and calm traffic. What's not to like?

SUGGEST your plan include new traffic circles at some of the already failing intersections as well as at those nearly capacity where significant new development is on your plan. Add traffic circles at:

1. Intersection of LIngle Ave and Hersheypark Dr
2. Fishburn and Sandhill
3. Wood and Waltonville Rd
4. the service road and Waltonville Rd

The Wood Rd/Waltonville Rd proposed circle is enormously important. Hershey West will add thousands of people to that exact intersection which is already failing. Hershey West will include shops & recreational areas. It is imperative to make that upgrade now. A traffic light is, of course, a poor solution. The current all-way stop solution is unsafe. Get it right: build a circle there.

08/13/2020

The Greater Hershey Regional Transportation Study just came to my attention, and, I have great concern regarding my property at [redacted] West Governor Road. Can you please give me some details regarding my property.

08/13/2020

Though I have written before to identify problems and suggest solutions to the Greater Hershey Regional Transportation Study, it has come to my attention that the situation is even worse than I realized. The problem at minimum doubles when you consider the expansion of both Governor Road and the Middletown Road corridor. I ask that **HRG and the Board of Supervisors remove the expansion of Governor Road between Fishburn and Cocoa Avenue and the expansion of Middletown Road from the study altogether until it can be proven that there is no other way by public transportation to transport people through and around the township.**

Put together, this study sacrifices about 100 Hershey and Hummelstown families' land and homes for the sake of making drivers of cars and trucks traveling in the Township a little faster. That is NOT a fair trade, not good value for the money spent. The only way this should even be considered remotely acceptable is if all possible steps had been taken to reevaluate the need for widening Governor Road and the Middletown Road corridors by:
-utilizing public transportation options
-mitigating climate change
-getting and applying updated data based on traffic volume considering COVID work and/or study from home.
The expansions create safety issues for the families whose children will enter and exit school buses, as well as air pollution, light pollution, noise pollution for all who live in the surrounding areas. The expansions also jeopardize at least three old buildings, some dating back to the 1800s.

Because roads will always fill to capacity, the wider the road, the more trucks and cars we will have. We need to take the long view and reverse the direction we are going. That is, we should not create more pavement to accommodate more cars and trucks but to plan other ways to move people wisely. Moving trucks and other through traffic to use Hershey Park Drive as Route 422 is great. Why not shift trucks and cars traveling Route 322 onto Hershey Park Drive as well, going around the township? Route 322 could be reconnected to the two-lane continuation in Campbelltown and it would keep traffic from using either Governor Road or Chocolate Avenue as drive-through routes. And it would certainly reduce the need for Governor Road to be widened.

Just with the development of Hershey West or West End, we know there will be a need to move more people around the township. It would be great to offer everyone there a transit system that would provide environmentally sustainable options and create good habits from the beginning instead of unhealthy ones, a system that would be part of a network in the rest of the

township and around the region. For example, an electric rail or trolley that is powered by renewable sources would both cut CO2 emissions and provide a transit option other than just cars or bikes or walking. Park and ride centers at each end of town could connect to that transit system. And that rail or trolley system could connect to a regional train system. Derry Township already has the intermodal station and parking lot. Let's truly use it as an intermodal hub. If HRG is not able or willing to plan creatively and sustainably for the township, we should be bold enough to terminate this plan and start fresh.

And the question of cost has yet to be addressed. No figures were given for any of the study, least of all what it would cost to compensate 100 families for their land and/or homes. All township taxpayers have a right to know what this will be costing them. And costs on top of the recreation center and COVID accommodations are already high. While grants are proposed, matching local funds are required. What would that mean in raised taxes? It behooves all of us to reduce costs, reduce construction every way possible. In the process, you save families, save the environment and save the township, region and the climate.

Thus, I ask again that **HRG and the Board of Supervisors remove the expansion of Governor Road between Fishburn and Cocoa Avenue and the expansion of Middletown Road from the study altogether until it can be proven that there is no other way by public transportation to transport people through and around the township.**

I ask again that **HRG and the Board of Supervisors take time to consider how best to mitigate climate change, to consider changes in traffic patterns as people work or study from home, to consider how to reduce the costs of addressing transportation needs and reducing construction around the township.**

Let's not kick the problems down the road, but plan now to form a transportation study that provides the township and region a sustainable future. Now is the time to be courageous for our children and future generations to build a transport system that will make our town a truly livable community, not just for some but for all families.

08/14/2020
FEWER CARS, MORE WALKING AND BIKE PATHS, MORE PUBLIC TRANSPORTATION.

08/14/2020
I think during this time of economic depression, depressed revenues and health uncertainty, no decisions should be made requiring an outlay of money by the township. We should wait until the pandemic is over/vaccine controlled.

I am very concerned about the widening of Middletown Road and the finding of land to do this project. The area that I am concerned about would be Indian Echo Caverns and Hershire Animal Hospital commercial locations. Taking even 30 feet of roadway from the parking at Hershire would render the parking lot unusable to a lot of spaces. Would you take it via eminent domain? That would be very costly. Or would you gain the space needed from the east side of the road?

I feel that widening of Governor Road would be a horrible enhancement for all of the homes located there and for those on Elm Avenue.

I would suggest the utilization of a trolley, metrobus system for the Twp. of Derry, similar to that of Key West, Florida and/or Ana Maria Island, Florida. It could really gear up during the tourist season and if it is free, tourists would use it and so would townspeople.

08/17/2020
THE CONGESTION CON:
HOW MORE LANES AND MORE MONEY EQUALS MORE TRAFFIC

.... we are spending billions to widen roads and seeing unimpressive, unpredictable results in return. Further, the urbanized areas expanding their freeways more rapidly aren't necessarily having more success curbing congestion—in fact, **in many cases the opposite is true.**

This report examines why our strategies to reduce congestion are failing, why eliminating congestion might actually be the wrong goal, and how **spending billions to expand highways can actually make congestion worse by encouraging people to drive more than they otherwise would,** a counterintuitive but well-documented phenomenon known as induced demand.

The report also has five simple policy recommendations to make better use of taxpayer dollars without wasting it on "congestion mitigation."
https://smartgrowthamerica.org/resources/the-congestion-con-how-more-lanes-and-more-money-equals-more-traffic/

Please REMOVE
1. the expansion of Governor Road between Fishburn and Cocoa Avenue and
2. the expansion of Middletown Road

from the Transportation Plan altogether! The Plan is the first step and the time to stop it is NOW.

No plan is BETTER than a BAD PLAN. I do not think you have to toss the whole plan - just the parts that do more harm than good.

A better plan for Governor Road is to partner with the Med Center to develop remote shared parking arrangements with 3 or 4 existing parking lots where the Med Ctr could use its existing shuttle to bring folks for free.

P.S. Previously, I emailed the below suggested edits to make the Draft's meager mention of Bike/Ped issues more robust and better conform to the Community Vision of our walkable, bikeable town.

08/17/2020
Hello All,
Thank you for extending the comment period on this study. I'm sure you are overwhelmed with feedback.

I'm sharing two interesting and somewhat relevant reports on congestion and transit recently published by Smart Growth America:

- The Congestion Con: How more lanes and more money equals more traffic
- A Green New Deal for City and Suburban Transportation

A couple paragraphs below in the transit study caught my eye that brings together multiple related concerns surrounding transportation planning. I know these are large scale issues, and the data presented at a national level, but we have to start somewhere and do our part to turn things around.

"The overwhelming majority of federal transportation spending is allocated for roads, leaving limited funds available for more sustainable modes like transit, walking, and biking. As a result, fewer than 10% of Americans currently live within walking distance of frequent transit. The collective "sidewalk gap" in U.S. cities easily adds up to tens of billions of dollars, and the Americans with Disabilities Act mandate to make streets accessible remains unfunded, leaving too many people isolated in their homes. Our roadways are designed to move vehicles at the highest speeds possible, with devastating consequences. More than 35,000 Americans die in automobile-related accidents every year, and pedestrian fatalities have increased by 35 percent in the past decade. Americans are spending longer than ever in their cars - and taking on unsustainable levels of debt to pay for those cars. These realities are treated as a necessary part of the American transportation system, but it doesn't have to be this way."

" Help states abandon automobile "level of service" and adopt broader measures of success When conducting environmental reviews of transportation projects, most state transportation departments seek to prevent impacts to automobile "level of service" (a measure of freeflowing traffic). Perversely, this measure has been used to block transit, pedestrian, and multimodal projects because they may slow automobile traffic, even when they have safety, economic, and environmental benefits."

https://smartgrowthamerica.org/

https://smartgrowthamerica.org/resources/the-congestion-con-how-more-lanes-and-more-money-equals-more-traffic/

http://t4america.org/wp-content/uploads/2020/03/20.03_GND-Transit_use_v4.pdf

08/17/2020
Hello- I have lived in Derry Township since 1973 and have watched the traffic move through the township. One comment I have regarding Rt. 322/Governor Road- I see it as being a two lane road from Rt 422, past the med center and the whole way to the county line with Lebanon County. What is the purpose of making it so wide in the middle when it is going to be a bottle neck at each end? I can see adding a little space (like 2 feet on either side to make a 4 foot wide bike path along one side), but I do not see the advantage of making it 5 lanes wide in the middle as some suggestions have been made.
And one thing residents much realize when they live here, this is a tourist town, and our economy depends on it (as we are finding out with the virus cut backs) and we need to live with it or move.
I am familiar with Myrtle Beach, South Carolina where they put in the bypass 17 to cut down on traffic on business 17, only to find that bypass 17 now is worse then business 17 is with businesses and stores, and shopping centers etc. along it.

08/21/2020
I have a few comments/questions regarding the Hershey transit plan. I've lived along the Governor Road corridor in Hershey for over 5 years now and I have concerns regarding the idea of widening governor road, especially the section between Centerview Drive and Cherry Drive. I work from home and noticed the traffic patterns over the years and Governor Road is generally a light traffic road with the exception of normal morning and afternoon rush hour, which usually only last about 30 minutes. Currently, the only thing that prevents people from driving at excessive speeds on Governor Road between Centerview and Cherry is the traffic itself. Police presence on this stretch of road is almost non-existent. During times of little traffic, it is common

to see cars, trucks, and commercial vehicles driving at speeds well above the posted speed limit, and I don't mean just a few miles per hour. Adding more lanes will only increase driving speed, as well as the risk of more accidents.

My questions are… how do you intend to add more lanes to this corridor? The south side of Governor Road is all residential in this section. Per PennDOT, the state's easement is 20 feet from the center line, which only leaves about 5 feet of space off of the current shoulder. The north side of Governor Road, on the other hand, has no residences and is mostly an open or agricultural area. So, is the plan to expand to the north or south sides (or both) of Governor Road?

What safeguards will be put in place to protect the homes and properties of those who live directly adjacent to Governor Road? More lanes, faster speeds, and the ability to change lanes, coupled with increasingly distracted drivers (i.e. smartphones) will inevitably lead to accidents where vehicles careen into yards, homes, garages, etc.

Does Derry Township intend to increase the speed monitoring of Governor Road after completion?

What is the proposed timeline for completing the widening for this corridor?

Thank you for your time

08/23/2020
My name is Dwayne Morris, and I have lived at [redacted] West Governor Road for sixteen years. I'm hoping that the turning of West Governor Road into a five-lane Highway will only result in me losing part of my front yard (and not my entire property being lost). Can you please confirm this? And, if the plan is for us to lose our homes, I'd also like to point out that if it was just four lanes (without a turning lane), this might save the homes of a dozen families along West Governor. From Fishburn Road to Cocoa Ave, along West Governor, there are only three possible turns (Elm, Glen, and across from Glen into a residential area most people don't go, except who lives there). Is a turning lane for three streets worth a dozen families losing their homes?

08/24/2020
I have noticed that your transportation study shows planning for sidewalks on East Mansion Road and we have concerns regarding the effect this would have on the almost 300 year old Derry Presbyterian Church.

Initial questions I had to start;

- Are they one side or both sides and if so which side?
- Would you expect standard development setback and spec or would you look at upgrade of existing walking path that has existed for years?
- Would you plan to destroy the trees and historic stone walls etc?
- Would your plan raise the road or want to cut into the up to 10 foot high banks along some of the road.

Some concerns are; the stone wall, the age and look of trees the church has cared for over years, some trees have been planted as memorials for people and events.

Please let me know any answers to these initial thoughts and how we can find out more to share with the membership. I know this is a long range type plan but I am sure the church plans to be here for another 100 years at least.

08/24/2020

Dear Hard-Working Community Leaders - (cc to Sun in case they want to publish as letter)
A belated thank you for your hard work and leadership in these difficult times (that will likely get worse, before they get better). Thank you for

1. **Extending the deadline for community comments** on the misdirected but fixable Transportation Plan. Like the recent letters in the Sun, I am confident that your edited version of the Plan will better focus on the community's continued call for a Walkable, Bikeable, and even somewhat bucolic place to raise our children.
2. **Pursuing revenue through fees for services** in these dire times. Chris Abruzzo may recall years ago, the Supervisors agreed to charge Hosts of Large Events (the HE&R sponsored half marathon - or things like that) for the cost of additional police or traffic control on an ongoing basis. I hope that policy continues. I encourage you all to take that a step further and charge HE&R and other HOSTS of Large Events (Concerts, RV Shows, etc.) for the cost of additional police or traffic control and other expenses.

These are difficult times and call for difficult and painful decisions. However, I encourage you to continue to be courageously creative and think "outside the box". You do not have to focus on short term results, because the short term is so uncertain!

You no longer have to do things the way we have always done them, because the future will be different. For example, the Zoning Hearing Board has done things the same way for a long time. However, with the staff's willingness to try new things, the process is now more open and transparent and continues to improve beyond my wildest dreams.
Now is the time for bold and creative leadership and the courage to make difficult but wise decisions.

Thus, I urge you to use your creative leadership to

1. Divert wasteful, costly highway expansion projects to local, efficient and effective multimodal transportation projects that focus on
   a. The safety of our residential neighborhoods;
   b. Active transportation options that promote a more healthy, sustainable lifestyle;
   c. Our children as they walk or bike to school; and
   d. Our seniors as they stroll or scooter (use a motorized scooter) to the new Senior Center.

For too long, our focus has been on the Big, Shiny Projects with big dollar budgets and more debt as demanded by the big entities that have more resources than our families do.

2. Open a community dialogue to begin to discuss our community safety / police budget (which was mentioned at the Chocolate Town Park Black Lives Matter Rally) to better address community needs and better match our funding situation. For example, years ago our police changed to focus more on community policing with police patrolling neighborhoods – often using the old-fashioned method of walking. Maybe it is time for some low-tech again.

These are difficult times and call for difficult and painful decisions. I thank you for your continued bravery in the face of such overwhelming challenges.

08/25/2020

Wanted to add my name and input for adding sidewalks up Sandhill Road. This would greatly increase the safety of those who already walk or run this dangerous and curvy road between Clark Road and Roush Road.

08/25/2020
I'm offering my feedback regarding these concepts.
1. I know the township wants to encourage bicycling and walking, but 6 lanes of traffic along Hersheypark Drive is rather discouraging. As a former cyclist, injury prevents me from being a current cyclist, who used to ride Hersheypark Drive, the volume and the speed is not conducive to safe riding.

2. Proposed sidewalk along 422 on the Friendly's side of the road makes no sense. There are no residences or businesses on that side of the road worth walking to. Also, trucks, volume and speed do not make it inviting for a stroll.

3. A traffic circle at West Chocolate and Old Chocolate is fucking nuts!

4. The 422 and 322 extension looks like you dropped spaghetti on the floor from the top view. We are too small and too rural a community for such a complicated and high rise kind of interchange. I know that this is becoming Disney north with increased traffic, but this is too much for our small town! PennDOT put in a super high, multilevel, complex interchange in my very small home town of Uniontown and it is an EYE SORE! Don't over complicate things.

5. 422 Business route will kill downtown! I fear that such a big interchange will direct traffic away from downtown. Yes, traffic is an issue in town, but it has been seen time and time again that a downtown dies when a bypass too much work has been done to bring business and energy to the downtown now you want it to die. When traffic is diverted toward Hersheypark Drive, that area will be built up adding to the competition of downtown. Do more to bring businesses to vacant building in Hummelstown, do more to spread the interest and the traffic rather than concentrating it in a compact area.

08/26/2020
"Cities around the world are overhauling their streets to restrict automobiles and better accommodate pedestrians and cyclists" New York Times, Aug 25, 2020

The above is surely true. Yet, for reasons unfathomable and unsupportable, Hershey is proposing doing the exact opposite. That can only mean that the folks who drew up the transportation plan failed in their mandate. OK - they did a poor job. NOW, let's get it right before we invest precious time and resources to implement a flawed vision.

The Bullfrog Valley trail is so popular that dozens of cars park on the grass just to the north of Wood Rd (because the parking lot is jammed) If it is so popular, why are you not planning to expand it in all directions?

We are building a $23,000,000 rec center -- yet many of our kids will not be able to safely ride a bike to it or walk to it because there are no sidewalks and no plans to add to our patchwork network of incomplete trails and sidewalks! Please explain that to me.

Our biggest employer is a medical system. Their work is our health. So why can my wife (a doctor) who lives a half mile away (as a bird flies) not walk there. She wants to. There are no sidewalks out of our neighborhood. There is no sidewalk on Sunnyside or Sandhill or Hillchurch.

This stuff is child's play. The real vision would be reimagining roads to turn some into one-way for cars and two ways for bikes. The real vision would be people-centric.

I am horrified when I think of my annual $14,000 property tax bill and think how amazingly poor your planning is.

Build Hershey West. OK -- where's the plan to accommodate the increase in traffic? Where's the traffic circle at Wood and Waltonville Rd - a slam dunk obvious choice.

Anyone who lives within three miles (or maybe 4 miles) of the schools, library and rec center should be able ride a bike to those enormously expensive locations. We cannot now. Your plan does not rectify that situation. Is that not an elementary goal.... let the kids get to school, library and rec center? Talk about a SNAFU.

The question is why not? Why just do stuff to encourage a 1950's car culture? I think the entire "plan" needs to be rethought and redone. What do you think?

08/28/2020
Back in the 1980s a plan to make exit off the turnpike at 743 then reroute east of Milton Hershey school to Lingles Road back to Hersheypark drive and 743north. Lots of arteries can come off this byepass

08/28/2020
Just saying it might help traffic if they would add a on ramp at Waltonville Rd and 422 & 322 West and a off ramp at Middletown Rd and 322 & 422 West before they start the West End project. It would take traffic away from the side access road that is always backed up

08/30/2020
Dear Supervisors and Other Community Leaders - Thank you again for extending the time for comment on the transportation plan! I understand a prior board had misdirected goals that HRG had correctly followed, so no one is to blame here.

I hope you have received enough feedback to wisely and boldly edit the Plan to better track the community vision and new (very limited) budget paradigm. I am confident that you are the correct board with the wisdom, power and bold courage to do the right thing.

"Strong Towns" *(Some of you may recall that Chuck Marohn had visited us as part of our Community Visioning Process)* just shared the below article and want to share it with you in case you need any more reason to make the courageous but vital edits. *I tried to highlight segments as I know you are all busy.*

I agree with the article that the question comes down to

> "...what we value in society. Do we want city neighborhoods divided by tangled highway junctions so people can get downtown easily from the suburbs? Or do we want walkable urban districts with cleaner air, quieter streets, and a proximity to jobs and businesses..."

You are in my thoughts as you move forward with confidence and leadership. You are not lemmings (see below)!

09/03/2020
I am a resident of Derry Township and I am submitting 4 brief comments to the Greater Hershey Regional Transportation Study.

1) intersection #30. If the purpose is to improve the flow of traffic thru the town on rt 322, why do the 4 lanes then reduce to 2 at the Milton Hershey School property? If your suggesting 4 lanes thru the residential sections of Governor Rd, why stop at the MHS property? It seems to defeat the purpose.

2) intersection #26. Currently, turning left from Rt# 322 onto Elm Ave is problematic and backs up traffic. There doesn't seem to be any improvement in this; in fact, it appears it will be worse.

3) intersection #02. From the sketch, it appears that only a right turn can be made from Wood Rd onto Middletown Rd. This will make it very inconvenient for the large volume of traffic that turns left onto Middletown Rd. The road behind Stoverdale Commons, that is used by some to go south on Middletown Rd, is not a public road.

4) intersection #35. The Hershey West End project already has a planned connector road, thru a section of this land, that is not included in this study. Why would another be necessary? This connector road seems to accomodate that project, at the expense of the existing residents that use Wood Rd to travel south on Middletown Rd. In addition, it is currently farmland; perhaps the owner of this land might have a different plan for its use.

Thank you for the consideration.

09/05/2020

I am writing to provide comments on the above referenced study. While this is a planning document, these studies are often given great deference by future leaders and become tools to direct policy. Because I live on Beech Avenue, my comments are directed specifically toward the **3 lane expansion of Governor Road**, given the **negative impact upon property values, increased off-hour traffic speed, and increased sound pollution** in the area. Based upon the "Recommended Projects Chart" the plan recommends expanding Governor Road from University Drive, Centerview, or Beech Avenue. Given the lack of analysis surrounding the Governor Road recommendation, I question the methods used to come to this conclusion.
As outlined in the report, currently there are ongoing actions to address traffic flow at Cherry Drive and Fishburn Road, to including a relocation of Sand Hill Road, the extension of Hope Drive, and the addition of turn lanes. I attended public hearings discussing the retail and gas station project in the area of Fishburn / Hockersville Road; these solutions have been suggested by local leaders and developers as the "fix" for traffic in the area. These actions to improve traffic flow appeared somewhat reasonable, as they were recommended by the profressional engineers involved in the conditional use application for the project.
To now learn that an expansion of Governor Rd to 5 lanes is being recommended - and apparently as a high priority based upon the implementation summary - makes me suspicious of the assumptions being provided by the Derry Township and used in the report. This is especially true given the bullet on page 27 which states that based upon discussions with municiplaities and others, "[a]n overall LOS C is to be maintained for...Route 322, Fishburn Road, and Sandhill Road." Is this report based upon the desires of the municiplaities and stakeholders or solid engineering and planning practices?

I ask the question because **there is little to no analysis within the report addressing the impact of current mitigation projects, specifically the Hope Drive extension.** Surely these road changes will pull some traffic off Governor or improve flow - otherwise they would not be included in the recommended projects table. However, there is little to no narrative of what adjustments and assumptions were made regarding the traffic projections on Governor Road. Other than stating in the conclusion that additional capacity is needed, and that a Level of Service (LOS) C must be maintained on Governor, there is little to no engineering analysis backing the

recommendation. **The concern is that desires of stakeholders are driving the recommendations in the report, and not the actual traffic projections.**

As an example, the study appears to end at Homestead drive, just short of the Milton Hershey Campus. While the overall conclusion is that Governor appears to need additional capacity, the recommended plan is to dump 4 or 5 lanes of traffic back into a two lane road after Homestead Road Given that p. 15 indicates the part of campus is within the scope of the report, surely the report authors are aware that traffic calming turn-abouts were recently installed on Governor, east of the 5 to 2 lane bottle-neck created by the recommended plan. Even a non-engineer layperson can easily conclude this is an inherently flawed design or analysis of Governor Road traffic projections. This traffic will not magically disappear - unless the intent is to drive flow northbound down Homestead, and past all Derry Township local schools. If this is in fact the plan, this would seem to violate one of the central goals of the report - to provide safety for pedestrians near the schools on Homestead Drive.
In short, a 3 lane road expansion near residential areas surrounding the north side of the medical center is **inherently flawed without further analysis to justify the recommendation**. **It will hurt property values, change the area from residential / agricultural to commercial, increase off hour traffic speeds, and add noise**. Such a drastic recommendation without explanation is questionable, given that **the impact of current mitigation strategies either cannot, or apparently have not, been addressed or analyzed.**
While I am sure that substantial time has been placed into this effort, the expansion of Governor Road needs further justification to be considered a legitimate planning recommendation. Otherwise, future leaders will use this report as backing for a 5 lane road that will see some traffic during peak hours - only to become a high speed drag strip during off hours -and a future magnet for commercial development.
Thank you for the opportunity to provide comments on this important topic.

09/07/2020
We agree with others who have written letters to the editor, etc., that public transportation options should be seriously considered instead of pushing more traffic through Hershey on wider roadways. We live in the "village" and our street (Areba) has become a main alternative to the congestion of 322 and 422.

I love the idea of bringing back the trolleys - it would add to the unique-ness of the town which the tourists and residents appreciate.

09/08/2020
Overall I think this study does a poor job reflecting the desires of the community as it relates to the future of transportation. I am also disappointed with the lack of community members engaged as part of the stakeholder group. In general this report appears to be driven by a crude application of the HCM without being sensitive to the context of the community.

Derry Township is subject to an MS4 permit for much of your study area, and as such DTMA at a minimum should be engaged as a stakeholder. Overall there is too much widening proposed to improve throughput at intersections, rather alternatives to widening and signalized intersections should be considered to improve flow at peak times, e.g. roundabouts. The significant increases in impervious areas for short spikes in traffic due to med center shift changes or events at the Hershey Entertainment complex are not justified and alternatives such as staggering schedules at both entities could improve these conditions without any capital improvements.

Wider considerations of the widening should also be considered, such as right-of-way impacts, potential loss of buffer due to residential condemnation, removal of homes and businesses for SCMs, etc.

Pedestrian and traffic calming considerations. The vast majority of this report ignores the significant impact on pedestrian mobility and safety due to the widening and connections proposed. Simply adding bike lanes and crosswalks does not eliminate the safety and mobility impacts of your 4 to 8 lane cross sections.

Bicycle mobility is not appropriately considered in the proposed projects. Hershey and Hummelstown lack a safety and efficient connection and the proposed work at Walton Ave further exacerbates this situation. A MUP along 322/422 or on-road options on the Walton widening need to be provided.

This is just a small portion of the comments that can be provided. As I stated before this is a poor representation community's desired future transportation landscape, and I hope you take time to engage the appropriate stakeholders and create a report that better represents the goals of our community. I would be happy to volunteer as one of those stakeholders.

09/08/2020
Hello,

I am a Derry Township resident writing with some thoughts on the Greater Hershey Regional Transportation study. I listened to the presentation to the board of supervisors by Eric Stump, and I've looked through the draft report. I have some concerns with some of the aspects of the report (and the associated recommendations).

First, as a resident of the village of Hershey (I live on Linden Road), I feel very concerned with the proposal to widen Governor Rd. The study lists as an "immediate improvement need" the widening of Governor Rd. to 5 lanes and bike lanes from Cherry Drive to Rt. 743. However, the portion of Governor Rd. from Elm Ave. to Rt. 743 is all residential. This plan would require taking portions of existing residential properties to widen the road. Yet the plan (and the presentation) also claim to seek to preserve the village/downtown area. Other parts of the plan talk of moving traffic away from downtown. Eric Stump's presentation spoke of the possibility of diverting traffic away from Rt. 422 by using Hersheypark Drive (a road which already has the capacity to handle many vehicles). He showed drawings of Rt. 422 making the default eastbound traffic route (from Harrisburg) flow to Hersheypark Drive rather than into town on existing Rt. 422. (I see this in the plan under the Hersheypark Drive Corridor section.) I strongly encourage the township to consider ways to divert traffic away from 322 (Governor Rd) as well instead of widening the road to make Governor Rd. a highway. My children and I enjoy riding our bikes around town. Governor Rd. is already challenging to cross (especially at Fishburn Rd. intersection); widening the road will only make this more challenging.

As a resident, I have spent lots of time sitting in traffic around town trying to get home or to leave town. Still, I *strongly* oppose the widening of Governor Road between Fishburn Rd. and Cocoa Ave., and I encourage the supervisors and engineers to explore different options.

Secondly, I have some concerns about the proposal to widen Middletown Road. I know this road is heavily used and there has been increased truck traffic (which I think is expected to continue to increase as more warehouses and distribution centers are built in the area). Widening Middletown Rd would also require acquisition of land. As with Governor Rd, however, I encourage supervisors and engineers to consider alternatives. Can we divert truck traffic to another road? An

existing road with the capacity to handle it? If we build more lanes and highways, we invite heavier traffic.

I know lots of development is coming with the West End project. I hope we can encourage different modes of transportation, and provide the infrastructure to support it. Park and ride lots may help facilitate carpooling; shuttle or bus service may help more people share rides, etc.

I appreciate the attention to pedestrians and cyclists. I support adding bike lanes, and I appreciate the efforts to enhance pedestrian access along the 743 corridor (especially the call to connect the village to the school campus trail across from Valley Rd, right near my home). I support marked crosswalks across Elm Avenue. I am grateful the township is trying to make a comprehensive, long-term plan to improve the transportation situation in and around Hershey.

I reiterate my major concern: please do not widen Governor Rd. between 743 and Elm Avenue (or to Fishburn Rd.). This is a residential section of road, and widening the highway will invite even more traffic. Be consistent with your goals: use existing highways and divert traffic away from downtown and residential areas.

Thanks for your consideration, and for inviting public comment.

09/08/2020
Quality of life in Hershey will be adversely affected if this plan as written is implemented.

The plan is too automobile/truck centered. Much more thought needs to be put into how residents can safely and efficiently get to places they need to go without getting into a car. This should include some form of viable public transportation--trolley? Sidewalks and bicycle lanes need to be a much more important part of this plan. Well placed crosswalks, the busiest of which should have pedestrian/bicyclist activated "walk" lights are necessary. The benefit of more walking and bicycling is twofold: fewer cars on the road and exercise for healthier bodies.

I saw a suggestion from someone about remote parking lots with shuttle buses for Hershey Med and Hershey Park visits thereby greatly reducing in-town traffic. This should be considered very seriously.

09/09/2020
I have a few short comments regarding the traffic study and I appreciate the opportunity to share them.

First, I am in support of the overall plan. This is not altruistic; I stand to benefit by the diversion of any traffic away from the current 422 through downtown Hershey. My street exits at the terminus of the two lane to one lane merge lane in front of the Spring Creek Golf Course, heading east on 422. Therefore, any reduction of traffic through the downtown streets is something I would naturally be in favor of. Additionally, I would note that the proposed 422 Loop around downtown Hershey is the solution that most towns and cities adopt once traffic builds to a certain point.

Second, given that 422 is the primary east-west corridor between Reading and Harrisburg, anything that can be done to remove event traffic from that route is a plus for both residents and commuters.

Finally, I would note that the eastern end of the Chocolate Avenue/422 route remains an orphan of sorts. The ill sited pedestrian lane at Para Avenue already looks neglected and

impedes traffic turning west from Para Avenue, as well as causing already impatient drivers to rush to the merge point past this pedestrian lane. At some point that is going to cause an increase in pedestrian-vehicle accidents. I hope that some thought on that issue might yield a better compromise at some point in the future.

Once again, thank you for the opportunity to forward my comments.