Transportation Analysis

Avondale Hills
Development of Regional Impact #2483
DeKalb County, Georgia

March 27, 2015

MARC R. ACAMPORA, PE, LLC
TRAFFIC ENGINEERING

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study prepared for:

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March 27, 2015

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Summary

This Transportation Analysis was prepared for the Avondale Hills Development of Regional Impact (DRI) #2483, in compliance with the requirements of the Georgia Regional Transportation Authority. The site is located along the north side of Mountain Drive, across from the Kensington MARTA station parking lot and will include single-family and multi-family residential, retail, and office. The project will be developed in one continuous phase, with build-out planned for 2020.

No mitigation was recommended for the existing condition, no-build condition, or build condition in order to comply with GRTA standards.

Georgia DOT auxiliary lane standards require an eastbound exclusive left turn lane on Mountain Drive to serve the west Avondale Hills DRI access. In addition, westbound exclusive right turn lanes are required at both Avondale Hills accesses according to the Georgia DOT standards. Recognizing the low volumes on Mountain Drive, this road is a good candidate for a "road diet". This would consist of reducing the two through lanes in each direction to one through lane per direction. A center left turn lane would be provided, either as a continuous two-way left turn lane, or as directional left turn lanes as appropriate at intersections. The remaining road width could be used for bicycle lanes. This could all be accomplished within the existing curblines and would incorporate the left turn lane identified for the Avondale Hills DRI west driveway. The road diet would also provide a left turn lane for the Avondale Hills DRI east entrance (one is not required by Georgia standards) as well as at the Kensington MARTA entrance. This is recommended as a better comprehensive design solution than the spot-widening of Mountain Drive to accommodate a left turn lane at the Avondale Hills DRI west driveway. DeKalb County has indicated that Mountain Drive has been under consideration for such a road diet.

This study recommends compliance with all applicable Georgia DOT driveway design standards including sight distances along Mountain Drive from each access, turn radii, and the distances of internal driveways and cross-streets from Mountain Drive.

In order to facilitate pedestrian access to the Kensington MARTA station, this study recommends that pedestrian crossings be installed across Mountain Drive at the Avondale Hills DRI accesses. This may include highly-visible (perhaps textured / colored) crosswalks, and possibly a pedestrian crossing signal at one or both locations.

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1. Project Description

This Transportation Analysis was performed for the proposed Development of Regional Impact (DRI) #2483 – Avondale Hills. The site is located along the north side of Mountain Drive at the location of the existing (but no longer inhabited) Kensington Manor Apartments in DeKalb County. An area map is presented in Figure 1 and an aerial photograph of the immediate site vicinity is presented in Figure 2. The total square footage of the multi-use development exceeds 400,000 square feet, which is a DRI threshold for a multi-use development in a metropolitan region, as set forth in the Georgia Department of Community Affairs (DCA) website for DRIs, Table I – Developments of Regional Impact Tiers and Development Thresholds. This DRI is located in the Kensington Livable Centers Initiative (LCI) area and, therefore, this study was performed to meet the Georgia Regional Transportation Authority (GRTA) Development of Regional Impact expedited review requirements, according to the GRTA *DRI Review Package Technical Guidelines*.

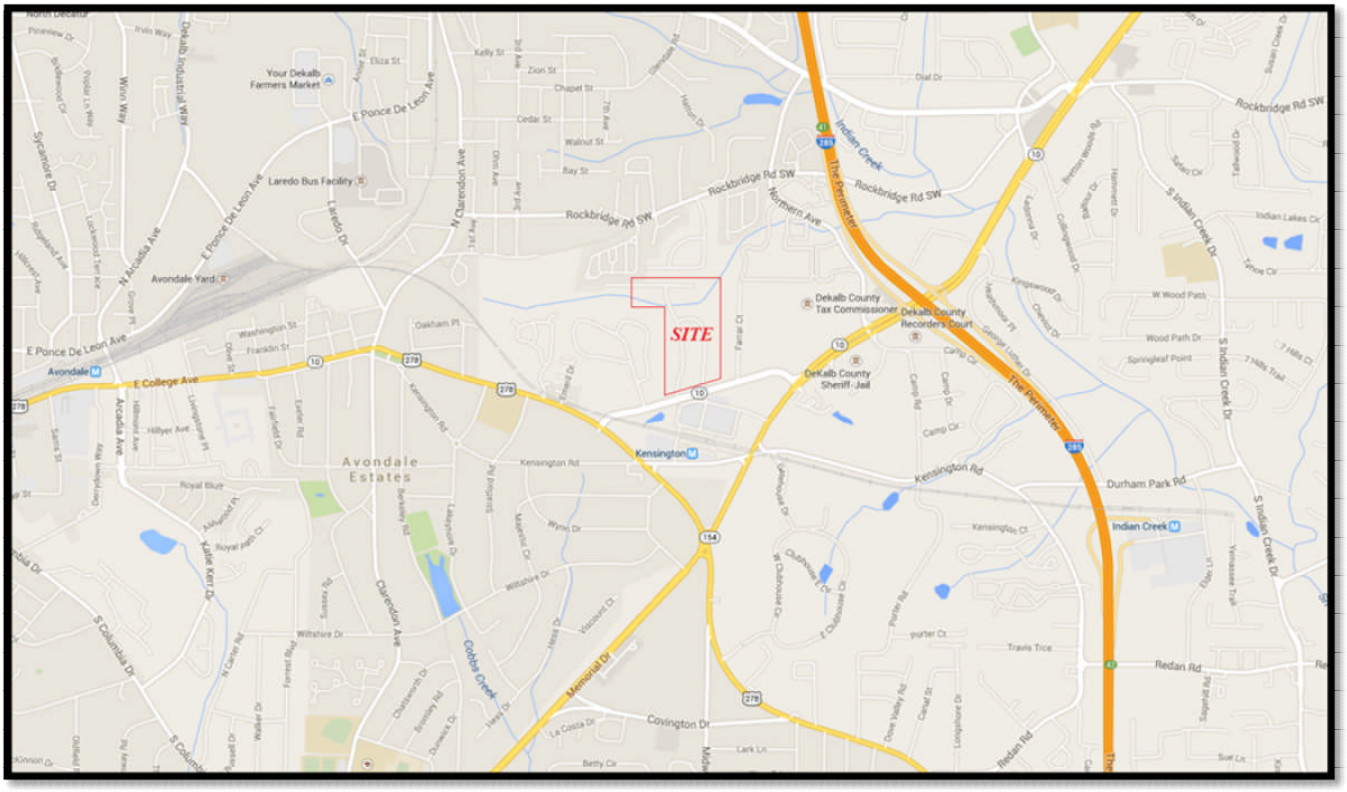


Figure 1 – Area Map

Figure 2 – Site Vicinity Aerial Photograph

1.1 Project Phasing, Pods, and Land Uses

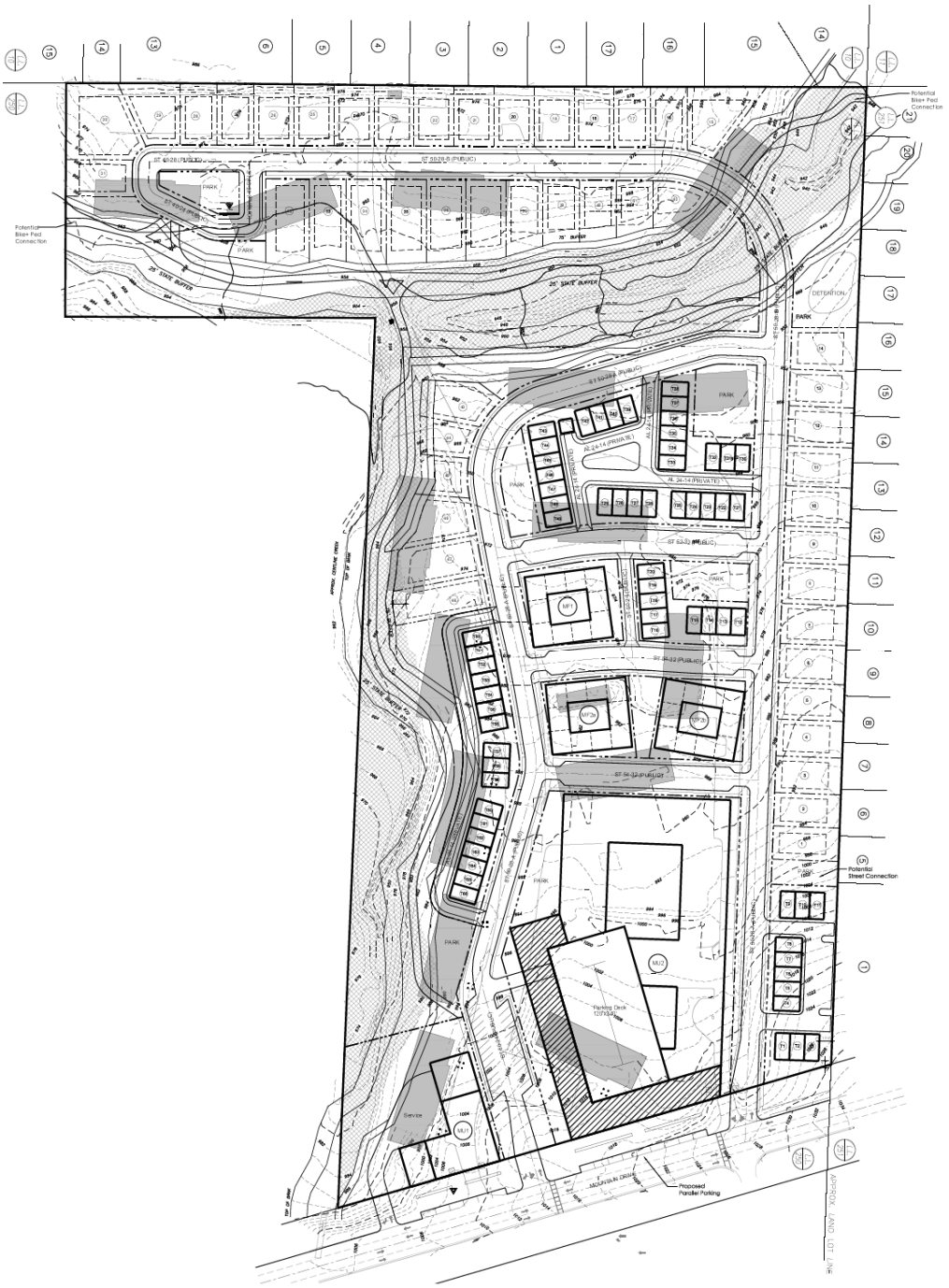
The site is currently developed with the Kensington Manor Apartments, which are no longer inhabited. Existing traffic counts at the apartment entrances reveal negligible activity. The proposed Avondale Hills DRI will redevelop the site with a mix of single family detached homes, townhomes, multi-family apartments, retail, and office. The project will be built in one continuous phase, with build-out expected in 2020. Table 1 presents the programmed land uses and sizes.

Table 1 – Avondale Hills Proposed Land Uses and Sizes

Land Use	Size
Single Family Detached Homes	48 units
Townhomes	66 units
Apartments	408 units
Retail	39,990 ft²
Office	15,000 ft²

1.2 Site Plan

This study is based on the site plan called Zoning Plan for Avondale Hills, prepared by TSW, Inc., dated March 10, 2015, as shown in Figure 3.



site plan by TSW, Inc.

Figure 3 – Avondale Hills Site Plan

1.3 Site Access

Access to the site will be provided at two main locations and a minor service access along Mountain Drive. The eastern access will be in the approximate same location as the existing eastern access to Kensington Manor, aligning with the entrance to the Kensington MARTA station parking lot entrance. The western access will be located slightly west of the existing western access to Kensington Manor. A service access will be located approximately 150 feet west of the western main site access. All access locations are proposed to operate with full turning movements permitted.

1.4 On-Site Pedestrian and Bicycle Facilities

Sidewalks will be provided on both sides of all streets. New sidewalks will connect to the existing sidewalk on Mountain Drive. No bicycle lanes are planned within site. However, bicycle racks are recommended at the entrances of the retail and office components.

1.5 Transit Access

This area surrounding the Avondale Hills DRI is well served by transit. On the south side of Mountain Drive, with its driveway aligning with the eastern access to the Avondale Hills DRI, is the Kensington MARTA rail station parking lot. The Kensington station is the second-to-easternmost station on the east-west MARTA rail line. A map of the MARTA rail system is included in Appendix H. In addition to heavy rail, several MARTA bus routes travel to the Kensington rail station or through the immediate area. These routes include Route 9 – Toney Valley / Peachcrest Road, Route 21 – Memorial Drive, Route 107 – Glenwood Road, Route 117 – Rockbridge Road / Panola Road, Route 119 – Kensington / Hairston Road, Route 121 – Stone Mountain / Memorial Drive, and Route 221 – Stone Mountain / Central Drive – Limited. The route maps for each of these bus routes are also found in Appendix H.

1.6 Parking

Parking will be provided on-site by a combination of parking deck, on-street parking, and private driveways. All parking is shown on the site plan submitted with this report. The on-site parking is summarized in Table 2.

Table 2 – Avondale Hills On-Site Parking

Land Use	Spaces Required	Spaces Provided
Single Family	2 per unit = 96	96
Townhouses	2 per unit = 132	132
Apartments (MF1, MF2a, MF2b)	1 per unit = 90	90
Mixed-Use/Apartments (MU2)	1 per 300 ft² = 350	350
Retail/Office	183	183 (42 on-street)
Total	851	851
Total Off-Street Parking Provided		802 (531 in deck)
Total On-Street Parking Provided		228

from site plan by TSW, Inc.

2. Study Network

The study network for this project was agreed to with GRTA and is presented in Table 3.

Table 3 – Existing Intersections Included in the Study Network

#	Description
1	Covington Highway (US 278) / Mountain Drive (SR 10)
2	Mountain Drive (SR 10) / Kensington Manor west access (future DRI west access)
3	Mountain Drive (SR 10) / Kensington Manor east access (future DRI east access) / Kensington MARTA access
4	Memorial Drive (SR 154) / Mountain Drive (SR 10)
5	Memorial Drive (SR 154) / Covington Highway (US 278)
6	I-285 Southbound Ramp / Memorial Drive (SR 154, SR 10)
7	I-285 Northbound Ramp / Memorial Drive (SR 154, SR 10)

2.1 Peak Time Periods And Analysis Conditions

All analyses are performed for the weekday a.m. peak hour and the weekday p.m. peak hour. The existing 2015, 2020 no-build, and 2020 build conditions are evaluated.

2.2 Level of Service Standard

The level of service standard is that level of service considered to be the minimum that provides acceptable operating conditions. A level of service (LOS) standard of D is used for suburban and urban areas, and for this study a LOS D standard was applied to all facilities. In the facilities needs analyses, mitigation is developed with LOS D as the minimum goal. However, should the existing LOS be worse than the standard, the existing LOS is taken to be the standard for that location and time period (but not to exceed LOS E), as set forth by GRTA procedures. Appendix A includes a description of the methodology used for the intersection analysis.

3. Existing Transportation Facilities

This section provides a description of the existing transportation infrastructure that will serve the proposed DRI. An inventory was performed of the lanes and method of control at the existing traffic facilities in the vicinity of the site. The availability of transit, bicycle, and pedestrian facilities adjacent to the site was also reviewed. Figure 5, in the Existing Traffic Analysis section of this report, depicts the existing lanes and control for the roadway and intersection facilities in the study network. The following is a brief description of each of these facilities.

3.1 Mountain Drive

Mountain Drive (SR 10) is an east/west connector roadway that connects Covington Highway (US 278) with Memorial Drive (SR 154). The State Route 10 designation is shared with Covington Highway to the north of Mountain Drive and Memorial Drive north of Mountain Drive. In the vicinity of the site Mountain Drive has four through travel lanes, two in each direction. The terrain is gently rolling and the posted speed limit is 35 mph, with a school zone at the west end of the road having a posted speed limit of 25 mph. The land along Mountain Drive is developed primarily with residential land uses and some office, while along most of the south side of the road is the parking lot for the Kensington MARTA rail station. In 2013 the Georgia Department of Transportation (DOT) recorded an Annual Average Daily Traffic (AADT) volume of 4,210 vehicles per day (vpd) on Mountain Drive. In conjunction with this Transportation Analysis, a 24-hour bi-directional count was collected on Tuesday, January 27, 2015. This count revealed 2,182 eastbound trips, 2,335 westbound trips, or a two-way total of 4,517 trips. Photograph 1 shows Mountain Drive facing west along the DRI frontage.

Photograph 1 – Mountain Drive Facing West Along DRI Frontage

3.2 US 278

West of the Avondale Hills DRI, US 278 is an east-west arterial that extends through Avondale Estates and Decatur and continues west. The road changes names several times, including Covington Highway in the vicinity of the DRI, North Avondale Road, and East College Avenue. Near the DRI, the road turns southward and continues to the southeast with an interchange at I-285, then continues east, roughly paralleling I-20. In the study area, US 278 has two through travel lanes in each direction and a center two-way left turn lane that becomes an exclusive left turn lane at major intersections. The terrain is very gently rolling and the posted speed limit is 35 mph near Mountain Drive and 45 mph south of Memorial Drive. In 2013 Georgia DOT recorded an AADT volume of 17,960 vpd on US 278 west of Mountain Drive and 12,590 vpd southeast of Kensington Road. Photograph 2 shows US 278 facing north from Mountain Drive.

Photograph 2 – US 278 Facing North From Mountain Drive

3.3 Memorial Drive

Memorial Drive (SR 154) is an east-west arterial that extends to downtown Atlanta, to the west, has an interchange with I-285 near the DRI site, then continues to the northeast to Stone Mountain. The road has three through lanes in each direction, with a center two-way left turn lane, through most of the study area. At US 278, the rightmost westbound lane becomes an exclusive right turn lane and, southwest of US 278, Memorial Drive has two westbound lanes, but continues to have three eastbound lanes. The terrain along Memorial Drive is very gently rolling and the posted speed limit is 45 mph. In 2013 Georgia DOT recorded an AADT volume of 45,610 vpd on Memorial Drive between Mountain Drive and I-285. Memorial Drive facing west at Mountain Drive is shown in Photograph 3.

Photograph 3 – Memorial Drive Facing West at Mountain Drive

3.4 Transit Service

The Avondale Hills DRI area is well served by transit. See a description of nearby transit service in section 1.5.

3.5 Bicycle and Pedestrian Facilities

This area generally does not have dedicated bicycle lanes. There is a continuous sidewalk along the north side of Mountain Drive from US 278 to about ¾ of the distance to Memorial Drive, where the sidewalk ends and becomes a dirt path. There is no sidewalk along the south side of Mountain Drive, but there are steps, across from the DRI west access, from Mountain Drive to the Kensington MARTA parking lot. There are sidewalks along both sides of US 278, Memorial Drive, and Kensington Road in the vicinity of the Avondale Hills DRI. Signalized intersections in the vicinity include pedestrian crossing signals and striped crosswalks.

4. Project Traffic Characteristics

This section provides a description of the traffic characteristics of the proposed Avondale Hills DRI, including the number of trips that will be generated, and where that traffic will travel.

4.1 Trip Generation

Vehicle trip estimates are determined through a process called trip generation. Rates or equations are applied to the size of each proposed land use to estimate the number of entering and exiting trips during specific time intervals. The standard rates and equations were employed from the 9th edition of the Institute of Transportation Engineers (ITE) *Trip Generation Manual*. The raw trip generation for the Avondale Hills DRI was calculated for the weekday a.m. and p.m. peak hours, as well as the weekday 24-hour period.

Three adjustments were made to the raw trip generation, calculated according to ITE procedures. First, a multi-use adjustment was made to reflect the trip-reduction benefit that is realized by the sharing of compatible trips between land uses within the Avondale Hills site. These trips remain within the development and never appear in the analysis of intersections or site driveways. The multi-use adjustments are based on the ITE *Trip Generation Manual – Volume 1: Users Guide and Handbook*.

Second, a transit adjustment was applied to account for the immediate proximity of the Kensington MARTA rail station and multiple bus routes. It is anticipated that the ability to use transit will be a popular option for residents and employees of the Avondale Hills DRI. Data about the use of transit for a development such as Avondale Hills, given the combination of factors in this area, is limited. It was decided, in agreement with GRTA, that a 25% reduction in trips for transit ridership would be applied.

Finally, the retail trip generation was adjusted to account for the effect of pass-by trips. These are trips that are already on the adjacent roadways and will divert into the site for shopping purposes enroute to their final destination. Pass-by percentages for the proposed retail were calculated using the ITE *Trip Generation Manual – Volume 1: Users Guide and Handbook* at 55% for the p.m. peak hour. However, it is anticipated that the retail that will be located in Avondale Hills will likely be more destination-oriented (as opposed to, say, a gasoline station or fast food restaurant, which draws heavily from passing trips). Therefore, in order to more realistically reflect the destination-oriented nature of the retail, and to be conservative, a modest 20% pass-by percentage was applied to the p.m. peak hour trips. This was further reduced to 10% for the a.m. peak and 24-hour periods.

The raw trip generation and all adjustments for Avondale Hills are presented in Table 4. The worksheets with the multi-use calculations are included in Appendix C.

Table 4 – Avondale Hills Trip Generation

Land Use	ITE Code	Size	A.M. Peak Hour			P.M. Peak Hour			24-Hour
			Enter	Exit	2-Way	Enter	Exit	2-Way	2-Way
Single Family	210	48 units	11	32	43	34	20	54	534
Townhomes	230	66 units	6	31	37	29	14	43	448
Apartments	220	408 units	40	163	203	157	85	242	2,596
Residential Subtotal		522 units	57	226	283	220	119	339	3,578
- multi-use			-1	-3	-4	-8	-5	-13	-179
subtotal			56	223	279	212	114	326	3,399
- transit	25%		-14	-56	-70	-53	-29	-82	-850
Total New Residential			42	167	209	159	85	244	2,549
Retail	826 (820 a.m.)	39,990 ft²	24	14	38	51	66	117	1,748
- multi-use			-4	-1	-5	-6	-9	-15	-205
subtotal			20	13	33	45	57	102	1,543
- transit	25%		-5	-3	-8	-11	-14	-25	-386
subtotal			15	10	25	34	43	77	1,157
- pass-by	10%, 20%, 10%		-2	-1	-3	-7	-9	-16	-116
Total New Retail			13	9	22	27	34	61	1,041
Office	710	15,000 ft²	20	3	23	4	18	22	166
- multi-use			-0	-1	-1	-1	-1	-2	-34
subtotal			20	2	22	3	17	20	132
- transit	25%		-5	-0	-5	-1	-4	-5	-33
Total New Office			15	2	17	2	13	15	99
Total Raw (Unadjusted) Trips			101	243	344	275	203	478	5,492
Total Multi-Use Reduction			-5	-5	-10	-15	-15	-30	-418
Multi-Use Percentages			-5.0%	-2.1%	-2.9%	-5.5%	-7.4%	-6.3%	-7.6%
Total Transit Reduction			-24	-59	-83	-65	-47	-112	-1,269
Total Pass-By Reduction			-2	-1	-3	-7	-9	-16	-116
Total New External Trips			70	178	248	188	132	320	3,689

4.2 Trip Distribution and Assignment

Trip distribution percentages were developed to determine where Avondale Hills traffic would travel. Three distributions were developed, one for each land use category – residential (includes single family, townhomes, and apartments), retail, and office. The residential distribution is based on the location of trip attractions and primary routes of travel to those attractions. Residential trip attractions primarily include employment and retail centers. Downtown Atlanta trips will use Memorial Drive to/from the west. Decatur, Emory, CDC, North Druid Hills Road, Midtown, and Buckhead trips will use 278 to/from the west. Trips to/from points around the Perimeter such as Cumberland Mall area, Perimeter/Dunwoody, Marietta, Alpharetta and north on Georgia 400, Norcross and northern Gwinnett County will travel to/from the north on I-285. Trips to/from the south on I-285 will include destinations along I-20, points south along I-75 and I-675, Hartsfield-Jackson Airport, and areas southwest. Southeast DeKalb will be accessed via US 278 to/from the east, and central Gwinnett and Stone Mountain trips will travel to/from the east on Memorial Drive. The retail trips were distributed based on residential population density, weighted for proximity the site, approximating a gravity model where the attraction of the trip diminishes at the rate of the square of the distance from the site. The office distribution is also based on residential population density, with less weight given to proximity to the site and slightly more emphasis given to I-285. The trip distribution percentages used in this study were agreed upon with GRTA.

The trips for each land use were assigned to each study intersection based on expected routes of travel. The total traffic expected to be generated solely by the Avondale Hills DRI is shown in Figure 4, along with the trip distribution percentages for each land use.

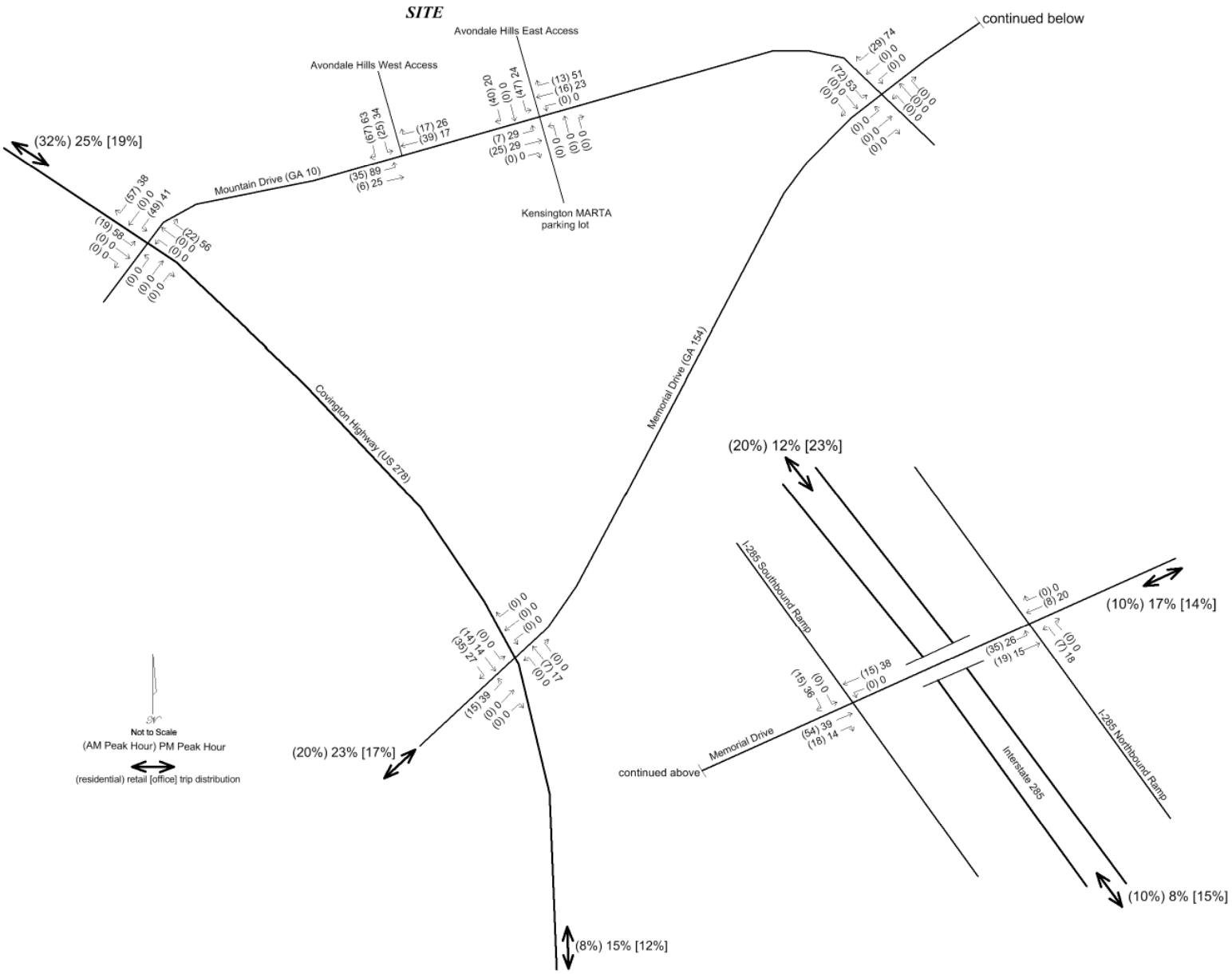


Figure 4 – Avondale Hills Trip Distribution Percentages and Site Generated Trips

5. Existing Traffic Analysis

This chapter presents the results of the capacity analysis and facilities needs analysis for the existing condition.

5.1 Existing Lanes and Traffic Control

A description of the existing conditions was provided previously in this report. Figure 5 presents the existing lane configuration and method of traffic control at each study intersection.

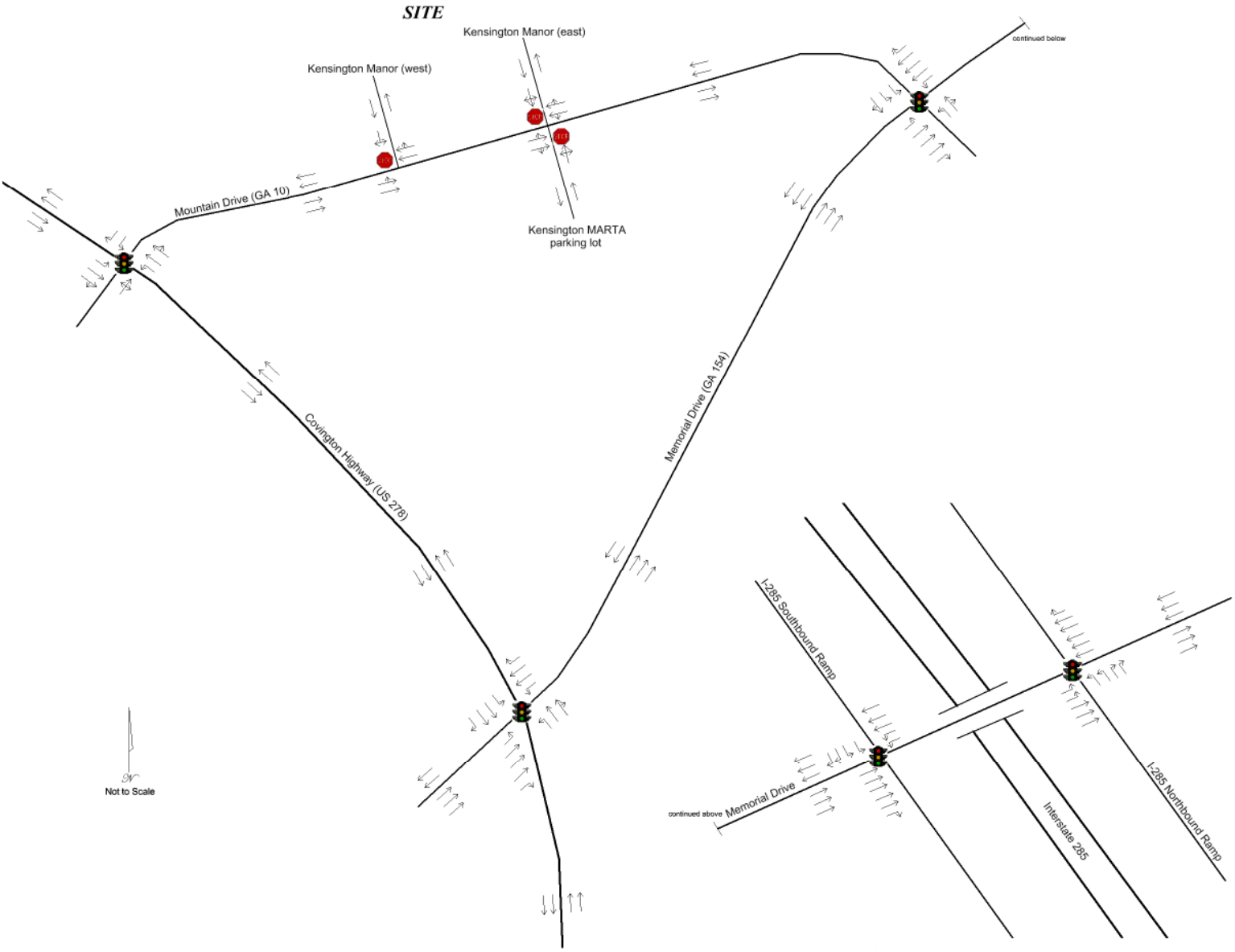


Figure 5 – Existing Lanes and Control

5.2 Existing Traffic Volumes

Traffic counts used in the analysis were collected during the weekday a.m. and p.m. peak periods. All traffic counts were performed on Tuesday, January 27, 2015. Local schools were in regular session when the counts were collected. The morning counts were collected from 7:00 a.m. to 9:00 a.m. and the evening counts were performed from 4:30 p.m. to 6:30 p.m. All counts were performed by a traffic data collection subconsultant and reviewed by Marc R. Acampora, PE, LLC. The peak hour during each count period was identified as the highest four consecutive fifteen minute volumes during each count period at each intersection. Appendix B presents all raw traffic count data. The existing peak hour volumes are presented in Figure 6.

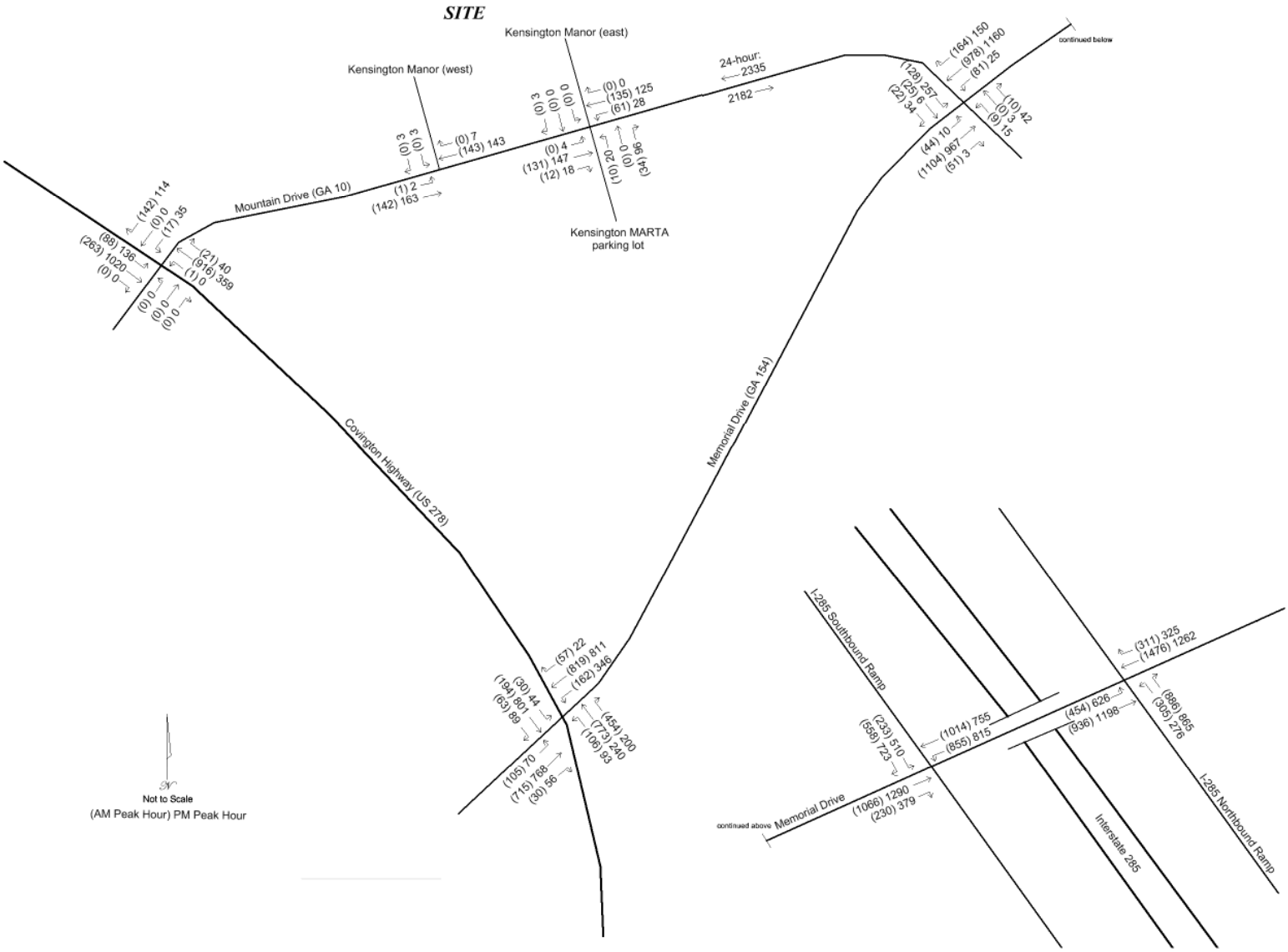


Figure 6 – Existing Traffic Volumes

5.3 Existing Intersection Operations

An analysis was performed for each study intersection, based on the counted traffic volumes, existing lane configurations, and method of traffic control (shown previously in Figure 5). The results of the analysis are shown in Table 5. The Synchro computer printouts, which provide detailed analysis information, are included in Appendix D.

Table 5 – Existing Intersection Levels of Service

#	Intersection	A.M. Peak Hour	P.M. Peak Hour
1	Covington Highway / Mountain Drive	A	A
	northbound approach (Covington)	A	A
	southbound approach (Covington)	A	A
	eastbound approach (driveway)	A	A
	westbound approach (Mountain)	C	C
2	Mountain Drive / Kensington Manor west	A	A
	southbound approach	A	A
	eastbound left turn	A	A
3	Mountain Drive / Kensington Manor east / Kensington MARTA	A	A
	northbound approach	A	B
	southbound approach	B	B
	eastbound left turn	A	A
	westbound left turn	A	A
4	Memorial Drive / Mountain Drive	B	B
	northbound approach (DeKalb Court)	D	D
	southbound approach (Mountain)	D	D
	eastbound approach (Memorial)	B	B
	westbound approach (Memorial)	A	B
5	Memorial Drive / Covington Highway	D	C
	northbound approach (Covington)	D	C
	southbound approach (Covington)	C	C
	eastbound approach (Memorial)	D	D
	westbound approach (Memorial)	D	C
6	I-285 Southbound Ramp / Memorial Drive	C	D
	southbound approach	*E*	D
	eastbound approach	C	D
	westbound approach	B	C
7	I-285 Northbound Ramp / Memorial Drive	C	C
	northbound approach	D	D
	eastbound approach	C	B
	westbound approach	C	C

5.4 Existing Facilities Needs Analysis

The analysis of existing conditions reveals that all intersections in the study network operate at or better than the LOS D standard. There is one approach in the network that operates lower than LOS D:

1) Intersection 6 – the southbound I-285 off-ramp at Memorial Drive, a.m. peak hour, LOS E

The GRTA rules for the existing condition analysis state that, if the existing LOS is worse than LOS D, but not LOS F, (in other words, LOS E) that LOS becomes the standard for that particular location. Therefore, for this one location, the southbound I-285 ramp at Memorial Drive, the LOS standard is LOS E.

The lane configuration and signal phasing at this intersection are appropriate. This signal operates in a system, in coordination with the adjacent signal at the I-285 northbound ramp, and other signals along the Memorial Drive corridor. Due to the fact that the other approaches at this intersection operate at a better level of service, there may be an opportunity to fine-tune the signal timing at the ramps to better balance the delays. However, it is recognized that there are potential implications for the whole corridor to changing signal timings and it is beyond the scope of this study to evaluate the signal operations of the Memorial Drive corridor. Observations reveal that the signals do operate well, given the high volume demands. Therefore, no specific signal timing change is recommended here. Instead, this study suggests that the County periodically review its signal timing plans to ensure optimal operations.

No other mitigation is recommended for the existing condition.

6. No-Build Traffic Analysis

A no-build analysis condition was developed for the DRI's build-out year of 2020. The no-build analysis provides a reference by which to measure the traffic impact of the proposed Avondale Hills DRI.

6.1 No Build Lanes and Traffic Control

No mitigation was identified in the Existing Facilities Needs Analysis. Therefore, the no-build infrastructure assumes the same lane configuration and traffic control as in the existing condition.

6.2 No-Build Traffic Volumes

The no-build condition includes background increases in traffic volumes that will occur whether or not the Avondale Hills DRI is built. Georgia Department of Transportation historic daily traffic volumes were researched in the study area. The data was collected for five years from 2009 to 2013 (inclusive; 2013 is the last year that Georgia DOT data is available) and is presented in Table 6.

Table 6 – Georgia DOT Historic AADT Data

Location	Station ID	2009	2010	%	2011	%	2012	%	2013	%
Mountain Drive near site	0893041	4,620	5,930	28.4%	6,040	1.9%	6,010	-0.5%	4,210	-30.0%
Covington Highway west of Mountain Dr	0893038	19,350	19,390	0.2%	19,370	-0.1%	17,880	-7.7%	17,960	0.4%
Covington Highway south of Kensington Rd	0893063	10,960	14,680	33.9%	12,830	-12.6%	12,760	-0.5%	12,590	-1.3%
Memorial Drive bet Mountain and I-285	0893043	36,440	36,520	0.2%	36,480	-0.1%	45,390	24.4%	45,610	0.5%
Memorial Drive west of Covington Hwy	0893192	21,330	22,460	5.3%	19,100	-15.0%	18,990	-0.6%	18,900	-0.5%

The AADT volumes fluctuate from location to location and from year to year. At the location closest to the site, Mountain Drive, the volumes took a significant drop of 30% between 2012 and 2013. The 2015 counts on Mountain Drive for this study are 4,517, which is an increase of 7%. From 2012 to 2013, two of the other count locations increased by about a half of one percent, while the other two locations decreased slightly. Because no clear discernable trend is identifiable for the area, a modest 1% per year, or a total of 5.1% from 2015 to 2020, was applied to the counted volumes. This increase accounts for general growth in volumes that may be expected in the study network by the time the Avondale Hills DRI is fully built and operational. While the Kensington LCI has identified goals for new development in this area, no other significant new developments are approved for construction at the time of this study. The 1% annual growth factor was agreed upon with GRTA. The 2020 no-build volumes are presented in Figure 7.

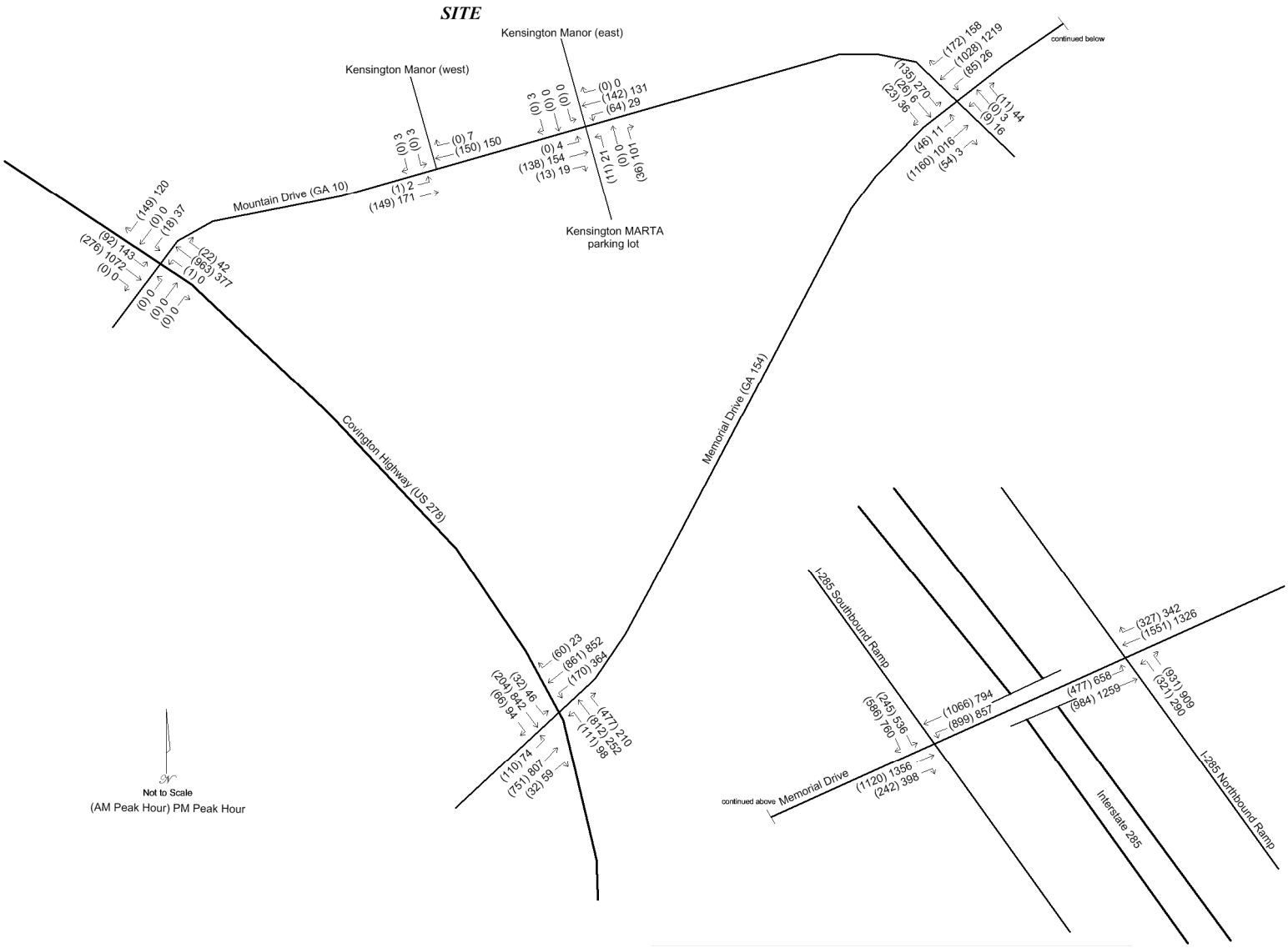


Figure 7 – No-Build Traffic Volumes

6.3 No-Build Intersection Operations

Each study intersection was evaluated for the 2020 no-build condition. The no-build levels of service at each intersection are shown in Table 7. The Synchro computer printouts are found in Appendix E.

Table 7 – No-Build Intersection Levels of Service

#	Intersection	A.M. Peak Hour	P.M. Peak Hour
1	Covington Highway / Mountain Drive	A	A
	northbound approach (Covington)	A	A
	southbound approach (Covington)	A	A
	eastbound approach (driveway)	A	A
	westbound approach (Mountain)	C	C
2	Mountain Drive / Kensington Manor west	A	A
	southbound approach	A	A
	eastbound left turn	A	A
3	Mountain Drive / Kensington Manor east / Kensington MARTA	A	A
	northbound approach	B	B
	southbound approach	B	B
	eastbound left turn	A	A
	westbound left turn	A	A
4	Memorial Drive / Mountain Drive	B	B
	northbound approach (DeKalb Court)	D	D
	southbound approach (Mountain)	D	D
	eastbound approach (Memorial)	B	B
	westbound approach (Memorial)	A	B
5	Memorial Drive / Covington Highway	D	C
	northbound approach (Covington)	D	D
	southbound approach (Covington)	C	C
	eastbound approach (Memorial)	D	D
	westbound approach (Memorial)	D	C
6	I-285 Southbound Ramp / Memorial Drive	C	D
	southbound approach	E	D
	eastbound approach	C	D
	westbound approach	B	C
7	I-285 Northbound Ramp / Memorial Drive	D	C
	northbound approach	D	D
	eastbound approach	C	B
	westbound approach	D	D

6.4 No-Build Facilities Needs Analysis

As with the existing condition, only the southbound ramp from I-285 at Memorial Drive operates worse than LOS D, with a LOS E in the no-build a.m. peak hour. Since the GRTA rules establish the existing LOS E as the LOS standard, the operations at the southbound ramp are considered acceptable in the no-build condition. Therefore, no mitigation is necessary.

No other mitigation is required for the no-build condition.

7. Future (Build) Traffic Analysis

The analysis of the 2020 build scenario identifies the traffic impact of the proposed Avondale Hills DRI. This future condition includes all traffic from the 2020 no-build scenario, plus the traffic that will be added by Avondale Hills.

7.1 Build Lanes and Traffic Control

No mitigation was identified for the existing condition or the 2020 no-build scenario. Therefore, the existing lanes and traffic control will continue to be used for the build condition analysis.

7.2 Build Traffic Volumes

The 2020 build volumes are the combined volumes from Figure 7 (the no-build volumes) and Figure 4 (the Avondale Hills site-generated trips). These build volumes are depicted at each intersection in Figure 8. The spreadsheets showing the components of all intersection volumes, by movement, are located in Appendix C.

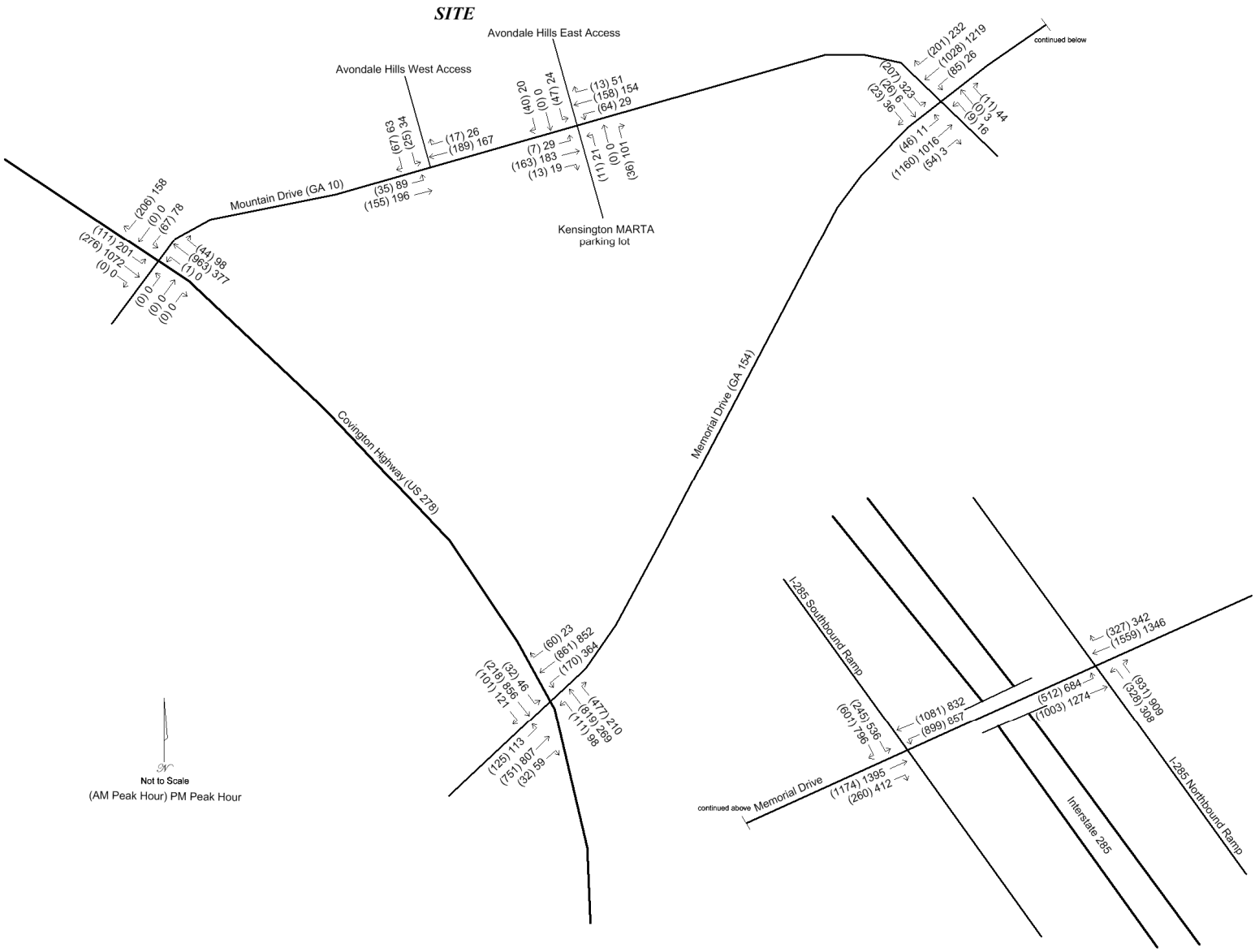


Figure 8 – Build Traffic Volumes

7.3 Build Intersection Operations

Each study intersection was re-evaluated for the 2020 build condition. The levels of service at each intersection are shown in Table 8, including the existing and no-build conditions. The Synchro computer printouts are located in Appendix F.

Table 8 – Build Intersection Levels of Service and Comparison with Existing and No-Build

#	Intersection	A.M. Peak Hour			P.M. Peak Hour		
		Exist	No-Build	Build	Exist	No-Build	Build
1	Covington Highway / Mountain Drive	A	A	B	A	A	A
	northbound approach (Covington)	A	A	A	A	A	A
	southbound approach (Covington)	A	A	A	A	A	A
	eastbound approach (driveway)	A	A	A	A	A	A
	westbound approach (Mountain)	C	C	C	C	C	C
2	Mountain Drive / Avondale Hills west	A	A	A	A	A	A
	southbound approach	A	A	B	A	A	B
	eastbound left turn	A	A	A	A	A	A
3	Mountain Drive / Avondale Hills east / Kensington MARTA	A	A	A	A	A	A
	northbound approach	A	B	B	B	B	B
	southbound approach	B	B	B	B	B	B
	eastbound left turn	A	A	A	A	A	A
	westbound left turn	A	A	A	A	A	A
4	Memorial Drive / Mountain Drive	B	B	B	B	B	B
	northbound approach (DeKalb Court)	D	D	D	D	D	D
	southbound approach (Mountain)	D	D	D	D	D	D
	eastbound approach (Memorial)	B	B	B	B	B	B
	westbound approach (Memorial)	A	A	A	B	B	B
5	Memorial Drive / Covington Highway	D	D	D	C	C	C
	northbound approach (Covington)	D	D	D	C	D	D
	southbound approach (Covington)	C	C	C	C	C	C
	eastbound approach (Memorial)	D	D	D	D	D	D
	westbound approach (Memorial)	D	D	D	C	C	C
6	I-285 Southbound Ramp / Memorial Drive	C	C	C	D	D	D
	southbound approach	E	E	E	D	D	D
	eastbound approach	C	C	C	D	D	D
	westbound approach	B	B	B	C	C	C
7	I-285 Northbound Ramp / Memorial Drive	C	D	C	C	C	C
	northbound approach	D	D	D	D	D	D
	eastbound approach	C	C	B	B	B	B
	westbound approach	C	D	D	C	D	D

7.4 Build Facilities Needs Analysis

As with the existing and no-build analyses, the one location exceeding the LOS D threshold is the southbound ramp from I-285 at Memorial Drive. Since LOS E was established as the standard for that location, no mitigation is required in the build condition.

No other mitigation is required for the build condition.

It is noted that the levels of service are very consistent between the existing, no-build, and build conditions. Overall operations in the study area can be described as busy, but operating acceptably. This will continue to be the case in the future after the Avondale Hills DRI is built and operational.

7.5 Georgia DOT Auxiliary Lane Assessment at Site Accesses

The two Avondale Hills accesses are located along Mountain Drive, which is Georgia State Route 10. Therefore, the Georgia DOT requirements for auxiliary turn lanes at private driveways were reviewed for the two accesses to Avondale Hills. The standards are proscribed in the Georgia DOT's *Regulations for Driveway and Encroachment Control* (Driveway Manual). The review of the standards is described as follows:

7.5.1 Left Turn Lanes

The Georgia DOT standards for the need for a left turn lane are set forth in the Driveway Manual Table 4-7A, shown below as Table 9.

Table 9 – Georgia DOT Left Turn Lane Standards

LEFT TURN REQUIREMENTS-FULL CONSTRUCTION				
POSTED SPEED	2 Lane Routes		More than 2 Lanes on Main Road	
	ADT		ADT	
	<6000	>=6000	<10000	>=10000
35 MPH OR LESS	300 LTV a day	200 LTV a day	400 LTV a day	300 LTV a day
40 TO 50 MPH	250 LTV a day	175 LTV a day	325 LTV a day	250 LTV a day
>= 55 MPH	200 LTV a day	150 LTV a day	250 LTV a day	200 LTV a day

TABLE 4-7A MINIMUM VOLUMES REQUIRING LEFT TURN LANES

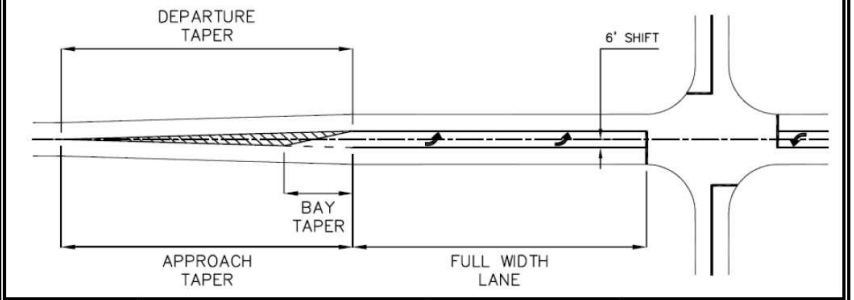
The 2013 GDOT AADT for Mountain Drive is 4,210 vpd, which is below the 10,000 vehicle threshold for a main road with greater than two lanes. The posted speed limit is 35 mph. The total entering volume per day at the two Avondale Hills driveways is calculated as 3,689 two-way new trips + 116 two way pass-by trips = 3,805 two way daily trips (from Table 4) divided by 2 equals 1,903 daily entering trips.

Approximately 46% of the site entering trips will turn left at the western site access. 1,903 total entering trips x 46% equals 875 left turn vehicles (LTV) per day. This is above the 400 LTV minimum standard. Therefore, an exclusive eastbound left turn lane is required at the western Avondale Hills access according to the Georgia DOT standard.

Approximately 13% of the site entering trips will turn left at the eastern site access. 1,903 total entering trips x 13% equals 247 left turn vehicles (LTV) per day. This is below the 400 LTV minimum standard. Therefore, no exclusive eastbound left turn lane is required at the eastern Avondale Hills access according to the Georgia DOT standard.

Table 10 is Table 4-9 from the Driveway Manual and presents the design standards for exclusive left turn lanes. At a posted speed limit of 35 mph, the left turn lane required at the western site access should consist of a 125 foot shift taper (assuming 6 foot shifts of the through lanes; will be higher for a 12 foot shift) plus a 50 foot bay taper plus 160 feet of full-width storage.

Table 10 – Georgia DOT Design Standards for Left Turn Lanes



POSTED SPEED LIMIT, MPH	APPROACH AND DEPARTURE TAPER, FT		BAY TAPER, FT	FULL WIDTH STORAGE
	6' Shift	12' Shift		
30	90	180	50	135
35	125	250	50	160
40	160	320	50	210
45	270	540	100	235
50	300	600	100	285
55	330	660	100	310
60	360	720	100	360
65	390	780	100	410

TABLE 4-9 MINIMUM DESIGN ELEMENTS OF LEFT TURN LANES

7.5.2 Right Turn Lanes

The Georgia DOT standards for the need for a right turn (deceleration) lane are set forth in the Driveway Manual Table 4-6, shown below as Table 11.

Table 11 – Georgia DOT Right Turn Lane Standards

POSTED SPEED	2 LANE ROUTES		MORE THAN 2 LANES ON MAIN ROAD	
	AADT		AADT	
	< 6000	>=6000	<10000	>=10000
35 MPH OR LESS	200 RTV a day	100 RTV a day	200 RTV a day	100 RTV a day
40 TO 50 MPH	150 RTV a day	75 RTV a day	150 RTV a day	75 RTV a day
55 TO 60 MPH	100 RTV a day	50 RTV a day	100 RTV a day	50 RTV a day
>= 65 MPH	Always	Always	Always	Always

TABLE 4-6 MINIMUM VOLUMES REQUIRING RIGHT TURN LANES

The 2013 GDOT AADT for Mountain Drive is 4,210 vpd, which is below the 10,000 vehicle threshold for a main road with greater than two lanes. The posted speed limit is 35 mph. The total entering volume per day at the two Avondale Hills

driveways is calculated as 3,689 two-way new trips + 116 two way pass-by trips = 3,805 two way daily trips (from Table 4) divided by 2 equals 1,903 daily entering trips.

Approximately 17% of the site entering trips will turn right at the western site access. 1,903 total entering trips x 17% equals 324 right turn vehicles (RTV) per day. This is above the 200 RTV minimum standard. Therefore, an exclusive westbound right turn lane is required at the western Avondale Hills access according to the Georgia DOT standard.

Approximately 24% of the site entering trips will turn right at the eastern site access. 1,903 total entering trips x 24% equals 457 right turn vehicles (RTV) per day. This is above the 200 RTV minimum standard. Therefore, an exclusive westbound right turn lane is required at the eastern Avondale Hills access according to the Georgia DOT standard.

Table 12 is Table 4-8 from the Driveway Manual and presents the design standards for exclusive right turn lanes. At a posted speed limit of 35 mph, the right turn lane required at each site access should consist of a 50 foot bay taper plus 100 feet of full-width storage.

Table 12 – Georgia DOT Design Standards for Right Turn Lanes

SPEED, MPH	FULL WIDTH STORAGE, FT	TAPER, FT
25		50
30	75	50
35	100	50
40	150	50
45	175	100
50	225	100
55	250	100
60	300	100
65	350	100

TABLE 4-8 MINIMUM RIGHT TURN DECELERATION LENGTHS

It is noted here that the 2020 build condition operational analysis assumed the existing lane configuration at both Avondale Hills accesses, which does not include exclusive left or right turn lanes at either intersection. The operational analysis reveals that levels of service will be acceptable at both driveways with no auxiliary left or right turn lanes. The identified auxiliary lanes are required for compliance with Georgia DOT design standards, not for compliance with GRTA LOS standards.

It is recommended that all other applicable Georgia DOT driveway design standards be reviewed and incorporated. These include sight distances along Mountain Drive from each driveway, turn radii, and distances of internal driveways and cross-streets from Mountain Drive.

8. Site Internal Circulation and Connectivity

The Avondale Hills DRI will be served by two primary accesses to Mountain Drive, as well as a service access. The eastern access will align with the access to the Kensington MARTA station parking lot. Two parallel interior north/south streets extend north from the two primary site accesses. These are intersected by access to a large parking deck at the front (south) of the site, then three east/west cross streets, before the western street bends to the east to connect to the eastern street. This creates a simple and logical grid street system. The three internal cross streets are lined with parallel parking spaces. The eastern street then crosses a bridge over Indian Creek and becomes a single linear street that serves single-family homes at the northern end of the site.

Sidewalks will be provided along both sides of all internal streets. These will connect to the existing sidewalk along the frontage on Mountain Drive. In order to facilitate pedestrian access to the Kensington MARTA station, it is recommended that pedestrian crossings be installed across Mountain Drive at the Avondale Hills accesses. Due to the four lane cross-section of Mountain Drive, the crosswalk should be highly-visible (perhaps textured / colored), and consideration should be given to the installation of a pedestrian crossing signal at one or both crosswalks.

No bicycle lanes exist in the study area and none are proposed within the Avondale Hills DRI. Bicycle racks should be installed at the entrances to the retail shopping and near the offices in order to encourage and facilitate bicycle use.

The site plan does not include any connectivity with adjacent properties. To the west, the property is bounded by a stream and to the east and north the land is developed with single-family homes, all of which create barriers to any through connection. However, the plan does provide a few locations at which an interconnection, either by street or a pedestrian path, may be provided if circumstances on the adjacent private properties should allow it in the future.

9. Programmed Infrastructure Projects

One transportation infrastructure project is programmed in the study network, as shown in Table 13.

Table 13 – Programmed Transportation Infrastructure Projects

Project ID	Description	Sponsor	Completion Date
DK-344A	Upgrades to approximately 40 signals, including the Covington Road corridor in the vicinity of Avondale Hills. The study intersection of Covington Road / Mountain Drive and the nearby intersection of Covington Road / Kensington Road are included.	GDOT	2016

data from Atlanta Regional Commission Plan 2040

On I-285, project ASP-AR-ML-240 anticipates the implementation of managed lanes on I-285 east from I-20 to I-85 north. This project is not expected to have a direct impact on the operations at the intersections in the study network unless modifications are made to the on- and off-ramps of I-285 at Memorial Drive. This information was not available at the time of this study.

The project data sheet for DK-344A is located in Appendix G.

10. Compliance with GRTA Criteria

This section addresses the compliance of the Avondale Hills DRI #2483 with the five criteria presented in Section 3-101 – General Criteria Applicable to All Proposed DRIs, found in *Procedures and Principles for GRTA Development of Regional Impact Review*, effective February 13, 2013.

A. Accessibility – The proposed DRI is designed to provide safe, quality, and convenient access and provides the flexibility of non-vehicular transportation options from the proposed development to existing or planned pedestrian, bicycle, or transit facilities such that there is a likelihood of significant use by residents, employees, and visitors to the proposed DRI.

   The Avondale Hills DRI will be served by two primary vehicular accesses, situated at approximately at the same location as two existing intersections on Mountain Drive. No additional vehicular access (other than a service driveway) will be added to the street system, thus minimizing points of conflict and impedance to adjacent street flows. This study has determined that both accesses will provide quality convenient access and will operate well. No field condition exists that suggests that the accesses would not provide safe connectivity to the street system. The eastern access will align with the driveway to the Kensington MARTA parking lot and the western access aligns with existing steps that provide a pedestrian path from Mountain Drive to the MARTA station. This provides direct, convenient connections for both vehicles and pedestrians to MARTA, thus facilitating use of transit by residents, employees, and visitors to Avondale Hills. As noted in this report, the Kensington MARTA station includes access to both the rail system, as well as to several bus routes, making this a significant transit hub. Sidewalks in the project will connect to the existing sidewalk on Mountain Drive, providing pedestrian connectivity to the surrounding areas.

B. Connectivity – The proposed DRI is likely to promote improved regional mobility in terms of new vehicular connections, on-site vehicular movements, and alternate routes that are likely to operate in a safe and efficient manner, increase the public roadway network, and avoid delays during peak periods.

   The project will be developed with a mix of land uses, a grid of streets interconnecting the uses, and sidewalks with pedestrian-friendly character. The mix of uses in Avondale Hills will result in interaction between the uses, which will reduce vehicle miles when compared with similar levels of development built separately. Also, some residents of the surrounding areas may be employed at the site, which would reduce existing trips from this general area to other employment centers. Residents of this project may shop at the retail and thus be intercepted from seeking shopping options elsewhere. The site plan anticipates potential future connections, either vehicular or pedestrian, to adjacent private properties, should an opportunity arise in the future to make such connections.

   On-site vehicular movements are facilitated by the grid of streets and this grid will provide for efficient on-site circulation which will eliminate the need for vehicles to circulate from one portion of the site to another using Mountain Drive. These design qualities will reduce vehicular impacts on Mountain Drive and thus improve regional mobility.

C. Access Management – The proposed DRI is designed so that vehicular ingress and egress to any on-site parking facilities and all access points to adjacent public roads are likely to operate in a safe and efficient manner and are

not reasonably anticipated to result in peak hour ingress and egress congestion on adjacent roads and at nearby intersections, referred to as an Access Analysis.

As discussed above, access to adjacent public roads will be provided at approximately the same two locations as existing street connections. This study concludes that these accesses will operate efficiently and nothing in the design or field conditions indicates that the intersections cannot be designed for safe operations. Peak hour ingress and egress will operate at excellent levels of service and congestion on adjacent roads and nearby intersections will be minimal. On-site parking facilities are located interior to the site. It is recommended that the design of intersections and the placement of interior cross streets and parking deck entrances comply with the Georgia DOT *Regulations for Driveway and Encroachment Control*.

D. Regional Policies and Adopted Plans – The proposed DRI is likely to promote improved regional mobility because it is located in a center or corridor identified in the Regional Development Plan (RDP) designated by an RC; or the DRI has included in the proposed site plan components which will assist in the implementation of a transportation project currently in the Regional Transportation Plan (RTP) or Transportation Improvement Program (TIP), or other adopted regional plan designated by an RC.

The location of the Avondale Hills DRI is located in the Kensington Livable Centers Initiative (LCI) area. The design of the site including the grid of streets and mix of uses is comparable to, and compatible with, the land uses and development pattern goals set forth in the *Kensington Livable Centers Initiative Transit Oriented Development Plan*, dated September 12, 2012, prepared for DeKalb County.

E. Local Standards Supporting Regional Policies – The proposed DRI is located within a local jurisdiction, or other jurisdictional agencies, with adopted codes that support regionally adopted policies, or the development codes and standards do not prohibit or impede the proposed DRI from meeting the GRTA DRI review criteria stated in Sections 3-101, 3-102, and 3-103.

Avondale Hills is located in unincorporated DeKalb County. DeKalb County controls land development patterns and uses through a comprehensive code of zoning ordinances, a comprehensive land use plan, and a transportation plan. No applicable code or standard of DeKalb County has been identified through this transportation study that would impede or prohibit the Avondale Hills DRI from meeting regional goals.

Appendix A
Traffic Analysis Methodologies

Intersection Analysis Methodology

The methodology used for evaluating traffic operations at intersections is presented in the Transportation Research Board's *Highway Capacity Manual*, 2010 edition (HCM 2010). Synchro 8 software, which emulates the HCM 2010 methodology, was used for all analyses. The following is an overview of the methodology employed for the analysis of signalized intersections and stop-sign controlled (unsignalized) intersections.

Signalized Intersections

The criteria for evaluating signalized intersections are capacity and level of service. The capacity analysis of an intersection compares the volume of traffic using the various lane groups at the intersection to the capacity of those lane groups. This produces a volume-to-capacity (v/c) ratio for each lane group. A v/c ratio greater than 1.0 indicates that the volume of traffic has exceeded the capacity available and indicates a temporary excess of demand. The HCM 2010 methodology computes a critical v/c ratio for an intersection based on the critical lane groups or approaches. This critical v/c ratio is an indication of overall intersection sufficiency.

Level of service for a signalized intersection is defined in terms of control delay per vehicle. For signalized intersections, a composite intersection level of service is determined. The thresholds for each level of service are higher for signalized intersections than for unsignalized intersections. This is attributable to a variety of factors including expectation and acceptance of higher delays at signals, and the fact that drivers can relax when waiting at a signal as opposed to having to remain attentive as they proceed through the unsignalized intersection. The level of service criteria for signalized intersections are shown in Table A.

Table A – Level of Service Criteria for Signalized Intersections

Control Delay (s/veh)	Level of Service by Volume-to-Capacity Ratio	
	≤1.0	>1.0
≤ 10	A	F
> 10 and ≤ 20	B	F
> 20 and ≤ 35	C	F
> 35 and ≤ 55	D	F
> 55 and ≤ 80	E	F
> 80	F	F

Source: Highway Capacity Manual 2010

Unsignalized Intersections

The operations at an unsignalized intersection are defined in terms of levels of service. Level of service (LOS) is a measure of driver discomfort, frustration, fuel consumption, and lost travel time. Level of service for an unsignalized intersection is defined in terms of control delay per vehicle. Control delay is that portion of delay attributable to the control device and includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. The delays at unsignalized intersections are based on gap acceptance theory, factoring in availability of gaps, usefulness of the gaps, and the priority of right-of-way given to each traffic stream.

Levels of service are assigned letters A through F. LOS A indicates operations with very low control delay while LOS F describes operations with high control delay. LOS F is considered to be unacceptable by most drivers, while LOS E is typically considered to be the limit of acceptable delay. The level of service criteria for unsignalized intersections are presented in Table B.

Table B – Level of Service Criteria for Unsignalized Intersections

Control Delay (s/veh)	Level of Service by Volume-to-Capacity Ratio	
	≤1.0	>1.0
0 – 10	A	F
> 10 and ≤ 15	B	F
> 15 and ≤ 25	C	F
> 25 and ≤ 35	D	F
> 35 and ≤ 50	E	F
> 50	F	F

Source: Highway Capacity Manual 2010

Facilities Needs Analysis

A facilities needs analysis tests alternative combinations of roadway improvements that allow a facility to achieve the LOS D standard (see Level of Service Standards section of the Study Network Chapter). Facilities needs analyses are performed for the existing, no-build, and build conditions, where necessary. The existing facilities needs analysis identifies existing deficiencies, and the mitigation required to achieve the applicable LOS standard. The future no-build analysis allows for the identification of projects necessary to bring the roadways up to the proscribed LOS standard, after the inclusion of other planned levels of development, but before the introduction of project-generated traffic. The future build analysis identifies those additional facilities improvements that will be necessitated by the subject DRI. Later in the study, programmed transportation improvements are identified, and those improvements are compared with the results of the facilities needs analysis, where appropriate.

Appendix B
Traffic Count Data

Reliable Traffic Data Services, LLC

Tel: (770) 578-8158 | Fax: (770) 578-8159
info@reliabletraffic.org | www.reliabletraffic.org

TMC Data
Covington Hwy (US278) @ Mountain Dr

7-9am I 4.30-6.30pm

File Name : 36310001
Site Code : 36310001
Start Date : 1/27/2015
Page No : 1

Groups Printed- Cars, Trucks & Buses

	Private Drwy Northbound					Mountain Dr Southbound					Covington Hwy (US278) Eastbound					Covington Hwy (US278) Westbound					
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
07:00 AM	0	0	0	0	0	3	0	40	0	43	17	58	0	0	75	0	222	3	0	225	343
07:15 AM	0	0	0	0	0	6	0	35	0	41	18	65	0	0	83	0	254	6	0	260	384
07:30 AM	0	0	0	0	0	6	0	34	0	40	22	72	0	0	94	1	236	6	0	243	377
07:45 AM	0	0	0	0	0	2	0	33	0	35	31	68	0	0	99	0	204	6	0	210	344
Total	0	0	0	0	0	17	0	142	0	159	88	263	0	0	351	1	916	21	0	938	1448
08:00 AM	0	0	0	0	0	6	0	38	0	44	24	59	0	0	83	0	198	10	0	208	335
08:15 AM	0	0	0	0	0	8	0	25	0	33	33	63	0	0	96	0	192	11	0	203	332
08:30 AM	0	0	0	0	0	2	0	26	0	28	36	80	0	0	116	0	187	9	0	196	340
08:45 AM	0	0	0	0	0	5	0	41	0	46	26	77	0	0	103	0	217	8	0	225	374
Total	0	0	0	0	0	21	0	130	0	151	119	279	0	0	398	0	794	38	0	832	1381
*** BREAK ***																					
04:30 PM	0	0	0	0	0	9	0	28	0	37	26	213	0	0	239	0	92	8	0	100	376
04:45 PM	0	0	0	0	0	12	0	33	0	45	33	248	0	0	281	0	90	12	0	102	428
Total	0	0	0	0	0	21	0	61	0	82	59	461	0	0	520	0	182	20	0	202	804
05:00 PM	0	0	0	0	0	8	0	28	0	36	25	275	0	0	300	0	85	13	0	98	434
05:15 PM	0	0	0	0	0	6	0	25	0	31	52	284	0	0	336	0	92	7	0	99	466
05:30 PM	0	0	0	0	0	3	0	25	0	28	29	216	0	0	245	0	92	7	0	99	372
05:45 PM	0	0	0	0	0	10	0	28	0	38	19	203	0	0	222	0	78	5	0	83	343
Total	0	0	0	0	0	27	0	106	0	133	125	978	0	0	1103	0	347	32	0	379	1615
06:00 PM	1	0	0	0	1	7	0	15	0	22	27	196	0	0	223	1	90	9	0	100	346
06:15 PM	0	0	0	0	0	8	0	28	0	36	29	160	0	0	189	0	74	5	0	79	304
Grand Total	1	0	0	0	1	101	0	482	0	583	447	2337	0	0	2784	2	2403	125	0	2530	5898
Apprch %	100	0	0	0		17.3	0	82.7	0		16.1	83.9	0	0		0.1	95	4.9	0		
Total %	0	0	0	0	0	1.7	0	8.2	0	9.9	7.6	39.6	0	0	47.2	0	40.7	2.1	0	42.9	

Reliable Traffic Data Services, LLC
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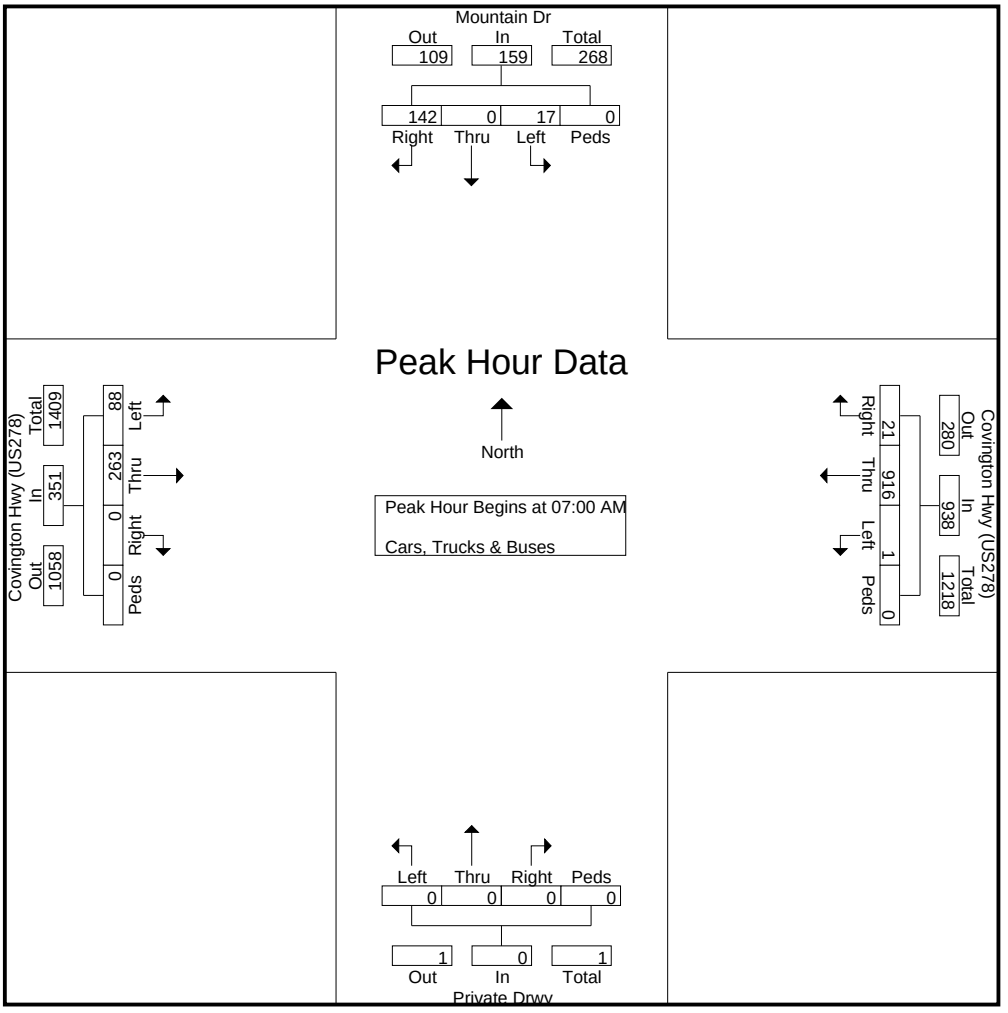
TMC Data
Covington Hwy (US278) @ Mountain Dr

7-9am I 4.30-6.30pm

File Name : 36310001
Site Code : 36310001
Start Date : 1/27/2015
Page No : 2

	Private Drwy Northbound					Mountain Dr Southbound					Covington Hwy (US278) Eastbound					Covington Hwy (US278) Westbound					
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 Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	0	0	0	0	0	3	0	**40**	0	**43**	17	58	0	0	75	0	222	3	0	225	343
07:15 AM	0	0	0	0	0	**6**	0	35	0	41	18	65	0	0	83	0	**254**	**6**	0	**260**	**384**
07:30 AM	0	0	0	0	0	6	0	34	0	40	22	**72**	0	0	94	**1**	236	6	0	243	377
07:45 AM	0	0	0	0	0	2	0	33	0	35	**31**	68	0	0	**99**	0	204	6	0	210	344
Total Volume	0	0	0	0	0	17	0	142	0	159	88	263	0	0	351	1	916	21	0	938	1448
% App. Total	0	0	0	0		10.7	0	89.3	0		25.1	74.9	0	0		0.1	97.7	2.2	0		
PHF	.000	.000	.000	.000	.000	.708	.000	.888	.000	.924	.710	.913	.000	.000	.886	.250	.902	.875	.000	.902	.943



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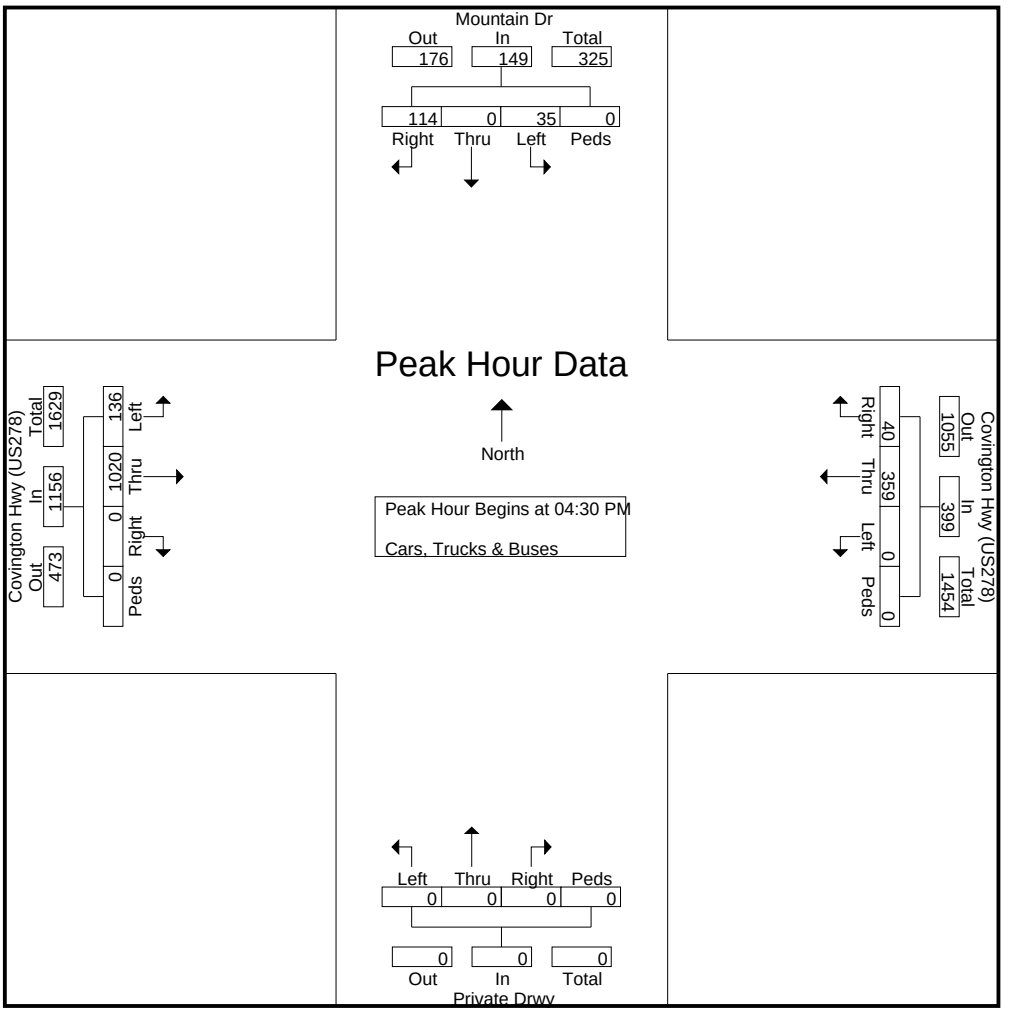
TMC Data
Covington Hwy (US278) @ Mountain Dr

7-9am I 4.30-6.30pm

File Name : 36310001
Site Code : 36310001
Start Date : 1/27/2015
Page No : 3

	Private Drwy Northbound					Mountain Dr Southbound					Covington Hwy (US278) Eastbound					Covington Hwy (US278) Westbound					
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 Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	0	0	0	0	0	9	0	28	0	37	26	213	0	0	239	0	**92**	8	0	100	376
04:45 PM	0	0	0	0	0	**12**	0	**33**	0	**45**	33	248	0	0	281	0	90	12	0	**102**	428
05:00 PM	0	0	0	0	0	8	0	28	0	36	25	275	0	0	300	0	85	**13**	0	98	434
05:15 PM	0	0	0	0	0	6	0	25	0	31	**52**	**284**	0	0	**336**	0	92	7	0	99	**466**
Total Volume	0	0	0	0	0	35	0	114	0	149	136	1020	0	0	1156	0	359	40	0	399	1704
% App. Total	0	0	0	0		23.5	0	76.5	0		11.8	88.2	0	0		0	90	10	0		
PHF	.000	.000	.000	.000	.000	.729	.000	.864	.000	.828	.654	.898	.000	.000	.860	.000	.976	.769	.000	.978	.914



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TMC Data
Mountain Dr @ Kensington Manor Drwy (W)

7-9am I 4.30-6.30pm

File Name : 36310002
Site Code : 36310002
Start Date : 1/27/2015
Page No : 1

Groups Printed- Cars, Trucks & Buses

	Northbound					Kensington Manor Drwy (West) Southbound					Mountain Dr Eastbound					Mountain Dr Westbound					
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
07:00 AM	0	0	0	0	0	0	0	0	0	0	1	21	0	0	22	0	35	0	0	35	57
07:15 AM	0	0	0	0	0	0	0	1	0	1	0	25	0	0	25	0	39	0	0	39	65
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	26	0	0	26	0	36	0	0	36	62
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	31	0	0	31	0	35	0	0	35	66
Total	0	0	0	0	0	0	0	1	0	1	1	103	0	0	104	0	145	0	0	145	250
08:00 AM	0	0	0	0	0	0	0	0	0	0	1	34	0	0	35	0	45	0	0	45	80
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	43	0	0	43	0	31	0	0	31	74
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	35	0	0	35	0	23	0	0	23	58
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	30	0	0	30	0	44	0	0	44	74
Total	0	0	0	0	0	0	0	0	0	0	1	142	0	0	143	0	143	0	0	143	286
*** BREAK ***																					
04:30 PM	0	0	0	0	0	0	0	1	0	1	0	36	0	0	36	0	44	0	0	44	81
04:45 PM	0	0	0	0	0	0	0	1	0	1	0	41	0	0	41	0	38	0	0	38	80
Total	0	0	0	0	0	0	0	2	0	2	0	77	0	0	77	0	82	0	0	82	161
05:00 PM	0	0	0	0	0	0	0	0	0	0	2	36	0	0	38	0	37	2	0	39	77
05:15 PM	0	0	0	0	0	3	0	1	0	4	0	50	0	0	50	0	24	5	0	29	83
05:30 PM	0	0	0	0	0	0	0	2	0	2	0	35	0	0	35	0	31	1	0	32	69
05:45 PM	0	0	0	0	0	0	0	3	0	3	0	23	0	0	23	0	34	0	0	34	60
Total	0	0	0	0	0	3	0	6	0	9	2	144	0	0	146	0	126	8	0	134	289
06:00 PM	0	0	0	0	0	3	0	0	0	3	0	38	0	0	38	0	30	1	0	31	72
06:15 PM	0	0	0	0	0	0	0	0	0	0	0	40	0	0	40	0	38	1	0	39	79
Grand Total	0	0	0	0	0	6	0	9	0	15	4	544	0	0	548	0	564	10	0	574	1137
Apprch %	0	0	0	0		40	0	60	0		0.7	99.3	0	0		0	98.3	1.7	0		
Total %	0	0	0	0	0	0.5	0	0.8	0	1.3	0.4	47.8	0	0	48.2	0	49.6	0.9	0	50.5	

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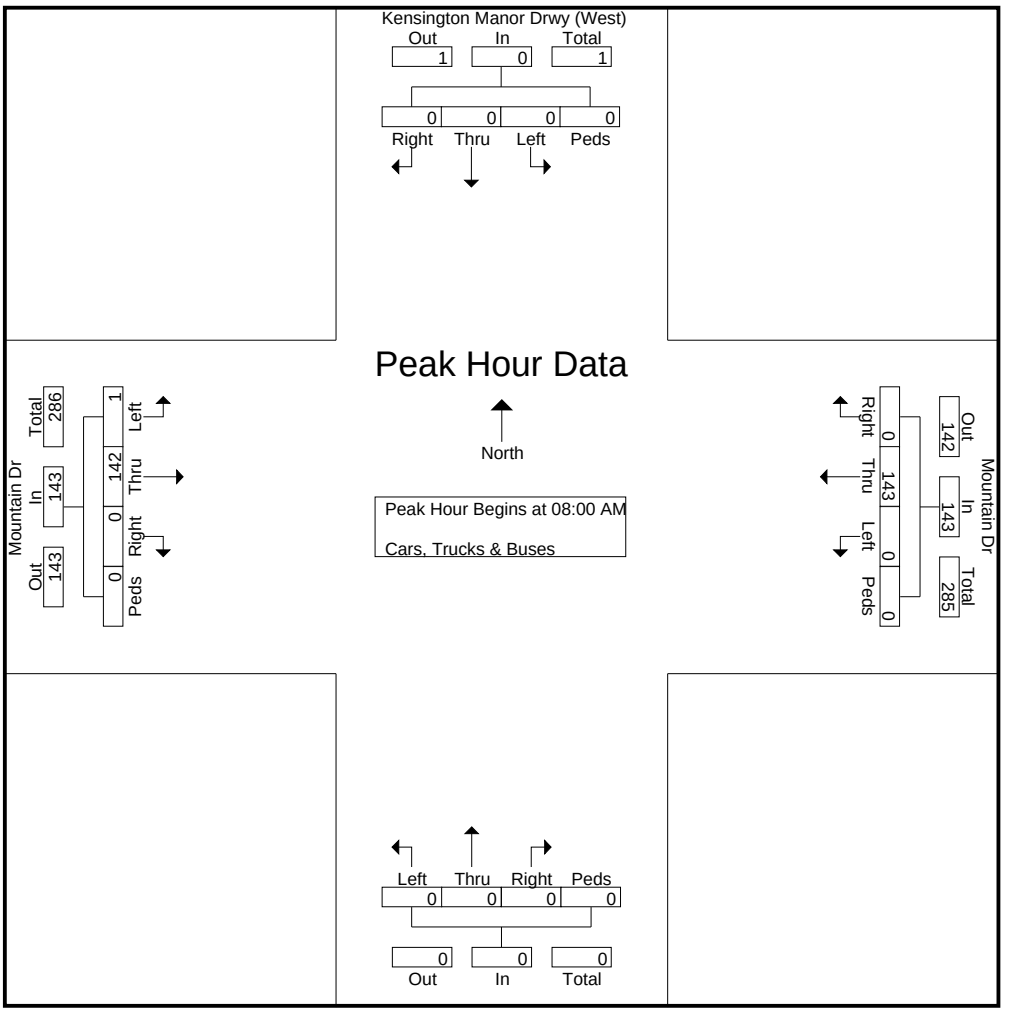
TMC Data
Mountain Dr @ Kensington Manor Drwy (W)

7-9am I 4.30-6.30pm

File Name : 36310002
Site Code : 36310002
Start Date : 1/27/2015
Page No : 2

	Northbound					Kensington Manor Drwy (West) Southbound					Mountain Dr Eastbound					Mountain Dr Westbound					
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 Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	0	0	0	0	0	0	0	0	0	0	**1**	34	0	0	35	0	**45**	0	0	**45**	**80**
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	**43**	0	0	**43**	0	31	0	0	31	74
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	35	0	0	35	0	23	0	0	23	58
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	30	0	0	30	0	44	0	0	44	74
Total Volume	0	0	0	0	0	0	0	0	0	0	1	142	0	0	143	0	143	0	0	143	286
% App. Total	0	0	0	0		0	0	0	0		0.7	99.3	0	0		0	100	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.826	.000	.000	.831	.000	.794	.000	.000	.794	.894



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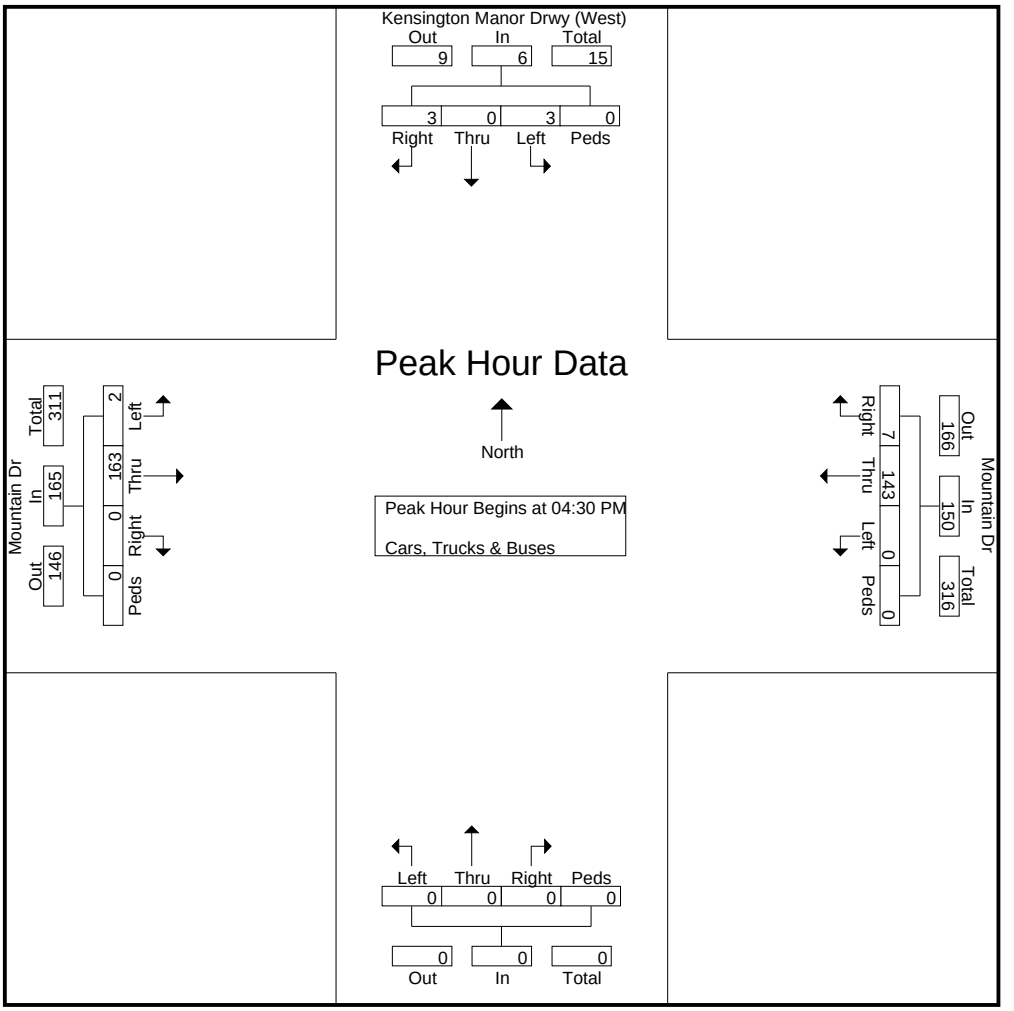
TMC Data
Mountain Dr @ Kensington Manor Drwy (W)

7-9am I 4.30-6.30pm

File Name : 36310002
Site Code : 36310002
Start Date : 1/27/2015
Page No : 3

	Northbound					Kensington Manor Drwy (West) Southbound					Mountain Dr Eastbound					Mountain Dr Westbound					
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 Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	0	0	0	0	0	0	0	**1**	0	1	0	36	0	0	36	0	**44**	0	0	**44**	81
04:45 PM	0	0	0	0	0	0	0	1	0	1	0	41	0	0	41	0	38	0	0	38	80
05:00 PM	0	0	0	0	0	0	0	0	0	0	**2**	36	0	0	38	0	37	2	0	39	77
05:15 PM	0	0	0	0	0	**3**	0	1	0	**4**	0	**50**	0	0	**50**	0	24	**5**	0	29	**83**
Total Volume	0	0	0	0	0	3	0	3	0	6	2	163	0	0	165	0	143	7	0	150	321
% App. Total	0	0	0	0		50	0	50	0		1.2	98.8	0	0		0	95.3	4.7	0		
PHF	.000	.000	.000	.000	.000	.250	.000	.750	.000	.375	.250	.815	.000	.000	.825	.000	.813	.350	.000	.852	.967



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TMC Data
Mountain Dr @ Kensington Manor Drwy (E)/
Marta Parking Lot Drwy
7-9am I 4.30-6.30pm

File Name : 36310003
Site Code : 36310003
Start Date : 1/27/2015
Page No : 1

Groups Printed- Cars, Trucks & Buses

	Marta Parking Lot Drwy Northbound					Kensington Manor Drwy (East) Southbound					Mountain Dr Eastbound					Mountain Dr Westbound					
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
07:00 AM	5	0	9	0	14	0	0	0	0	0	0	17	5	0	22	14	43	0	0	57	93
07:15 AM	2	0	12	0	14	0	0	0	0	0	0	20	3	0	23	11	33	0	0	44	81
07:30 AM	3	0	14	0	17	0	0	0	0	0	0	22	3	0	25	8	25	0	0	33	75
07:45 AM	2	0	3	0	5	0	0	0	0	0	0	33	1	0	34	19	38	0	0	57	96
Total	12	0	38	0	50	0	0	0	0	0	0	92	12	0	104	52	139	0	0	191	345
08:00 AM	1	0	10	0	11	0	0	0	0	0	0	21	5	0	26	12	45	0	0	57	94
08:15 AM	4	0	8	0	12	0	0	0	0	0	0	41	1	0	42	11	26	0	0	37	91
08:30 AM	2	0	6	0	8	0	0	0	0	0	0	39	2	0	41	21	22	0	0	43	92
08:45 AM	3	0	10	0	13	0	0	0	0	0	0	30	4	0	34	17	42	0	0	59	106
Total	10	0	34	0	44	0	0	0	0	0	0	131	12	0	143	61	135	0	0	196	383
*** BREAK ***																					
04:30 PM	6	0	25	0	31	0	0	0	0	0	0	32	2	0	34	6	38	0	0	44	109
04:45 PM	3	0	20	0	23	0	0	0	0	0	0	39	3	0	42	6	33	0	0	39	104
Total	9	0	45	0	54	0	0	0	0	0	0	71	5	0	76	12	71	0	0	83	213
05:00 PM	4	0	34	0	38	0	0	0	0	0	0	31	6	0	37	7	35	0	0	42	117
05:15 PM	7	0	17	0	24	0	0	3	0	3	4	45	7	0	56	9	19	0	0	28	111
05:30 PM	2	0	24	0	26	0	0	0	0	0	0	35	2	0	37	9	29	0	0	38	101
05:45 PM	4	0	28	0	32	0	0	0	0	0	0	25	0	0	25	5	29	2	0	36	93
Total	17	0	103	0	120	0	0	3	0	3	4	136	15	0	155	30	112	2	0	144	422
06:00 PM	8	0	32	0	40	0	0	0	0	0	0	37	5	0	42	6	26	0	0	32	114
06:15 PM	0	0	16	0	16	0	0	0	0	0	0	36	2	0	38	8	40	0	0	48	102
Grand Total	56	0	268	0	324	0	0	3	0	3	4	503	51	0	558	169	523	2	0	694	1579
Apprch %	17.3	0	82.7	0		0	0	100	0		0.7	90.1	9.1	0		24.4	75.4	0.3	0		
Total %	3.5	0	17	0	20.5	0	0	0.2	0	0.2	0.3	31.9	3.2	0	35.3	10.7	33.1	0.1	0	44	

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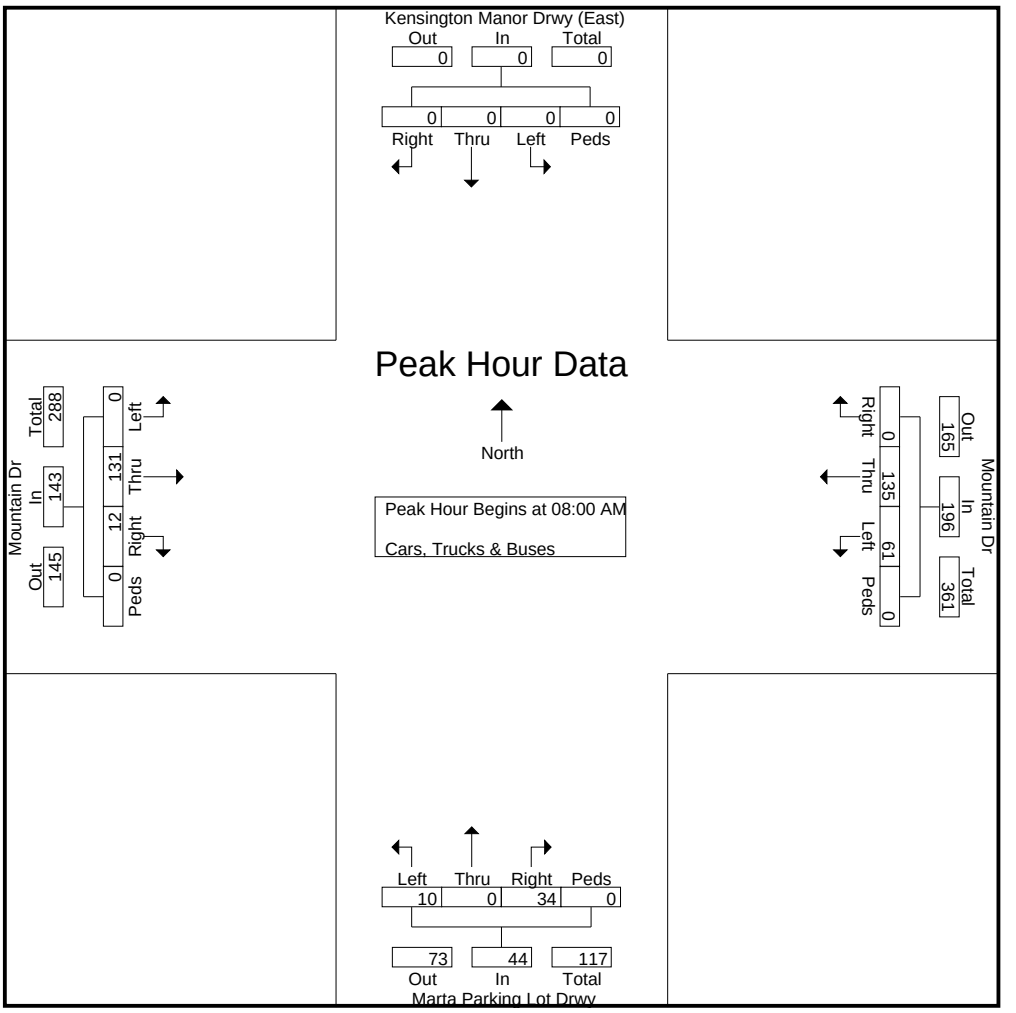
TMC Data
Mountain Dr @ Kensington Manor Drwy (E)/
Marta Parking Lot Drwy
7-9am I 4.30-6.30pm

File Name : 36310003
Site Code : 36310003
Start Date : 1/27/2015
Page No : 2

	Marta Parking Lot Drwy Northbound					Kensington Manor Drwy (East) Southbound					Mountain Dr Eastbound					Mountain Dr Westbound					
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 Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	1	0	**10**	0	11	0	0	0	0	0	0	21	**5**	0	26	12	**45**	0	0	57	94
08:15 AM	**4**	0	8	0	12	0	0	0	0	0	0	**41**	1	0	**42**	11	26	0	0	37	91
08:30 AM	2	0	6	0	8	0	0	0	0	0	0	39	2	0	41	**21**	22	0	0	43	92
08:45 AM	3	0	10	0	**13**	0	0	0	0	0	0	30	4	0	34	17	42	0	0	**59**	**106**
Total Volume	10	0	34	0	44	0	0	0	0	0	0	131	12	0	143	61	135	0	0	196	383
% App. Total	22.7	0	77.3	0		0	0	0	0		0	91.6	8.4	0		31.1	68.9	0	0		
PHF	.625	.000	.850	.000	.846	.000	.000	.000	.000	.000	.000	.799	.600	.000	.851	.726	.750	.000	.000	.831	.903



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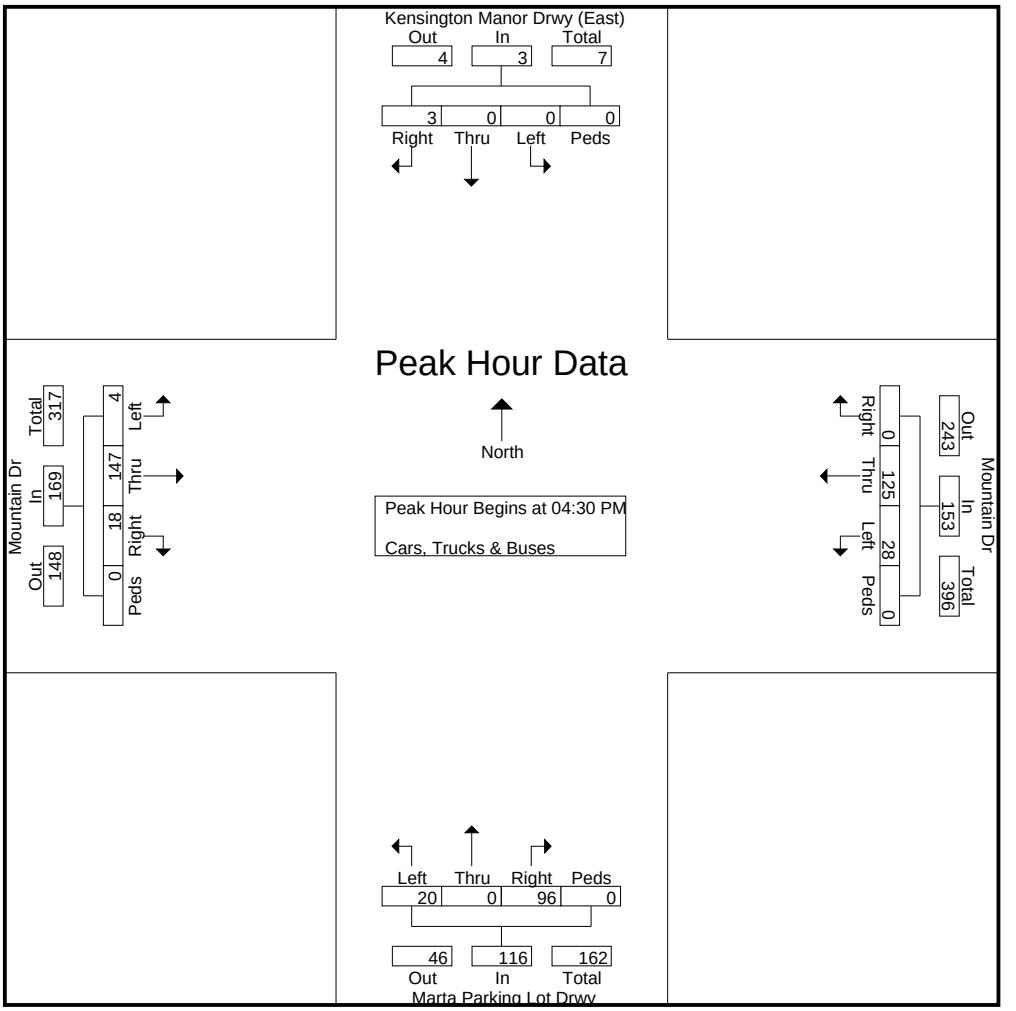
TMC Data
Mountain Dr @ Kensington Manor Drwy (E)/
Marta Parking Lot Drwy
7-9am I 4.30-6.30pm

File Name : 36310003
Site Code : 36310003
Start Date : 1/27/2015
Page No : 3

	Marta Parking Lot Drwy Northbound					Kensington Manor Drwy (East) Southbound					Mountain Dr Eastbound					Mountain Dr Westbound					
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 Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	6	0	25	0	31	0	0	0	0	0	0	32	2	0	34	6	**38**	0	0	**44**	109
04:45 PM	3	0	20	0	23	0	0	0	0	0	0	39	3	0	42	6	33	0	0	39	104
05:00 PM	4	0	**34**	0	**38**	0	0	0	0	0	0	31	6	0	37	7	35	0	0	42	**117**
05:15 PM	**7**	0	17	0	24	0	0	**3**	0	**3**	**4**	**45**	**7**	0	**56**	**9**	19	0	0	28	111
Total Volume	20	0	96	0	116	0	0	3	0	3	4	147	18	0	169	28	125	0	0	153	441
% App. Total	17.2	0	82.8	0		0	0	100	0		2.4	87	10.7	0		18.3	81.7	0	0		
PHF	.714	.000	.706	.000	.763	.000	.000	.250	.000	.250	.250	.817	.643	.000	.754	.778	.822	.000	.000	.869	.942



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TMC Data
Memorial Dr @ Mountain Dr/
Dekalb County Offices Drwy
7-9am I 4.30-6.30pm

File Name : 36310004
Site Code : 36310004
Start Date : 1/27/2015
Page No : 1

Groups Printed- Cars, Trucks & Buses

	Memorial Dr Northbound					Memorial Dr Southbound					Mountain Dr Eastbound					Dekalb County Offices Drwy Westbound					
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
07:00 AM	5	215	2	0	222	5	176	41	0	222	32	2	4	0	38	0	0	1	0	1	483
07:15 AM	8	267	3	0	278	8	228	36	0	272	33	1	7	0	41	0	1	0	0	1	592
07:30 AM	10	267	5	0	282	6	241	34	0	281	39	4	6	0	49	0	0	1	0	1	613
07:45 AM	12	289	5	0	306	11	246	46	0	303	28	4	3	0	35	1	0	1	0	2	646
Total	35	1038	15	0	1088	30	891	157	0	1078	132	11	20	0	163	1	1	3	0	5	2334
08:00 AM	18	290	8	0	316	16	243	49	0	308	31	1	2	0	34	2	0	5	0	7	665
08:15 AM	8	282	21	0	311	22	255	31	0	308	36	17	11	0	64	3	0	2	0	5	688
08:30 AM	6	243	17	0	266	32	234	38	0	304	33	3	6	0	42	3	0	2	0	5	617
08:45 AM	6	219	17	0	242	46	219	58	0	323	33	1	6	0	40	0	0	2	0	2	607
Total	38	1034	63	0	1135	116	951	176	0	1243	133	22	25	0	180	8	0	11	0	19	2577
*** BREAK ***																					
04:30 PM	1	239	1	0	241	7	245	33	0	285	40	0	9	0	49	8	1	8	0	17	592
04:45 PM	2	241	2	0	245	10	265	38	0	313	56	0	8	0	64	0	1	12	0	13	635
Total	3	480	3	0	486	17	510	71	0	598	96	0	17	0	113	8	2	20	0	30	1227
05:00 PM	5	224	0	0	229	6	322	44	0	372	74	0	12	0	86	8	1	18	0	27	714
05:15 PM	2	237	0	0	239	4	274	27	0	305	64	5	9	0	78	5	1	6	0	12	634
05:30 PM	1	265	1	0	267	5	299	41	0	345	63	1	5	0	69	2	0	6	0	8	689
05:45 PM	4	254	2	0	260	4	248	35	0	287	57	0	7	0	64	4	1	7	0	12	623
Total	12	980	3	0	995	19	1143	147	0	1309	258	6	33	0	297	19	3	37	0	59	2660
06:00 PM	1	245	1	0	247	3	277	27	0	307	66	0	7	0	73	1	1	2	0	4	631
06:15 PM	7	223	2	0	232	3	238	37	0	278	63	1	6	0	70	0	0	5	0	5	585
Grand Total	96	4000	87	0	4183	188	4010	615	0	4813	748	40	108	0	896	37	7	78	0	122	10014
Apprch %	2.3	95.6	2.1	0		3.9	83.3	12.8	0		83.5	4.5	12.1	0		30.3	5.7	63.9	0		
Total %	1	39.9	0.9	0	41.8	1.9	40	6.1	0	48.1	7.5	0.4	1.1	0	8.9	0.4	0.1	0.8	0	1.2	

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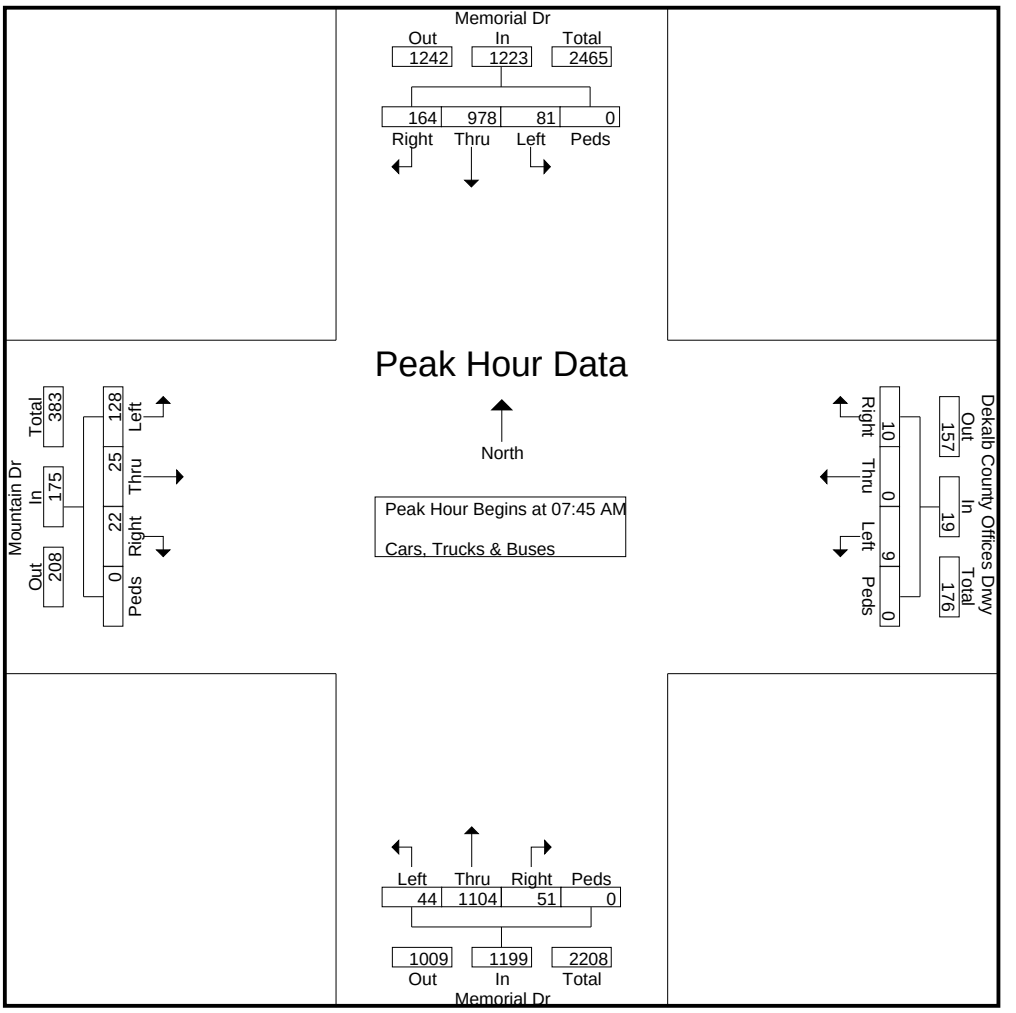
TMC Data
Memorial Dr @ Mountain Dr/
Dekalb County Offices Drwy
7-9am I 4.30-6.30pm

File Name : 36310004
Site Code : 36310004
Start Date : 1/27/2015

	Memorial Dr Northbound					Memorial Dr Southbound					Mountain Dr Eastbound					Dekalb County Offices Drwy Westbound					
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 Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	12	289	5	0	306	11	246	46	0	303	28	4	3	0	35	1	0	1	0	2	646
08:00 AM	**18**	**290**	8	0	**316**	16	243	**49**	0	**308**	31	1	2	0	34	2	0	**5**	0	**7**	665
08:15 AM	8	282	**21**	0	311	22	**255**	31	0	308	**36**	**17**	**11**	0	**64**	**3**	0	2	0	5	**688**
08:30 AM	6	243	17	0	266	**32**	234	38	0	304	33	3	6	0	42	3	0	2	0	5	617
Total Volume	44	1104	51	0	1199	81	978	164	0	1223	128	25	22	0	175	9	0	10	0	19	2616
% App. Total	3.7	92.1	4.3	0		6.6	80	13.4	0		73.1	14.3	12.6	0		47.4	0	52.6	0		
PHF	.611	.952	.607	.000	.949	.633	.959	.837	.000	.993	.889	.368	.500	.000	.684	.750	.000	.500	.000	.679	.951



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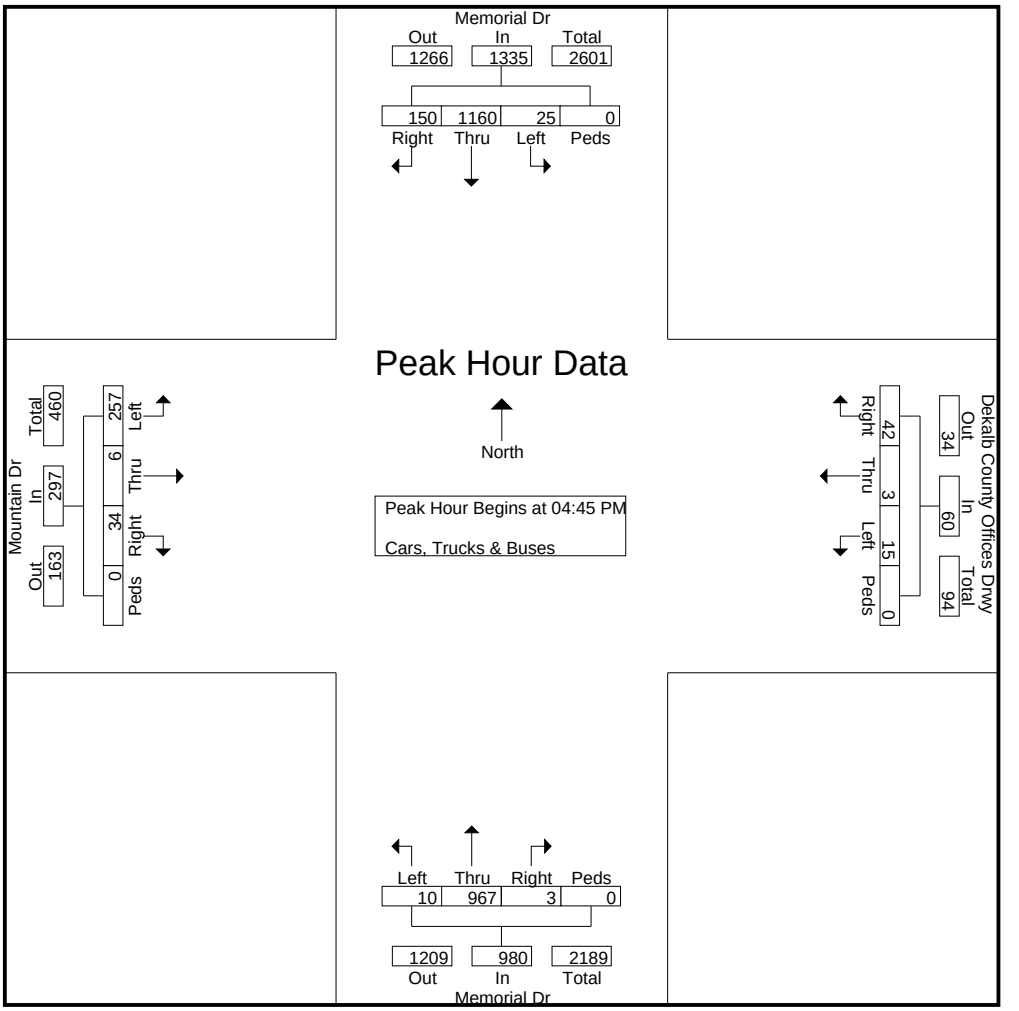
TMC Data
Memorial Dr @ Mountain Dr/
Dekalb County Offices Drwy
7-9am I 4.30-6.30pm

File Name : 36310004
Site Code : 36310004
Start Date : 1/27/2015
Page No : 3

	Memorial Dr Northbound					Memorial Dr Southbound					Mountain Dr Eastbound					Dekalb County Offices Drwy Westbound					
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 Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	2	241	**2**	0	245	**10**	265	38	0	313	56	0	8	0	64	0	**1**	12	0	13	635
05:00 PM	**5**	224	0	0	229	6	**322**	**44**	0	**372**	**74**	0	**12**	0	**86**	**8**	1	**18**	0	**27**	**714**
05:15 PM	2	237	0	0	239	4	274	27	0	305	64	**5**	9	0	78	5	1	6	0	12	634
05:30 PM	1	**265**	1	0	**267**	5	299	41	0	345	63	1	5	0	69	2	0	6	0	8	689
Total Volume	10	967	3	0	980	25	1160	150	0	1335	257	6	34	0	297	15	3	42	0	60	2672
% App. Total	1	98.7	0.3	0		1.9	86.9	11.2	0		86.5	2	11.4	0		25	5	70	0		
PHF	.500	.912	.375	.000	.918	.625	.901	.852	.000	.897	.868	.300	.708	.000	.863	.469	.750	.583	.000	.556	.936



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TMC Data
Covington Hwy (US278) @ Memorial Dr

7-9am I 4.30-6.30pm

File Name : 36310005
Site Code : 36310005
Start Date : 1/27/2015
Page No : 1

Groups Printed- Cars, Trucks & Buses

	Memorial Dr Northbound					Memorial Dr Southbound					Covington Hwy (US278) Eastbound					Covington Hwy (US278) Westbound					
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
07:00 AM	25	130	6	0	161	27	173	7	0	207	0	46	13	0	59	23	195	92	0	310	737
07:15 AM	27	171	3	0	201	32	196	11	0	239	4	48	7	0	59	30	213	82	0	325	824
07:30 AM	29	162	5	0	196	38	195	14	0	247	8	48	13	0	69	26	202	89	0	317	829
07:45 AM	23	179	7	0	209	33	216	12	0	261	7	55	16	0	78	32	206	131	0	369	917
Total	104	642	21	0	767	130	780	44	0	954	19	197	49	0	265	111	816	394	0	1321	3307
08:00 AM	25	197	10	0	232	52	211	18	0	281	8	36	15	0	59	25	184	108	0	317	889
08:15 AM	28	177	8	0	213	39	197	13	0	249	7	55	19	0	81	23	181	126	0	330	873
08:30 AM	21	154	5	0	180	48	193	17	0	258	6	66	5	0	77	21	152	99	0	272	787
08:45 AM	18	145	4	0	167	29	176	10	0	215	6	50	6	0	62	26	154	87	0	267	711
Total	92	673	27	0	792	168	777	58	0	1003	27	207	45	0	279	95	671	420	0	1186	3260
*** BREAK ***																					
04:30 PM	16	190	9	0	215	70	192	3	0	265	14	168	15	0	197	22	55	41	0	118	795
04:45 PM	19	177	7	0	203	74	197	5	0	276	10	193	24	0	227	24	67	42	0	133	839
Total	35	367	16	0	418	144	389	8	0	541	24	361	39	0	424	46	122	83	0	251	1634
05:00 PM	22	183	11	0	216	92	234	4	0	330	15	206	28	0	249	17	50	67	0	134	929
05:15 PM	13	186	9	0	208	87	184	5	0	276	11	216	28	0	255	29	68	37	0	134	873
05:30 PM	19	199	14	0	232	79	195	5	0	279	8	194	20	0	222	16	80	51	0	147	880
05:45 PM	16	200	22	0	238	88	198	8	0	294	10	185	13	0	208	31	42	45	0	118	858
Total	70	768	56	0	894	346	811	22	0	1179	44	801	89	0	934	93	240	200	0	533	3540
06:00 PM	22	191	27	0	240	80	187	3	0	270	13	179	25	0	217	9	56	46	0	111	838
06:15 PM	17	176	12	0	205	81	176	4	0	261	11	131	32	0	174	23	60	32	0	115	755
Grand Total	340	2817	159	0	3316	949	3120	139	0	4208	138	1876	279	0	2293	377	1965	1175	0	3517	13334
Apprch %	10.3	85	4.8	0		22.6	74.1	3.3	0		6	81.8	12.2	0		10.7	55.9	33.4	0		
Total %	2.5	21.1	1.2	0	24.9	7.1	23.4	1	0	31.6	1	14.1	2.1	0	17.2	2.8	14.7	8.8	0	26.4	

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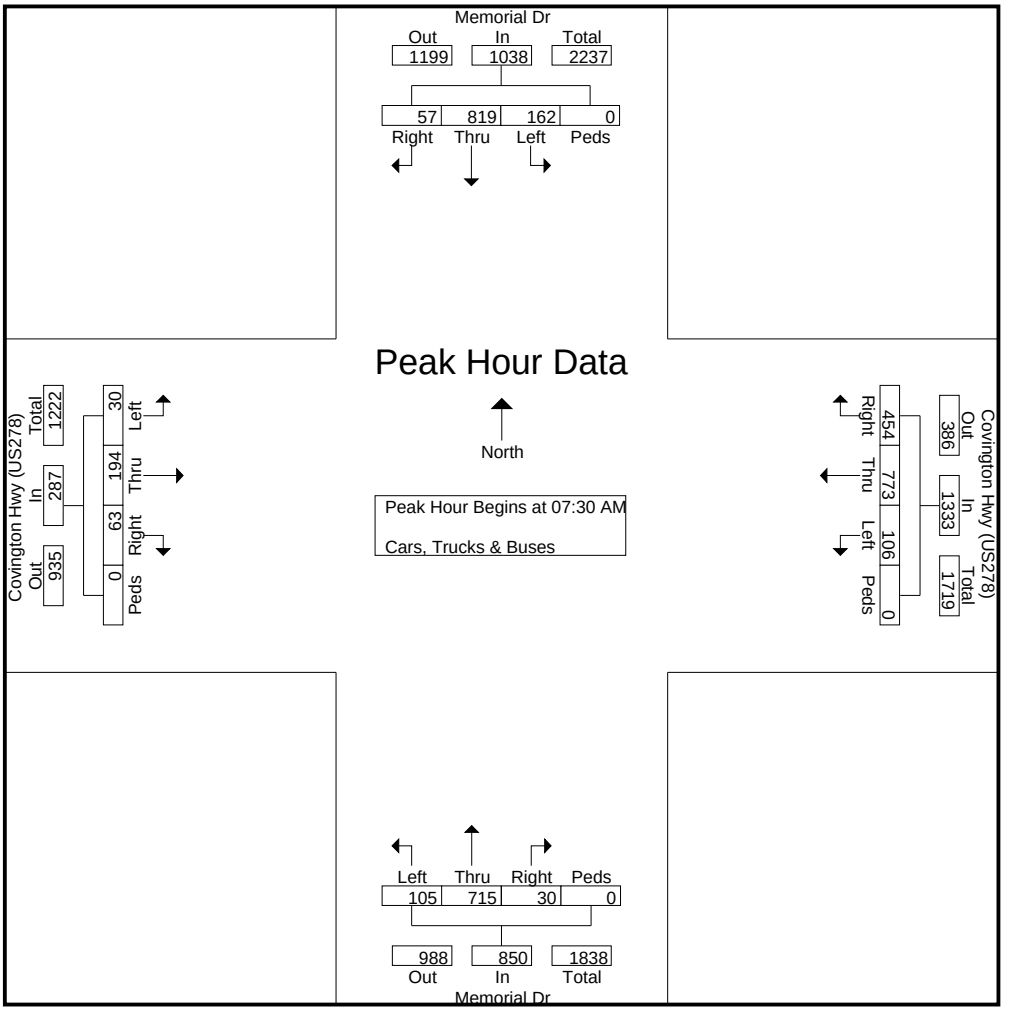
TMC Data
Covington Hwy (US278) @ Memorial Dr

7-9am I 4.30-6.30pm

File Name : 36310005
Site Code : 36310005
Start Date : 1/27/2015
Page No : 2

	Memorial Dr Northbound					Memorial Dr Southbound					Covington Hwy (US278) Eastbound					Covington Hwy (US278) Westbound					
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 Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	**29**	162	5	0	196	38	195	14	0	247	**8**	48	13	0	69	26	202	89	0	317	829
07:45 AM	23	179	7	0	209	33	**216**	12	0	261	7	**55**	16	0	78	**32**	**206**	**131**	0	**369**	**917**
08:00 AM	25	**197**	**10**	0	**232**	**52**	211	**18**	0	**281**	8	36	15	0	59	25	184	108	0	317	889
08:15 AM	28	177	8	0	213	39	197	13	0	249	7	55	**19**	0	**81**	23	181	126	0	330	873
Total Volume	105	715	30	0	850	162	819	57	0	1038	30	194	63	0	287	106	773	454	0	1333	3508
% App. Total	12.4	84.1	3.5	0		15.6	78.9	5.5	0		10.5	67.6	22	0		8	58	34.1	0		
PHF	.905	.907	.750	.000	.916	.779	.948	.792	.000	.923	.938	.882	.829	.000	.886	.828	.938	.866	.000	.903	.956



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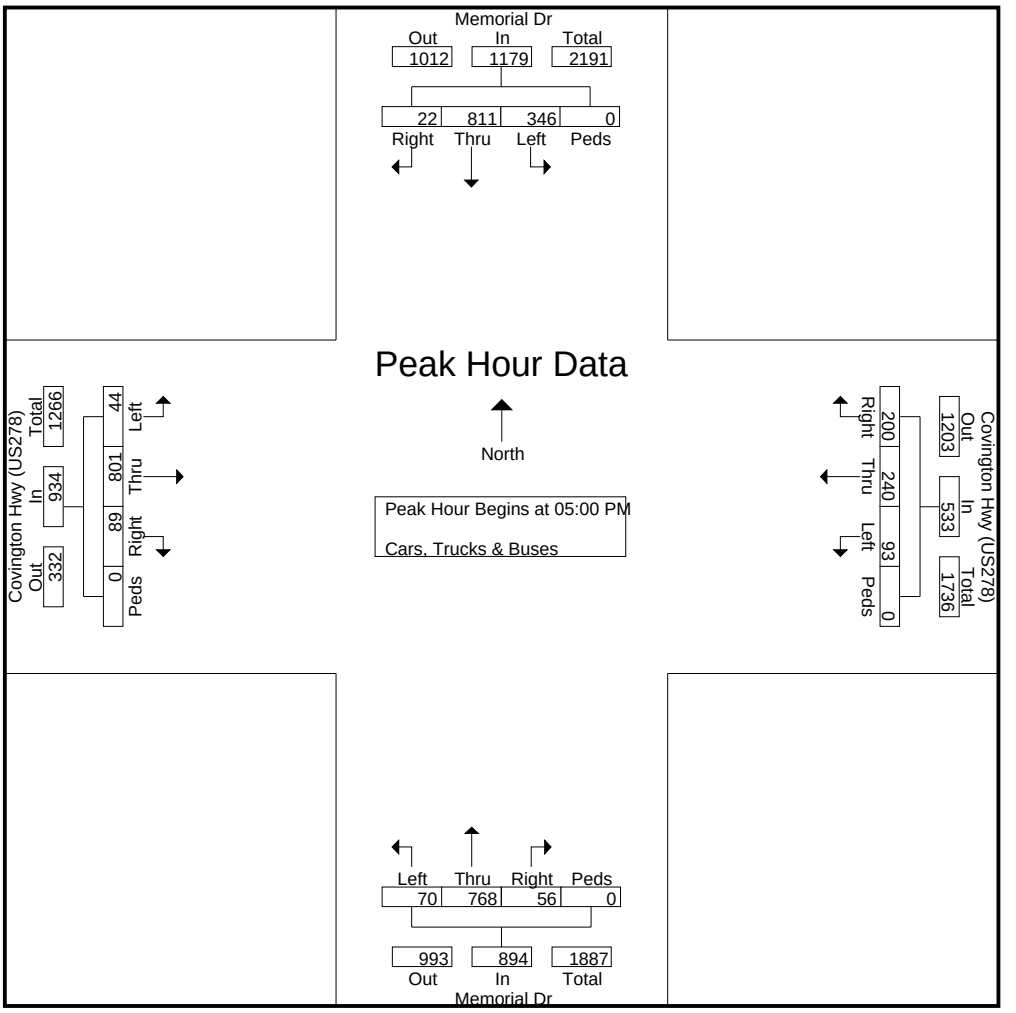
TMC Data
Covington Hwy (US278) @ Memorial Dr

7-9am I 4.30-6.30pm

File Name : 36310005
Site Code : 36310005
Start Date : 1/27/2015
Page No : 3

	Memorial Dr Northbound					Memorial Dr Southbound					Covington Hwy (US278) Eastbound					Covington Hwy (US278) Westbound					
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 Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	**22**	183	11	0	216	**92**	**234**	4	0	**330**	**15**	206	**28**	0	249	17	50	**67**	0	134	**929**
05:15 PM	13	186	9	0	208	87	184	5	0	276	11	**216**	28	0	**255**	29	68	37	0	134	873
05:30 PM	19	199	14	0	232	79	195	5	0	279	8	194	20	0	222	16	**80**	51	0	**147**	880
05:45 PM	16	**200**	**22**	0	**238**	88	198	**8**	0	294	10	185	13	0	208	**31**	42	45	0	118	858
Total Volume	70	768	56	0	894	346	811	22	0	1179	44	801	89	0	934	93	240	200	0	533	3540
% App. Total	7.8	85.9	6.3	0		29.3	68.8	1.9	0		4.7	85.8	9.5	0		17.4	45	37.5	0		
PHF	.795	.960	.636	.000	.939	.940	.866	.688	.000	.893	.733	.927	.795	.000	.916	.750	.750	.746	.000	.906	.953



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TMC Data
Memorial Dr @ I-285 SB Ramps

7-9am I 4.30-6.30pm

File Name : 36310006
Site Code : 36310006
Start Date : 1/27/2015
Page No : 1

Groups Printed- Cars, Trucks & Buses

	Northbound					I-285 SB Off-Ramp Southbound					Memorial Dr Eastbound					Memorial Dr Westbound					
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
07:00 AM	0	0	0	0	0	44	0	98	0	142	0	259	33	0	292	192	226	0	0	418	852
07:15 AM	0	0	0	0	0	58	0	103	0	161	0	279	42	0	321	196	237	0	0	433	915
07:30 AM	0	0	0	0	0	52	0	112	0	164	0	251	55	0	306	208	251	0	0	459	929
07:45 AM	0	0	0	0	0	57	0	146	0	203	0	316	67	0	383	217	264	0	0	481	1067
Total	0	0	0	0	0	211	0	459	0	670	0	1105	197	0	1302	813	978	0	0	1791	3763
08:00 AM	0	0	0	0	0	64	0	149	0	213	0	232	52	0	284	224	253	0	0	477	974
08:15 AM	0	0	0	0	0	60	0	151	0	211	0	267	56	0	323	206	246	0	0	452	986
08:30 AM	0	0	0	0	0	52	0	163	0	215	0	235	43	0	278	194	242	0	0	436	929
08:45 AM	0	0	0	0	0	56	0	168	0	224	0	271	40	0	311	182	237	0	0	419	954
Total	0	0	0	0	0	232	0	631	0	863	0	1005	191	0	1196	806	978	0	0	1784	3843
*** BREAK ***																					
04:30 PM	0	0	0	0	0	129	0	187	0	316	0	312	104	0	416	202	172	0	0	374	1106
04:45 PM	0	0	0	0	0	124	0	190	0	314	0	319	77	0	396	207	184	0	0	391	1101
Total	0	0	0	0	0	253	0	377	0	630	0	631	181	0	812	409	356	0	0	765	2207
05:00 PM	0	0	0	0	0	114	0	158	0	272	0	337	107	0	444	212	197	0	0	409	1125
05:15 PM	0	0	0	0	0	143	0	188	0	331	0	322	91	0	413	194	202	0	0	396	1140
05:30 PM	0	0	0	0	0	118	0	159	0	277	0	293	72	0	365	202	205	0	0	407	1049
05:45 PM	0	0	0	0	0	112	0	168	0	280	0	288	83	0	371	162	193	0	0	355	1006
Total	0	0	0	0	0	487	0	673	0	1160	0	1240	353	0	1593	770	797	0	0	1567	4320
06:00 PM	0	0	0	0	0	144	0	209	0	353	0	345	56	0	401	183	178	0	0	361	1115
06:15 PM	0	0	0	0	0	141	0	207	0	348	0	255	65	0	320	176	167	0	0	343	1011
Grand Total	0	0	0	0	0	1468	0	2556	0	4024	0	4581	1043	0	5624	3157	3454	0	0	6611	16259
Apprch %	0	0	0	0		36.5	0	63.5	0		0	81.5	18.5	0		47.8	52.2	0	0		
Total %	0	0	0	0	0	9	0	15.7	0	24.7	0	28.2	6.4	0	34.6	19.4	21.2	0	0	40.7	

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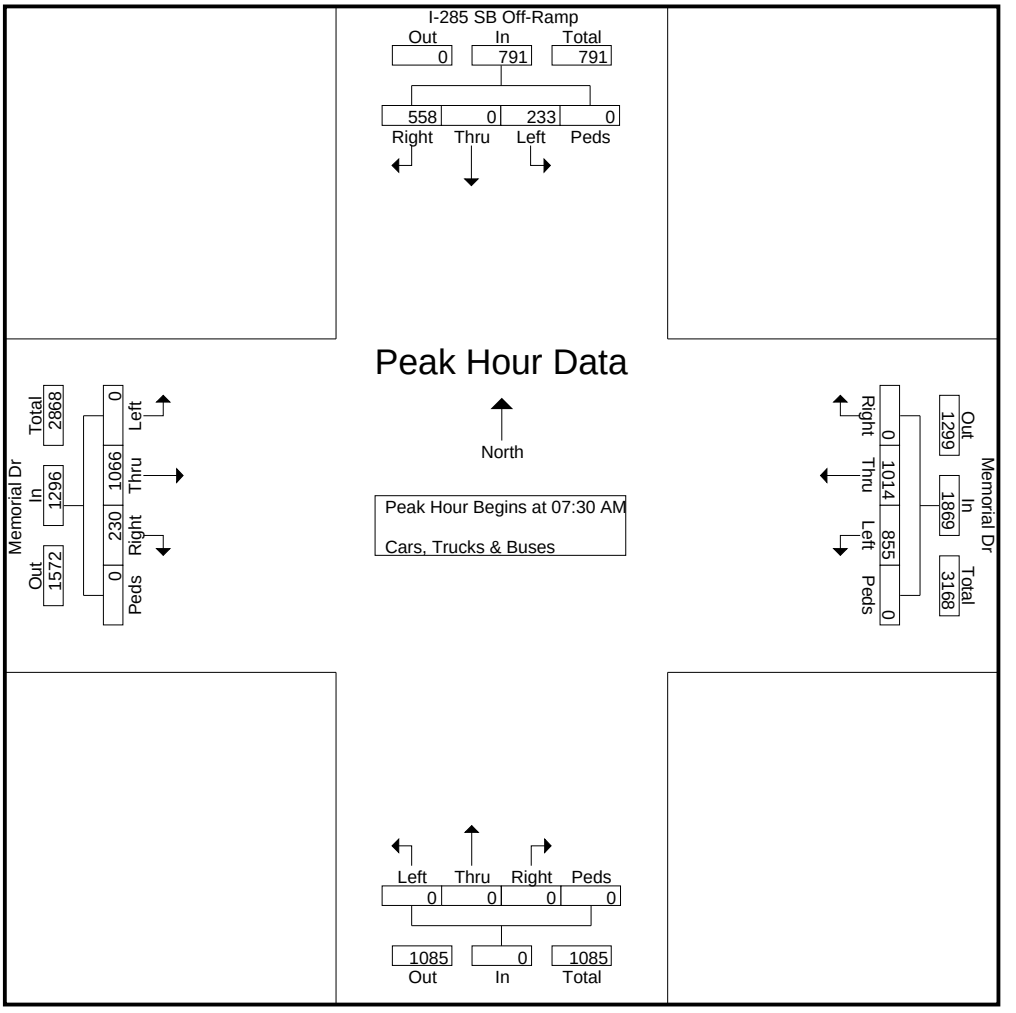
TMC Data
Memorial Dr @ I-285 SB Ramps

7-9am I 4.30-6.30pm

File Name : 36310006
Site Code : 36310006
Start Date : 1/27/2015
Page No : 2

	Northbound					I-285 SB Off-Ramp Southbound					Memorial Dr Eastbound					Memorial Dr Westbound					
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 Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	0	0	0	0	52	0	112	0	164	0	251	55	0	306	208	251	0	0	459	929
07:45 AM	0	0	0	0	0	57	0	146	0	203	0	**316**	**67**	0	**383**	217	**264**	0	0	**481**	**1067**
08:00 AM	0	0	0	0	0	**64**	0	149	0	**213**	0	232	52	0	284	**224**	253	0	0	477	974
08:15 AM	0	0	0	0	0	60	0	**151**	0	211	0	267	56	0	323	206	246	0	0	452	986
Total Volume	0	0	0	0	0	233	0	558	0	791	0	1066	230	0	1296	855	1014	0	0	1869	3956
% App. Total	0	0	0	0		29.5	0	70.5	0		0	82.3	17.7	0		45.7	54.3	0	0		
PHF	.000	.000	.000	.000	.000	.910	.000	.924	.000	.928	.000	.843	.858	.000	.846	.954	.960	.000	.000	.971	.927



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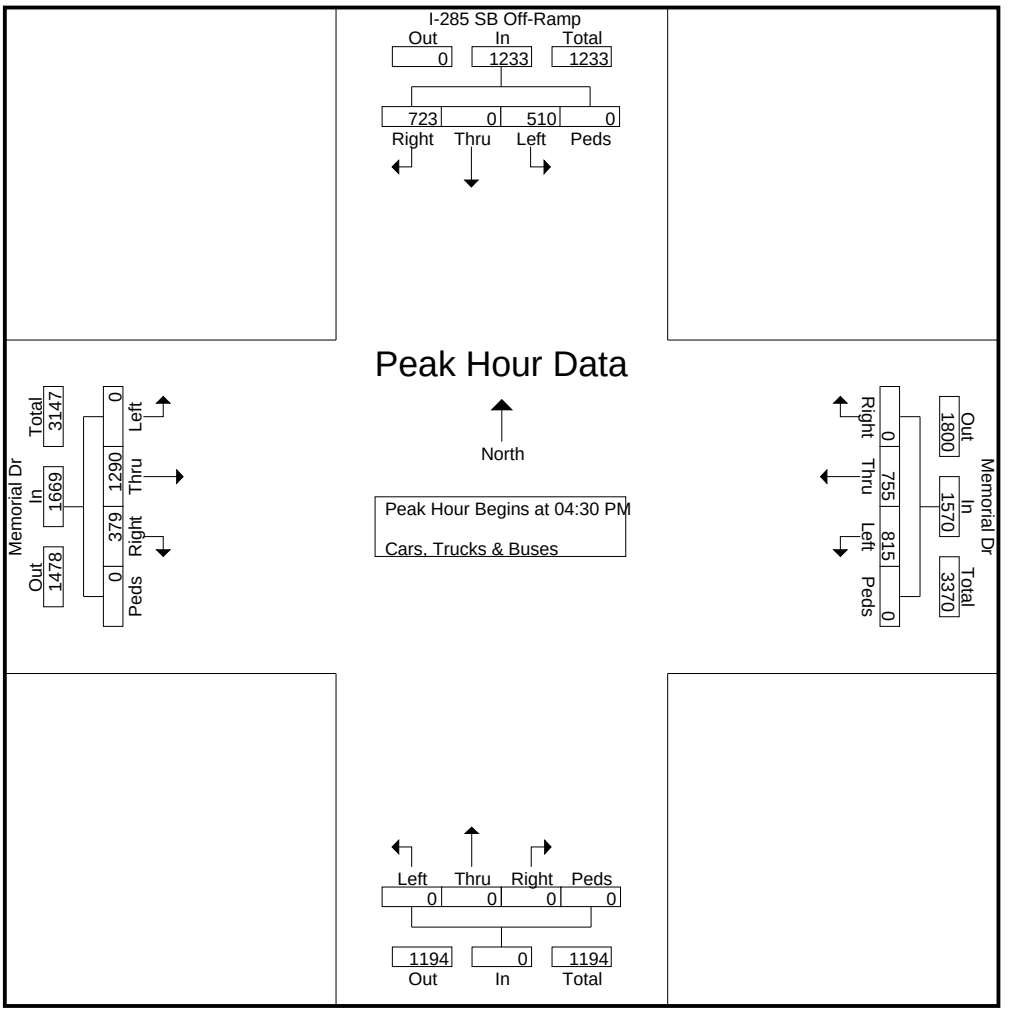
TMC Data
Memorial Dr @ I-285 SB Ramps

7-9am I 4.30-6.30pm

File Name : 36310006
Site Code : 36310006
Start Date : 1/27/2015
Page No : 3

	Northbound					I-285 SB Off-Ramp Southbound					Memorial Dr Eastbound					Memorial Dr Westbound					
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 Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	0	0	0	0	0	129	0	187	0	316	0	312	104	0	416	202	172	0	0	374	1106
04:45 PM	0	0	0	0	0	124	0	**190**	0	314	0	319	77	0	396	207	184	0	0	391	1101
05:00 PM	0	0	0	0	0	114	0	158	0	272	0	**337**	**107**	0	**444**	**212**	197	0	0	**409**	1125
05:15 PM	0	0	0	0	0	**143**	0	188	0	**331**	0	322	91	0	413	194	**202**	0	0	396	**1140**
Total Volume	0	0	0	0	0	510	0	723	0	1233	0	1290	379	0	1669	815	755	0	0	1570	4472
% App. Total	0	0	0	0		41.4	0	58.6	0		0	77.3	22.7	0		51.9	48.1	0	0		
PHF	.000	.000	.000	.000	.000	.892	.000	.951	.000	.931	.000	.957	.886	.000	.940	.961	.934	.000	.000	.960	.981



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TMC Data
Memorial Dr @ I-285 NB Ramps

7-9am I 4.30-6.30pm

File Name : 36310007
Site Code : 36310007
Start Date : 1/27/2015
Page No : 1

Groups Printed- Cars, Trucks & Buses

	I-285 NB Off-Ramp Northbound					Southbound					Memorial Dr Eastbound					Memorial Dr Westbound					
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
07:00 AM	54	0	93	0	147	0	0	0	0	0	106	174	0	0	280	0	346	115	0	461	888
07:15 AM	62	0	145	0	207	0	0	0	0	0	109	203	0	0	312	0	367	107	0	474	993
07:30 AM	67	0	184	0	251	0	0	0	0	0	112	224	0	0	336	0	378	84	0	462	1049
07:45 AM	89	0	260	0	349	0	0	0	0	0	114	237	0	0	351	0	375	77	0	452	1152
Total	272	0	682	0	954	0	0	0	0	0	441	838	0	0	1279	0	1466	383	0	1849	4082
08:00 AM	77	0	228	0	305	0	0	0	0	0	106	248	0	0	354	0	366	72	0	438	1097
08:15 AM	72	0	214	0	286	0	0	0	0	0	122	227	0	0	349	0	357	78	0	435	1070
08:30 AM	91	0	199	0	290	0	0	0	0	0	104	193	0	0	297	0	348	74	0	422	1009
08:45 AM	89	0	203	0	292	0	0	0	0	0	92	187	0	0	279	0	334	71	0	405	976
Total	329	0	844	0	1173	0	0	0	0	0	424	855	0	0	1279	0	1405	295	0	1700	4152
*** BREAK ***																					
04:30 PM	60	0	196	0	256	0	0	0	0	0	139	262	0	0	401	0	309	89	0	398	1055
04:45 PM	63	0	203	0	266	0	0	0	0	0	144	285	0	0	429	0	314	80	0	394	1089
Total	123	0	399	0	522	0	0	0	0	0	283	547	0	0	830	0	623	169	0	792	2144
05:00 PM	68	0	218	0	286	0	0	0	0	0	181	286	0	0	467	0	317	64	0	381	1134
05:15 PM	71	0	219	0	290	0	0	0	0	0	162	308	0	0	470	0	325	91	0	416	1176
05:30 PM	74	0	225	0	299	0	0	0	0	0	139	319	0	0	458	0	306	90	0	396	1153
05:45 PM	76	0	225	0	301	0	0	0	0	0	115	250	0	0	365	0	297	82	0	379	1045
Total	289	0	887	0	1176	0	0	0	0	0	597	1163	0	0	1760	0	1245	327	0	1572	4508
06:00 PM	69	0	179	0	248	0	0	0	0	0	173	310	0	0	483	0	291	90	0	381	1112
06:15 PM	64	0	209	0	273	0	0	0	0	0	145	275	0	0	420	0	273	95	0	368	1061
Grand Total	1146	0	3200	0	4346	0	0	0	0	0	2063	3988	0	0	6051	0	5303	1359	0	6662	17059
Apprch %	26.4	0	73.6	0		0	0	0	0		34.1	65.9	0	0		0	79.6	20.4	0		
Total %	6.7	0	18.8	0	25.5	0	0	0	0	0	12.1	23.4	0	0	35.5	0	31.1	8	0	39.1	

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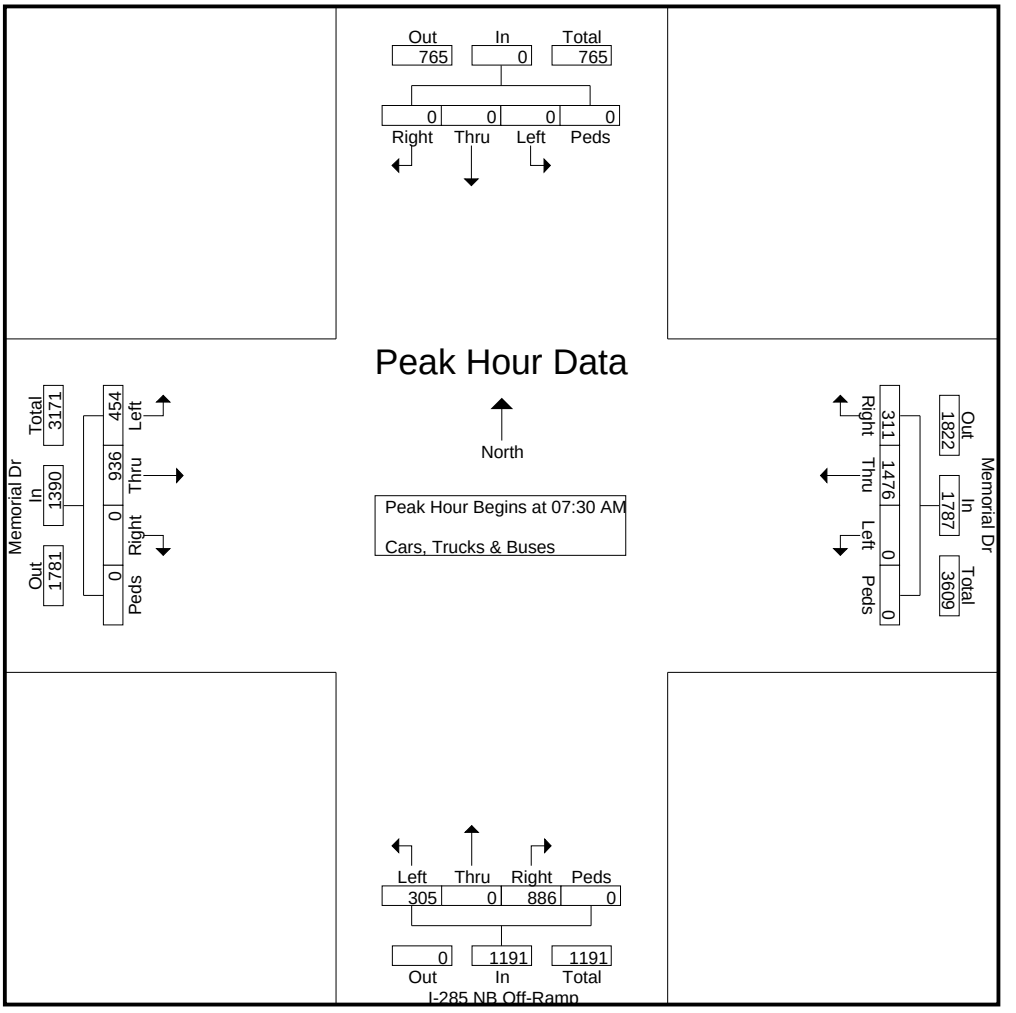
TMC Data
Memorial Dr @ I-285 NB Ramps

7-9am I 4.30-6.30pm

File Name : 36310007
Site Code : 36310007
Start Date : 1/27/2015
Page No : 2

	I-285 NB Off-Ramp Northbound					Southbound					Memorial Dr Eastbound					Memorial Dr Westbound					
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 Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	67	0	184	0	251	0	0	0	0	0	112	224	0	0	336	0	**378**	**84**	0	**462**	1049
07:45 AM	**89**	0	**260**	0	**349**	0	0	0	0	0	114	237	0	0	351	0	375	77	0	452	**1152**
08:00 AM	77	0	228	0	305	0	0	0	0	0	106	**248**	0	0	**354**	0	366	72	0	438	1097
08:15 AM	72	0	214	0	286	0	0	0	0	0	**122**	227	0	0	349	0	357	78	0	435	1070
Total Volume	305	0	886	0	1191	0	0	0	0	0	454	936	0	0	1390	0	1476	311	0	1787	4368
% App. Total	25.6	0	74.4	0		0	0	0	0		32.7	67.3	0	0		0	82.6	17.4	0		
PHF	.857	.000	.852	.000	.853	.000	.000	.000	.000	.000	.930	.944	.000	.000	.982	.000	.976	.926	.000	.967	.948



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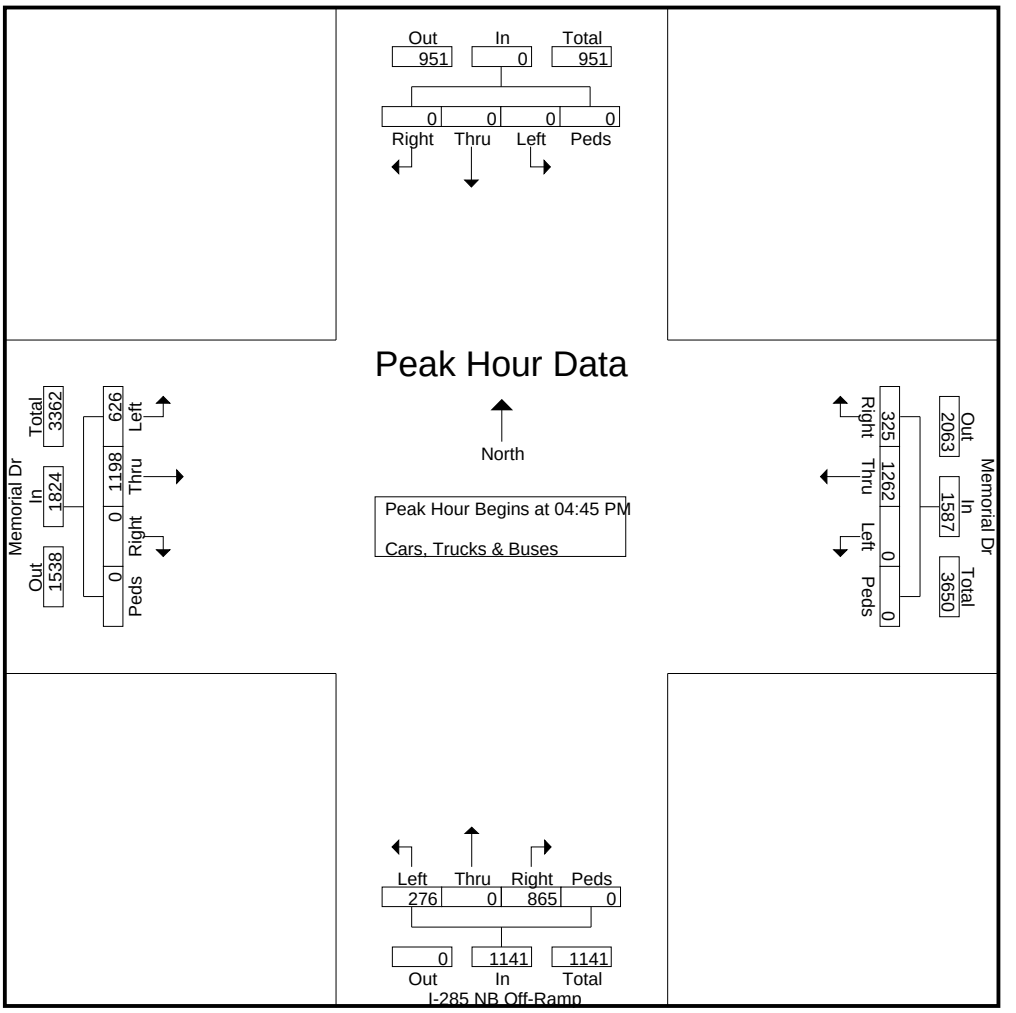
TMC Data
Memorial Dr @ I-285 NB Ramps

7-9am I 4.30-6.30pm

File Name : 36310007
Site Code : 36310007
Start Date : 1/27/2015
Page No : 3

	I-285 NB Off-Ramp Northbound					Southbound					Memorial Dr Eastbound					Memorial Dr Westbound					
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 Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	63	0	203	0	266	0	0	0	0	0	144	285	0	0	429	0	314	80	0	394	1089
05:00 PM	68	0	218	0	286	0	0	0	0	0	**181**	286	0	0	467	0	317	64	0	381	1134
05:15 PM	71	0	219	0	290	0	0	0	0	0	162	308	0	0	**470**	0	**325**	**91**	0	**416**	**1176**
05:30 PM	**74**	0	**225**	0	**299**	0	0	0	0	0	139	**319**	0	0	458	0	306	90	0	396	1153
Total Volume	276	0	865	0	1141	0	0	0	0	0	626	1198	0	0	1824	0	1262	325	0	1587	4552
% App. Total	24.2	0	75.8	0		0	0	0	0		34.3	65.7	0	0		0	79.5	20.5	0		
PHF	.932	.000	.961	.000	.954	.000	.000	.000	.000	.000	.865	.939	.000	.000	.970	.000	.971	.893	.000	.954	.968



ADT Data

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Site Code: 36310101
Mountain Dr Between both driveways of
Kensington Manor

Start Time	27-Jan-15 Tue	Eastbound Morning	Eastbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Westbound Morning	Westbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Combined Totals Morning	Combined Totals Afternoon
12:00		5	48			3	43				
12:15		3	37			6	50				
12:30		1	35			3	39				
12:45		5	49	14	169	0	30	12	162	26	331
01:00		3	38			2	36				
01:15		1	46			4	43				
01:30		5	39			3	40				
01:45		5	30	14	153	1	32	10	151	24	304
02:00		2	38			3	45				
02:15		2	38			0	41				
02:30		2	53			2	52				
02:45		0	41	6	170	3	51	8	189	14	359
03:00		1	39			0	40				
03:15		2	46			0	47				
03:30		0	56			3	39				
03:45		1	40	4	181	4	53	7	179	11	360
04:00		0	36			3	36				
04:15		2	46			4	38				
04:30		2	40			4	45				
04:45		5	45	9	167	3	40	14	159	23	326
05:00		4	33			2	35				
05:15		5	51			6	30				
05:30		7	45			12	35				
05:45		5	26	21	155	14	38	34	138	55	293
06:00		17	38			15	35				
06:15		11	36			21	32				
06:30		20	27			18	24				
06:45		25	17	73	118	39	29	93	120	166	238
07:00		20	30			35	13				
07:15		23	25			42	32				
07:30		29	19			33	27				
07:45		30	28	102	102	38	16	148	88	250	190
08:00		27	28			47	23				
08:15		45	19			30	12				
08:30		39	18			24	17				
08:45		33	26	144	91	44	14	145	66	289	157
09:00		27	19			37	19				
09:15		25	14			42	23				
09:30		29	12			37	12				
09:45		33	13	114	58	31	15	147	69	261	127
10:00		27	7			37	6				
10:15		21	6			39	17				
10:30		28	10			36	4				
10:45		25	13	101	36	45	13	157	40	258	76
11:00		41	11			37	11				
11:15		27	11			47	8				
11:30		33	6			48	8				
11:45		46	5	147	33	36	4	168	31	315	64
Total		749	1433			943	1392			1692	2825
Percent		34.3%	65.7%			40.4%	59.6%			37.5%	62.5%
Grand Total			749	1433			943	1392			1692	2825
Percent			34.3%	65.7%			40.4%	59.6%			37.5%	62.5%

ADT ADT 4,517 AADT 4,517

Appendix C
Traffic Volume Worksheets

Avondale Hills DRI Traffic Impact Study
DeKalb County, Georgia

March 2015

Intersection: Covington Highway (US 278) / Mountain Drive / House Driveway

Weekday A.M. Peak Hour	Northbound Covington Highway				Southbound Covington Highway				Eastbound House Driveway				Westbound Mountain Drive			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Counted Volumes (Tuesday, January 27, 2015)	1	916	21	938	88	263	0	351	0	0	0	0	17	0	142	159
Total Annual Background Growth	5.1%	5.1%	5.1%		5.1%	5.1%	5.1%		5.1%	5.1%	5.1%		5.1%	5.1%	5.1%	
No-Build Volumes	**1**	**963**	**22**	**938**	**92**	**276**	**0**	**351**	**0**	**0**	**0**	**0**	**18**	**0**	**149**	**159**
Avondale Hills Residential	0	0	12	12	13	0	0	13	0	0	0	0	46	0	54	100
Avondale Hills Retail New	0	0	5	5	3	0	0	3	0	0	0	0	3	0	2	5
Avondale Hills Retail Pass-By	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Avondale Hills Office	0	0	5	5	3	0	0	3	0	0	0	0	0	0	1	1
Avondale Hills Total	**0**	**0**	**22**	**22**	**19**	**0**	**0**	**19**	**0**	**0**	**0**	**0**	**49**	**0**	**57**	**106**
Build Volumes	**1**	**963**	**44**	**1008**	**111**	**276**	**0**	**388**	**0**	**0**	**0**	**0**	**67**	**0**	**206**	**273**

Weekday P.M. Peak Hour	Northbound Covington Highway				Southbound Covington Highway				Eastbound House Driveway				Westbound Mountain Drive			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Counted Volumes (Tuesday, January 27, 2015)	0	359	40	399	136	1020	0	1156	0	0	0	0	35	0	114	149
Total Annual Background Growth	5.1%	5.1%	5.1%		5.1%	5.1%	5.1%		5.1%	5.1%	5.1%		5.1%	5.1%	5.1%	
No-Build Volumes	**0**	**377**	**42**	**399**	**143**	**1072**	**0**	**1156**	**0**	**0**	**0**	**0**	**37**	**0**	**120**	**149**
Avondale Hills Residential	0	0	45	45	50	0	0	50	0	0	0	0	24	0	27	51
Avondale Hills Retail New	0	0	11	11	7	0	0	7	0	0	0	0	13	0	9	22
Avondale Hills Retail Pass-By	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Avondale Hills Office	0	0	0	0	1	0	0	1	0	0	0	0	4	0	2	6
Avondale Hills Total	**0**	**0**	**56**	**56**	**58**	**0**	**0**	**58**	**0**	**0**	**0**	**0**	**41**	**0**	**38**	**79**
Build Volumes	**0**	**377**	**98**	**475**	**201**	**1072**	**0**	**1273**	**0**	**0**	**0**	**0**	**78**	**0**	**158**	**236**

Avondale Hills DRI Traffic Impact Study
DeKalb County, Georgia

March 2015

Intersection: Mountain Drive / Avondale Hills DRI West Access

Weekday A.M. Peak Hour		**Southbound Kensington Manor Drive**			**Eastbound Mountain Drive**			**Westbound Mountain Drive**		
		L	**R**	**Tot**	**L**	**T**	**Tot**	**T**	**R**	**Tot**
Counted Volumes (Tuesday, January 27, 2015)		**0**	**0**	**0**	**1**	**142**	**143**	**143**	**0**	**143**
Total Annual Background Growth		5.1%	5.1%		5.1%	5.1%		5.1%	5.1%	
No-Build Volumes		**0**	**0**	**0**	**1**	**149**	**143**	**150**	**0**	**143**
Avondale Hills Residential		20	60	80	18	7	25	40	4	44
Avondale Hills Retail New		4	5	9	8	0	8	0	5	5
Avondale Hills Retail Pass-By		0	1	1	1	-1	0	-1	1	0
Avondale Hills Office		1	1	2	8	0	8	0	7	7
Avondale Hills Total		**25**	**67**	**92**	**35**	**6**	**41**	**39**	**17**	**56**
Build Volumes		**25**	**67**	**92**	**35**	**155**	**190**	**189**	**17**	**206**

Weekday P.M. Peak Hour		**Southbound Kensington Manor Drive**			**Eastbound Mountain Drive**			**Westbound Mountain Drive**		
		L	**R**	**Tot**	**L**	**T**	**Tot**	**T**	**R**	**Tot**
Counted Volumes (Tuesday, January 27, 2015)		**3**	**3**	**6**	**2**	**163**	**165**	**143**	**7**	**150**
Total Annual Background Growth		5.1%	5.1%		5.1%	5.1%		5.1%	5.1%	
No-Build Volumes		**3**	**3**	**6**	**2**	**171**	**165**	**150**	**7**	**150**
Avondale Hills Residential		10	31	41	66	29	95	20	13	33
Avondale Hills Retail New		12	22	34	18	0	18	0	9	9
Avondale Hills Retail Pass-By		5	4	9	4	-4	0	-3	3	0
Avondale Hills Office		7	6	13	1	0	1	0	1	1
Avondale Hills Total		**34**	**63**	**97**	**89**	**25**	**114**	**17**	**26**	**43**
Build Volumes		**34**	**63**	**97**	**89**	**196**	**285**	**167**	**26**	**193**

Avondale Hills DRI Traffic Impact Study
DeKalb County, Georgia

March 2015

Intersection: Mountain Drive / Avondale Hills DRI East Access / Kensington MARTA Access

Weekday A.M. Peak Hour	Northbound Kensington MARTA				Southbound Kensington Manor Drive				Eastbound Mountain Drive				Westbound Mountain Drive			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Counted Volumes (Tuesday, January 27, 2015)	10	0	34	44	0	0	0	0	0	131	12	143	61	135	0	196
Total Annual Background Growth	5.1%	5.1%	5.1%		5.1%	5.1%	5.1%		5.1%	5.1%	5.1%		5.1%	5.1%	5.1%	
No-Build Volumes	**11**	**0**	**36**	**44**	**0**	**0**	**0**	**0**	**0**	**138**	**13**	**143**	**64**	**142**	**0**	**196**
Avondale Hills Residential	0	0	0	0	47	0	40	87	7	20	0	27	0	4	13	17
Avondale Hills Retail New	0	0	0	0	0	0	0	0	0	4	0	4	0	5	0	5
Avondale Hills Retail Pass-By	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Avondale Hills Office	0	0	0	0	0	0	0	0	0	1	0	1	0	7	0	7
Avondale Hills Total	**0**	**0**	**0**	**0**	**47**	**0**	**40**	**87**	**7**	**25**	**0**	**32**	**0**	**16**	**13**	**29**
Build Volumes	**11**	**0**	**36**	**46**	**47**	**0**	**40**	**87**	**7**	**163**	**13**	**182**	**64**	**158**	**13**	**235**

Weekday P.M. Peak Hour	Northbound Kensington MARTA				Southbound Kensington Manor Drive				Eastbound Mountain Drive				Westbound Mountain Drive			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Counted Volumes (Tuesday, January 27, 2015)	20	0	96	116	0	0	3	3	4	147	18	169	28	125	0	153
Total Annual Background Growth	5.1%	5.1%	5.1%		5.1%	5.1%	5.1%		5.1%	5.1%	5.1%		5.1%	5.1%	5.1%	
No-Build Volumes	**21**	**0**	**101**	**116**	**0**	**0**	**3**	**3**	**4**	**154**	**19**	**169**	**29**	**131**	**0**	**153**
Avondale Hills Residential	0	0	0	0	24	0	20	44	29	10	0	39	0	13	51	64
Avondale Hills Retail New	0	0	0	0	0	0	0	0	0	12	0	12	0	9	0	9
Avondale Hills Retail Pass-By	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Avondale Hills Office	0	0	0	0	0	0	0	0	0	7	0	7	0	1	0	1
Avondale Hills Total	**0**	**0**	**0**	**0**	**24**	**0**	**20**	**44**	**29**	**29**	**0**	**58**	**0**	**23**	**51**	**74**
Build Volumes	**21**	**0**	**101**	**122**	**24**	**0**	**20**	**44**	**29**	**183**	**19**	**231**	**29**	**154**	**51**	**235**

Avondale Hills DRI Traffic Impact Study
DeKalb County, Georgia

March 2015

Intersection: Memorial Drive / Mountain Drive/ DeKalb County Juvenile Court Access

Weekday A.M. Peak Hour	**Northbound DeKalb Juvenile Court**				**Southbound Mountain Drive**				**Eastbound Memorial Drive**				**Westbound Memorial Drive**			
	L	**T**	**R**	**Tot**	**L**	**T**	**R**	**Tot**	**L**	**T**	**R**	**Tot**	**L**	**T**	**R**	**Tot**
Counted Volumes (Tuesday, January 27, 2015)	9	0	10	19	128	25	22	175	44	1104	51	1199	81	978	164	1223
Total Annual Background Growth	5.1%	5.1%	5.1%		5.1%	5.1%	5.1%		5.1%	5.1%	5.1%		5.1%	5.1%	5.1%	
No-Build Volumes	**9**	**0**	**11**	**19**	**135**	**26**	**23**	**175**	**46**	**1160**	**54**	**1199**	**85**	**1028**	**172**	**1223**
Avondale Hills Residential	0	0	0	0	67	0	0	67	0	0	0	0	0	0	17	17
Avondale Hills Retail New	0	0	0	0	4	0	0	4	0	0	0	0	0	0	5	5
Avondale Hills Retail Pass-By	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Avondale Hills Office	0	0	0	0	1	0	0	1	0	0	0	0	0	0	7	7
Avondale Hills Total	**0**	**0**	**0**	**0**	**72**	**0**	**0**	**72**	**0**	**0**	**0**	**0**	**0**	**0**	**29**	**29**
Build Volumes	**9**	**0**	**11**	**20**	**207**	**26**	**23**	**256**	**46**	**1160**	**54**	**1260**	**85**	**1028**	**201**	**1314**

Weekday P.M. Peak Hour	**Northbound DeKalb Juvenile Court**				**Southbound Mountain Drive**				**Eastbound Memorial Drive**				**Westbound Memorial Drive**			
	L	**T**	**R**	**Tot**	**L**	**T**	**R**	**Tot**	**L**	**T**	**R**	**Tot**	**L**	**T**	**R**	**Tot**
Counted Volumes (Tuesday, January 27, 2015)	15	3	42	60	257	6	34	297	10	967	3	980	25	1160	150	1335
Total Annual Background Growth	5.1%	5.1%	5.1%		5.1%	5.1%	5.1%		5.1%	5.1%	5.1%		5.1%	5.1%	5.1%	
No-Build Volumes	**16**	**3**	**44**	**60**	**270**	**6**	**36**	**297**	**11**	**1016**	**3**	**980**	**26**	**1219**	**158**	**1335**
Avondale Hills Residential	0	0	0	0	34	0	0	34	0	0	0	0	0	0	64	64
Avondale Hills Retail New	0	0	0	0	12	0	0	12	0	0	0	0	0	0	9	9
Avondale Hills Retail Pass-By	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Avondale Hills Office	0	0	0	0	7	0	0	7	0	0	0	0	0	0	1	1
Avondale Hills Total	**0**	**0**	**0**	**0**	**53**	**0**	**0**	**53**	**0**	**0**	**0**	**0**	**0**	**0**	**74**	**74**
Build Volumes	**16**	**3**	**44**	**63**	**323**	**6**	**36**	**365**	**11**	**1016**	**3**	**1030**	**26**	**1219**	**232**	**1477**

Avondale Hills DRI Traffic Impact Study
DeKalb County, Georgia

March 2015

Intersection: Covington Highway (US 278) / Memorial Drive (GA 154 / GA 10)

Weekday A.M. Peak Hour	**Northbound Covington Highway**				**Southbound Covington Highway**				**Eastbound Memorial Drive**				**Westbound Memroial Drive**			
	L	**T**	**R**	**Tot**	**L**	**T**	**R**	**Tot**	**L**	**T**	**R**	**Tot**	**L**	**T**	**R**	**Tot**
Counted Volumes (Tuesday, January 27, 2015)	106	773	454	1333	30	194	63	287	105	715	30	850	162	819	57	1038
Total Annual Background Growth	5.1%	5.1%	5.1%		5.1%	5.1%	5.1%		5.1%	5.1%	5.1%		5.1%	5.1%	5.1%	
No-Build Volumes	**111**	**812**	**477**	**1333**	**32**	**204**	**66**	**287**	**110**	**751**	**32**	**850**	**170**	**861**	**60**	**1038**
Avondale Hills Residential	0	3	0	3	0	13	33	46	9	0	0	9	0	0	0	0
Avondale Hills Retail New	0	2	0	2	0	1	2	3	3	0	0	3	0	0	0	0
Avondale Hills Retail Pass-By	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Avondale Hills Office	0	2	0	2	0	0	0	0	3	0	0	3	0	0	0	0
Avondale Hills Total	**0**	**7**	**0**	**7**	**0**	**14**	**35**	**49**	**15**	**0**	**0**	**15**	**0**	**0**	**0**	**0**
Build Volumes	**111**	**819**	**477**	**1408**	**32**	**218**	**101**	**351**	**125**	**751**	**32**	**908**	**170**	**861**	**60**	**1091**

Weekday P.M. Peak Hour	**Northbound Covington Highway**				**Southbound Covington Highway**				**Eastbound Memorial Drive**				**Westbound Memroial Drive**			
	L	**T**	**R**	**Tot**	**L**	**T**	**R**	**Tot**	**L**	**T**	**R**	**Tot**	**L**	**T**	**R**	**Tot**
Counted Volumes (Tuesday, January 27, 2015)	93	240	200	533	44	801	89	934	70	768	56	894	346	811	22	1179
Total Annual Background Growth	5.1%	5.1%	5.1%		5.1%	5.1%	5.1%		5.1%	5.1%	5.1%		5.1%	5.1%	5.1%	
No-Build Volumes	**98**	**252**	**210**	**533**	**46**	**842**	**94**	**934**	**74**	**807**	**59**	**894**	**364**	**852**	**23**	**1179**
Avondale Hills Residential	0	13	0	13	0	7	17	24	32	0	0	32	0	0	0	0
Avondale Hills Retail New	0	4	0	4	0	5	8	13	7	0	0	7	0	0	0	0
Avondale Hills Retail Pass-By	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Avondale Hills Office	0	0	0	0	0	2	2	4	0	0	0	0	0	0	0	0
Avondale Hills Total	**0**	**17**	**0**	**17**	**0**	**14**	**27**	**41**	**39**	**0**	**0**	**39**	**0**	**0**	**0**	**0**
Build Volumes	**98**	**269**	**210**	**577**	**46**	**856**	**121**	**1023**	**113**	**807**	**59**	**979**	**364**	**852**	**23**	**1239**

Avondale Hills DRI Traffic Impact Study
DeKalb County, Georgia

March 2015

Intersection: Memorial Drive (GA 154 / GA 10) / I-285 Southbound Ramp

Weekday A.M. Peak Hour		**Southbound I-285 Ramp**			**Eastbound Memorial Drive**			**Westbound Memorial Drive**		
		L	**R**	**Tot**	**T**	**R**	**Tot**	**L**	**T**	**Tot**
Counted Volumes (Tuesday, January 27, 2015)		233	558	791	1066	230	1296	855	1014	1869
Total Annual Background Growth		5.1%	5.1%		5.1%	5.1%		5.1%	5.1%	
No-Build Volumes		**245**	**586**	**791**	**1120**	**242**	**1296**	**899**	**1066**	**1869**
Avondale Hills Residential		0	9	9	50	17	67	0	8	8
Avondale Hills Retail New		0	2	2	3	1	4	0	3	3
Avondale Hills Retail Pass-By		0	1	1	0	0	0	0	0	0
Avondale Hills Office		0	3	3	1	0	1	0	4	4
Avondale Hills Total		**0**	**15**	**15**	**54**	**18**	**72**	**0**	**15**	**15**
Build Volumes		**245**	**601**	**846**	**1174**	**260**	**1434**	**899**	**1081**	**1979**

Weekday P.M. Peak Hour		**Southbound I-285 Ramp**			**Eastbound Memorial Drive**			**Westbound Memorial Drive**		
		L	**R**	**Tot**	**T**	**R**	**Tot**	**L**	**T**	**Tot**
Counted Volumes (Tuesday, January 27, 2015)		510	723	1233	1290	379	1669	815	755	1570
Total Annual Background Growth		5.1%	5.1%		5.1%	5.1%		5.1%	5.1%	
No-Build Volumes		**536**	**760**	**1233**	**1356**	**398**	**1669**	**857**	**794**	**1570**
Avondale Hills Residential		0	32	32	25	9	34	0	32	32
Avondale Hills Retail New		0	3	3	9	3	12	0	6	6
Avondale Hills Retail Pass-By		0	0	0	0	0	0	0	0	0
Avondale Hills Office		0	1	1	5	2	7	0	0	0
Avondale Hills Total		**0**	**36**	**36**	**39**	**14**	**53**	**0**	**38**	**38**
Build Volumes		**536**	**796**	**1332**	**1395**	**412**	**1807**	**857**	**832**	**1688**

Avondale Hills DRI Traffic Impact Study
DeKalb County, Georgia

March 2015

Intersection: Memorial Drive (GA 154 / GA 10) / I-285 Northbound Ramp

Weekday A.M. Peak Hour	**Northbound I-285 Ramp**				**Eastbound Memorial Drive**			**Westbound Memorial Drive**		
	L	**R**	**Tot**		**L**	**T**	**Tot**	**T**	**R**	**Tot**
Counted Volumes (Tuesday, January 27, 2015)	305	886	1191		454	936	1390	1476	311	1787
Total Annual Background Growth	5.1%	5.1%			5.1%	5.1%		5.1%	5.1%	
No-Build Volumes	**321**	**931**	**1191**		**477**	**984**	**1390**	**1551**	**327**	**1787**
Avondale Hills Residential	4	0	4		33	17	50	4	0	4
Avondale Hills Retail New	1	0	1		1	2	3	2	0	2
Avondale Hills Retail Pass-By	0	0	0		0	0	0	0	0	0
Avondale Hills Office	2	0	2		1	0	1	2	0	2
Avondale Hills Total	**7**	**0**	**7**		**35**	**19**	**54**	**8**	**0**	**8**
Build Volumes	**328**	**931**	**1259**		**512**	**1003**	**1515**	**1559**	**327**	**1886**

Weekday P.M. Peak Hour	**Northbound I-285 Ramp**				**Eastbound Memorial Drive**			**Westbound Memorial Drive**		
	L	**R**	**Tot**		**L**	**T**	**Tot**	**T**	**R**	**Tot**
Counted Volumes (Tuesday, January 27, 2015)	276	865	1141		626	1198	1824	1262	325	1587
Total Annual Background Growth	5.1%	5.1%			5.1%	5.1%		5.1%	5.1%	
No-Build Volumes	**290**	**909**	**1141**		**658**	**1259**	**1824**	**1326**	**342**	**1587**
Avondale Hills Residential	16	0	16		19	8	27	16	0	16
Avondale Hills Retail New	2	0	2		4	5	9	4	0	4
Avondale Hills Retail Pass-By	0	0	0		0	0	0	0	0	0
Avondale Hills Office	0	0	0		3	2	5	0	0	0
Avondale Hills Total	**18**	**0**	**18**		**26**	**15**	**41**	**20**	**0**	**20**
Build Volumes	**308**	**909**	**1217**		**684**	**1274**	**1958**	**1346**	**342**	**1688**

Analyst MRA
Date 3/23/2015

MULTI-USE DEVELOPMENT TRIP GENERATION AND INTERNAL CAPTURE SUMMARY

Name of Dvlpt Avondale Hills DRI
Time Period a.m. peak hour
uses opposite percentages of p.m. peak data

LAND USE A Residential

ITE LU Code 210, 220, 230
Size 48, 408, 66

	Total	Internal	External
Enter	57	1	56
Exit	226	3	223
Total	283	4	279
%	100%	1%	99%

Exit to External: 223
Enter from External: 56

31% 70 Demand	53% 30 Demand	2% 5 Demand	2% 1 Demand
3 Balanced	1 Balanced	0 Balanced	0 Balanced
12% 3 Demand	9% 1 Demand	2% 0 Demand	0% 0 Demand

LAND USE B Retail

ITE LU Code 826 (820)
Size 39,990 sf

	Total	Internal	External
Enter	24	4	20
Exit	14	1	13
Total	38	5	33
%	100%	13%	87%

Exit to External: 13
Enter from External: 20

Demand	Balanced	Demand
3% 1	1	31% 1
2% 0	0	23% 5

LAND USE C Office

ITE LU Code 710
Size 15,000 sf

	Total	Internal	External
Enter	20	0	20
Exit	3	1	2
Total	23	1	22
%	100%	4%	96%

Enter from External: 20
Exit to External: 2

Net External Trips for Multi-Use Development

	LAND USE A	LAND USE B	LAND USE C	TOTAL
Enter	56	20	21	97
Exit	223	13	1	237
Total	279	33	22	334
Single-Use Trip Gen. Est.	283	38	23	344

Source: Kaku Associates, Inc.

INTERNAL CAPTURE: 3%

Analyst MRA
Date 3/23/2015

MULTI-USE DEVELOPMENT TRIP GENERATION AND INTERNAL CAPTURE SUMMARY

Name of Dvlpt Avondale Hills DRI
Time Period p.m. peak hour

LAND USE A Residential

ITE LU Code 210, 220, 230
Size 48, 408, 66

	Total	Internal	External
Enter	220	8	212
Exit	119	5	114
Total	339	13	326
%	100%	4%	96%

Exit to External: 114
Enter from External: 212

53% 63 Demand
5 Balanced
9% 5 Demand

31% 68 Demand
8 Balanced
12% 8 Demand

2% 2 Demand
0 Balanced
0% 0 Demand

2% 4 Demand
0 Balanced
2% 0 Demand

LAND USE B Retail

ITE LU Code 826 (820)
Size 39,990 sf

	Total	Internal	External
Enter	51	6	45
Exit	66	9	57
Total	117	15	102
%	100%	13%	87%

Exit to External: 57
Enter from External: 45

Demand 2% 1 | Balanced 1 | Demand 23% 4
Demand 3% 2 | Balanced 1 | Demand 31% 1

LAND USE C Office

ITE LU Code 710
Size 15,000 sf

	Total	Internal	External
Enter	4	1	3
Exit	18	1	17
Total	22	2	20
%	100%	9%	91%

Enter from External: 3
Exit to External: 17

Net External Trips for Multi-Use Development

	LAND USE A	LAND USE B	LAND USE C	TOTAL
Enter	212	45	3	260
Exit	114	57	17	188
Total	326	102	20	448
Single-Use Trip Gen. Est.	339	117	22	478

Source: Kaku Associates, Inc.

INTERNAL CAPTURE: 6%

Analyst MRA
Date 3/23/2015

MULTI-USE DEVELOPMENT TRIP GENERATION AND INTERNAL CAPTURE SUMMARY

Name of Dvlpt Avondale Hills DRI
Time Period 24-hour

LAND USE A Residential

ITE LU Code 210, 220, 230
Size 48, 408, 66

	Total	Internal	External
Enter	1789	98	1691
Exit	1789	81	1708
Total	3578	179	3399
%	100%	5%	95%

Exit to External: 1708
Enter from External: 1691

38% 680 Demand
79 Balanced
9% 79 Demand

33% 590 Demand
96 Balanced
11% 96 Demand

2% 36 Demand
2 Balanced
3% 2 Demand

3% 54 Demand
2 Balanced
2% 2 Demand

LAND USE B Retail

ITE LU Code 826 (820)
Size 39,990 sf

	Total	Internal	External
Enter	874	97	777
Exit	874	108	766
Total	1748	205	1543
%	100%	12%	88%

Exit to External: 766
Enter from External: 777

4% 35 Demand
18 Balanced
22% 18 Demand

3% 26 Demand
12 Balanced
15% 12 Demand

LAND USE C Office

ITE LU Code 710
Size 15,000 sf

	Total	Internal	External
Enter	83	14	69
Exit	83	20	63
Total	166	34	132
%	100%	20%	80%

Enter from External: 69
Exit to External: 63

Net External Trips for Multi-Use Development

	LAND USE A	LAND USE B	LAND USE C	TOTAL
Enter	1691	777	69	2537
Exit	1708	766	63	2537
Total	3399	1543	132	5074
Single-Use Trip Gen. Est.	3578	1748	166	5492

Source: Kaku Associates, Inc.

INTERNAL CAPTURE: 8%

Appendix D
Existing Condition Analysis

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	17	0	142	1	916	21	88	263	0
Number	7	4	14	3	8	18	5	2	12	1	6	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	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
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1863	1863	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	0	0	0	18	0	154	1	1018	23	99	296	0
Adj No. of Lanes	0	1	0	0	1	1	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.90	0.90	0.90	0.89	0.89	0.89
Percent Heavy Veh, %	0	0	0	0	0	2	0	2	2	2	2	2
Cap, veh/h	0	3	0	208	0	259	840	2392	54	473	2747	0
Arrive On Green	0.00	0.00	0.00	0.12	0.00	0.12	0.68	0.68	0.68	0.05	0.78	0.00
Sat Flow, veh/h	0	1900	0	1774	0	1583	1100	3538	80	1774	3632	0
Grp Volume(v), veh/h	0	0	0	18	0	154	1	509	532	99	296	0
Grp Sat Flow(s),veh/h/ln	0	1900	0	1774	0	1583	1100	1770	1849	1774	1770	0
Q Serve(g_s), s	0.0	0.0	0.0	0.7	0.0	6.8	0.0	9.8	9.8	1.1	1.5	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.7	0.0	6.8	0.0	9.8	9.8	1.1	1.5	0.0
Prop In Lane	0.00		0.00	1.00		1.00	1.00		0.04	1.00		0.00
Lane Grp Cap(c), veh/h	0	3	0	208	0	259	840	1197	1250	473	2747	0
V/C Ratio(X)	0.00	0.00	0.00	0.09	0.00	0.59	0.00	0.43	0.43	0.21	0.11	0.00
Avail Cap(c_a), veh/h	0	405	0	378	0	411	840	1197	1250	485	2747	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	0.54	0.54	0.54	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	29.5	0.0	29.0	3.9	5.5	5.5	3.6	2.1	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.2	0.0	2.2	0.0	0.6	0.6	0.2	0.1	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	0.0	0.0	0.0	0.3	0.0	3.1	0.0	4.9	5.1	0.6	0.8	0.0
LnGrp Delay(d),s/veh	0.0	0.0	0.0	29.7	0.0	31.2	3.9	6.1	6.1	3.9	2.1	0.0
LnGrp LOS				C		C	A	A	A	A	A	
Approach Vol, veh/h		0			172			1042			395	
Approach Delay, s/veh		0.0			31.0			6.1			2.6	
Approach LOS					C			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	7.5	54.7		0.0		62.2		12.8
Change Period (Y+Rc), s	4.0	4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s	4.0	23.0		16.0		31.0		16.0
Max Q Clear Time (g_c+I1), s	3.1	11.8		0.0		3.5		8.8
Green Ext Time (p_c), s	0.0	6.2		0.0		10.0		0.3

Intersection Summary	
HCM 2010 Ctrl Delay	7.9
HCM 2010 LOS	A

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	1	142	143	1	1	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	83	83	79	79	50	50
Heavy Vehicles, %	1	2	2	1	1	1
Mvmt Flow	1	171	181	1	2	2

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	182	0	-	0	270	91
Stage 1	-	-	-	-	182	-
Stage 2	-	-	-	-	88	-
Critical Hdwy	4.12	-	-	-	6.82	6.92
Critical Hdwy Stg 1	-	-	-	-	5.82	-
Critical Hdwy Stg 2	-	-	-	-	5.82	-
Follow-up Hdwy	2.21	-	-	-	3.51	3.31
Pot Cap-1 Maneuver	1398	-	-	-	699	952
Stage 1	-	-	-	-	834	-
Stage 2	-	-	-	-	928	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1398	-	-	-	698	952
Mov Cap-2 Maneuver	-	-	-	-	698	-
Stage 1	-	-	-	-	834	-
Stage 2	-	-	-	-	927	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	9.5
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1398	-	-	-	805
HCM Lane V/C Ratio	0.001	-	-	-	0.005
HCM Control Delay (s)	7.6	0	-	-	9.5
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	1	131	12	61	135	1	10	1	34	1	1	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
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	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	83	83	83	85	85	85	50	50	50
Heavy Vehicles, %	1	2	1	1	2	1	1	1	1	1	1	1
Mvmt Flow	1	154	14	73	163	1	12	1	40	2	2	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	164	0	0	168	0	0	393	475	84	390	481	82
Stage 1	-	-	-	-	-	-	164	164	-	310	310	-
Stage 2	-	-	-	-	-	-	229	311	-	80	171	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.52	6.52	6.92	7.52	6.52	6.92
Critical Hdwy Stg 1	-	-	-	-	-	-	6.52	5.52	-	6.52	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.52	5.52	-	6.52	5.52	-
Follow-up Hdwy	2.21	-	-	2.21	-	-	3.51	4.01	3.31	3.51	4.01	3.31
Pot Cap-1 Maneuver	1419	-	-	1415	-	-	543	489	962	546	485	964
Stage 1	-	-	-	-	-	-	825	764	-	678	660	-
Stage 2	-	-	-	-	-	-	756	659	-	922	759	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1419	-	-	1415	-	-	516	461	962	499	457	964
Mov Cap-2 Maneuver	-	-	-	-	-	-	516	461	-	499	457	-
Stage 1	-	-	-	-	-	-	824	763	-	677	622	-
Stage 2	-	-	-	-	-	-	709	621	-	881	758	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	2.4	9.9	11.3
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	791	1419	-	-	1415	-	-	574
HCM Lane V/C Ratio	0.067	0.001	-	-	0.052	-	-	0.01
HCM Control Delay (s)	9.9	7.5	0	-	7.7	0.1	-	11.3
HCM Lane LOS	A	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0.2	-	-	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	44	1104	51	81	978	164	9	0	10	128	25	22
Number	7	4	14	3	8	18	5	2	12	1	6	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	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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	46	1162	54	82	988	166	13	0	15	188	37	32
Adj No. of Lanes	1	3	1	1	3	1	1	1	0	2	1	0
Peak Hour Factor	0.95	0.95	0.95	0.99	0.99	0.99	0.68	0.68	0.68	0.68	0.68	0.68
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	357	2972	925	341	3005	936	136	0	57	663	176	152
Arrive On Green	0.03	0.58	0.58	0.03	0.59	0.59	0.04	0.00	0.04	0.19	0.19	0.19
Sat Flow, veh/h	1774	5085	1583	1774	5085	1583	1774	0	1583	3442	923	799
Grp Volume(v), veh/h	46	1162	54	82	988	166	13	0	15	188	0	69
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1774	1695	1583	1774	0	1583	1721	0	1722
Q Serve(g_s), s	1.1	12.9	1.5	1.9	10.4	1.7	0.7	0.0	1.0	4.9	0.0	3.5
Cycle Q Clear(g_c), s	1.1	12.9	1.5	1.9	10.4	1.7	0.7	0.0	1.0	4.9	0.0	3.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.46
Lane Grp Cap(c), veh/h	357	2972	925	341	3005	936	136	0	57	663	0	328
V/C Ratio(X)	0.13	0.39	0.06	0.24	0.33	0.18	0.10	0.00	0.26	0.28	0.00	0.21
Avail Cap(c_a), veh/h	426	2972	925	432	3005	936	339	0	241	663	0	328
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	8.6	11.7	9.4	9.0	10.9	1.2	48.8	0.0	49.3	36.2	0.0	35.8
Incr Delay (d2), s/veh	0.2	0.4	0.1	0.4	0.3	0.4	0.3	0.0	2.4	1.1	0.0	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(50%),veh/ln	0.5	6.1	0.7	1.0	4.9	0.8	0.4	0.0	0.5	2.4	0.0	1.8
LnGrp Delay(d),s/veh	8.7	12.1	9.5	9.3	11.2	1.6	49.1	0.0	51.7	37.3	0.0	37.3
LnGrp LOS	A	B	A	A	B	A	D		D	D		D
Approach Vol, veh/h		1262			1236			28			257	
Approach Delay, s/veh		11.9			9.8			50.5			37.3	
Approach LOS		B			A			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.2	7.8	7.6	65.4	8.0	24.0	7.0	66.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	20.0	16.0	9.0	44.0	16.0	20.0	7.0	46.0
Max Q Clear Time (g_c+I1), s	6.9	3.0	3.9	14.9	2.7	5.5	3.1	12.4
Green Ext Time (p_c), s	0.8	0.0	0.1	18.8	0.0	0.8	0.0	20.6

Intersection Summary	
HCM 2010 Ctrl Delay	13.7
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	105	715	30	162	819	57	106	773	454	30	194	63
Number	7	4	14	3	8	18	5	2	12	1	6	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	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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	114	777	33	176	890	62	118	859	504	34	218	71
Adj No. of Lanes	1	3	1	1	2	1	1	2	0	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.90	0.90	0.90	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	224	1626	506	326	1216	544	569	1005	581	129	1567	701
Arrive On Green	0.06	0.32	0.32	0.08	0.34	0.34	0.04	0.46	0.46	0.02	0.44	0.44
Sat Flow, veh/h	1774	5085	1583	1774	3539	1583	1774	2163	1249	1774	3539	1583
Grp Volume(v), veh/h	114	777	33	176	890	62	118	700	663	34	218	71
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1774	1770	1583	1774	1770	1642	1774	1770	1583
Q Serve(g_s), s	6.0	17.2	2.0	9.1	30.9	3.7	5.1	49.1	50.7	1.5	5.1	3.7
Cycle Q Clear(g_c), s	6.0	17.2	2.0	9.1	30.9	3.7	5.1	49.1	50.7	1.5	5.1	3.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.76	1.00		1.00
Lane Grp Cap(c), veh/h	224	1626	506	326	1216	544	569	822	763	129	1567	701
V/C Ratio(X)	0.51	0.48	0.07	0.54	0.73	0.11	0.21	0.85	0.87	0.26	0.14	0.10
Avail Cap(c_a), veh/h	225	1626	506	374	1216	544	569	822	763	143	1567	701
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	32.5	38.2	33.1	28.7	40.3	31.4	19.4	33.2	33.6	29.4	23.2	22.7
Incr Delay (d2), s/veh	1.9	1.0	0.2	1.4	3.9	0.4	0.2	10.8	12.8	1.1	0.2	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(50%),veh/ln	3.1	8.2	0.9	4.5	15.7	1.7	2.5	26.4	25.7	0.7	2.6	1.7
LnGrp Delay(d),s/veh	34.4	39.3	33.3	30.1	44.2	31.8	19.6	44.0	46.4	30.4	23.3	23.0
LnGrp LOS	C	D	C	C	D	C	B	D	D	C	C	C
Approach Vol, veh/h		924			1128			1481			323	
Approach Delay, s/veh		38.4			41.3			43.1			24.0	
Approach LOS		D			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.9	69.1	15.2	48.8	10.0	66.0	11.9	52.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	64.0	15.0	41.0	6.0	62.0	8.0	48.0
Max Q Clear Time (g_c+I1), s	3.5	52.7	11.1	19.2	7.1	7.1	8.0	32.9
Green Ext Time (p_c), s	0.0	7.7	0.2	11.7	0.0	17.6	0.0	9.3

Intersection Summary	
HCM 2010 Ctrl Delay	39.9
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	1066	230	855	1014	0	0	0	0	233	0	558
Number	7	4	14	3	8	18				1	6	16
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
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0				1863	1863	1863
Adj Flow Rate, veh/h	0	1254	271	881	1045	0				251	0	600
Adj No. of Lanes	0	5	1	2	3	0				2	0	2
Peak Hour Factor	0.92	0.85	0.85	0.97	0.97	0.92				0.93	0.93	0.93
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	3193	670	945	3694	0				768	0	685
Arrive On Green	0.00	0.42	0.42	0.55	1.00	0.00				0.22	0.00	0.22
Sat Flow, veh/h	0	7898	1583	3442	5253	0				3548	0	3167
Grp Volume(v), veh/h	0	1254	271	881	1045	0				251	0	600
Grp Sat Flow(s),veh/h/ln	0	1509	1583	1721	1695	0				1774	0	1583
Q Serve(g_s), s	0.0	16.1	16.7	33.1	0.0	0.0				8.4	0.0	25.6
Cycle Q Clear(g_c), s	0.0	16.1	16.7	33.1	0.0	0.0				8.4	0.0	25.6
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	3193	670	945	3694	0				768	0	685
V/C Ratio(X)	0.00	0.39	0.40	0.93	0.28	0.00				0.33	0.00	0.88
Avail Cap(c_a), veh/h	0	3193	670	1327	3694	0				963	0	860
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.75	0.75	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	27.9	28.1	30.3	0.0	0.0				46.3	0.0	53.0
Incr Delay (d2), s/veh	0.0	0.4	1.8	7.4	0.1	0.0				0.2	0.0	8.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	6.8	7.6	16.4	0.0	0.0				4.1	0.0	12.1
LnGrp Delay(d),s/veh	0.0	28.3	29.9	37.8	0.1	0.0				46.5	0.0	61.5
LnGrp LOS		C	C	D	A					D		E
Approach Vol, veh/h		1525			1926						851	
Approach Delay, s/veh		28.6			17.4						57.1	
Approach LOS		C			B						E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			42.4	63.3		34.3		105.7
Change Period (Y+Rc), s			4.0	4.0		4.0		4.0
Max Green Setting (Gmax), s			54.0	36.0		38.0		94.0
Max Q Clear Time (g_c+I1), s			35.1	18.7		27.6		2.0
Green Ext Time (p_c), s			3.3	14.1		2.7		40.9

Intersection Summary	
HCM 2010 Ctrl Delay	29.2
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	454	936	0	0	1476	311	305	0	886	0	0	0
Number	7	4	14	3	8	18	5	2	12			
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			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1863	1863	1863	1863			
Adj Flow Rate, veh/h	463	955	0	0	1522	321	359	0	1042			
Adj No. of Lanes	2	3	0	0	5	1	2	0	2			
Peak Hour Factor	0.98	0.98	0.92	0.92	0.97	0.97	0.85	0.85	0.85			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	523	2931	0	0	2986	627	1300	0	1160			
Arrive On Green	0.20	0.77	0.00	0.00	0.40	0.40	0.37	0.00	0.37			
Sat Flow, veh/h	3442	5253	0	0	7898	1583	3548	0	3167			
Grp Volume(v), veh/h	463	955	0	0	1522	321	359	0	1042			
Grp Sat Flow(s),veh/h/ln	1721	1695	0	0	1509	1583	1774	0	1583			
Q Serve(g_s), s	18.3	8.2	0.0	0.0	21.4	21.5	10.0	0.0	43.5			
Cycle Q Clear(g_c), s	18.3	8.2	0.0	0.0	21.4	21.5	10.0	0.0	43.5			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	523	2931	0	0	2986	627	1300	0	1160			
V/C Ratio(X)	0.88	0.33	0.00	0.00	0.51	0.51	0.28	0.00	0.90			
Avail Cap(c_a), veh/h	664	2931	0	0	2986	627	1571	0	1402			
HCM Platoon Ratio	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.88	0.88	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	54.7	7.9	0.0	0.0	32.0	32.1	31.3	0.0	41.9			
Incr Delay (d2), s/veh	10.2	0.3	0.0	0.0	0.6	3.0	0.1	0.0	7.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	9.4	3.9	0.0	0.0	9.0	9.9	4.9	0.0	20.1			
LnGrp Delay(d),s/veh	64.8	8.1	0.0	0.0	32.6	35.0	31.4	0.0	48.9			
LnGrp LOS	E	A			C	D	C		D			
Approach Vol, veh/h		1418			1843			1401				
Approach Delay, s/veh		26.7			33.1			44.4				
Approach LOS		C			C			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		55.3		84.7			25.3	59.4
Change Period (Y+Rc), s		4.0		4.0			4.0	4.0
Max Green Setting (Gmax), s		62.0		70.0			27.0	39.0
Max Q Clear Time (g_c+I1), s		45.5		10.2			20.3	23.5
Green Ext Time (p_c), s		5.8		38.3			1.0	13.4

Intersection Summary	
HCM 2010 Ctrl Delay	34.5
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	35	0	114	0	359	40	136	1020	0
Number	7	4	14	3	8	18	5	2	12	1	6	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	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
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1863	1863	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	0	0	0	42	0	137	0	366	41	158	1186	0
Adj No. of Lanes	0	1	0	0	1	1	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.83	0.83	0.83	0.98	0.98	0.98	0.86	0.86	0.86
Percent Heavy Veh, %	0	0	0	0	0	2	0	2	2	2	2	2
Cap, veh/h	0	3	0	194	0	260	103	2134	238	847	2747	0
Arrive On Green	0.00	0.00	0.00	0.11	0.00	0.11	0.00	1.00	1.00	0.05	0.78	0.00
Sat Flow, veh/h	0	1900	0	1774	0	1583	480	3212	358	1774	3632	0
Grp Volume(v), veh/h	0	0	0	42	0	137	0	201	206	158	1186	0
Grp Sat Flow(s),veh/h/ln	0	1900	0	1774	0	1583	480	1770	1800	1774	1770	0
Q Serve(g_s), s	0.0	0.0	0.0	1.5	0.0	5.5	0.0	0.0	0.0	1.7	7.9	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	1.5	0.0	5.5	0.0	0.0	0.0	1.7	7.9	0.0
Prop In Lane	0.00		0.00	1.00		1.00	1.00		0.20	1.00		0.00
Lane Grp Cap(c), veh/h	0	3	0	194	0	260	103	1176	1196	847	2747	0
V/C Ratio(X)	0.00	0.00	0.00	0.22	0.00	0.53	0.00	0.17	0.17	0.19	0.43	0.00
Avail Cap(c_a), veh/h	0	434	0	405	0	448	103	1176	1196	877	2747	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.95	0.95	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	28.4	0.0	26.8	0.0	0.0	0.0	2.5	2.6	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.6	0.0	1.7	0.0	0.3	0.3	0.1	0.5	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(50%),veh/ln	0.0	0.0	0.0	0.8	0.0	2.5	0.0	0.1	0.1	0.8	4.0	0.0
LnGrp Delay(d),s/veh	0.0	0.0	0.0	29.0	0.0	28.4	0.0	0.3	0.3	2.6	3.1	0.0
LnGrp LOS				C		C		A	A	A	A	
Approach Vol, veh/h		0			179			407			1344	
Approach Delay, s/veh		0.0			28.6			0.3			3.1	
Approach LOS					C			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	7.8	50.5		0.0		58.3		11.7
Change Period (Y+Rc), s	4.0	4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s	5.0	17.0		16.0		26.0		16.0
Max Q Clear Time (g_c+I1), s	3.7	2.0		0.0		9.9		7.5
Green Ext Time (p_c), s	0.0	9.1		0.0		9.6		0.4

Intersection Summary	
HCM 2010 Ctrl Delay	4.8
HCM 2010 LOS	A

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	2	163	143	7	3	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	83	83	85	85	38	38
Heavy Vehicles, %	1	2	2	1	1	1
Mvmt Flow	2	196	168	8	8	8

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	176	0	-	0	275	88
Stage 1	-	-	-	-	172	-
Stage 2	-	-	-	-	103	-
Critical Hdwy	4.12	-	-	-	6.82	6.92
Critical Hdwy Stg 1	-	-	-	-	5.82	-
Critical Hdwy Stg 2	-	-	-	-	5.82	-
Follow-up Hdwy	2.21	-	-	-	3.51	3.31
Pot Cap-1 Maneuver	1405	-	-	-	694	956
Stage 1	-	-	-	-	844	-
Stage 2	-	-	-	-	913	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1405	-	-	-	693	956
Mov Cap-2 Maneuver	-	-	-	-	693	-
Stage 1	-	-	-	-	844	-
Stage 2	-	-	-	-	911	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	9.6
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1405	-	-	-	804
HCM Lane V/C Ratio	0.002	-	-	-	0.02
HCM Control Delay (s)	7.6	0	-	-	9.6
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

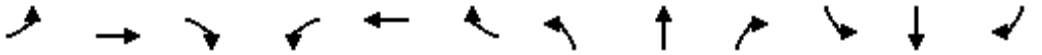
Intersection	
Int Delay, s/veh	3.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	4	147	18	28	125	1	20	1	96	1	1	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
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	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	75	87	87	87	76	76	76	25	25	25
Heavy Vehicles, %	1	2	1	1	2	1	1	1	1	1	1	1
Mvmt Flow	5	196	24	32	144	1	26	1	126	4	4	12

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	145	0	0	220	0	0	357	428	110	318	440	72
Stage 1	-	-	-	-	-	-	219	219	-	209	209	-
Stage 2	-	-	-	-	-	-	138	209	-	109	231	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.52	6.52	6.92	7.52	6.52	6.92
Critical Hdwy Stg 1	-	-	-	-	-	-	6.52	5.52	-	6.52	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.52	5.52	-	6.52	5.52	-
Follow-up Hdwy	2.21	-	-	2.21	-	-	3.51	4.01	3.31	3.51	4.01	3.31
Pot Cap-1 Maneuver	1442	-	-	1354	-	-	576	520	926	614	512	979
Stage 1	-	-	-	-	-	-	766	723	-	776	730	-
Stage 2	-	-	-	-	-	-	854	730	-	887	715	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1442	-	-	1354	-	-	553	504	926	517	497	979
Mov Cap-2 Maneuver	-	-	-	-	-	-	553	504	-	517	497	-
Stage 1	-	-	-	-	-	-	763	720	-	773	711	-
Stage 2	-	-	-	-	-	-	817	711	-	762	712	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	1.5	10.4	10.2
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	825	1442	-	-	1354	-	-	713
HCM Lane V/C Ratio	0.187	0.004	-	-	0.024	-	-	0.028
HCM Control Delay (s)	10.4	7.5	0	-	7.7	0.1	-	10.2
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.7	0	-	-	0.1	-	-	0.1



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	10	967	3	25	1160	150	15	3	42	257	6	34
Number	7	4	14	3	8	18	5	2	12	1	6	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	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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	11	1051	3	28	1289	167	27	5	75	299	7	40
Adj No. of Lanes	1	3	1	1	3	1	1	1	0	2	1	0
Peak Hour Factor	0.92	0.92	0.92	0.90	0.90	0.90	0.56	0.56	0.56	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	245	2881	897	348	2936	914	136	7	104	656	54	306
Arrive On Green	0.01	0.57	0.57	0.02	0.58	0.58	0.04	0.07	0.07	0.19	0.22	0.22
Sat Flow, veh/h	1774	5085	1583	1774	5085	1583	1774	100	1498	3442	241	1378
Grp Volume(v), veh/h	11	1051	3	28	1289	167	27	0	80	299	0	47
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1774	1695	1583	1774	0	1598	1721	0	1620
Q Serve(g_s), s	0.3	11.9	0.1	0.7	15.1	1.9	1.5	0.0	5.1	8.1	0.0	2.4
Cycle Q Clear(g_c), s	0.3	11.9	0.1	0.7	15.1	1.9	1.5	0.0	5.1	8.1	0.0	2.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.94	1.00		0.85
Lane Grp Cap(c), veh/h	245	2881	897	348	2936	914	136	0	111	656	0	359
V/C Ratio(X)	0.04	0.36	0.00	0.08	0.44	0.18	0.20	0.00	0.72	0.46	0.00	0.13
Avail Cap(c_a), veh/h	294	2881	897	378	2936	914	339	0	274	656	0	359
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	10.4	12.4	9.9	9.8	12.6	1.4	48.1	0.0	47.9	37.7	0.0	32.7
Incr Delay (d2), s/veh	0.1	0.4	0.0	0.1	0.5	0.4	0.7	0.0	8.5	2.3	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(50%),veh/ln	0.1	5.6	0.0	0.3	7.2	0.9	0.8	0.0	2.5	4.0	0.0	1.2
LnGrp Delay(d),s/veh	10.5	12.8	9.9	9.9	13.0	1.9	48.8	0.0	56.3	40.0	0.0	33.5
LnGrp LOS	B	B	A	A	B	A	D		E	D		C
Approach Vol, veh/h		1065			1484			107			346	
Approach Delay, s/veh		12.8			11.7			54.4			39.1	
Approach LOS		B			B			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.0	11.3	6.2	63.5	8.0	27.3	5.1	64.6
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	20.0	18.0	4.0	47.0	16.0	22.0	4.0	47.0
Max Q Clear Time (g_c+I1), s	10.1	7.1	2.7	13.9	3.5	4.4	2.3	17.1
Green Ext Time (p_c), s	0.9	0.2	0.0	22.0	0.0	1.2	0.0	20.6

Intersection Summary	
HCM 2010 Ctrl Delay	16.8
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	70	768	56	346	811	22	93	240	200	44	801	89
Number	7	4	14	3	8	18	5	2	12	1	6	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	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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	74	817	60	389	911	25	102	264	220	48	871	97
Adj No. of Lanes	1	3	1	1	2	1	1	2	0	1	2	1
Peak Hour Factor	0.94	0.94	0.94	0.89	0.89	0.89	0.91	0.91	0.91	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	280	1702	530	465	1611	721	249	680	547	331	1207	540
Arrive On Green	0.04	0.33	0.33	0.16	0.46	0.46	0.05	0.36	0.36	0.05	0.68	0.68
Sat Flow, veh/h	1774	5085	1583	1774	3539	1583	1774	1866	1502	1774	3539	1583
Grp Volume(v), veh/h	74	817	60	389	911	25	102	250	234	48	871	97
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1774	1770	1583	1774	1770	1598	1774	1770	1583
Q Serve(g_s), s	3.8	17.8	3.7	19.3	26.4	1.2	5.1	14.6	15.3	2.5	21.6	3.1
Cycle Q Clear(g_c), s	3.8	17.8	3.7	19.3	26.4	1.2	5.1	14.6	15.3	2.5	21.6	3.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.94	1.00		1.00
Lane Grp Cap(c), veh/h	280	1702	530	465	1611	721	249	645	582	331	1207	540
V/C Ratio(X)	0.26	0.48	0.11	0.84	0.57	0.03	0.41	0.39	0.40	0.15	0.72	0.18
Avail Cap(c_a), veh/h	286	1702	530	664	1611	721	286	645	582	334	1207	540
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.93	0.93	0.93
Uniform Delay (d), s/veh	29.0	36.9	32.2	25.3	28.0	21.1	29.0	32.9	33.1	28.5	18.1	15.2
Incr Delay (d2), s/veh	0.5	1.0	0.4	6.4	1.4	0.1	1.1	1.8	2.1	0.2	3.5	0.7
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(50%),veh/ln	1.9	8.5	1.7	10.2	13.2	0.6	2.6	7.5	7.1	1.2	10.7	1.4
LnGrp Delay(d),s/veh	29.5	37.9	32.6	31.7	29.4	21.2	30.1	34.7	35.2	28.7	21.6	15.8
LnGrp LOS	C	D	C	C	C	C	C	C	D	C	C	B
Approach Vol, veh/h		951			1325			586			1016	
Approach Delay, s/veh		36.9			29.9			34.1			21.4	
Approach LOS		D			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.8	55.0	26.4	50.9	11.0	51.7	9.5	67.7
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	51.0	38.0	31.0	10.0	45.0	6.0	63.0
Max Q Clear Time (g_c+I1), s	4.5	17.3	21.3	19.8	7.1	23.6	5.8	28.4
Green Ext Time (p_c), s	0.0	11.8	1.0	7.7	0.1	9.8	0.0	15.3

Intersection Summary	
HCM 2010 Ctrl Delay	30.0
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	1290	379	815	755	0	0	0	0	510	0	723
Number	7	4	14	3	8	18				1	6	16
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
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0				1863	1863	1863
Adj Flow Rate, veh/h	0	1372	403	849	786	0				548	0	777
Adj No. of Lanes	0	5	1	2	3	0				2	0	2
Peak Hour Factor	0.92	0.94	0.94	0.96	0.96	0.92				0.93	0.93	0.93
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	2801	588	921	3394	0				977	0	872
Arrive On Green	0.00	0.37	0.37	0.45	1.00	0.00				0.28	0.00	0.28
Sat Flow, veh/h	0	7898	1583	3442	5253	0				3548	0	3167
Grp Volume(v), veh/h	0	1372	403	849	786	0				548	0	777
Grp Sat Flow(s),veh/h/ln	0	1509	1583	1721	1695	0				1774	0	1583
Q Serve(g_s), s	0.0	19.6	30.1	32.5	0.0	0.0				18.5	0.0	33.0
Cycle Q Clear(g_c), s	0.0	19.6	30.1	32.5	0.0	0.0				18.5	0.0	33.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2801	588	921	3394	0				977	0	872
V/C Ratio(X)	0.00	0.49	0.69	0.92	0.23	0.00				0.56	0.00	0.89
Avail Cap(c_a), veh/h	0	2801	588	1205	3394	0				1090	0	973
HCM Platoon Ratio	1.00	1.00	1.00	1.67	1.67	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.80	0.80	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	33.8	37.1	37.4	0.0	0.0				43.5	0.0	48.7
Incr Delay (d2), s/veh	0.0	0.6	6.4	8.1	0.1	0.0				0.5	0.0	9.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	8.3	14.1	16.4	0.0	0.0				9.1	0.0	15.6
LnGrp Delay(d),s/veh	0.0	34.4	43.5	45.5	0.1	0.0				44.0	0.0	58.3
LnGrp LOS		C	D	D	A					D		E
Approach Vol, veh/h		1775			1635						1325	
Approach Delay, s/veh		36.5			23.7						52.4	
Approach LOS		D			C						D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			41.5	56.0		42.6		97.4
Change Period (Y+Rc), s			4.0	4.0		4.0		4.0
Max Green Setting (Gmax), s			49.0	36.0		43.0		89.0
Max Q Clear Time (g_c+I1), s			34.5	32.1		35.0		2.0
Green Ext Time (p_c), s			3.0	3.6		3.6		38.5

Intersection Summary	
HCM 2010 Ctrl Delay	36.5
HCM 2010 LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	626	1198	0	0	1262	325	276	0	865	0	0	0
Number	7	4	14	3	8	18	5	2	12			
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			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1863	1863	1863	1863			
Adj Flow Rate, veh/h	645	1235	0	0	1328	342	291	0	911			
Adj No. of Lanes	2	3	0	0	5	1	2	0	2			
Peak Hour Factor	0.97	0.97	0.92	0.92	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	704	3157	0	0	2924	614	1143	0	1020			
Arrive On Green	0.41	1.00	0.00	0.00	0.39	0.39	0.32	0.00	0.32			
Sat Flow, veh/h	3442	5253	0	0	7898	1583	3548	0	3167			
Grp Volume(v), veh/h	645	1235	0	0	1328	342	291	0	911			
Grp Sat Flow(s),veh/h/ln	1721	1695	0	0	1509	1583	1774	0	1583			
Q Serve(g_s), s	24.8	0.0	0.0	0.0	18.3	23.6	8.5	0.0	38.3			
Cycle Q Clear(g_c), s	24.8	0.0	0.0	0.0	18.3	23.6	8.5	0.0	38.3			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	704	3157	0	0	2924	614	1143	0	1020			
V/C Ratio(X)	0.92	0.39	0.00	0.00	0.45	0.56	0.25	0.00	0.89			
Avail Cap(c_a), veh/h	910	3157	0	0	2924	614	1419	0	1267			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.80	0.80	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	40.2	0.0	0.0	0.0	31.9	33.5	35.0	0.0	45.2			
Incr Delay (d2), s/veh	9.6	0.3	0.0	0.0	0.5	3.6	0.1	0.0	7.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	12.6	0.1	0.0	0.0	7.7	11.0	4.2	0.0	17.7			
LnGrp Delay(d),s/veh	49.9	0.3	0.0	0.0	32.4	37.1	35.2	0.0	52.4			
LnGrp LOS	D	A			C	D	D		D			
Approach Vol, veh/h		1880			1670			1202				
Approach Delay, s/veh		17.3			33.3			48.2				
Approach LOS		B			C			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		49.1		90.9			32.6	58.3
Change Period (Y+Rc), s		4.0		4.0			4.0	4.0
Max Green Setting (Gmax), s		56.0		76.0			37.0	35.0
Max Q Clear Time (g_c+I1), s		40.3		2.0			26.8	25.6
Green Ext Time (p_c), s		4.8		45.5			1.9	8.6

Intersection Summary	
HCM 2010 Ctrl Delay	30.8
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Appendix E
No-Build Analysis

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	18	0	149	1	963	22	92	276	0
Number	7	4	14	3	8	18	5	2	12	1	6	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	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
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1863	1863	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	0	0	0	20	0	162	1	1058	24	102	307	0
Adj No. of Lanes	0	1	0	0	1	1	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.91	0.91	0.91	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	2	0	2	2	2	2	2
Cap, veh/h	0	3	0	217	0	268	826	2372	54	454	2728	0
Arrive On Green	0.00	0.00	0.00	0.12	0.00	0.12	0.67	0.67	0.67	0.05	0.77	0.00
Sat Flow, veh/h	0	1900	0	1774	0	1583	1089	3538	80	1774	3632	0
Grp Volume(v), veh/h	0	0	0	20	0	162	1	529	553	102	307	0
Grp Sat Flow(s),veh/h/ln	0	1900	0	1774	0	1583	1089	1770	1849	1774	1770	0
Q Serve(g_s), s	0.0	0.0	0.0	0.8	0.0	7.1	0.0	10.5	10.5	1.2	1.6	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.8	0.0	7.1	0.0	10.5	10.5	1.2	1.6	0.0
Prop In Lane	0.00		0.00	1.00		1.00	1.00		0.04	1.00		0.00
Lane Grp Cap(c), veh/h	0	3	0	217	0	268	826	1186	1239	454	2728	0
V/C Ratio(X)	0.00	0.00	0.00	0.09	0.00	0.60	0.00	0.45	0.45	0.22	0.11	0.00
Avail Cap(c_a), veh/h	0	405	0	378	0	412	826	1186	1239	466	2728	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	0.46	0.46	0.46	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	29.2	0.0	28.8	4.1	5.8	5.8	3.9	2.2	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.2	0.0	2.2	0.0	0.6	0.5	0.2	0.1	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	0.0	0.0	0.0	0.4	0.0	3.2	0.0	5.2	5.4	0.6	0.8	0.0
LnGrp Delay(d),s/veh	0.0	0.0	0.0	29.4	0.0	31.0	4.1	6.4	6.3	4.2	2.2	0.0
LnGrp LOS				C		C	A	A	A	A	A	
Approach Vol, veh/h		0			182			1083			409	
Approach Delay, s/veh		0.0			30.8			6.4			2.7	
Approach LOS					C			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	7.5	54.3		0.0		61.8		13.2
Change Period (Y+Rc), s	4.0	4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s	4.0	23.0		16.0		31.0		16.0
Max Q Clear Time (g_c+I1), s	3.2	12.5		0.0		3.6		9.1
Green Ext Time (p_c), s	0.0	6.1		0.0		10.5		0.3

Intersection Summary	
HCM 2010 Ctrl Delay	8.1
HCM 2010 LOS	A

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	1	149	150	1	1	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	84	84	80	80	50	50
Heavy Vehicles, %	1	2	2	1	1	1
Mvmt Flow	1	177	188	1	2	2

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	189	0	-	0	279	94
Stage 1	-	-	-	-	188	-
Stage 2	-	-	-	-	91	-
Critical Hdwy	4.12	-	-	-	6.82	6.92
Critical Hdwy Stg 1	-	-	-	-	5.82	-
Critical Hdwy Stg 2	-	-	-	-	5.82	-
Follow-up Hdwy	2.21	-	-	-	3.51	3.31
Pot Cap-1 Maneuver	1390	-	-	-	691	948
Stage 1	-	-	-	-	828	-
Stage 2	-	-	-	-	925	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1390	-	-	-	690	948
Mov Cap-2 Maneuver	-	-	-	-	690	-
Stage 1	-	-	-	-	828	-
Stage 2	-	-	-	-	924	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	9.5
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1390	-	-	-	799
HCM Lane V/C Ratio	0.001	-	-	-	0.005
HCM Control Delay (s)	7.6	0	-	-	9.5
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	1	138	13	64	142	1	11	1	36	1	1	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
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	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	84	84	84	85	85	85	50	50	50
Heavy Vehicles, %	1	2	1	1	2	1	1	1	1	1	1	1
Mvmt Flow	1	160	15	76	169	1	13	1	42	2	2	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	170	0	0	176	0	0	408	493	88	405	500	85
Stage 1	-	-	-	-	-	-	170	170	-	322	322	-
Stage 2	-	-	-	-	-	-	238	323	-	83	178	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.52	6.52	6.92	7.52	6.52	6.92
Critical Hdwy Stg 1	-	-	-	-	-	-	6.52	5.52	-	6.52	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.52	5.52	-	6.52	5.52	-
Follow-up Hdwy	2.21	-	-	2.21	-	-	3.51	4.01	3.31	3.51	4.01	3.31
Pot Cap-1 Maneuver	1412	-	-	1405	-	-	530	478	956	533	473	960
Stage 1	-	-	-	-	-	-	818	759	-	667	652	-
Stage 2	-	-	-	-	-	-	747	651	-	919	753	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1412	-	-	1405	-	-	503	449	956	485	444	960
Mov Cap-2 Maneuver	-	-	-	-	-	-	503	449	-	485	444	-
Stage 1	-	-	-	-	-	-	817	758	-	666	613	-
Stage 2	-	-	-	-	-	-	698	612	-	876	752	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	2.5	10	11.5
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	777	1412	-	-	1405	-	-	560
HCM Lane V/C Ratio	0.073	0.001	-	-	0.054	-	-	0.011
HCM Control Delay (s)	10	7.6	0	-	7.7	0.1	-	11.5
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0.2	-	-	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	46	1160	54	85	1028	172	9	0	11	135	26	23
Number	7	4	14	3	8	18	5	2	12	1	6	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	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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	48	1208	56	86	1038	174	13	0	16	196	38	33
Adj No. of Lanes	1	3	1	1	3	1	1	1	0	2	1	0
Peak Hour Factor	0.96	0.96	0.96	0.99	0.99	0.99	0.68	0.68	0.68	0.69	0.69	0.69
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	348	3017	939	335	3051	950	136	0	57	630	167	145
Arrive On Green	0.03	0.59	0.59	0.04	0.60	0.60	0.04	0.00	0.04	0.18	0.18	0.18
Sat Flow, veh/h	1774	5085	1583	1774	5085	1583	1774	0	1583	3442	921	800
Grp Volume(v), veh/h	48	1208	56	86	1038	174	13	0	16	196	0	71
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1774	1695	1583	1774	0	1583	1721	0	1722
Q Serve(g_s), s	1.1	13.3	1.6	2.0	10.8	1.8	0.7	0.0	1.0	5.2	0.0	3.7
Cycle Q Clear(g_c), s	1.1	13.3	1.6	2.0	10.8	1.8	0.7	0.0	1.0	5.2	0.0	3.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.46
Lane Grp Cap(c), veh/h	348	3017	939	335	3051	950	136	0	57	630	0	312
V/C Ratio(X)	0.14	0.40	0.06	0.26	0.34	0.18	0.10	0.00	0.28	0.31	0.00	0.23
Avail Cap(c_a), veh/h	415	3017	939	424	3051	950	339	0	241	630	0	312
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	8.3	11.4	9.0	8.7	10.6	1.2	48.8	0.0	49.3	37.2	0.0	36.7
Incr Delay (d2), s/veh	0.2	0.4	0.1	0.4	0.3	0.4	0.3	0.0	2.6	1.3	0.0	1.7
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(50%),veh/ln	0.6	6.3	0.7	1.0	5.1	0.9	0.4	0.0	0.5	2.6	0.0	1.9
LnGrp Delay(d),s/veh	8.4	11.8	9.1	9.1	10.9	1.6	49.1	0.0	51.9	38.4	0.0	38.4
LnGrp LOS	A	B	A	A	B	A	D		D	D		D
Approach Vol, veh/h		1312			1298			29			267	
Approach Delay, s/veh		11.6			9.5			50.7			38.4	
Approach LOS		B			A			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.2	7.8	7.7	66.3	8.0	23.0	7.0	67.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	19.0	16.0	9.0	45.0	16.0	19.0	7.0	47.0
Max Q Clear Time (g_c+I1), s	7.2	3.0	4.0	15.3	2.7	5.7	3.1	12.8
Green Ext Time (p_c), s	0.8	0.0	0.1	19.9	0.0	0.8	0.0	21.9

Intersection Summary	
HCM 2010 Ctrl Delay	13.5
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	110	751	32	170	861	60	111	812	477	32	204	66
Number	7	4	14	3	8	18	5	2	12	1	6	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	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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	118	808	34	183	926	65	122	892	524	36	227	73
Adj No. of Lanes	1	3	1	1	2	1	1	2	0	1	2	1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.91	0.91	0.91	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	216	1611	501	321	1209	541	562	1005	579	118	1567	701
Arrive On Green	0.06	0.32	0.32	0.08	0.34	0.34	0.04	0.46	0.46	0.02	0.44	0.44
Sat Flow, veh/h	1774	5085	1583	1774	3539	1583	1774	2166	1247	1774	3539	1583
Grp Volume(v), veh/h	118	808	34	183	926	65	122	726	690	36	227	73
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1774	1770	1583	1774	1770	1643	1774	1770	1583
Q Serve(g_s), s	6.2	18.1	2.1	9.5	32.7	3.9	5.2	52.1	54.4	1.6	5.3	3.8
Cycle Q Clear(g_c), s	6.2	18.1	2.1	9.5	32.7	3.9	5.2	52.1	54.4	1.6	5.3	3.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.76	1.00		1.00
Lane Grp Cap(c), veh/h	216	1611	501	321	1209	541	562	821	763	118	1567	701
V/C Ratio(X)	0.55	0.50	0.07	0.57	0.77	0.12	0.22	0.88	0.91	0.30	0.14	0.10
Avail Cap(c_a), veh/h	227	1611	501	376	1209	541	562	821	763	131	1567	701
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	33.1	38.9	33.4	29.0	41.1	31.6	19.5	34.1	34.7	30.9	23.2	22.8
Incr Delay (d2), s/veh	2.4	1.1	0.3	1.6	4.7	0.5	0.2	13.2	16.3	1.4	0.2	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(50%),veh/ln	3.2	8.6	1.0	4.8	16.7	1.8	2.6	28.4	28.0	0.8	2.7	1.7
LnGrp Delay(d),s/veh	35.6	40.0	33.7	30.6	45.8	32.1	19.7	47.3	51.0	32.4	23.4	23.1
LnGrp LOS	D	D	C	C	D	C	B	D	D	C	C	C
Approach Vol, veh/h		960			1174			1538			336	
Approach Delay, s/veh		39.2			42.6			46.8			24.3	
Approach LOS		D			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.0	69.0	15.7	48.3	10.0	66.0	12.2	51.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	64.0	16.0	40.0	6.0	62.0	9.0	47.0
Max Q Clear Time (g_c+I1), s	3.6	56.4	11.5	20.1	7.2	7.3	8.2	34.7
Green Ext Time (p_c), s	0.0	5.7	0.2	11.6	0.0	18.9	0.0	8.3

Intersection Summary	
HCM 2010 Ctrl Delay	41.9
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	1120	242	899	1066	0	0	0	0	245	0	586
Number	7	4	14	3	8	18				1	6	16
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
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0				1863	1863	1863
Adj Flow Rate, veh/h	0	1287	278	917	1088	0				261	0	623
Adj No. of Lanes	0	5	1	2	3	0				2	0	2
Peak Hour Factor	0.92	0.87	0.87	0.98	0.98	0.92				0.94	0.94	0.94
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	3073	645	980	3664	0				789	0	704
Arrive On Green	0.00	0.41	0.41	0.57	1.00	0.00				0.22	0.00	0.22
Sat Flow, veh/h	0	7898	1583	3442	5253	0				3548	0	3167
Grp Volume(v), veh/h	0	1287	278	917	1088	0				261	0	623
Grp Sat Flow(s),veh/h/ln	0	1509	1583	1721	1695	0				1774	0	1583
Q Serve(g_s), s	0.0	17.1	17.7	34.4	0.0	0.0				8.6	0.0	26.7
Cycle Q Clear(g_c), s	0.0	17.1	17.7	34.4	0.0	0.0				8.6	0.0	26.7
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	3073	645	980	3664	0				789	0	704
V/C Ratio(X)	0.00	0.42	0.43	0.94	0.30	0.00				0.33	0.00	0.88
Avail Cap(c_a), veh/h	0	3073	645	1327	3664	0				938	0	837
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.69	0.69	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	29.6	29.8	29.0	0.0	0.0				45.7	0.0	52.7
Incr Delay (d2), s/veh	0.0	0.4	2.1	7.5	0.1	0.0				0.2	0.0	9.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	7.2	8.1	17.1	0.0	0.0				4.3	0.0	12.6
LnGrp Delay(d),s/veh	0.0	30.1	31.9	36.5	0.1	0.0				45.9	0.0	62.6
LnGrp LOS		C	C	D	A					D		E
Approach Vol, veh/h		1565			2005						884	
Approach Delay, s/veh		30.4			16.8						57.7	
Approach LOS		C			B						E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			43.8	61.0		35.1		104.9
Change Period (Y+Rc), s			4.0	4.0		4.0		4.0
Max Green Setting (Gmax), s			54.0	37.0		37.0		95.0
Max Q Clear Time (g_c+I1), s			36.4	19.7		28.7		2.0
Green Ext Time (p_c), s			3.4	14.4		2.5		43.8

Intersection Summary	
HCM 2010 Ctrl Delay	29.7
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	477	984	0	0	1551	327	321	0	931	0	0	0
Number	7	4	14	3	8	18	5	2	12			
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			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1863	1863	1863	1863			
Adj Flow Rate, veh/h	482	994	0	0	1583	334	373	0	1083			
Adj No. of Lanes	2	3	0	0	5	1	2	0	2			
Peak Hour Factor	0.99	0.99	0.92	0.92	0.98	0.98	0.86	0.86	0.86			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	543	2865	0	0	2844	597	1346	0	1202			
Arrive On Green	0.21	0.75	0.00	0.00	0.38	0.38	0.38	0.00	0.38			
Sat Flow, veh/h	3442	5253	0	0	7898	1583	3548	0	3167			
Grp Volume(v), veh/h	482	994	0	0	1583	334	373	0	1083			
Grp Sat Flow(s),veh/h/ln	1721	1695	0	0	1509	1583	1774	0	1583			
Q Serve(g_s), s	19.0	9.3	0.0	0.0	23.2	23.3	10.2	0.0	45.2			
Cycle Q Clear(g_c), s	19.0	9.3	0.0	0.0	23.2	23.3	10.2	0.0	45.2			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	543	2865	0	0	2844	597	1346	0	1202			
V/C Ratio(X)	0.89	0.35	0.00	0.00	0.56	0.56	0.28	0.00	0.90			
Avail Cap(c_a), veh/h	688	2865	0	0	2844	597	1597	0	1425			
HCM Platoon Ratio	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.87	0.87	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	54.1	8.8	0.0	0.0	34.4	34.4	30.1	0.0	41.0			
Incr Delay (d2), s/veh	10.0	0.3	0.0	0.0	0.8	3.8	0.1	0.0	7.3			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	9.8	4.4	0.0	0.0	9.8	10.8	5.0	0.0	20.9			
LnGrp Delay(d),s/veh	64.1	9.1	0.0	0.0	35.2	38.2	30.2	0.0	48.3			
LnGrp LOS	E	A			D	D	C		D			
Approach Vol, veh/h		1476			1917			1456				
Approach Delay, s/veh		27.1			35.7			43.7				
Approach LOS		C			D			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		57.1		82.9			26.1	56.8
Change Period (Y+Rc), s		4.0		4.0			4.0	4.0
Max Green Setting (Gmax), s		63.0		69.0			28.0	37.0
Max Q Clear Time (g_c+I1), s		47.2		11.3			21.0	25.3
Green Ext Time (p_c), s		6.0		39.4			1.1	10.6

Intersection Summary	
HCM 2010 Ctrl Delay	35.5
HCM 2010 LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	37	0	120	0	377	42	143	1072	0
Number	7	4	14	3	8	18	5	2	12	1	6	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	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
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1863	1863	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	0	0	0	44	0	143	0	385	43	164	1232	0
Adj No. of Lanes	0	1	0	0	1	1	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.84	0.84	0.84	0.98	0.98	0.98	0.87	0.87	0.87
Percent Heavy Veh, %	0	0	0	0	0	2	0	2	2	2	2	2
Cap, veh/h	0	3	0	201	0	267	103	2121	236	831	2733	0
Arrive On Green	0.00	0.00	0.00	0.11	0.00	0.11	0.00	1.00	1.00	0.05	0.77	0.00
Sat Flow, veh/h	0	1900	0	1774	0	1583	459	3213	357	1774	3632	0
Grp Volume(v), veh/h	0	0	0	44	0	143	0	211	217	164	1232	0
Grp Sat Flow(s),veh/h/ln	0	1900	0	1774	0	1583	459	1770	1800	1774	1770	0
Q Serve(g_s), s	0.0	0.0	0.0	1.6	0.0	5.8	0.0	0.0	0.0	1.8	8.5	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	1.6	0.0	5.8	0.0	0.0	0.0	1.8	8.5	0.0
Prop In Lane	0.00		0.00	1.00		1.00	1.00		0.20	1.00		0.00
Lane Grp Cap(c), veh/h	0	3	0	201	0	267	103	1168	1188	831	2733	0
V/C Ratio(X)	0.00	0.00	0.00	0.22	0.00	0.54	0.00	0.18	0.18	0.20	0.45	0.00
Avail Cap(c_a), veh/h	0	434	0	405	0	449	103	1168	1188	861	2733	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.94	0.94	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	28.2	0.0	26.6	0.0	0.0	0.0	2.6	2.8	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.5	0.0	1.7	0.0	0.3	0.3	0.1	0.5	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(50%),veh/ln	0.0	0.0	0.0	0.8	0.0	2.6	0.0	0.1	0.1	0.8	4.3	0.0
LnGrp Delay(d),s/veh	0.0	0.0	0.0	28.7	0.0	28.3	0.0	0.3	0.3	2.7	3.3	0.0
LnGrp LOS				C		C		A	A	A	A	
Approach Vol, veh/h		0			187			428			1396	
Approach Delay, s/veh		0.0			28.4			0.3			3.3	
Approach LOS					C			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	7.8	50.2		0.0		58.1		11.9
Change Period (Y+Rc), s	4.0	4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s	5.0	17.0		16.0		26.0		16.0
Max Q Clear Time (g_c+I1), s	3.8	2.0		0.0		10.5		7.8
Green Ext Time (p_c), s	0.0	9.5		0.0		9.7		0.4

Intersection Summary	
HCM 2010 Ctrl Delay	5.0
HCM 2010 LOS	A

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	2	171	150	7	3	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	84	84	86	86	38	38
Heavy Vehicles, %	1	2	2	1	1	1
Mvmt Flow	2	204	174	8	8	8

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	183	0	-	0	285	91
Stage 1	-	-	-	-	178	-
Stage 2	-	-	-	-	107	-
Critical Hdwy	4.12	-	-	-	6.82	6.92
Critical Hdwy Stg 1	-	-	-	-	5.82	-
Critical Hdwy Stg 2	-	-	-	-	5.82	-
Follow-up Hdwy	2.21	-	-	-	3.51	3.31
Pot Cap-1 Maneuver	1397	-	-	-	685	952
Stage 1	-	-	-	-	838	-
Stage 2	-	-	-	-	909	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1397	-	-	-	684	952
Mov Cap-2 Maneuver	-	-	-	-	684	-
Stage 1	-	-	-	-	838	-
Stage 2	-	-	-	-	907	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	9.6
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1397	-	-	-	796
HCM Lane V/C Ratio	0.002	-	-	-	0.02
HCM Control Delay (s)	7.6	0	-	-	9.6
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	3.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	4	154	19	29	131	1	21	1	101	1	1	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
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	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	76	76	76	88	88	88	77	77	77	25	25	25
Heavy Vehicles, %	1	2	1	1	2	1	1	1	1	1	1	1
Mvmt Flow	5	203	25	33	149	1	27	1	131	4	4	12

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	150	0	0	228	0	0	368	442	114	327	453	75
Stage 1	-	-	-	-	-	-	226	226	-	215	215	-
Stage 2	-	-	-	-	-	-	142	216	-	112	238	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.52	6.52	6.92	7.52	6.52	6.92
Critical Hdwy Stg 1	-	-	-	-	-	-	6.52	5.52	-	6.52	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.52	5.52	-	6.52	5.52	-
Follow-up Hdwy	2.21	-	-	2.21	-	-	3.51	4.01	3.31	3.51	4.01	3.31
Pot Cap-1 Maneuver	1436	-	-	1345	-	-	566	511	920	605	503	974
Stage 1	-	-	-	-	-	-	759	718	-	770	726	-
Stage 2	-	-	-	-	-	-	849	725	-	884	710	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1436	-	-	1345	-	-	542	495	920	506	487	974
Mov Cap-2 Maneuver	-	-	-	-	-	-	542	495	-	506	487	-
Stage 1	-	-	-	-	-	-	756	715	-	767	706	-
Stage 2	-	-	-	-	-	-	811	705	-	754	707	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	1.5	10.5	10.3
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	817	1436	-	-	1345	-	-	703
HCM Lane V/C Ratio	0.196	0.004	-	-	0.025	-	-	0.028
HCM Control Delay (s)	10.5	7.5	0	-	7.7	0.1	-	10.3
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.7	0	-	-	0.1	-	-	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	11	1016	3	26	1219	158	16	3	44	270	6	36
Number	7	4	14	3	8	18	5	2	12	1	6	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	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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	12	1092	3	29	1340	174	29	5	79	310	7	41
Adj No. of Lanes	1	3	1	1	3	1	1	1	0	2	1	0
Peak Hour Factor	0.93	0.93	0.93	0.91	0.91	0.91	0.56	0.56	0.56	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	233	2864	892	335	2918	908	136	7	108	656	53	310
Arrive On Green	0.01	0.56	0.56	0.02	0.57	0.57	0.04	0.07	0.07	0.19	0.22	0.22
Sat Flow, veh/h	1774	5085	1583	1774	5085	1583	1774	95	1503	3442	236	1383
Grp Volume(v), veh/h	12	1092	3	29	1340	174	29	0	84	310	0	48
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1774	1695	1583	1774	0	1598	1721	0	1619
Q Serve(g_s), s	0.3	12.5	0.1	0.7	16.0	2.1	1.7	0.0	5.4	8.4	0.0	2.5
Cycle Q Clear(g_c), s	0.3	12.5	0.1	0.7	16.0	2.1	1.7	0.0	5.4	8.4	0.0	2.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.94	1.00		0.85
Lane Grp Cap(c), veh/h	233	2864	892	335	2918	908	136	0	115	656	0	363
V/C Ratio(X)	0.05	0.38	0.00	0.09	0.46	0.19	0.21	0.00	0.73	0.47	0.00	0.13
Avail Cap(c_a), veh/h	281	2864	892	364	2918	908	339	0	274	656	0	363
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	10.7	12.8	10.0	10.0	13.0	1.5	47.9	0.0	47.7	37.8	0.0	32.5
Incr Delay (d2), s/veh	0.1	0.4	0.0	0.1	0.5	0.5	0.8	0.0	8.5	2.4	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(50%),veh/ln	0.2	6.0	0.0	0.4	7.6	1.0	0.8	0.0	2.7	4.2	0.0	1.2
LnGrp Delay(d),s/veh	10.8	13.1	10.0	10.1	13.5	2.0	48.6	0.0	56.2	40.2	0.0	33.3
LnGrp LOS	B	B	B	B	B	A	D		E	D		C
Approach Vol, veh/h		1107			1543			113			358	
Approach Delay, s/veh		13.1			12.1			54.3			39.3	
Approach LOS		B			B			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.0	11.6	6.3	63.1	8.0	27.6	5.2	64.2
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	20.0	18.0	4.0	47.0	16.0	22.0	4.0	47.0
Max Q Clear Time (g_c+I1), s	10.4	7.4	2.7	14.5	3.7	4.5	2.3	18.0
Green Ext Time (p_c), s	1.0	0.2	0.0	22.6	0.0	1.2	0.0	20.9

Intersection Summary	
HCM 2010 Ctrl Delay	17.1
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	74	807	59	364	852	23	98	252	210	46	842	94
Number	7	4	14	3	8	18	5	2	12	1	6	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	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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	78	849	62	404	947	26	107	274	228	49	905	101
Adj No. of Lanes	1	3	1	1	2	1	1	2	0	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.90	0.90	0.90	0.92	0.92	0.92	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	280	1754	546	471	1654	740	224	653	526	309	1150	514
Arrive On Green	0.04	0.34	0.34	0.16	0.47	0.47	0.05	0.35	0.35	0.06	0.65	0.65
Sat Flow, veh/h	1774	5085	1583	1774	3539	1583	1774	1865	1503	1774	3539	1583
Grp Volume(v), veh/h	78	849	62	404	947	26	107	260	242	49	905	101
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1774	1770	1583	1774	1770	1598	1774	1770	1583
Q Serve(g_s), s	4.0	18.4	3.7	19.7	27.2	1.2	5.5	15.6	16.3	2.6	25.7	3.6
Cycle Q Clear(g_c), s	4.0	18.4	3.7	19.7	27.2	1.2	5.5	15.6	16.3	2.6	25.7	3.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.94	1.00		1.00
Lane Grp Cap(c), veh/h	280	1754	546	471	1654	740	224	619	559	309	1150	514
V/C Ratio(X)	0.28	0.48	0.11	0.86	0.57	0.04	0.48	0.42	0.43	0.16	0.79	0.20
Avail Cap(c_a), veh/h	284	1754	546	663	1654	740	244	619	559	311	1150	514
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.92	0.92	0.92
Uniform Delay (d), s/veh	28.1	36.1	31.3	24.9	27.1	20.2	31.1	34.7	34.9	29.9	21.0	17.2
Incr Delay (d2), s/veh	0.5	1.0	0.4	8.0	1.4	0.1	1.6	2.1	2.4	0.2	5.1	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(50%),veh/ln	2.0	8.7	1.7	10.6	13.6	0.6	2.8	8.0	7.6	1.3	13.1	1.7
LnGrp Delay(d),s/veh	28.6	37.0	31.7	32.9	28.6	20.3	32.7	36.7	37.3	30.1	26.1	18.0
LnGrp LOS	C	D	C	C	C	C	C	D	D	C	C	B
Approach Vol, veh/h		989			1377			609			1055	
Approach Delay, s/veh		36.0			29.7			36.3			25.5	
Approach LOS		D			C			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.9	53.0	26.8	52.3	11.4	49.5	9.7	69.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	49.0	38.0	33.0	9.0	44.0	6.0	65.0
Max Q Clear Time (g_c+I1), s	4.6	18.3	21.7	20.4	7.5	27.7	6.0	29.2
Green Ext Time (p_c), s	0.0	12.0	1.1	8.7	0.0	8.8	0.0	16.4

Intersection Summary	
HCM 2010 Ctrl Delay	31.1
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	1356	398	857	794	0	0	0	0	536	0	760
Number	7	4	14	3	8	18				1	6	16
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
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0				1863	1863	1863
Adj Flow Rate, veh/h	0	1427	419	884	819	0				570	0	809
Adj No. of Lanes	0	5	1	2	3	0				2	0	2
Peak Hour Factor	0.92	0.95	0.95	0.97	0.97	0.92				0.94	0.94	0.94
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	2671	561	953	3353	0				1006	0	898
Arrive On Green	0.00	0.35	0.35	0.46	1.00	0.00				0.28	0.00	0.28
Sat Flow, veh/h	0	7898	1583	3442	5253	0				3548	0	3167
Grp Volume(v), veh/h	0	1427	419	884	819	0				570	0	809
Grp Sat Flow(s),veh/h/ln	0	1509	1583	1721	1695	0				1774	0	1583
Q Serve(g_s), s	0.0	21.1	32.5	33.9	0.0	0.0				19.2	0.0	34.4
Cycle Q Clear(g_c), s	0.0	21.1	32.5	33.9	0.0	0.0				19.2	0.0	34.4
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2671	561	953	3353	0				1006	0	898
V/C Ratio(X)	0.00	0.53	0.75	0.93	0.24	0.00				0.57	0.00	0.90
Avail Cap(c_a), veh/h	0	2671	561	1180	3353	0				1090	0	973
HCM Platoon Ratio	1.00	1.00	1.00	1.67	1.67	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.77	0.77	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	36.0	39.7	36.3	0.0	0.0				42.8	0.0	48.3
Incr Delay (d2), s/veh	0.0	0.8	8.8	8.9	0.1	0.0				0.6	0.0	10.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	8.9	15.6	17.1	0.0	0.0				9.5	0.0	16.4
LnGrp Delay(d),s/veh	0.0	36.8	48.5	45.2	0.1	0.0				43.4	0.0	59.1
LnGrp LOS		D	D	D	A					D		E
Approach Vol, veh/h		1846			1703						1379	
Approach Delay, s/veh		39.5			23.5						52.6	
Approach LOS		D			C						D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			42.8	53.6		43.7		96.3
Change Period (Y+Rc), s			4.0	4.0		4.0		4.0
Max Green Setting (Gmax), s			48.0	37.0		43.0		89.0
Max Q Clear Time (g_c+I1), s			35.9	34.5		36.4		2.0
Green Ext Time (p_c), s			2.9	2.3		3.3		41.6

Intersection Summary	
HCM 2010 Ctrl Delay	37.6
HCM 2010 LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	658	1259	0	0	1326	342	290	0	909	0	0	0
Number	7	4	14	3	8	18	5	2	12			
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			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1863	1863	1863	1863			
Adj Flow Rate, veh/h	671	1285	0	0	1381	356	302	0	947			
Adj No. of Lanes	2	3	0	0	5	1	2	0	2			
Peak Hour Factor	0.98	0.98	0.92	0.92	0.96	0.96	0.96	0.96	0.96			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	729	3102	0	0	2788	585	1181	0	1054			
Arrive On Green	0.42	1.00	0.00	0.00	0.37	0.37	0.33	0.00	0.33			
Sat Flow, veh/h	3442	5253	0	0	7898	1583	3548	0	3167			
Grp Volume(v), veh/h	671	1285	0	0	1381	356	302	0	947			
Grp Sat Flow(s),veh/h/ln	1721	1695	0	0	1509	1583	1774	0	1583			
Q Serve(g_s), s	25.8	0.0	0.0	0.0	19.8	25.6	8.7	0.0	39.8			
Cycle Q Clear(g_c), s	25.8	0.0	0.0	0.0	19.8	25.6	8.7	0.0	39.8			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	729	3102	0	0	2788	585	1181	0	1054			
V/C Ratio(X)	0.92	0.41	0.00	0.00	0.50	0.61	0.26	0.00	0.90			
Avail Cap(c_a), veh/h	910	3102	0	0	2788	585	1419	0	1267			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.77	0.77	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	39.3	0.0	0.0	0.0	34.0	35.9	34.0	0.0	44.4			
Incr Delay (d2), s/veh	10.1	0.3	0.0	0.0	0.6	4.7	0.1	0.0	7.8			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	13.1	0.1	0.0	0.0	8.3	11.9	4.3	0.0	18.5			
LnGrp Delay(d),s/veh	49.4	0.3	0.0	0.0	34.7	40.5	34.2	0.0	52.2			
LnGrp LOS	D	A			C	D	C		D			
Approach Vol, veh/h		1956			1737			1249				
Approach Delay, s/veh		17.1			35.9			47.8				
Approach LOS		B			D			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		50.6		89.4			33.6	55.7
Change Period (Y+Rc), s		4.0		4.0			4.0	4.0
Max Green Setting (Gmax), s		56.0		76.0			37.0	35.0
Max Q Clear Time (g_c+I1), s		41.8		2.0			27.8	27.6
Green Ext Time (p_c), s		4.8		48.3			1.8	6.9

Intersection Summary	
HCM 2010 Ctrl Delay	31.5
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Appendix F
Build Analysis

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	67	0	206	1	963	44	111	276	0
Number	7	4	14	3	8	18	5	2	12	1	6	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	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
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1863	1863	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	0	0	0	73	0	224	1	1058	48	123	307	0
Adj No. of Lanes	0	1	0	0	1	1	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.91	0.91	0.91	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	2	0	2	2	2	2	2
Cap, veh/h	0	3	0	288	0	335	781	2168	98	419	2588	0
Arrive On Green	0.00	0.00	0.00	0.16	0.00	0.16	0.63	0.63	0.63	0.05	0.73	0.00
Sat Flow, veh/h	0	1900	0	1774	0	1583	1089	3448	156	1774	3632	0
Grp Volume(v), veh/h	0	0	0	73	0	224	1	543	563	123	307	0
Grp Sat Flow(s),veh/h/ln	0	1900	0	1774	0	1583	1089	1770	1835	1774	1770	0
Q Serve(g_s), s	0.0	0.0	0.0	2.7	0.0	9.7	0.0	12.3	12.3	1.7	1.9	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	2.7	0.0	9.7	0.0	12.3	12.3	1.7	1.9	0.0
Prop In Lane	0.00		0.00	1.00		1.00	1.00		0.09	1.00		0.00
Lane Grp Cap(c), veh/h	0	3	0	288	0	335	781	1112	1154	419	2588	0
V/C Ratio(X)	0.00	0.00	0.00	0.25	0.00	0.67	0.00	0.49	0.49	0.29	0.12	0.00
Avail Cap(c_a), veh/h	0	405	0	378	0	416	781	1112	1154	426	2588	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	0.44	0.44	0.44	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	27.5	0.0	27.2	5.2	7.5	7.5	5.3	3.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.5	0.0	3.0	0.0	0.7	0.7	0.4	0.1	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	0.0	0.0	0.0	1.4	0.0	4.5	0.0	6.1	6.3	0.8	1.0	0.0
LnGrp Delay(d),s/veh	0.0	0.0	0.0	27.9	0.0	30.1	5.2	8.1	8.1	5.7	3.1	0.0
LnGrp LOS				C		C	A	A	A	A	A	
Approach Vol, veh/h		0			297			1107			430	
Approach Delay, s/veh		0.0			29.6			8.1			3.8	
Approach LOS					C			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	7.7	51.1		0.0		58.8		16.2
Change Period (Y+Rc), s	4.0	4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s	4.0	23.0		16.0		31.0		16.0
Max Q Clear Time (g_c+I1), s	3.7	14.3		0.0		3.9		11.7
Green Ext Time (p_c), s	0.0	5.4		0.0		10.7		0.4

Intersection Summary	
HCM 2010 Ctrl Delay	10.6
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	35	155	189	17	25	67
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	81	81	90	90
Heavy Vehicles, %	1	2	2	1	1	1
Mvmt Flow	41	182	233	21	28	74

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	254	0	-	0	418	127
Stage 1	-	-	-	-	244	-
Stage 2	-	-	-	-	174	-
Critical Hdwy	4.12	-	-	-	6.82	6.92
Critical Hdwy Stg 1	-	-	-	-	5.82	-
Critical Hdwy Stg 2	-	-	-	-	5.82	-
Follow-up Hdwy	2.21	-	-	-	3.51	3.31
Pot Cap-1 Maneuver	1315	-	-	-	566	903
Stage 1	-	-	-	-	777	-
Stage 2	-	-	-	-	842	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1315	-	-	-	546	903
Mov Cap-2 Maneuver	-	-	-	-	546	-
Stage 1	-	-	-	-	777	-
Stage 2	-	-	-	-	813	-

Approach	EB	WB	SB
HCM Control Delay, s	1.5	0	10.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1315	-	-	-	767
HCM Lane V/C Ratio	0.031	-	-	-	0.133
HCM Control Delay (s)	7.8	0.1	-	-	10.4
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.5

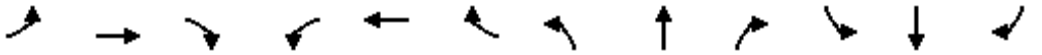
Intersection	
Int Delay, s/veh	3.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	7	163	13	64	158	13	11	1	36	49	1	40
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
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	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	85	85	85	85	85	85	90	90	90
Heavy Vehicles, %	1	2	1	1	2	1	1	1	1	1	1	1
Mvmt Flow	8	187	15	75	186	15	13	1	42	54	1	44

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	201	0	0	202	0	0	455	563	101	454	562	101
Stage 1	-	-	-	-	-	-	211	211	-	344	344	-
Stage 2	-	-	-	-	-	-	244	352	-	110	218	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.52	6.52	6.92	7.52	6.52	6.92
Critical Hdwy Stg 1	-	-	-	-	-	-	6.52	5.52	-	6.52	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.52	5.52	-	6.52	5.52	-
Follow-up Hdwy	2.21	-	-	2.21	-	-	3.51	4.01	3.31	3.51	4.01	3.31
Pot Cap-1 Maneuver	1376	-	-	1375	-	-	491	436	938	492	436	938
Stage 1	-	-	-	-	-	-	774	729	-	647	638	-
Stage 2	-	-	-	-	-	-	741	633	-	886	724	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1376	-	-	1375	-	-	442	406	938	444	406	938
Mov Cap-2 Maneuver	-	-	-	-	-	-	442	406	-	444	406	-
Stage 1	-	-	-	-	-	-	769	724	-	642	598	-
Stage 2	-	-	-	-	-	-	661	594	-	839	719	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	2.2	10.3	12.5
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	730	1376	-	-	1375	-	-	579
HCM Lane V/C Ratio	0.077	0.006	-	-	0.055	-	-	0.173
HCM Control Delay (s)	10.3	7.6	0	-	7.8	0.1	-	12.5
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.3	0	-	-	0.2	-	-	0.6



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	46	1160	54	85	1028	207	9	0	11	207	26	23
Number	7	4	14	3	8	18	5	2	12	1	6	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	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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	48	1208	56	86	1038	209	13	0	16	296	37	33
Adj No. of Lanes	1	3	1	1	3	1	1	1	0	2	1	0
Peak Hour Factor	0.96	0.96	0.96	0.99	0.99	0.99	0.68	0.68	0.68	0.70	0.70	0.70
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	335	2966	923	330	3002	935	136	0	57	663	173	154
Arrive On Green	0.03	0.58	0.58	0.04	0.59	0.59	0.04	0.00	0.04	0.19	0.19	0.19
Sat Flow, veh/h	1774	5085	1583	1774	5085	1583	1774	0	1583	3442	909	811
Grp Volume(v), veh/h	48	1208	56	86	1038	209	13	0	16	296	0	70
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1774	1695	1583	1774	0	1583	1721	0	1720
Q Serve(g_s), s	1.1	13.6	1.6	2.0	11.0	2.2	0.7	0.0	1.0	8.0	0.0	3.6
Cycle Q Clear(g_c), s	1.1	13.6	1.6	2.0	11.0	2.2	0.7	0.0	1.0	8.0	0.0	3.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.47
Lane Grp Cap(c), veh/h	335	2966	923	330	3002	935	136	0	57	663	0	328
V/C Ratio(X)	0.14	0.41	0.06	0.26	0.35	0.22	0.10	0.00	0.28	0.45	0.00	0.21
Avail Cap(c_a), veh/h	402	2966	923	419	3002	935	339	0	241	663	0	328
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	8.7	12.0	9.5	9.1	11.1	1.2	48.8	0.0	49.3	37.4	0.0	35.9
Incr Delay (d2), s/veh	0.2	0.4	0.1	0.4	0.3	0.6	0.3	0.0	2.6	2.2	0.0	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(50%),veh/ln	0.6	6.5	0.7	1.0	5.2	1.1	0.4	0.0	0.5	4.0	0.0	1.8
LnGrp Delay(d),s/veh	8.9	12.4	9.6	9.5	11.4	1.8	49.1	0.0	51.9	39.6	0.0	37.4
LnGrp LOS	A	B	A	A	B	A	D		D	D		D
Approach Vol, veh/h		1312			1333			29			366	
Approach Delay, s/veh		12.1			9.8			50.7			39.2	
Approach LOS		B			A			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.2	7.8	7.8	65.2	8.0	24.0	7.0	66.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	20.0	16.0	9.0	44.0	16.0	20.0	7.0	46.0
Max Q Clear Time (g_c+I1), s	10.0	3.0	4.0	15.6	2.7	5.6	3.1	13.0
Green Ext Time (p_c), s	1.0	0.0	0.1	19.5	0.0	1.2	0.0	21.5

Intersection Summary	
HCM 2010 Ctrl Delay	14.7
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	125	751	32	170	861	60	111	819	477	32	218	101
Number	7	4	14	3	8	18	5	2	12	1	6	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	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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	133	799	34	183	926	65	122	900	524	35	240	111
Adj No. of Lanes	1	3	1	1	2	1	1	2	0	1	2	1
Peak Hour Factor	0.94	0.94	0.94	0.93	0.93	0.93	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	222	1609	501	324	1188	531	540	1010	576	116	1567	701
Arrive On Green	0.06	0.32	0.32	0.08	0.34	0.34	0.04	0.46	0.46	0.02	0.44	0.44
Sat Flow, veh/h	1774	5085	1583	1774	3539	1583	1774	2174	1240	1774	3539	1583
Grp Volume(v), veh/h	133	799	34	183	926	65	122	729	695	35	240	111
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1774	1770	1583	1774	1770	1644	1774	1770	1583
Q Serve(g_s), s	7.0	17.8	2.1	9.6	33.0	4.0	5.2	52.5	54.9	1.5	5.7	5.9
Cycle Q Clear(g_c), s	7.0	17.8	2.1	9.6	33.0	4.0	5.2	52.5	54.9	1.5	5.7	5.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.75	1.00		1.00
Lane Grp Cap(c), veh/h	222	1609	501	324	1188	531	540	822	764	116	1567	701
V/C Ratio(X)	0.60	0.50	0.07	0.57	0.78	0.12	0.23	0.89	0.91	0.30	0.15	0.16
Avail Cap(c_a), veh/h	235	1609	501	365	1188	531	540	822	764	129	1567	701
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	33.3	38.8	33.4	29.3	41.8	32.2	19.5	34.1	34.8	31.1	23.3	23.4
Incr Delay (d2), s/veh	3.8	1.1	0.3	1.6	5.1	0.5	0.2	13.6	16.8	1.4	0.2	0.5
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	3.6	8.5	1.0	4.8	16.9	1.8	2.6	28.6	28.5	0.8	2.8	2.7
LnGrp Delay(d),s/veh	37.1	39.9	33.7	30.9	46.9	32.7	19.7	47.7	51.6	32.5	23.5	23.8
LnGrp LOS	D	D	C	C	D	C	B	D	D	C	C	C
Approach Vol, veh/h		966			1174			1546			386	
Approach Delay, s/veh		39.3			43.6			47.3			24.4	
Approach LOS		D			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.0	69.0	15.7	48.3	10.0	66.0	13.0	51.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	64.0	15.0	41.0	6.0	62.0	10.0	46.0
Max Q Clear Time (g_c+I1), s	3.5	56.9	11.6	19.8	7.2	7.9	9.0	35.0
Green Ext Time (p_c), s	0.0	5.5	0.1	12.0	0.0	19.6	0.0	7.6

Intersection Summary	
HCM 2010 Ctrl Delay	42.2
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	1174	160	899	1081	0	0	0	0	245	0	601
Number	7	4	14	3	8	18				1	6	16
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
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0				1863	1863	1863
Adj Flow Rate, veh/h	0	1334	182	908	1092	0				258	0	633
Adj No. of Lanes	0	5	1	2	3	0				2	0	2
Peak Hour Factor	0.92	0.88	0.88	0.99	0.99	0.92				0.95	0.95	0.95
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	3065	643	970	3645	0				802	0	716
Arrive On Green	0.00	0.41	0.41	0.56	1.00	0.00				0.23	0.00	0.23
Sat Flow, veh/h	0	7898	1583	3442	5253	0				3548	0	3167
Grp Volume(v), veh/h	0	1334	182	908	1092	0				258	0	633
Grp Sat Flow(s),veh/h/ln	0	1509	1583	1721	1695	0				1774	0	1583
Q Serve(g_s), s	0.0	17.9	10.8	34.1	0.0	0.0				8.5	0.0	27.1
Cycle Q Clear(g_c), s	0.0	17.9	10.8	34.1	0.0	0.0				8.5	0.0	27.1
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	3065	643	970	3645	0				802	0	716
V/C Ratio(X)	0.00	0.44	0.28	0.94	0.30	0.00				0.32	0.00	0.88
Avail Cap(c_a), veh/h	0	3065	643	1303	3645	0				963	0	860
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.68	0.68	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	30.0	27.9	29.4	0.0	0.0				45.2	0.0	52.4
Incr Delay (d2), s/veh	0.0	0.5	1.1	7.6	0.1	0.0				0.2	0.0	9.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	7.5	4.9	16.9	0.0	0.0				4.2	0.0	12.8
LnGrp Delay(d),s/veh	0.0	30.4	29.0	37.0	0.1	0.0				45.4	0.0	61.9
LnGrp LOS		C	C	D	A					D		E
Approach Vol, veh/h		1516			2000						891	
Approach Delay, s/veh		30.3			16.9						57.1	
Approach LOS		C			B						E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			43.5	60.9		35.7		104.3
Change Period (Y+Rc), s			4.0	4.0		4.0		4.0
Max Green Setting (Gmax), s			53.0	37.0		38.0		94.0
Max Q Clear Time (g_c+I1), s			36.1	19.9		29.1		2.0
Green Ext Time (p_c), s			3.4	14.2		2.6		43.6

Intersection Summary	
HCM 2010 Ctrl Delay	29.6
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	512	1003	0	0	1559	327	328	0	931	0	0	0
Number	7	4	14	3	8	18	5	2	12			
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			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1863	1863	1863	1863			
Adj Flow Rate, veh/h	517	1013	0	0	1591	334	377	0	1070			
Adj No. of Lanes	2	3	0	0	5	1	2	0	2			
Peak Hour Factor	0.99	0.99	0.92	0.92	0.98	0.98	0.87	0.87	0.87			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	571	2888	0	0	2817	591	1330	0	1187			
Arrive On Green	0.33	1.00	0.00	0.00	0.37	0.37	0.37	0.00	0.37			
Sat Flow, veh/h	3442	5253	0	0	7898	1583	3548	0	3167			
Grp Volume(v), veh/h	517	1013	0	0	1591	334	377	0	1070			
Grp Sat Flow(s),veh/h/ln	1721	1695	0	0	1509	1583	1774	0	1583			
Q Serve(g_s), s	20.1	0.0	0.0	0.0	23.4	23.5	10.4	0.0	44.7			
Cycle Q Clear(g_c), s	20.1	0.0	0.0	0.0	23.4	23.5	10.4	0.0	44.7			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	571	2888	0	0	2817	591	1330	0	1187			
V/C Ratio(X)	0.91	0.35	0.00	0.00	0.56	0.56	0.28	0.00	0.90			
Avail Cap(c_a), veh/h	713	2888	0	0	2817	591	1571	0	1402			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.85	0.85	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	45.7	0.0	0.0	0.0	34.8	34.8	30.6	0.0	41.3			
Incr Delay (d2), s/veh	11.5	0.3	0.0	0.0	0.8	3.9	0.1	0.0	7.4			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	10.4	0.1	0.0	0.0	9.9	10.9	5.1	0.0	20.7			
LnGrp Delay(d),s/veh	57.2	0.3	0.0	0.0	35.7	38.7	30.7	0.0	48.7			
LnGrp LOS	E	A			D	D	C		D			
Approach Vol, veh/h		1530			1925			1447				
Approach Delay, s/veh		19.5			36.2			44.1				
Approach LOS		B			D			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		56.5		83.5			27.2	56.3
Change Period (Y+Rc), s		4.0		4.0			4.0	4.0
Max Green Setting (Gmax), s		62.0		70.0			29.0	37.0
Max Q Clear Time (g_c+I1), s		46.7		2.0			22.1	25.5
Green Ext Time (p_c), s		5.8		44.4			1.2	10.5

Intersection Summary	
HCM 2010 Ctrl Delay	33.3
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	78	0	158	0	377	98	201	1072	0
Number	7	4	14	3	8	18	5	2	12	1	6	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	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
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1863	1863	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	0	0	0	93	0	188	0	385	100	231	1232	0
Adj No. of Lanes	0	1	0	0	1	1	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.84	0.84	0.84	0.98	0.98	0.98	0.87	0.87	0.87
Percent Heavy Veh, %	0	0	0	0	0	2	0	2	2	2	2	2
Cap, veh/h	0	3	0	253	0	337	103	1717	441	786	2631	0
Arrive On Green	0.00	0.00	0.00	0.14	0.00	0.14	0.00	1.00	1.00	0.07	0.74	0.00
Sat Flow, veh/h	0	1900	0	1774	0	1583	459	2789	717	1774	3632	0
Grp Volume(v), veh/h	0	0	0	93	0	188	0	243	242	231	1232	0
Grp Sat Flow(s),veh/h/ln	0	1900	0	1774	0	1583	459	1770	1736	1774	1770	0
Q Serve(g_s), s	0.0	0.0	0.0	3.3	0.0	7.4	0.0	0.0	0.0	3.0	9.6	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	3.3	0.0	7.4	0.0	0.0	0.0	3.0	9.6	0.0
Prop In Lane	0.00		0.00	1.00		1.00	1.00		0.41	1.00		0.00
Lane Grp Cap(c), veh/h	0	3	0	253	0	337	103	1089	1069	786	2631	0
V/C Ratio(X)	0.00	0.00	0.00	0.37	0.00	0.56	0.00	0.22	0.23	0.29	0.47	0.00
Avail Cap(c_a), veh/h	0	434	0	405	0	474	103	1089	1069	788	2631	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.93	0.93	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	27.2	0.0	24.6	0.0	0.0	0.0	3.3	3.5	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.9	0.0	1.4	0.0	0.4	0.5	0.2	0.6	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(50%),veh/ln	0.0	0.0	0.0	1.7	0.0	3.4	0.0	0.1	0.1	1.4	4.8	0.0
LnGrp Delay(d),s/veh	0.0	0.0	0.0	28.1	0.0	26.0	0.0	0.4	0.5	3.5	4.1	0.0
LnGrp LOS				C		C		A	A	A	A	
Approach Vol, veh/h		0			281			485			1463	
Approach Delay, s/veh		0.0			26.7			0.4			4.0	
Approach LOS					C			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	8.9	47.1		0.0		56.0		14.0
Change Period (Y+Rc), s	4.0	4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s	5.0	17.0		16.0		26.0		16.0
Max Q Clear Time (g_c+I1), s	5.0	2.0		0.0		11.6		9.4
Green Ext Time (p_c), s	0.0	9.8		0.0		9.5		0.6

Intersection Summary	
HCM 2010 Ctrl Delay	6.1
HCM 2010 LOS	A

Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	89	196	167	26	34	63
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	87	87	90	90
Heavy Vehicles, %	1	2	2	1	1	1
Mvmt Flow	105	231	192	30	38	70

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	222	0	-	0	532	111
Stage 1	-	-	-	-	207	-
Stage 2	-	-	-	-	325	-
Critical Hdwy	4.12	-	-	-	6.82	6.92
Critical Hdwy Stg 1	-	-	-	-	5.82	-
Critical Hdwy Stg 2	-	-	-	-	5.82	-
Follow-up Hdwy	2.21	-	-	-	3.51	3.31
Pot Cap-1 Maneuver	1352	-	-	-	480	924
Stage 1	-	-	-	-	810	-
Stage 2	-	-	-	-	708	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1352	-	-	-	437	924
Mov Cap-2 Maneuver	-	-	-	-	437	-
Stage 1	-	-	-	-	810	-
Stage 2	-	-	-	-	645	-

Approach	EB	WB	SB
HCM Control Delay, s	2.6	0	11.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1352	-	-	-	664
HCM Lane V/C Ratio	0.077	-	-	-	0.162
HCM Control Delay (s)	7.9	0.2	-	-	11.5
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.3	-	-	-	0.6

Intersection	
Int Delay, s/veh	3.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	29	183	19	29	154	51	21	1	101	24	1	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
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	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	77	77	77	89	89	89	77	77	77	90	90	90
Heavy Vehicles, %	1	2	1	1	2	1	1	1	1	1	1	1
Mvmt Flow	38	238	25	33	173	57	27	1	131	27	1	22

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	230	0	0	262	0	0	477	621	131	462	605	115
Stage 1	-	-	-	-	-	-	325	325	-	267	267	-
Stage 2	-	-	-	-	-	-	152	296	-	195	338	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.52	6.52	6.92	7.52	6.52	6.92
Critical Hdwy Stg 1	-	-	-	-	-	-	6.52	5.52	-	6.52	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.52	5.52	-	6.52	5.52	-
Follow-up Hdwy	2.21	-	-	2.21	-	-	3.51	4.01	3.31	3.51	4.01	3.31
Pot Cap-1 Maneuver	1342	-	-	1307	-	-	474	404	897	485	413	919
Stage 1	-	-	-	-	-	-	664	650	-	718	689	-
Stage 2	-	-	-	-	-	-	838	669	-	791	642	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1342	-	-	1307	-	-	440	379	897	394	388	919
Mov Cap-2 Maneuver	-	-	-	-	-	-	440	379	-	394	388	-
Stage 1	-	-	-	-	-	-	642	629	-	694	669	-
Stage 2	-	-	-	-	-	-	793	650	-	652	621	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.1	1	11	12.5
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	755	1342	-	-	1307	-	-	528
HCM Lane V/C Ratio	0.212	0.028	-	-	0.025	-	-	0.095
HCM Control Delay (s)	11	7.8	0.1	-	7.8	0.1	-	12.5
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.8	0.1	-	-	0.1	-	-	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	11	1016	3	26	1219	232	16	3	44	323	6	36
Number	7	4	14	3	8	18	5	2	12	1	6	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	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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	12	1092	3	28	1325	252	29	5	79	367	7	41
Adj No. of Lanes	1	3	1	1	3	1	1	1	0	2	1	0
Peak Hour Factor	0.93	0.93	0.93	0.92	0.92	0.92	0.56	0.56	0.56	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	221	2819	878	328	2870	894	136	7	108	688	55	323
Arrive On Green	0.01	0.55	0.55	0.02	0.56	0.56	0.04	0.07	0.07	0.20	0.23	0.23
Sat Flow, veh/h	1774	5085	1583	1774	5085	1583	1774	95	1503	3442	236	1383
Grp Volume(v), veh/h	12	1092	3	28	1325	252	29	0	84	367	0	48
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1774	1695	1583	1774	0	1598	1721	0	1619
Q Serve(g_s), s	0.3	12.8	0.1	0.7	16.1	3.2	1.7	0.0	5.4	10.0	0.0	2.5
Cycle Q Clear(g_c), s	0.3	12.8	0.1	0.7	16.1	3.2	1.7	0.0	5.4	10.0	0.0	2.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.94	1.00		0.85
Lane Grp Cap(c), veh/h	221	2819	878	328	2870	894	136	0	115	688	0	379
V/C Ratio(X)	0.05	0.39	0.00	0.09	0.46	0.28	0.21	0.00	0.73	0.53	0.00	0.13
Avail Cap(c_a), veh/h	269	2819	878	358	2870	894	339	0	259	688	0	379
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	11.1	13.3	10.4	10.4	13.5	1.6	47.9	0.0	47.7	37.6	0.0	31.8
Incr Delay (d2), s/veh	0.1	0.4	0.0	0.1	0.5	0.8	0.8	0.0	8.6	2.9	0.0	0.7
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(50%),veh/ln	0.2	6.1	0.0	0.4	7.6	1.5	0.8	0.0	2.7	5.0	0.0	1.2
LnGrp Delay(d),s/veh	11.2	13.7	10.5	10.5	14.0	2.4	48.7	0.0	56.3	40.6	0.0	32.4
LnGrp LOS	B	B	B	B	B	A	D		E	D		C
Approach Vol, veh/h		1107			1605			113			415	
Approach Delay, s/veh		13.6			12.1			54.3			39.6	
Approach LOS		B			B			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	25.0	11.6	6.2	62.2	8.0	28.6	5.2	63.3
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	21.0	17.0	4.0	47.0	16.0	22.0	4.0	47.0
Max Q Clear Time (g_c+I1), s	12.0	7.4	2.7	14.8	3.7	4.5	2.3	18.1
Green Ext Time (p_c), s	1.1	0.2	0.0	22.8	0.0	1.4	0.0	21.0

Intersection Summary	
HCM 2010 Ctrl Delay	17.6
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	113	807	59	364	852	23	98	269	210	46	856	121
Number	7	4	14	3	8	18	5	2	12	1	6	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	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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	118	841	61	404	947	26	107	292	228	49	911	129
Adj No. of Lanes	1	3	1	1	2	1	1	2	0	1	2	1
Peak Hour Factor	0.96	0.96	0.96	0.90	0.90	0.90	0.92	0.92	0.92	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	291	1709	532	470	1570	702	228	685	520	309	1176	526
Arrive On Green	0.06	0.34	0.34	0.16	0.44	0.44	0.05	0.36	0.36	0.06	0.66	0.66
Sat Flow, veh/h	1774	5085	1583	1774	3539	1583	1774	1919	1457	1774	3539	1583
Grp Volume(v), veh/h	118	841	61	404	947	26	107	269	251	49	911	129
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1774	1770	1583	1774	1770	1606	1774	1770	1583
Q Serve(g_s), s	6.1	18.4	3.7	20.0	28.5	1.3	5.4	16.1	16.7	2.5	24.9	4.6
Cycle Q Clear(g_c), s	6.1	18.4	3.7	20.0	28.5	1.3	5.4	16.1	16.7	2.5	24.9	4.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.91	1.00		1.00
Lane Grp Cap(c), veh/h	291	1709	532	470	1570	702	228	632	573	309	1176	526
V/C Ratio(X)	0.40	0.49	0.11	0.86	0.60	0.04	0.47	0.43	0.44	0.16	0.77	0.25
Avail Cap(c_a), veh/h	317	1709	532	659	1570	702	261	632	573	311	1176	526
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90	0.90	0.90
Uniform Delay (d), s/veh	28.4	37.0	32.1	25.4	29.6	22.0	30.3	34.1	34.3	29.3	19.9	16.5
Incr Delay (d2), s/veh	0.9	1.0	0.4	8.2	1.7	0.1	1.5	2.1	2.4	0.2	4.5	1.0
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	3.0	8.8	1.7	10.7	14.2	0.6	2.7	8.2	7.8	1.2	12.6	2.1
LnGrp Delay(d),s/veh	29.3	38.0	32.5	33.6	31.3	22.1	31.8	36.2	36.7	29.5	24.4	17.5
LnGrp LOS	C	D	C	C	C	C	C	D	D	C	C	B
Approach Vol, veh/h		1020			1377			627			1089	
Approach Delay, s/veh		36.7			31.8			35.7			23.8	
Approach LOS		D			C			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.9	54.0	27.1	51.0	11.4	50.5	12.0	66.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	50.0	38.0	32.0	10.0	44.0	10.0	60.0
Max Q Clear Time (g_c+I1), s	4.5	18.7	22.0	20.4	7.4	26.9	8.1	30.5
Green Ext Time (p_c), s	0.0	12.5	1.1	8.1	0.1	9.2	0.0	14.9

Intersection Summary	
HCM 2010 Ctrl Delay	31.5
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	1395	412	857	832	0	0	0	0	536	0	796
Number	7	4	14	3	8	18				1	6	16
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
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0				1863	1863	1863
Adj Flow Rate, veh/h	0	1453	429	874	849	0				564	0	838
Adj No. of Lanes	0	5	1	2	3	0				2	0	2
Peak Hour Factor	0.92	0.96	0.96	0.98	0.98	0.92				0.95	0.95	0.95
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	2611	548	943	3299	0				1044	0	931
Arrive On Green	0.00	0.35	0.35	0.46	1.00	0.00				0.29	0.00	0.29
Sat Flow, veh/h	0	7898	1583	3442	5253	0				3548	0	3167
Grp Volume(v), veh/h	0	1453	429	874	849	0				564	0	838
Grp Sat Flow(s),veh/h/ln	0	1509	1583	1721	1695	0				1774	0	1583
Q Serve(g_s), s	0.0	21.8	34.0	33.5	0.0	0.0				18.7	0.0	35.6
Cycle Q Clear(g_c), s	0.0	21.8	34.0	33.5	0.0	0.0				18.7	0.0	35.6
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2611	548	943	3299	0				1044	0	931
V/C Ratio(X)	0.00	0.56	0.78	0.93	0.26	0.00				0.54	0.00	0.90
Avail Cap(c_a), veh/h	0	2611	548	1180	3299	0				1140	0	1018
HCM Platoon Ratio	1.00	1.00	1.00	1.67	1.67	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.75	0.75	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	37.1	41.1	36.6	0.0	0.0				41.5	0.0	47.4
Incr Delay (d2), s/veh	0.0	0.9	10.7	8.5	0.1	0.0				0.4	0.0	10.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	9.2	16.5	16.9	0.0	0.0				9.2	0.0	16.9
LnGrp Delay(d),s/veh	0.0	37.9	51.7	45.2	0.1	0.0				41.9	0.0	57.7
LnGrp LOS		D	D	D	A					D		E
Approach Vol, veh/h		1882			1723						1402	
Approach Delay, s/veh		41.1			23.0						51.3	
Approach LOS		D			C						D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			42.4	52.5		45.2		94.8
Change Period (Y+Rc), s			4.0	4.0		4.0		4.0
Max Green Setting (Gmax), s			48.0	35.0		45.0		87.0
Max Q Clear Time (g_c+I1), s			35.5	36.0		37.6		2.0
Green Ext Time (p_c), s			2.9	0.0		3.6		43.2

Intersection Summary	
HCM 2010 Ctrl Delay	37.7
HCM 2010 LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	684	1274	0	0	1346	342	308	0	909	0	0	0
Number	7	4	14	3	8	18	5	2	12			
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			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1863	1863	1863	1863			
Adj Flow Rate, veh/h	691	1287	0	0	1388	353	318	0	937			
Adj No. of Lanes	2	3	0	0	5	1	2	0	2			
Peak Hour Factor	0.99	0.99	0.92	0.92	0.97	0.97	0.97	0.97	0.97			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	749	3115	0	0	2764	580	1172	0	1046			
Arrive On Green	0.44	1.00	0.00	0.00	0.37	0.37	0.33	0.00	0.33			
Sat Flow, veh/h	3442	5253	0	0	7898	1583	3548	0	3167			
Grp Volume(v), veh/h	691	1287	0	0	1388	353	318	0	937			
Grp Sat Flow(s),veh/h/ln	1721	1695	0	0	1509	1583	1774	0	1583			
Q Serve(g_s), s	26.5	0.0	0.0	0.0	20.0	25.5	9.2	0.0	39.4			
Cycle Q Clear(g_c), s	26.5	0.0	0.0	0.0	20.0	25.5	9.2	0.0	39.4			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	749	3115	0	0	2764	580	1172	0	1046			
V/C Ratio(X)	0.92	0.41	0.00	0.00	0.50	0.61	0.27	0.00	0.90			
Avail Cap(c_a), veh/h	934	3115	0	0	2764	580	1419	0	1267			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.74	0.74	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	38.4	0.0	0.0	0.0	34.4	36.2	34.5	0.0	44.6			
Incr Delay (d2), s/veh	9.8	0.3	0.0	0.0	0.7	4.7	0.1	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			
%ile BackOfQ(50%),veh/ln	13.5	0.1	0.0	0.0	8.4	11.8	4.5	0.0	18.3			
LnGrp Delay(d),s/veh	48.2	0.3	0.0	0.0	35.1	40.9	34.6	0.0	52.1			
LnGrp LOS	D	A			D	D	C		D			
Approach Vol, veh/h		1978			1741			1255				
Approach Delay, s/veh		17.0			36.3			47.7				
Approach LOS		B			D			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		50.2		89.8			34.5	55.3
Change Period (Y+Rc), s		4.0		4.0			4.0	4.0
Max Green Setting (Gmax), s		56.0		76.0			38.0	34.0
Max Q Clear Time (g_c+I1), s		41.4		2.0			28.5	27.5
Green Ext Time (p_c), s		4.8		48.5			1.9	6.2

Intersection Summary	
HCM 2010 Ctrl Delay	31.5
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Appendix G
Programmed Infrastructure Improvements

DK-344A

PLAN 2040 RTP Update PROJECT FACT SHEET

Short Title: UPGRADES TO APPROXIMATELY 40 SIGNALS IN DEKALB COUNTY

GDOT Project No.: 0002669

Federal ID No.: STP-0002-00(669)

Status: Programmed

Service Type: Roadway / Operations & Safety

Sponsor: GDOT

Jurisdiction: DeKalb County

Analysis Level: Exempt from Air Quality Analysis (40 CFR 93)

No Image Available

Existing Thru Lane: N/A

Planned Thru Lane: N/A

Network Year: 2015

Corridor Length: N/A miles

Detailed Description and Justification

The proposed project would consist of the upgrading of traffic signal equipment at forty (40) intersections in Dekalb County. This project would improve the overall efficiency and safety of traffic flow due to upgraded traffic signal displays and state of the art traffic signal control equipment, provide better signal coordination through fiber optic communications cable, and improve pedestrian safety with improved crosswalks, pedestrian signals and sidewalk ramps in compliance with the Americans with Disability Act (ADA). This project upgrades (and in some cases replaces) signals along the following corridors: Briarcliff Road, Chamblee-Tucker Road, Clairmont Road, Clifton Road, Columbia Drive, Covington Highway, LaVista Road, Peachtree Road, and Peachtree Industrial Boulevard.

Phase Status & Funding Information		Status	FISCAL YEAR	TOTAL PHASE COST	BREAKDOWN OF TOTAL PHASE COST BY FUNDING SOURCE			
					FEDERAL	STATE	BONDS	LOCAL/PRIVATE
PE	STP - Statewide Flexible (GDOT)	AUTH	2005	**$0,000**	~~$0,000~~	~~$0,000~~	~~$0,000~~	~~$0,000~~
PE	STP - Statewide Flexible (GDOT)	AUTH	2014	**$200,000**	~~$200,000~~	~~$0,000~~	~~$0,000~~	~~$0,000~~
ROW	Local Jurisdiction/Municipality Funds	AUTH	2011	**$500,000**	~~$0,000~~	~~$0,000~~	~~$0,000~~	~~$500,000~~
CST	STP - Statewide Flexible (GDOT)		2016	**$5,982,300**	$5,982,300	$0,000	$0,000	$0,000
				$6,682,300	**$6,182,300**	**$0,000**	**$0,000**	**$500,000**

SCP: Scoping PE: Preliminary engineering / engineering / design / planning PE-OV: GDOT oversight services for engineering ROW: Right-of-way Acquistion
UTL: Utility relocation CST: Construction / Implementation ALL: Total estimated cost, inclusive of all phases

Appendix H
MARTA Route Maps

marta | METROPOLITAN ATLANTA RAPID TRANSIT AUTHORITY

www.itsmarta.com 404-848-5000 TTY: 404-848-5665 Accessible Format: 404-848-4037

Information

Legend

- Red Line
- Red Line Night Time Service (see below)
  After 9 pm, North Springs to Lindbergh Center only.
  Transfer to the Gold Line for service between Lindbergh Center and the Airport.
- Gold Line
- Blue Line
- Expressways
- Green Line
  Service to Edgewood/Candler Park:
  weekdays 5 am-9 am & 3 pm-9 pm
  Service to King Memorial:
  weekdays 9 am-3 pm, Sat.- Sun. until 9pm
- Green Line Night Service (see below)
  After 9 pm, Bankhead to Vine City only. Transfer to the Blue Line for service between Vine City and Indian Creek.
- Stations with free daily parking
- Stations with long-term and free daily parking
- MARTA RideStore
  - Airport Station
  - Five Points Station
    Located at Peachtree St. Entrance
- Reduced Fare Office
  - Lindbergh Center Station
    Located in MARTA Headquarters Building
  - Five Points Station
    Located at Forsyth St. Entrance
- Lost & Found
  - Five Points Station
    Inside Reduced Fare Office
- Stations with restrooms

Regional Connections

Cobb Community Transit
www.cobbcct.org
(770) 427-4444
Stations served:
- Peachtree Center
- Arts Center
- Midtown
- North Avenue
- Five Points
- Civic Center
- Hamilton E. Holmes

Gwinnett County Transit
www.gctransit.com
(770) 822-5010
Stations served:
- Doraville
- Arts Center
- Midtown
- North Avenue
- Civic Center
- Peachtree Center
- Lindbergh Center
- Five Points

GRTA Xpress
www.xpressga.com
(404) 463-4782
Stations served:
- Civic Center
- Arts Center
- North Avenue
- Peachtree Center
- Medical Center
- North Springs
- Dunwoody
- Midtown
- Five Points
- Doraville

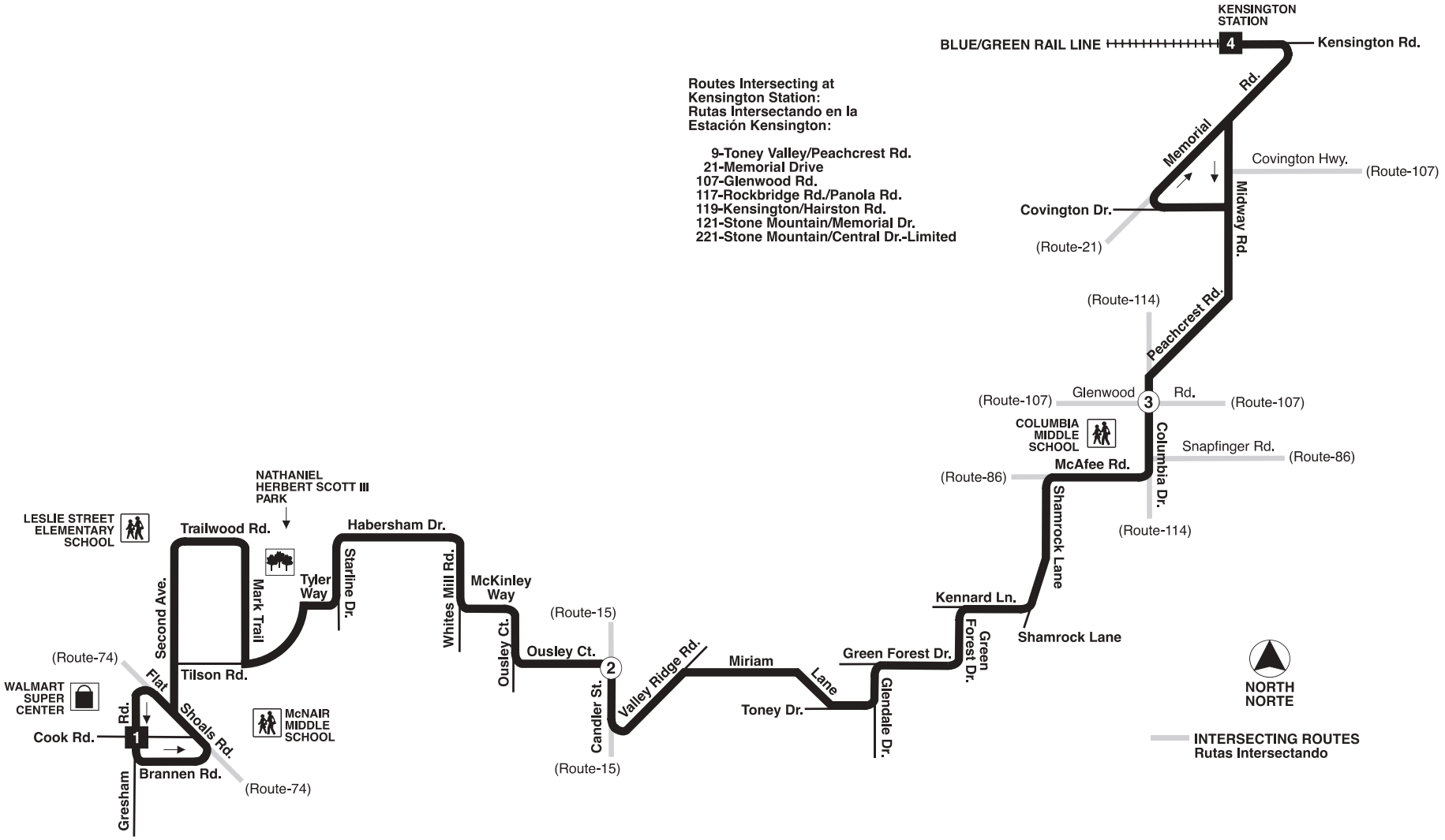
Zipcar (a car sharing service)
www.zipcar.com 1-866-4ZIPCAR

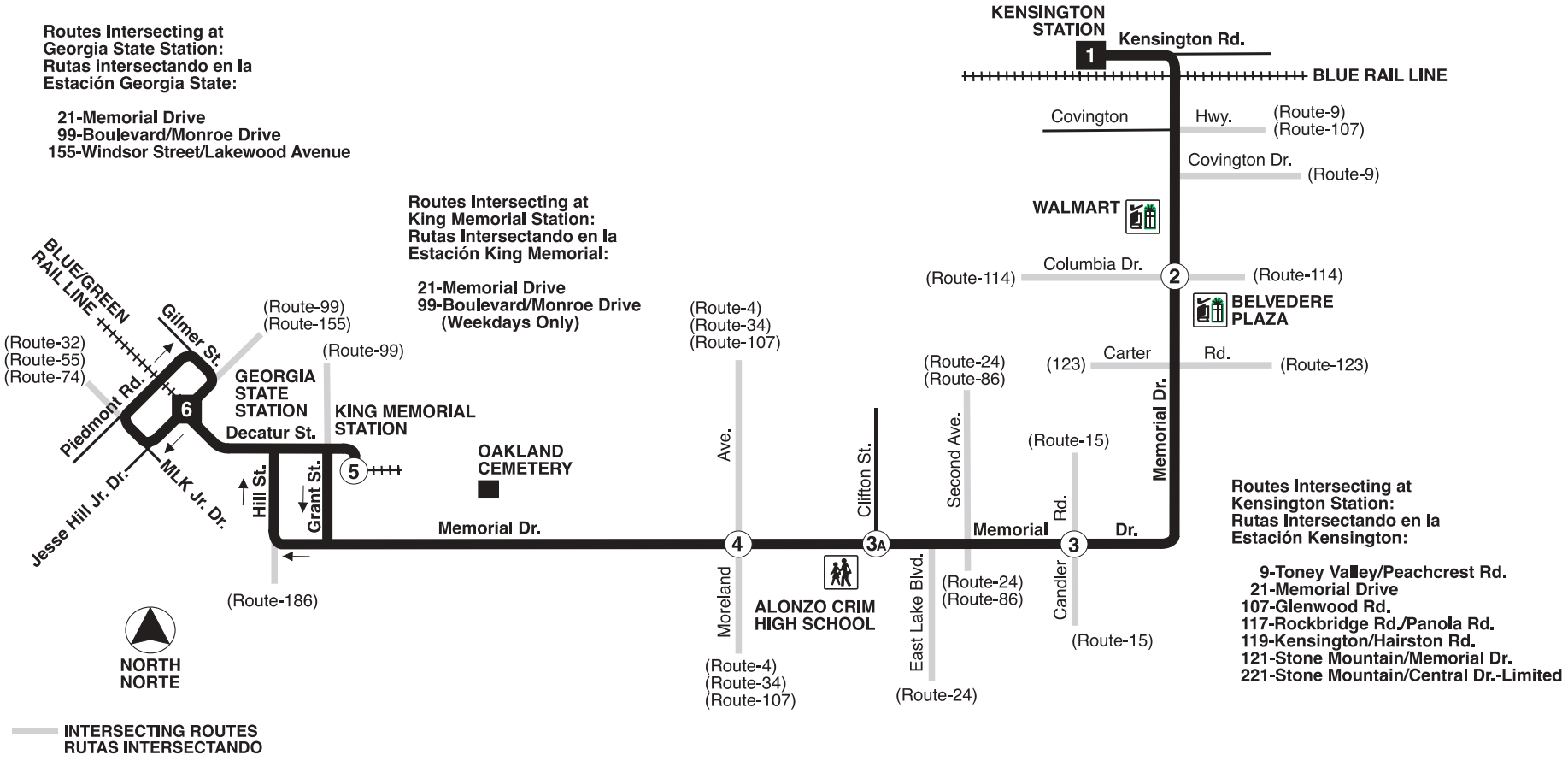
Amtrak
www.amtrak.com 1-800-USA-RAIL
Bus Route 110 from Arts Center Station

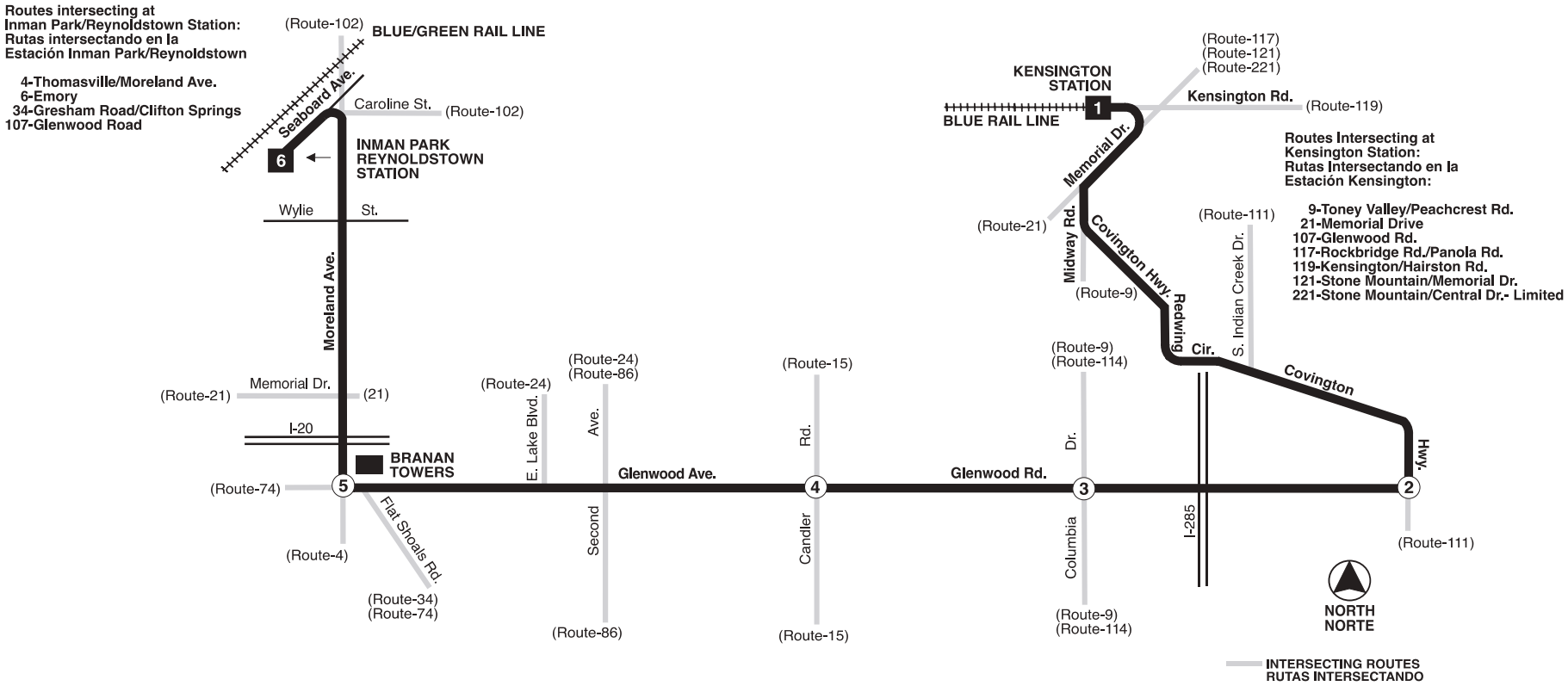
Greyhound Bus Lines/Southeastern Stages
www.greyhound.com 1-800-231-2222
Exit at Garnett Station

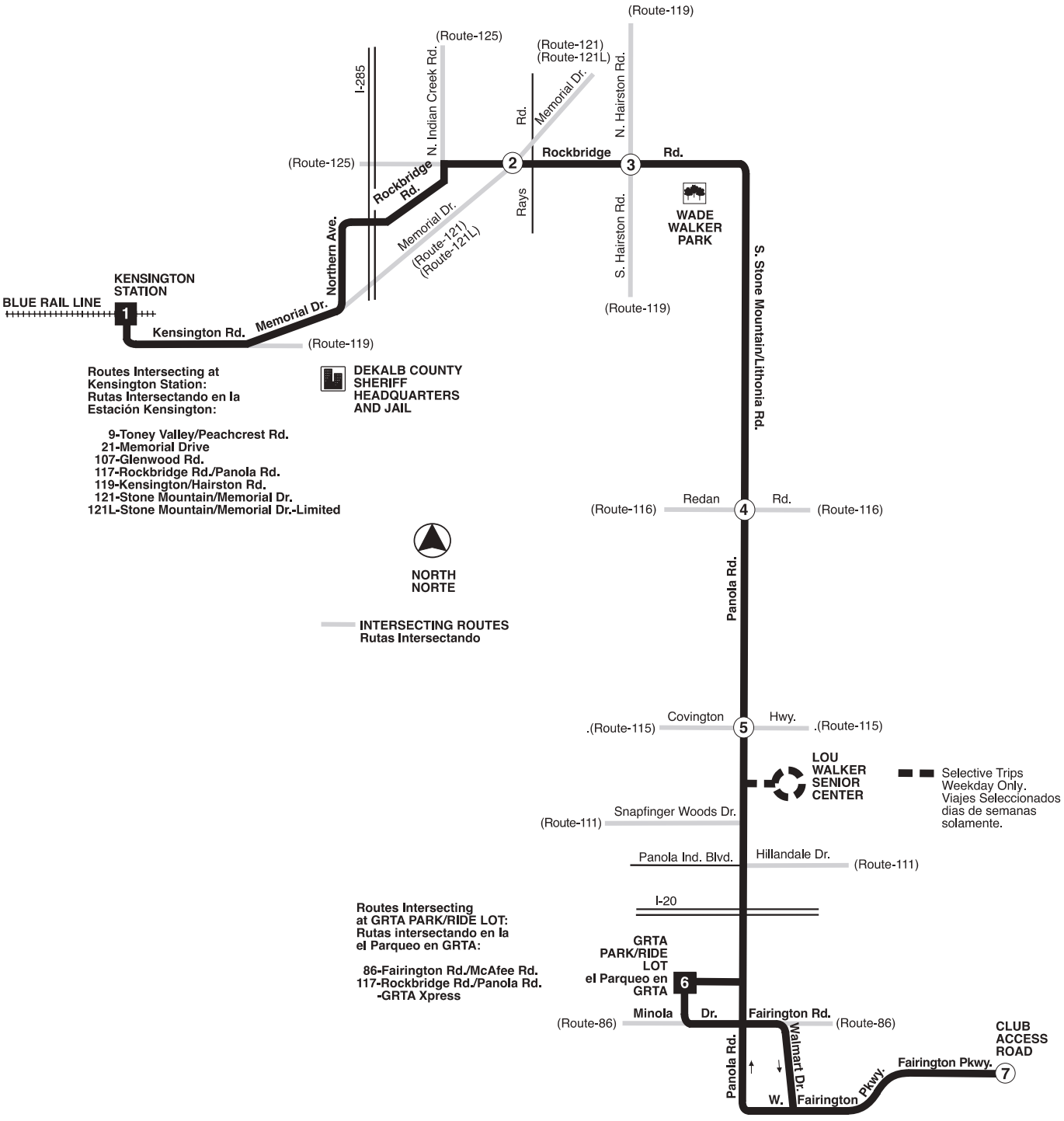
Hartsfield-Jackson Atlanta International Airport
www.atlanta-airport.com (800) 897-1910
Red and Gold Lines before 9 pm. Gold Line only after 9 pm. Transfer to the Red Line at Lindbergh Center to continue to North Springs.

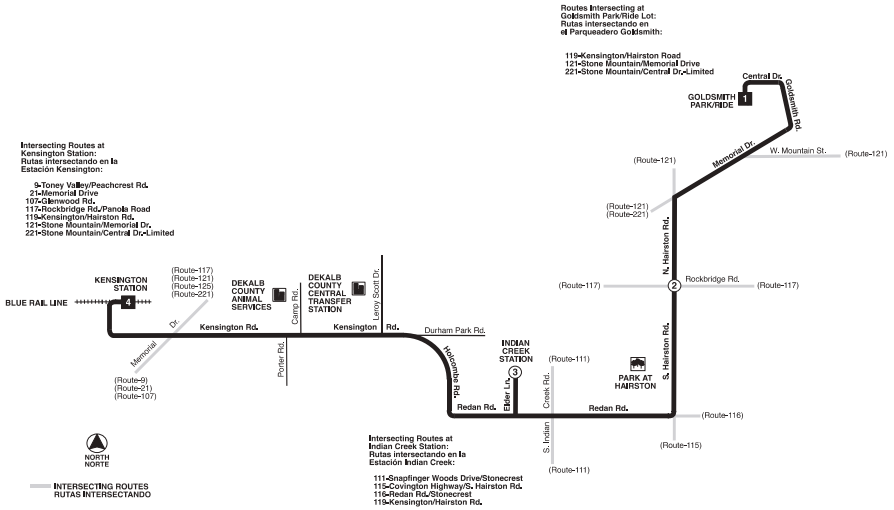
Night Service After 9:00 PM Daily

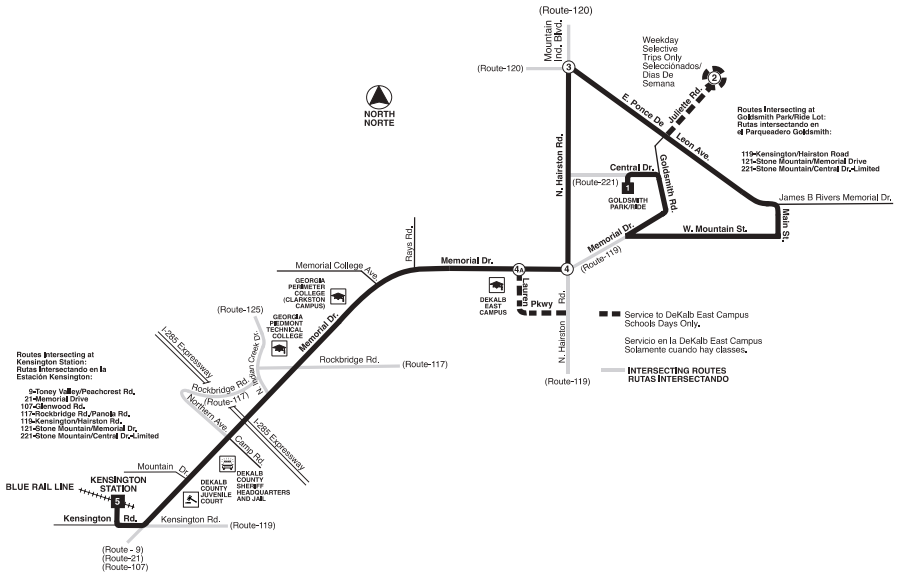

KENSINGTON STATION
BLUE/GREEN RAIL LINE
4
Kensington Rd.
Memorial Rd.
Covington Hwy.
(Route-107)
Midway Rd.
Covington Dr.
(Route-21)
Routes Intersecting at Kensington Station:
Rutas Intersectando en la Estación Kensington:
9-Toney Valley/Peachcrest Rd.
21-Memorial Drive
107-Glenwood Rd.
117-Rockbridge Rd./Panola Rd.
119-Kensington/Hairston Rd.
121-Stone Mountain/Memorial Dr.
221-Stone Mountain/Central Dr.-Limited
(Route-114)
Peachcrest Rd.
(Route-107)
Glenwood Rd.
(Route-107)
3
COLUMBIA MIDDLE SCHOOL
Columbia Dr.
Snapfinger Rd.
(Route-86)
McAfee Rd.
(Route-86)
(Route-114)
Shamrock Lane
Kennard Ln.
Shamrock Lane
Green Forest Dr.
Green Forest Dr.
Glendale Dr.
Toney Dr.
Miriam Lane
Valley Ridge Rd.
Candler St.
2
Ousley Ct.
(Route-15)
Ousley Ct.
(Route-15)
McKinley Way
Whites Mill Rd.
Habersham Dr.
Starline Dr.
Tyler Way
NATHANIEL HERBERT SCOTT III PARK
Trailwood Rd.
Mark Trail
Tilson Rd.
Second Ave.
LESLIE STREET ELEMENTARY SCHOOL
(Route-74)
Flat Shoals Rd.
WALMART SUPER CENTER
Cook Rd.
1
Brannen Rd.
Gresham Rd.
(Route-74)
McNAIR MIDDLE SCHOOL
NORTH
NORTE
INTERSECTING ROUTES
Rutas Intersectando

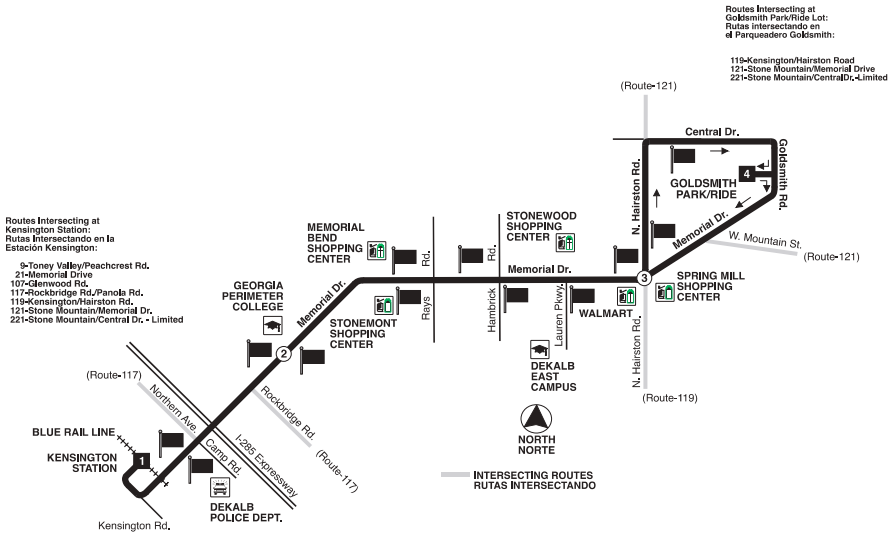

Routes Intersecting at
Georgia State Station:
Rutas intersectando en la
Estación Georgia State:
21-Memorial Drive
99-Boulevard/Monroe Drive
155-Windsor Street/Lakewood Avenue
Routes Intersecting at
King Memorial Station:
Rutas Intersectando en la
Estación King Memorial:
21-Memorial Drive
99-Boulevard/Monroe Drive
(Weekdays Only)
KENSINGTON
STATION
Kensington Rd.
BLUE RAIL LINE
Covington
Hwy.
(Route-9)
(Route-107)
Covington Dr.
(Route-9)
WALMART
Columbia Dr.
(Route-114)
(Route-114)
BELVEDERE
PLAZA
Carter
(123)
Rd.
(Route-123)
(Route-24)
(Route-86)
(Route-15)
Memorial Dr.
Second Ave.
Rd.
Candler
(Route-15)
(Route-24)
(Route-86)
East Lake Blvd.
(Route-24)
Clifton St.
Ave.
Moreland
(Route-4)
(Route-34)
(Route-107)
(Route-4)
(Route-34)
(Route-107)
ALONZO CRIM
HIGH SCHOOL
Memorial Dr.
Dr.
OAKLAND
CEMETERY
BLUE/GREEN
RAIL LINE
Gilmer St.
(Route-99)
(Route-155)
(Route-99)
(Route-32)
(Route-55)
(Route-74)
Piedmont Rd.
GEORGIA
STATE
STATION
Decatur St.
KING MEMORIAL
STATION
Jesse Hill Jr. Dr.
MLK Jr. Dr.
Hill St.
Grant St.
(Route-186)
NORTH
NORTE
Routes Intersecting at
Kensington Station:
Rutas Intersectando en la
Estación Kensington:
9-Toney Valley/Peachcrest Rd.
21-Memorial Drive
107-Glenwood Rd.
117-Rockbridge Rd./Panola Rd.
119-Kensington/Hairston Rd.
121-Stone Mountain/Memorial Dr.
221-Stone Mountain/Central Dr.-Limited
INTERSECTING ROUTES
RUTAS INTERSECTANDO


Routes intersecting at
Inman Park/Reynoldstown Station:
Rutas intersectando en la
Estación Inman Park/Reynoldstown
4-Thomasville/Moreland Ave.
6-Emory
34-Gresham Road/Clifton Springs
107-Glenwood Road
(Route-102)
BLUE/GREEN RAIL LINE
Seaboard Ave.
Caroline St.
(Route-102)
6
INMAN PARK
REYNOLDSTOWN
STATION
Wylie
St.
Moreland Ave.
Memorial Dr.
(Route-21)
(21)
I-20
BRANAN
TOWERS
(Route-74)
5
(Route-4)
Flat Shoals Rd.
(Route-34)
(Route-74)
(Route-24)
E. Lake Blvd.
(Route-24)
(Route-86)
Ave.
Second
(Route-86)
Glenwood Ave.
(Route-15)
Rd.
Candler
(Route-15)
4
Glenwood Rd.
(Route-9)
(Route-114)
Dr.
Columbia
(Route-9)
(Route-114)
3
(Route-117)
(Route-121)
(Route-221)
KENSINGTON
STATION
1
BLUE RAIL LINE
Kensington Rd.
(Route-119)
Memorial Dr.
(Route-21)
Midway Rd.
(Route-9)
Covington Hwy.
Redwing
Cir.
(Route-111)
S. Indian Creek Dr.
Covington
Hwy.
2
I-285
(Route-111)
Routes Intersecting at
Kensington Station:
Rutas Intersectando en la
Estación Kensington:
9-Toney Valley/Peachcrest Rd.
21-Memorial Drive
107-Glenwood Rd.
117-Rockbridge Rd./Panola Rd.
119-Kensington/Hairston Rd.
121-Stone Mountain/Memorial Dr.
221-Stone Mountain/Central Dr.- Limited
NORTH
NORTE
INTERSECTING ROUTES
RUTAS INTERSECTANDO


(Route-119)
(Route-125)
(Route-121)
(Route-121L)
I-285
N. Indian Creek Rd.
Memorial Dr.
Rd.
N. Hairston Rd.
(Route-125)
Rockbridge Rd.
2
Rockbridge Rd.
3
WADE WALKER PARK
Rays
S. Hairston Rd.
(Route-119)
Rockbridge Rd.
Memorial Dr.
(Route-121)
(Route-121L)
Northern Ave.
S. Stone Mountain/Lithonia Rd.
KENSINGTON STATION
BLUE RAIL LINE
1
Memorial Dr.
Kensington Rd.
(Route-119)
Routes Intersecting at Kensington Station:
Rutas Intersectando en la Estación Kensington:
9-Toney Valley/Peachcrest Rd.
21-Memorial Drive
107-Glenwood Rd.
117-Rockbridge Rd./Panola Rd.
119-Kensington/Hairston Rd.
121-Stone Mountain/Memorial Dr.
121L-Stone Mountain/Memorial Dr.-Limited
DEKALB COUNTY SHERIFF HEADQUARTERS AND JAIL
(Route-116)
Redan
Rd.
(Route-116)
4
NORTH
NORTE
Panola Rd.
INTERSECTING ROUTES
Rutas Intersectando
.(Route-115)
Covington
Hwy.
.(Route-115)
5
LOU WALKER SENIOR CENTER
Selective Trips Weekday Only.
Viajes Seleccionados dias de semanas solamente.
(Route-111)
Snapfinger Woods Dr.
Panola Ind. Blvd.
Hillandale Dr.
(Route-111)
I-20
Routes Intersecting at GRTA PARK/RIDE LOT:
Rutas intersectando en la el Parqueo en GRTA:
86-Fairington Rd./McAfee Rd.
117-Rockbridge Rd./Panola Rd.
-GRTA Xpress
GRTA PARK/RIDE LOT
el Parqueo en GRTA
6
Minola
Dr.
Fairington Rd.
(Route-86)
(Route-86)
CLUB ACCESS ROAD
Panola Rd.
Walmart Dr.
Fairington Pkwy.
7
W. Fairington Pkwy.


Routes Intersecting at
Goldsmith Park/Ride Lot:
Rutas intersectando en
el Parqueadero Goldsmith:
119-Kensington/Hairston Road
121-Stone Mountain/Memorial Drive
221-Stone Mountain/Central Dr.-Limited
Central Dr.
GOLDSMITH
PARK/RIDE
1
Goldsmith Rd.
Memorial Dr.
W. Mountain St.
(Route-121)
(Route-121)
(Route-121)
(Route-221)
N. Hairston Rd.
Rockbridge Rd.
(Route-117)
(Route-117)
2
Intersecting Routes at
Kensington Station:
Rutas intersectando en la
Estación Kensington:
9-Toney Valley/Peachcrest Rd.
21-Memorial Drive
107-Glenwood Rd.
117-Rockbridge Rd./Panola Road
119-Kensington/Hairston Rd.
121-Stone Mountain/Memorial Dr.
221-Stone Mountain/Central Dr.-Limited
(Route-117)
(Route-121)
(Route-125)
(Route-221)
KENSINGTON
STATION
BLUE RAIL LINE
4
DEKALB
COUNTY
ANIMAL
SERVICES
Camp Rd.
DEKALB
COUNTY
CENTRAL
TRANSFER
STATION
Leroy Scott Dr.
Memorial Dr.
Kensington Rd.
Kensington Rd.
Durham Park Rd.
Porter Rd.
Hairston Rd.
INDIAN
CREEK
STATION
3
(Route-111)
PARK AT
HAIRSTON
S. Hairston Rd.
Elder Ln.
Creek Rd.
Redan Rd.
Redan Rd.
(Route-116)
(Route-115)
S. Indian
(Route-111)
(Route-9)
(Route-21)
(Route-107)
NORTH
NORTE
Intersecting Routes at
Indian Creek Station:
Rutas intersectando en la
Estación Indian Creek:
111-Snapfinger Woods Drive/Stonecrest
115-Covington Highway/S. Hairston Rd.
116-Redan Rd./Stonecrest
119-Kensington/Hairston Rd.
INTERSECTING ROUTES
RUTAS INTERSECTANDO


(Route-120)
Mountain Ind. Blvd.
(Route-120)
3
Weekday Selective Trips Only
Selecciónados/ Dias De Semana
2
Julieve Rd.
E. Ponce De Leon Ave.
Routes Intersecting at Goldsmith Park/Ride Lot:
Rutas intersectando en el Parqueadero Goldsmith:
119-Kensington/Hairston Road
121-Stone Mountain/Memorial Drive
221-Stone Mountain/Central Dr.-Limited
NORTH
NORTE
N. Hairston Rd.
Central Dr.
(Route-221)
1
GOLDSMITH PARK/RIDE
Goldsmith Rd.
James B Rivers Memorial Dr.
Main St.
W. Mountain St.
Memorial Dr.
(Route-119)
Rays Rd.
Memorial College Ave.
Memorial Dr.
4A
4
GEORGIA PIEDMONT COLLEGE (CLARKSTON CAMPUS)
DEKALB EAST CAMPUS
Indian Creek Dr.
Indian Creek Pkwy
Rd.
(Route-125)
GEORGIA PIEDMONT TECHNICAL COLLEGE
Service to DeKalb East Campus Schools Days Only.
Servicio en la DeKalb East Campus Solamente cuando hay classes.
I-285 Expressway
Rockbridge Rd.
(Route-117)
N. Hairston Rd.
(Route-119)
INTERSECTING ROUTES
RUTAS INTERSECTANDO
Routes Intersecting at Kensington Station:
Rutas Intersectando en la Estación Kensington:
9-Toney Valley/Peachcrest Rd.
21-Memorial Drive
107-Glenwood Rd.
117-Rockbridge Rd./Panola Rd.
119-Kensington/Hairston Rd.
121-Stone Mountain/Memorial Dr.
221-Stone Mountain/Central Dr.-Limited
Rockbridge Rd.
(Route-117)
Northern Ave.
I-285 Expressway
Camp Rd.
Mountain Dr.
BLUE RAIL LINE
KENSINGTON STATION
5
DEKALB COUNTY JUVENILE COURT
DEKALB COUNTY SHERIFF HEADQUARTERS AND JAIL
Kensington Rd.
Kensington Rd.
(Route-119)
(Route - 9)
(Route-21)
(Route-107)


Routes Intersecting at
Goldsmith Park/Ride Lot:
Rutas intersectando en
el Parqueadero Goldsmith:
119-Kensington/Hairston Road
121-Stone Mountain/Memorial Drive
221-Stone Mountain/CentralDr.-Limited
(Route-121)
Central Dr.
Goldsmith Rd.
N. Hairston Rd.
GOLDSMITH
PARK/RIDE
Memorial Dr.
W. Mountain St.
(Route-121)
Routes Intersecting at
Kensington Station:
Rutas Intersectando en la
Estación Kensington:
9-Toney Valley/Peachcrest Rd.
21-Memorial Drive
107-Glenwood Rd.
117-Rockbridge Rd./Panola Rd.
119-Kensington/Hairston Rd.
121-Stone Mountain/Memorial Dr.
221-Stone Mountain/Central Dr. - Limited
MEMORIAL
BEND
SHOPPING
CENTER
Rd.
Rd.
STONEWOOD
SHOPPING
CENTER
Memorial Dr.
SPRING MILL
SHOPPING
CENTER
GEORGIA
PERIMETER
COLLEGE
Memorial Dr.
Rays
Hambrick
Lauren Pkwy.
WALMART
STONEMONT
SHOPPING
CENTER
DEKALB
EAST
CAMPUS
N. Hairston Rd.
(Route-119)
(Route-117)
Northern Ave.
Rockbridge Rd.
BLUE RAIL LINE
KENSINGTON
STATION
Comp Rd.
I-285 Expressway
(Route-117)
DEKALB
POLICE DEPT.
Kensington Rd.
NORTH
NORTE
INTERSECTING ROUTES
RUTAS INTERSECTANDO