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April 10, 2020

VIA EMAIL

Mr. Kenneth Kovalchik
Town Planner
Town of Guilderland
P.O. Box 339
Guilderland, NY 12084

Re: Western Avenue/Crossgates
MC Project No. 19002502A

Dear Mr. Kovalchik:

The following items are in response to the GPI letter to you dated March 27, 2020. The items are numbered according to their review comments.

1. Trip Generation numbers (before adjustments) shown in the tables appear reasonable and are consistent with Trip Generation, 10th Edition, through the entering and exiting numbers shown in the Section F text have not been updated to reflect those currently in Table 2.

   Response: Comment noted. No response necessary.

2. The number of new trips shown entering and exiting site's 1, 2 & 3 in the figures generally correlate with the trip generation tables (give or take a couple trips on various movements, which are assumed to be rounding errors insignificant to the analysis).

   Response: Comment noted. No response necessary.

3. Trip reduction percentages used for interplay and pass-by trips are not discussed in the text, and the methodology selected to apply interplay credits does not appear to correlate with ITE recommended procedures. We request background information and discussion methodology is needed to justify the percentages used as part of the trip forecasting.

Response: ***The DEIS Traffic Impact Study discussed "that not all the trips to Costco facility would be "new" to the adjacent roadway system and a significant portion would be "interplay" between Crossgates Mall, "interplay" between the Costco retail and fueling stations, and as "pass-by" traffic from the existing traffic stream along Western Avenue, Rapp Road and Crossgates Mall Road. The Trip Generation table (Table No. 2) outlined the trip reduction percentages used for "interplay" and "pass-by***

The Institute of Transportation Engineers (ITE) as outlined in their "Trip Generation Handbook, 3rd Edition, September 2017 indicates that at a development site consisting of two or more land uses, there is potential for interaction among those uses (referred to as "internal capture trips") particularly where trips can be made by walking. As a result, the total generation of external trips (those entering and exiting the overall site) may be less than the simple sum of the trips generated by each discrete land use." In addition, ITE also outlines "not all traffic entering or exiting a site driveway is necessarily new traffic added to the street system. The actual amount of new traffic is dependent upon the purpose of the trip and the route used from its origin to its destination. A pass-by trip is made as an intermediate stop on the way from an origin to a primary trip destination without a route diversion. Pass-by trips are attracted from passing the site on an adjacent street or roadway that offers direct access to the generator.

The following is a further discussion of the Trip Generation Rates and "internal/interplay" and "pass-by" credits utilized in the Traffic Impact Study. As outlined in the Traffic Impact Study, "In order to provide a conservative analysis, estimates of the amount of traffic to be generated by Site 2 were based on the Hourly Trip Generation Rates for both the retail and 18 fueling stations components separately based on information contained in the Institute of Transportation Engineers (ITE) "Trip Generation Manual", 10th Edition, September 2017 – Land Use 857 – for Discount Club (Costco) and ITE Land Use 944 for the fueling stations". NOTE: ITE Land Use 857 - Discount Club indicates that some sites may include on-site fueling pumps". Since the trip generation estimates were based on both components separately, a 25% "interplay" credit was taken (only for the fueling station generation). This equated to a reduction in combined trip generation of 18% (PM) and 20% (SAT). In addition, a 10% "interplay" credit was also taken between both the Costco warehouse and

fueling stations with the Crossgates Mall (which consists of some 1,600,000 s.f. of retail space) resulting in a reduction of 92 (PM) and 124 (SAT) trips.

In addition, a 25% "pass-by" credit was taken from the existing traffic stream along Western Avenue, Rapp Road and Crossgates Mall Road. Based on information contained in the ITE Trip Generation Handbook, 3rd Edition, September 2017, the Average Pass-By Trip Percentage for ITE Land Use 857 – Discount Club is 37% (PM) and 30% (SAT) while the Average Pass-By Trip Percentage for ITE Land Use 944 – Fueling Stations is 42% (PM) . A copy of this information is contained in Appendix 1.

Based on the above, it is our opinion that the trip reduction percentages used for "interplay" and "pass-by" are appropriate and can be considered conservative.

4. At Intersection # 2 (Western Ave and Gabriel Terrace) – Given the high traffic volumes and number of lanes on Western Ave, the fact that site traffic can access full movement traffic signals from the site via Crossgates Mall Rd and that the opposing side street already experiences excessive delays and LOS F operations, it is recommended that the Gabriel Terrace approach to Western Ave be physically converted to a channelized right in/right out only as part of the project. Full access at this location allowing left turns on and off Western Ave could be a safety issue and left turn or through vehicles on this approach could significantly impact delay for all vehicles on the approach. This modification to Western Ave will likely require a Highway Work Permit from NYSDOT Region 1.

Response: ***Gabriel Terrace at its intersection with Western Avenue is a public street. The Applicant does not object to the Town's requesting that this street be right turn in/out. The Applicant will fund the required improvements if approved by the Town/NYSDOT. It should be noted that the 2022 Build condition for Costco (Site 2) did not assign any left turn traffic at Western Avenue/Gabriel Terrace.***

Under the 2025 Build Condition for Site 3 (Hypothetical Mixed-Use Development), 15% of that traffic was assigned as entering left turns from Western Avenue (18 AM trips, 37 PM trips and 53 SAT trips). If left turn entering movements were restricted, these trips would be redistributed to Rapp Road.

5. For Intersection # 3 (Western Ave and Rapp Road), the projects have a measurable impact to the delays in the PM peak hour. While the overall LOS stays in the D range from 2022 No Build the 2025 build conditions, the overall intersection delay increases from 38.3 sec to 50.6 sec an increase of over 30%. Several movements at the intersection are forecasted to drop a LOS due to the new development traffic. The TIS should identify if there are any reasonable mitigation measures available to address this impact. It appears there is additional DOT ROW on the north side of Route 20 east of the intersection that could allow for a dedicated right turn lane and/or CDTA bus stop movements. The applicant should discuss this with DOT.

   Response: ***The Applicant will discuss with the NYSDOT improvements at this location. This intersection could be monitored after the opening on Costco (Site 2) to determine actual traffic volumes and if any improvement would be necessary including phasing/signal prior to the Site 3 application. (i.e. 2025 Build Conditions).***

6. In the site 1 area, the TIS recommends a connection to the Crossgates Mall North Ring Road and "additional access to I-87/I-90 as well as Washington Avenue" although no details or concepts of these actions are presented in the TIS. Additional detail on these actions are suggested so the Town can properly evaluate these recommendations.

   Response: ***There is no design to provide new access to I-87/I-90 on Washington Avenue. The referenced roadway would connect to the North Ring Road and would provide a new alternate way to reach existing access points to the State's system. The Site 1 concept plan (C131) is contained in DEIS Appendix A.***

7. For the Costco driveways to Rapp Road (Intersection #6) the Town does not support a full access intersection on Rapp Road to the Costco site. The Comprehensive Plan and Westmere Corridor Study all encourage the Crossgates Mall Ring Road to be used for the site access to this location. The Town supports the right-in/right-out access for the fuel pump area, and possibly a right-in/right-out for the Costco site from Rapp Road. The applicant should present an access alternative that does not allow left turns entering or exiting along the Rapp Road frontage. It is recommended that physical barriers (raised medians/curbed islands) be constructed to restrict the access to only the allowed movements.

Response: ***The northerly (main) access to Costco from Rapp Road will be a right turn in/out driveway with geometrics to discourage left turns. Thus, the need for the extension of the median will be subject to the final design of this driveway, as well as the final design of the intersection of Rapp Road/Mall Ring Road. A right turn in only driveway to the fueling area is also recommended. Since this would result in a redistribution of traffic, an updated traffic analysis is shown in Appendix 2.***

8. The TIS should identify potential opportunities for providing pedestrian (and bike) connections between the existing and proposed land uses in the Crossgates mall area. This would be especially appropriate for the residential uses proposed in site 1 as well as the planned CDTA transit center. The applicant should refer to the Westmere Corridor Study Section 5.6 for recommendations on pedestrian and bicycle improvements.

   Response: ***Pedestrians and bicyclists considerations are included within the DEIS (Section 2 – Description of the Proposed Action, Section 3.5.1.4 Pedestrian Transportation System, and Trail Map Enlargement 1 – Figure 2) relative to the provision of sidewalks, crosswalks, bike lanes, and location of bike racks. The proposal for a "tighter" intersection at Rapp Road/ring road also considered these elements as part of the overall design.***

9. For intersection # 10, the Mall Ring Road and I-87 on/off Ramps, the development of the three sites is impacting the LOS especially in the Saturday peak hour. During the 2025 Sat peak hour a LOS D is reported with many movements experiencing a LOS E and one with a LOS F. These results are representative of "normal", not holiday season conditions. During holiday season the congested conditions at this intersection routinely result in queues that extend onto the freeway mainline and often require police presence. Although the TIS points out that improvements to this location are included in the CDTA Transit Center proposal, the TIS should explore alternatives for capacity improvements to this location if the CDTA project is delayed beyond 2025 or cancelled.

   Also, NYSDOT maintains vehicle detection on the off ramp that is connected to the traffic signal controller at this intersection. In addition to exploring capacity improvements, the applicant should confer with NYSDOT about this and if the sensor its use can be adjusted to improve signal timing and operations.

Response: ***The Applicant will discuss with the NYSDOT the existing signal (detection, timings, etc.). The existing intersection can accommodate the existing and future traffic stream from Site 1 (Residential Development) and Site 2 (Costco). The development of Site 3 will be at a later date. The Applicant proposed that as part of the development of Site 3, the issue of CDTA's improvements at this location be confirmed (see CDTA's March 3, 2020 letter – Appendix 3). Should CDTA's project be significantly delayed or canceled, the Applicant will pursue additional improvements at this location, including the construction of the roundabout (as part of the Site 3 Application), if warranted.***

10. For Intersection 11 (Crossgates Mall Rd and Driveway 1/Gabriel Terrace) the northbound approach is projected to operate at a LOS F in Sat peak hour with the only mitigation to monitor to determine if a traffic signal should be installed. The LOS summary tables seem to indicate that signalization is required to achieve an acceptable LOS. We suggest considering adding right turn lanes to the side street approaches to alleviate the future LOS F conditions on those approaches without signalization. Those analyses with these right turn lanes should be presented to be determine in that would be a viable means to mitigate future traffic without signalization.

    Also, if signalization is recommended to alleviate future build condition failing levels of service, a Traffic Signal Warrant analysis should be prepared and presented as justification. If a traffic signal is shown to be warranted on day of opening or any time in the future based on the forecasted traffic volume, the applicant should analyze the impact of this new traffic signal on the traffic flows on the ring road. This is a concern since if a signal is installed at Gabriel Terrace it would result in 4 signalized intersections along the ring road in less than a ½ mile (2300 feet).

    Another alternative at this location is the align Gabriel Terrace a sufficient distance east of the mall driveway to create two offset "T" intersections as a way of reducing traffic conflicts and potentially avoiding the need for signalization.

    Response: ***The four-legged intersection calls for a future traffic signal based on traffic signal warrant criteria. Projected traffic for the Gabriel Terrace Driveway is anticipated to meet traffic signal warrants. This intersection should be monitored after the opening on Costco (Site 2) and prior to the Site 3 application to determine actual traffic volumes and if Traffic signal warrant will be met. If a traffic signal is not warranted, the Applicant will discuss***

with the Town the possibility of moving the Gabriel Terrace Driveway further to the east to provide two "T" intersections.

This signal will have to be coordinated with the upgraded signal at the intersection of Rapp Road/Mall Ring Road.

11. For all locations along the mall ring road, TIS should explore alternatives for capacity improvements if the CDTA project is delayed beyond 2025 or cancelled.

Response: See response to Comment 9.

12. VHB recently completed a safety review for the Rapp Road Mall ring road intersection for the Town and CDTC which identified the likely contributing factors to the crash history and outlines several recommendations for addressing this history as follows:

VHB Safety Evaluation Memorandum

The DEIS included for informational purposes the VHB Safety Evaluation Memorandum. In addition, since we (Maser Consulting) did not author the memorandum, we cannot comment on the information used by VHB in preparing their Memorandum.

That said, we have adopted many of the recommendations enclosed therein, namely:

- Elimination of the channelized right turns. These turns will now be made at lower speeds and under signal control.
- Installation of a state-of-the-art traffic signal with advance warning, protected left turn phases, and signal head alignment.
- Provision of sidewalks and pedestrian crosswalks as part of a new updated traffic signal. This will enhance pedestrian safety as called for with the Westmere Corridor Study.
- Intersection lighting to assist motorists and bicyclists during hours of darkness. Note since this intersection is used in off hours by the public, the lighting should be independent of Costco or mall lighting.
- Provision of bicycle lane traveling through the intersection.
- The modification to the ring road approaching Rapp Road to three lanes.

13. We acknowledge the March 13, 2020 comment memo regarding the project from the Albany County Planning Board. The applicant should provide a response to these comments as part of the TIS process.

Response: ***The Albany County Planning Board Comments have been addressed and are contained in Appendix 4.***

If you have any questions regarding the above, please do not hesitate to contact us.

Very truly yours,

MASER CONSULTING P.A.

John T. Collins, Ph.D., P.E.
Executive Principal

RPRces
Enclosures

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APPENDIX 1

ITE PASS-BY AND NON-PASS-BY TRIPS

TABLE NO. 2

HOURLY TRIP GENERATION RATES
AND ANTICIPATED SITE GENERATED TRAFFIC VOLUMES

SITE 2 COSTCO	ENTRY		EXIT		TOTAL	
	HTGR*	VOLUME	HTGR*	VOLUME	HTGR*	VOLUME
160,000 S.F.						
WEEKDAY PEAK AM HOUR	0.34	54	0.15	24	0.49	78
WEEKDAY PEAK PM HOUR	2.09	334	2.09	334	4.18	668
SATURDAY PEAK HOUR	3.12	499	3.25	520	6.37	1019
W/ 10% INTERPLAY W/ MALL						
WEEKDAY PEAK AM HOUR	----	----	----	----	----	----
WEEKDAY PEAK PM HOUR	----	-33	----	-33	----	-66
SATURDAY PEAK HOUR	----	-51	----	-51	----	-102
W/ 25 % PASS-BY						
WEEKDAY PEAK AM HOUR	----	----	----	----	----	----
WEEKDAY PEAK PM HOUR	----	-83	----	-83	----	-166
SATURDAY PEAK HOUR	----	-127	----	-127	----	-254
18 FUEING STATIONS						
WEEKDAY PEAK AM HOUR	5.14	92	5.14	92	10.28	184
WEEKDAY PEAK PM HOUR	7.015	126	7.015	126	14.03	252
SATURDAY PEAK HOUR	6.385	115	6.385	115	12.77	230
W/ 10% INTERPLAY W/ MALL						
WEEKDAY PEAK AM HOUR	----	----	----	----	----	----
WEEKDAY PEAK PM HOUR	----	-13	----	-13	----	-26
SATURDAY PEAK HOUR	----	-11	----	-11	----	-22
W/ 25% INTERPLAY W/ COSTCO						
WEEKDAY PEAK AM HOUR	----	----	----	----	----	----
WEEKDAY PEAK PM HOUR	----	-31	----	-31	----	-62
SATURDAY PEAK HOUR	----	-29	----	-29	----	-58
W/ 25 % PASS-BY						
WEEKDAY PEAK AM HOUR	----	----	----	----	----	----
WEEKDAY PEAK PM HOUR	----	-31	----	-31	----	-62
SATURDAY PEAK HOUR	----	-29	----	-29	----	-58
"NEW' TRIPS						
WEEKDAY PEAK AM HOUR	**----**	**146**	**----**	**116**	**----**	**262**
WEEKDAY PEAK PM HOUR	**----**	**269**	**----**	**269**	**----**	**538**
SATURDAY PEAK HOUR	**----**	**367**	**----**	**388**	**----**	**755**

THE ABOVE HOURLY TRIP GENERATION RATES (HTGR) ARE BASED ON DATA PUBLISHED BY THE INSTITUTE OF TRANSPORTATION ENGINEERS (ITE) AS CONTAINED IN THE TRIP GENERATION HANDBOOK, 10th EDITION, 2017.
* ITE LAND USE 857 - DISCOUNT CLUB & ITE LAND USE 944 - GASOLINE/SERVICE STATION

Table E.18 Pass-By and Non-Pass-By Trips Weekday, PM Peak Period Land Use Code 857—Discount Club

SIZE (1,000 SQ. FT. GFA)	VEHICLE FUELING POSITIONS	LOCATION	WEEKDAY SURVEY DATE	NO. OF INTERVIEWS	TIME PERIOD	PASS-BY TRIP (%)	NON-PASS-BY TRIP (%)			SOURCE
							PRIMARY	DIVERTED	TOTAL	
137	12	Lancaster, PA	June 2009	160	4:00–6:00 p.m.	38	—	—	62	719
149	12	Harrisburg, PA	June 2009	228	4:00–6:00 p.m.	33	—	—	67	719
149	12	Robinson, PA	June 2009	147	4:00–6:00 p.m.	29	—	—	71	719
149	12	Cranberry, PA	June 2009	218	4:00–6:00 p.m.	50	—	—	50	719
149	12	Frederick, MD	July 2010	255	4:00–6:00 p.m.	34	—	—	66	719

Average Pass-By Trip Percentage: 37
"—" means no data were provided

Table E.19 Pass-By and Non-Pass-By Trips Saturday, Mid-Day Peak Period Land Use Code 857—Discount Club

SIZE (1,000 SQ. FT. GFA)	VEHICLE FUELING POSITIONS	LOCATION	SURVEY DATE	NO. OF INTERVIEWS	TIME PERIOD	PASS-BY TRIP (%)	NON-PASS-BY TRIP (%)			SOURCE
							PRIMARY	DIVERTED	TOTAL	
137	12	Lancaster, PA	June 2009	462	12:00–3:00 p.m.	26	—	—	74	719
149	12	Harrisburg, PA	June 2009	203	12:00–3:00 p.m.	16	—	—	84	719
149	12	Robinson, PA	June 2009	240	12:00–3:00 p.m.	37	—	—	63	719
149	12	Cranberry, PA	June 2009	267	12:00–3:00 p.m.	39	—	—	61	719
149	12	Frederick, MD	July 2010	209	12:00–3:00 p.m.	31	—	—	69	719

Average Pass-By Trip Percentage: 30
"—" means no data were provided

Table E.20 Pass-By and Non-Pass-By Trips Weekday, PM Peak Period Land Use Code 862—Home Improvement Superstore

SIZE (1,000 SQ. FT. GFA)	LOCATION	WEEKDAY SURVEY DATE	NO. OF INTERVIEWS	TIME PERIOD	PASS-BY TRIP (%)	NON-PASS-BY TRIPS (%)			ADJ. STREET PEAK HOUR VOLUME	SOURCE
						PRIMARY	DIVERTED	TOTAL		
107	Casselberry, FL	1992	488	2:00–6:00 p.m.	44	32	24	56	—	TPD Inc.
91	Daytona Beach, FL	1993	111	2:00–6:00 p.m.	46	—	—	54	—	TPD Inc.
100	Orlando, FL	1993	147	2:00–6:00 p.m.	54	—	—	46	—	TPD Inc.
142	Clearwater, FL	May 2010	153	2:00–6:00 p.m.	25	—	—	75	3,888	731

Average Pass-By Trip Percentage: 42
"—" means no data were provided

Table E.36 Pass-By and Non-Pass-By Trips Weekday, PM Peak Period Land Use Code 944—Gasoline/Service Station

SIZE (1,000 SQ. FT. GFA)	VEHICLE FUELING POSITIONS	LOCATION	WEEKDAY SURVEY DATE	NO. OF INTERVIEWS	TIME PERIOD	PASS-BY TRIP (%)	NON-PASS-BY TRIPS (%)			ADJ. STREET PEAK HOUR VOLUME	SOURCE
							PRIMARY	DIVERTED	TOTAL		
—	—	Chicago suburbs, IL	1987	48	3:00–7:00 p.m.	21	—	—	79	—	Kenig, O'Hara, Humes, Flock
—	—	Chicago suburbs, IL	1987	34	3:00–6:00 p.m.	25	—	—	75	—	Kenig, O'Hara, Humes, Flock
—	—	Chicago suburbs, IL	1987	42	3:00–6:00 p.m.	20	—	—	80	—	Kenig, O'Hara, Humes, Flock
2.3	6	Gaithersburg, MD	1992	55	4:00–6:00 p.m.	40	11	49	60	2,760	RBA
2.1	6	Bethesda, MD	1992	30	4:00–6:00 p.m.	53	20	27	47	1,060	RBA
1.7	6	Wheaton, MD	1992	18	4:00–6:00 p.m.	61	6	33	39	2,510	RBA
2.0	8	Gaithersburg, MD	1992	47	4:00–6:00 p.m.	62	23	15	38	2,635	RBA
1.2	6	Damascus, MD	1992	26	4:00–6:00 p.m.	58	11	31	42	1,020	RBA
0.3	12	Wheaton, MD	1992	52	4:00–6:00 p.m.	38	10	52	62	3,835	RBA

Average Pass-By Trip Percentage: 42
"—" means no data were provided

Table E.37 Pass-By and Non-Pass-By Trips Weekday, AM Peak Period Land Use Code 945—Gasoline/Service Station with Convenience Market

SIZE (1,000 SQ. FT. GFA)	VEHICLE FUELING POSITIONS	LOCATION	WEEKDAY SURVEY DATE	NO. OF INTERVIEWS	TIME PERIOD	PASS-BY TRIP (%)	NON-PASS-BY TRIPS (%)			ADJ. STREET PEAK HOUR VOLUME	SOURCE
							PRIMARY	DIVERTED	TOTAL		
0.8	8	Louisville area, KY	1993	61	7:00–9:00 a.m.	60	15	25	40	4,000	Barton-Aschman Assoc.
0.6	8	Louisville, KY	1993	48	7:00–9:00 a.m.	68	13	19	32	1,307	Barton-Aschman Assoc.
0.7	10	Louisville, KY	1993	47	7:00–9:00 a.m.	67	11	22	33	1,105	Barton-Aschman Assoc.
0.7	8	Louisville area, KY	1993	—	7:00–9:00 a.m.	56	22	22	44	1,211	Barton-Aschman Assoc.
0.7	10	Louisville area, KY	1993	—	7:00–9:00 a.m.	46	42	12	54	1,211	Barton-Aschman Assoc.
0.3	—	Louisville area, KY	1993	75	7:00–9:00 a.m.	72	15	13	28	—	Barton-Aschman Assoc.
0.8	8	Silver Spring, MD	1992	36	7:00–9:00 a.m.	47	14	39	53	3,095	RBA
0.4	8	Derwood, MD	1992	46	7:00–9:00 a.m.	75	0	25	25	3,770	RBA
2.2	8	Kensington, MD	1992	31	7:00–9:00 a.m.	47	34	19	53	1,785	RBA
1	8	Silver Spring, MD	1992	35	7:00–9:00 a.m.	78	9	13	22	7,080	RBA

Average Pass-By Trip Percentage: 62
"—" means no data were provided

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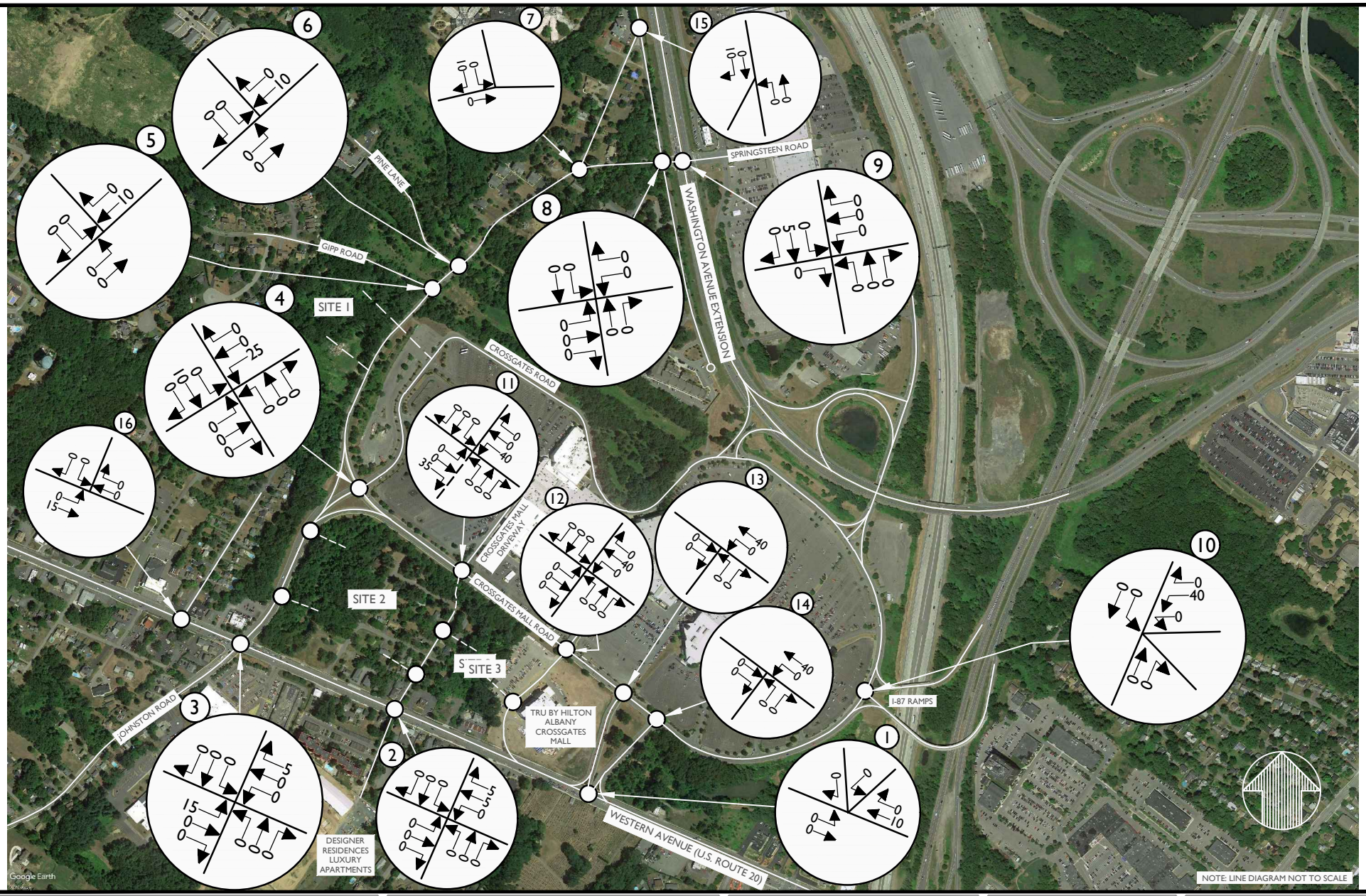
APPENDIX 2

UPDATED ANALYIS

W/ NO LEFT TURNS
AT SITE 2 NORTHERLY DRIVEWAY



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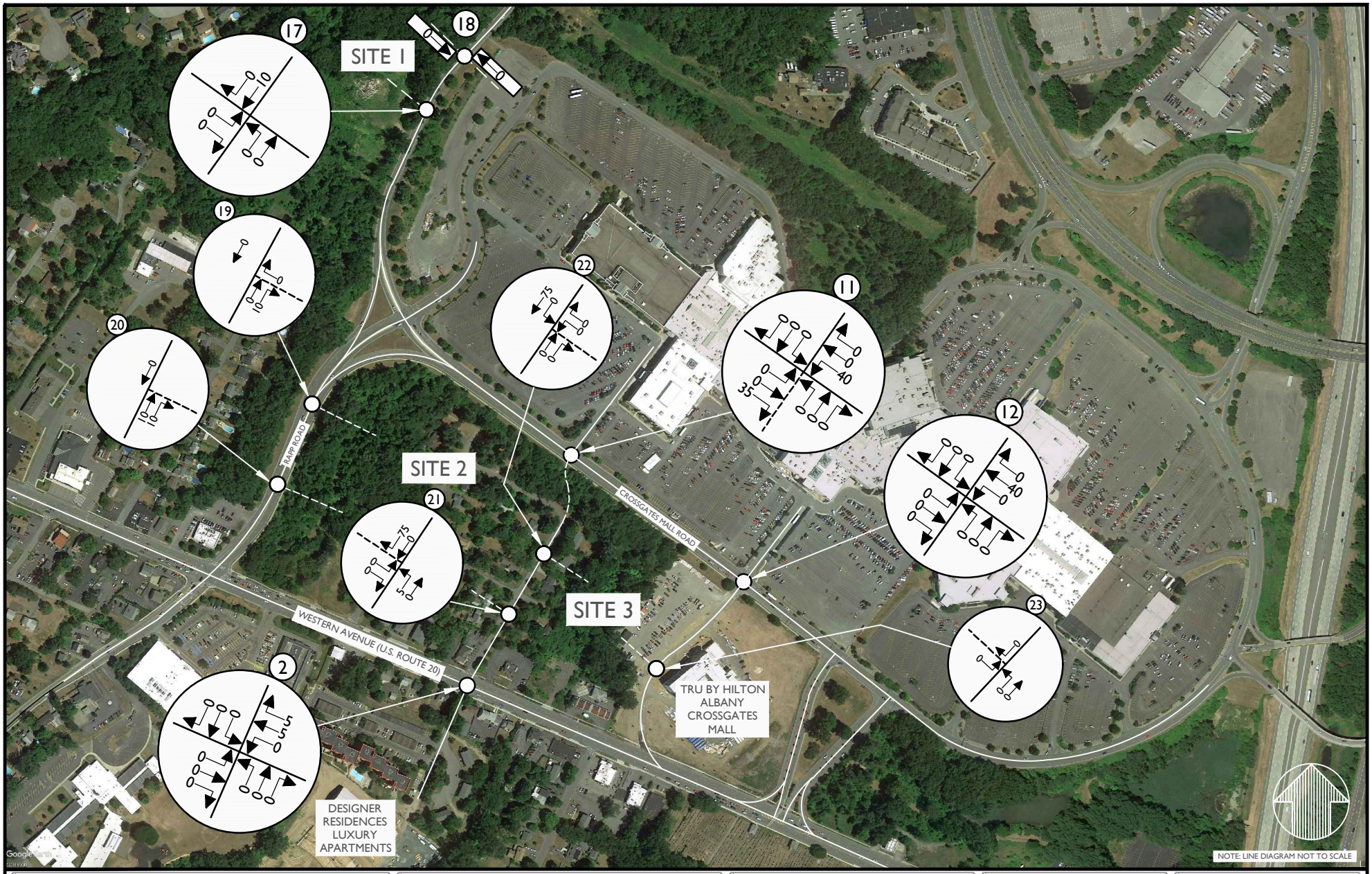
SCALE:	DATE:	DRAWN BY:	CHECKED BY:
N.T.S.	04/08/20	N.S.T.	R.P.R.

PROJECT NUMBER: 19002502A

DRAWING NAME: I9102IJFM_FIGURES - 02.17.2020 - 04.08.2020

SHEET TITLE:
ARRIVAL DISTRIBUTION
SITE 2 - COSTCO
(EXPRESSED AS A %)

SHEET NUMBER:
FIGURE NO. 16-R



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- Sterling, VA
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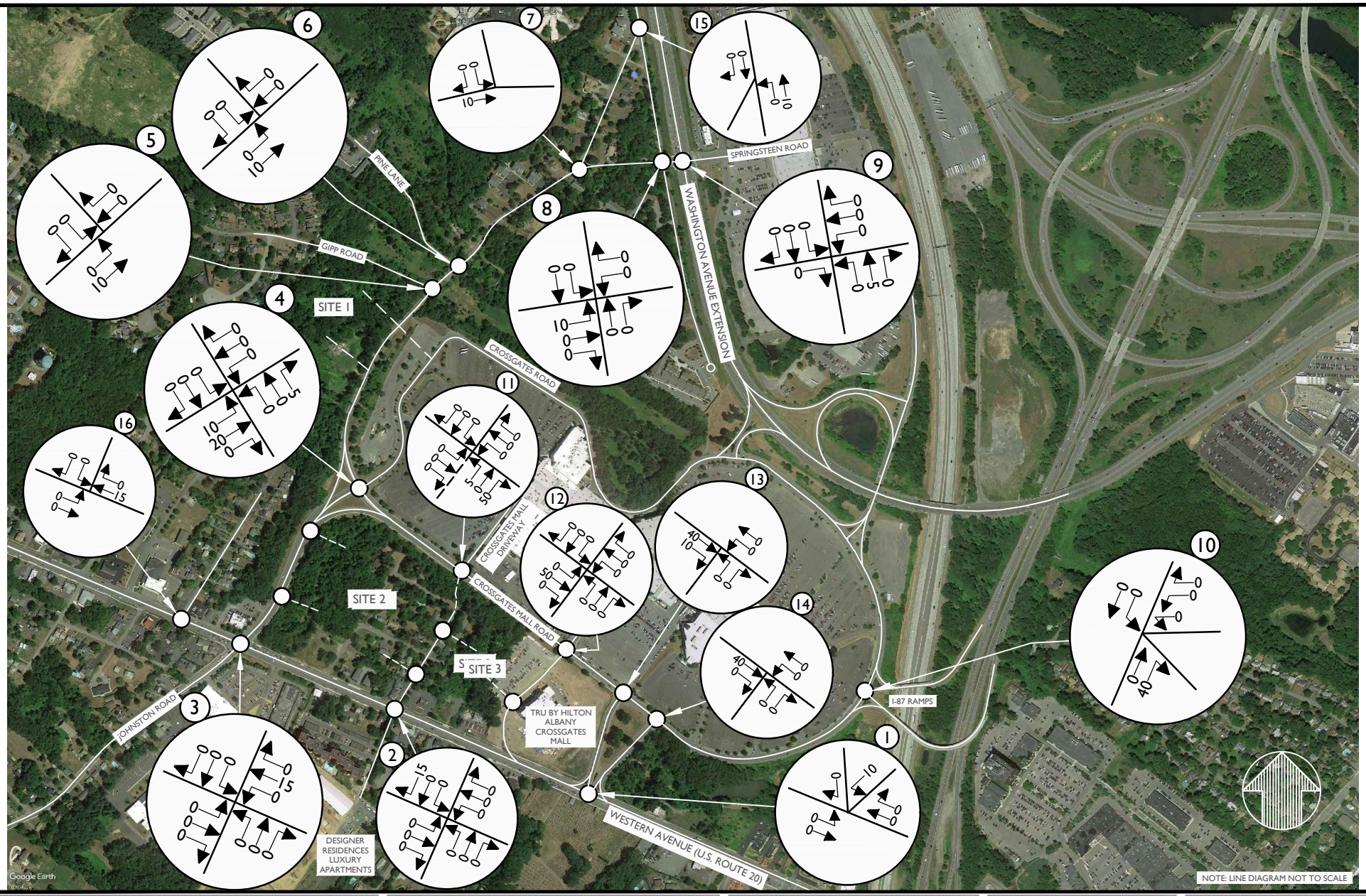
PROJECT NUMBER: 19002502A

DRAWING NAME: 191021JFM_FIGURES - 02.17.2020 - 04.08.2020

SHEET TITLE:
ARRIVAL DISTRIBUTION
SITE 2 - COSTCO
(EXPRESSED AS A %)

SHEET NUMBER:
FIGURE NO. 16-A-R



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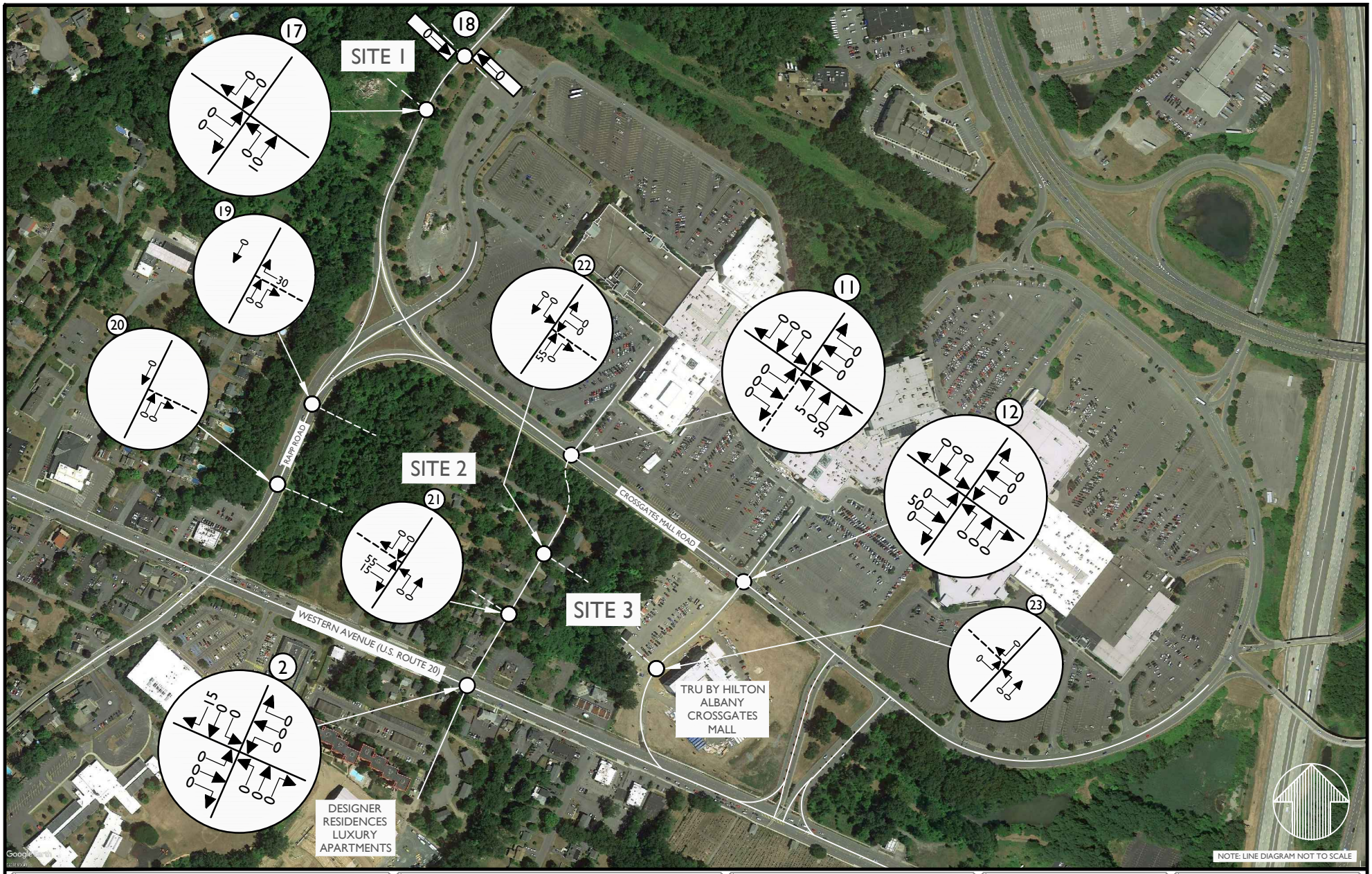
PROJECT NUMBER: 19002502A

DRAWING NAME: 19102IFM_FIGURES - 02.17.2020 - 04.08.2020

SHEET TITLE:
DEPARTURE DISTRIBUTION
SITE 2 - COSTCO
(EXPRESSED AS A %)

SHEET NUMBER:
FIGURE NO. 17



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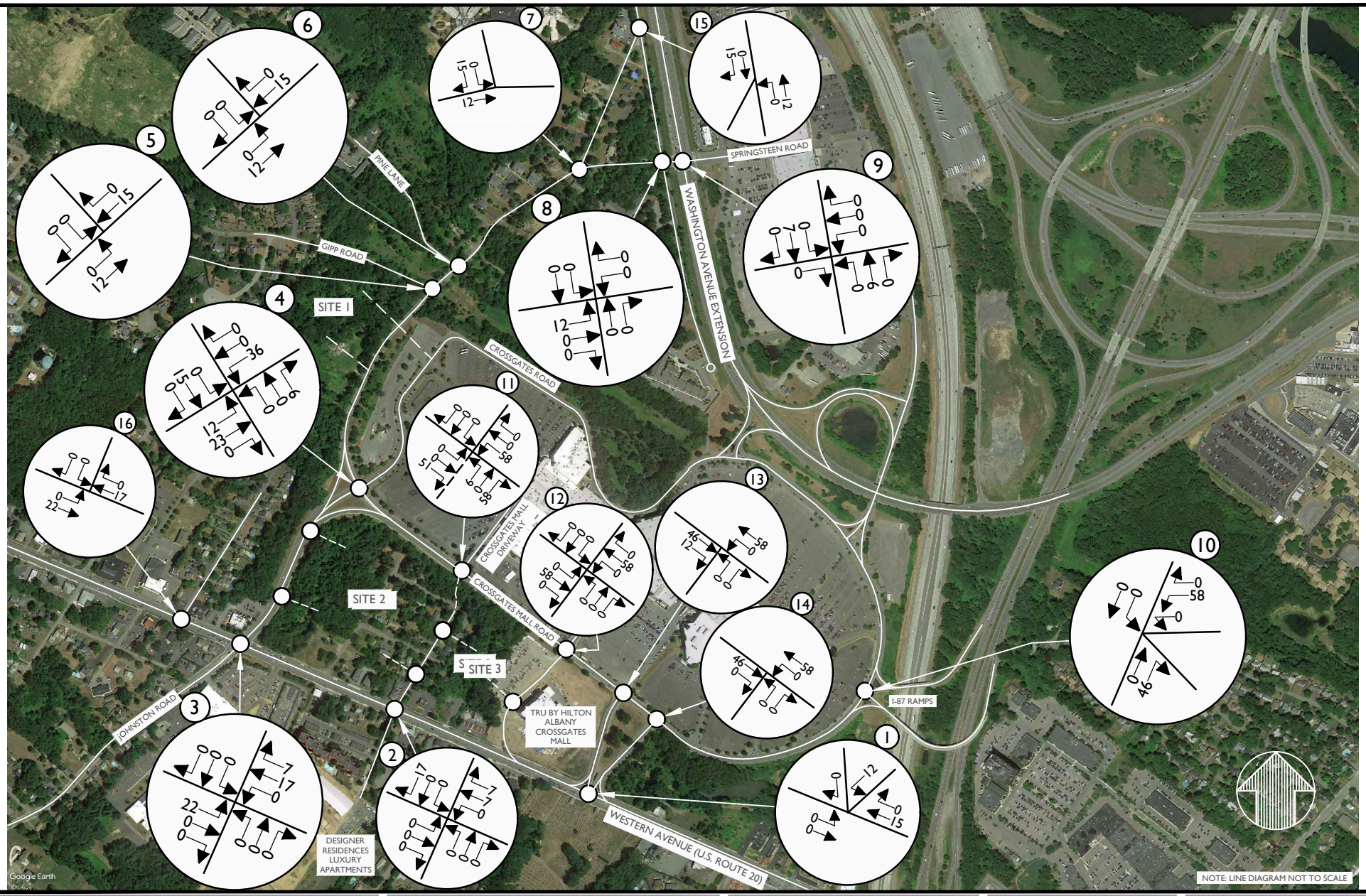
PROJECT NUMBER: 19002502A

DRAWING NAME: 191021JFM_FIGURES - 02.17.2020 - 04.08.2020

SHEET TITLE:
DEPARTURE DISTRIBUTION
SITE 2 - COSTCO
(EXPRESSED AS A %)

SHEET NUMBER:
FIGURE NO. 17-A



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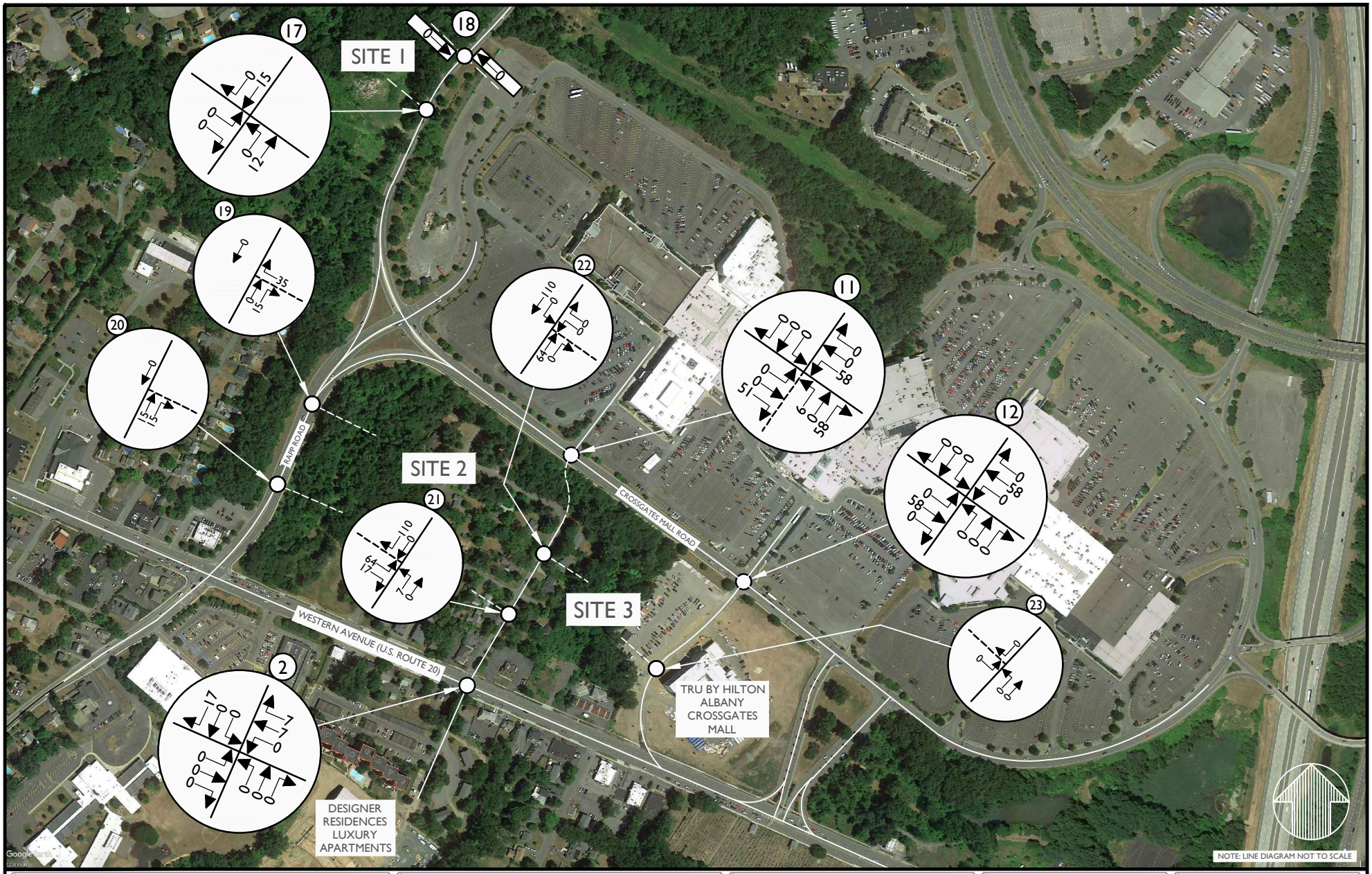
PROJECT NUMBER:	DRAWING NAME:
19002502A	19102|PM_FIGURES - 02.17.2020 - 04.08.2020

SHEET TITLE:
SITE GENERATED TRAFFIC VOLUMES
SITE 2 - COSTCO
WEEKDAY PEAK AM HOUR

SHEET NUMBER:
FIGURE NO. 21-R



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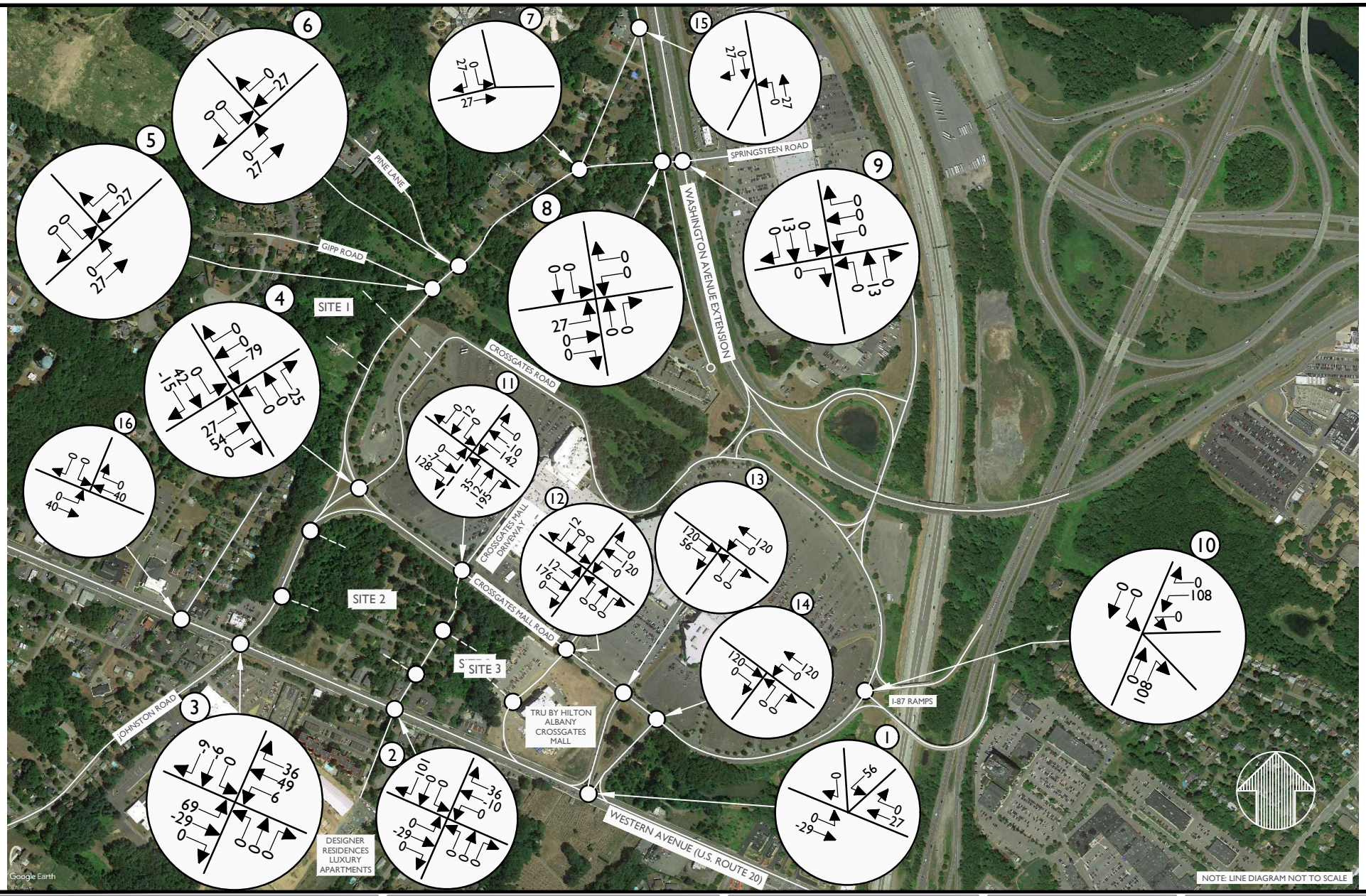
PROJECT NUMBER: 19002502A

DRAWING NAME: 19102IJFM_FIGURES - 02.17.2020 - 04.08.2020

SHEET TITLE:
SITE GENERATED TRAFFIC VOLUMES
SITE 2 - COSTCO
WEEKDAY PEAK AM HOUR

SHEET NUMBER:
FIGURE NO. 21-A-R



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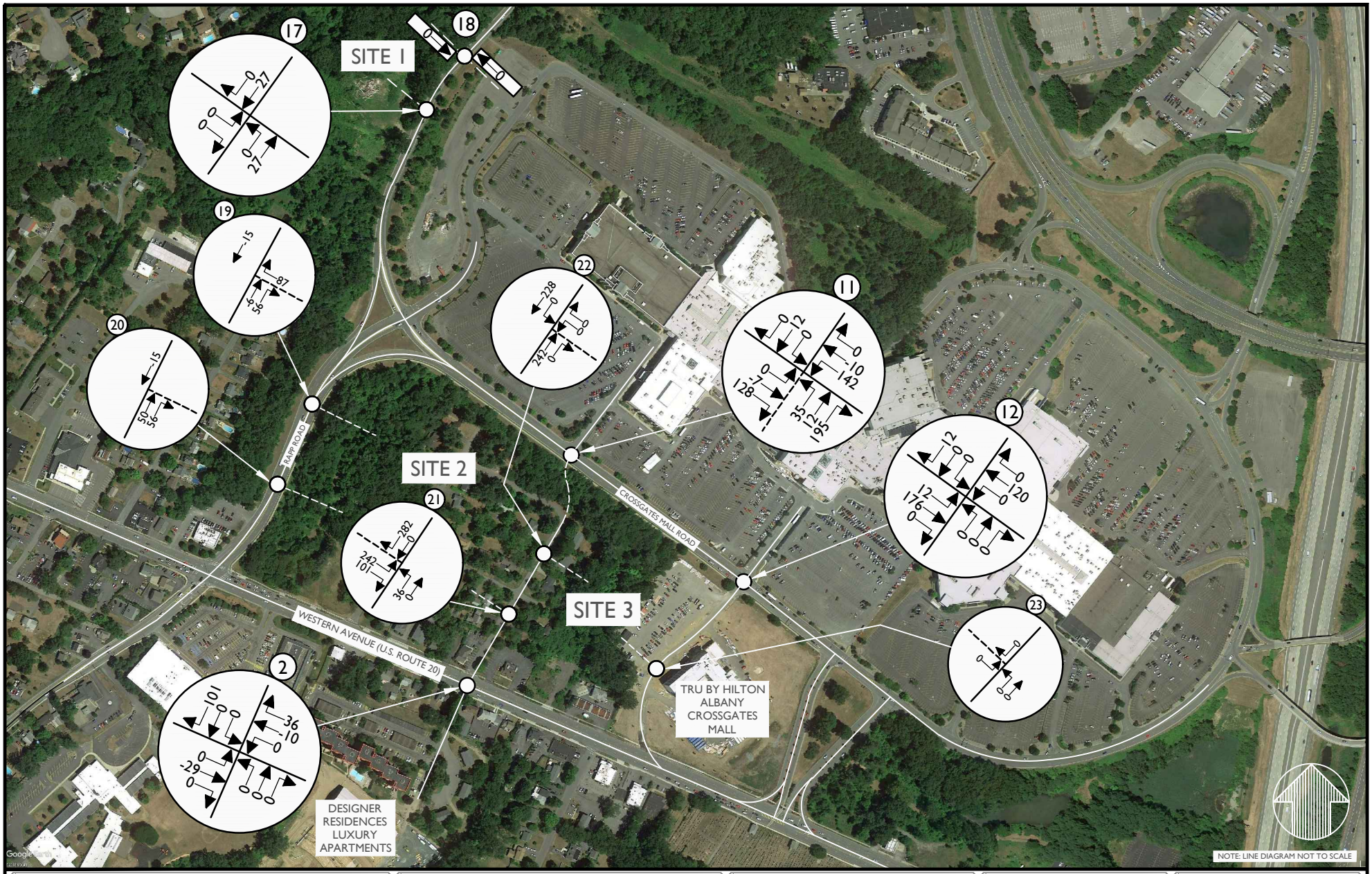
PROJECT NUMBER: 19002502A

DRAWING NAME: I9102IJFM_FIGURES - 02.17.2020 - 04.08.2020

SHEET TITLE:
SITE GENERATED TRAFFIC VOLUMES
SITE 2 - COSTCO
WEEKDAY PEAK PM HOUR

SHEET NUMBER:
FIGURE NO. 22-R



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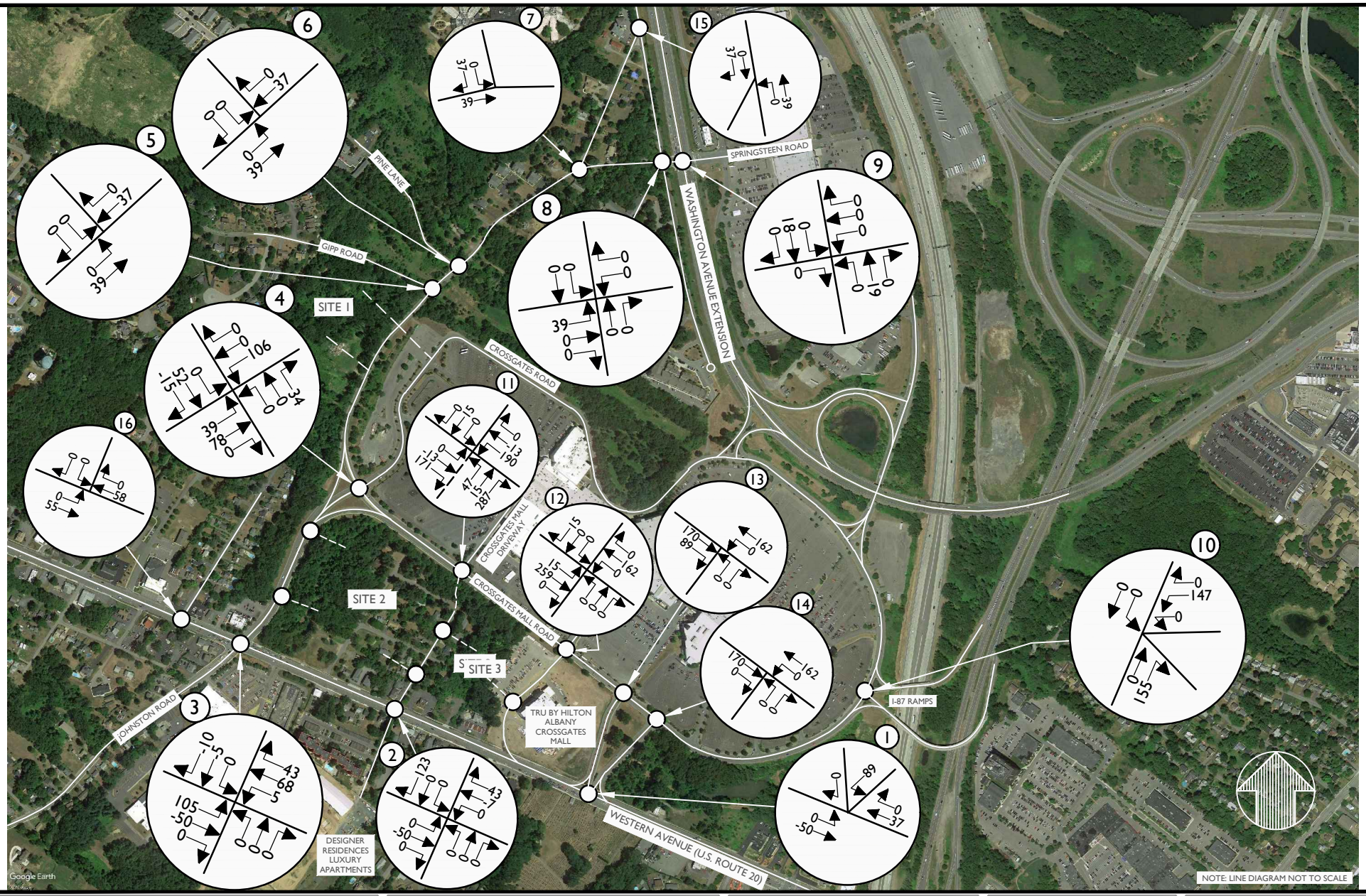
PROJECT NUMBER: 19002502A
DRAWING NAME: 191021JFM_FIGURES - 02.17.2020 - 04.08.2020

SHEET TITLE:
SITE GENERATED TRAFFIC VOLUMES
SITE 2 - COSTCO
WEEKDAY PEAK PM HOUR

SHEET NUMBER:
FIGURE NO. 22-A-R



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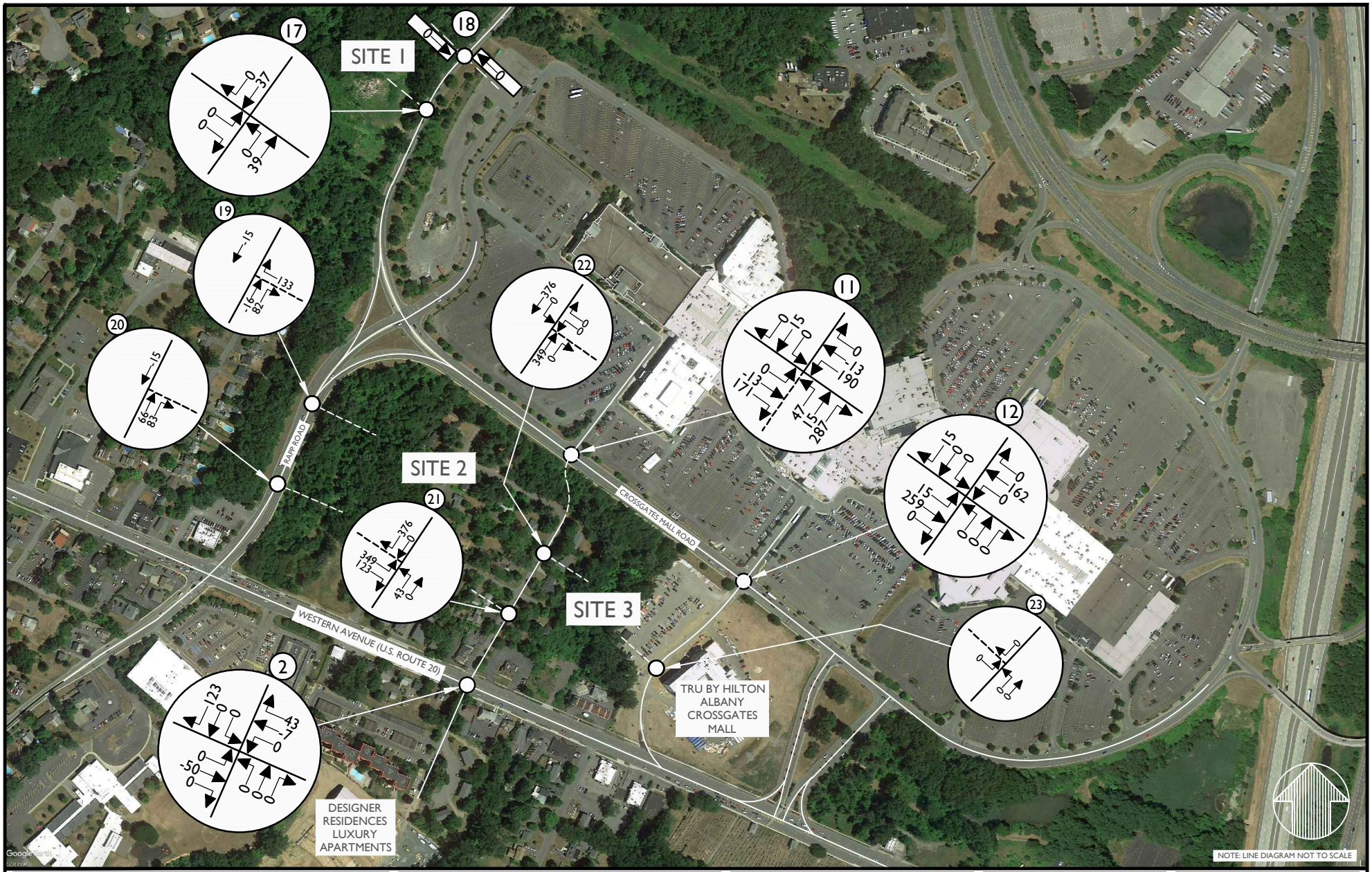
PROJECT NUMBER: 19002502A

DRAWING NAME: I9102IJFM_FIGURES - 02.17.2020 - 04.08.2020

SHEET TITLE:
SITE GENERATED TRAFFIC VOLUMES
SITE 2 - COSTCO
SATURDAY PEAK HOUR

SHEET NUMBER:
FIGURE NO. 23-R



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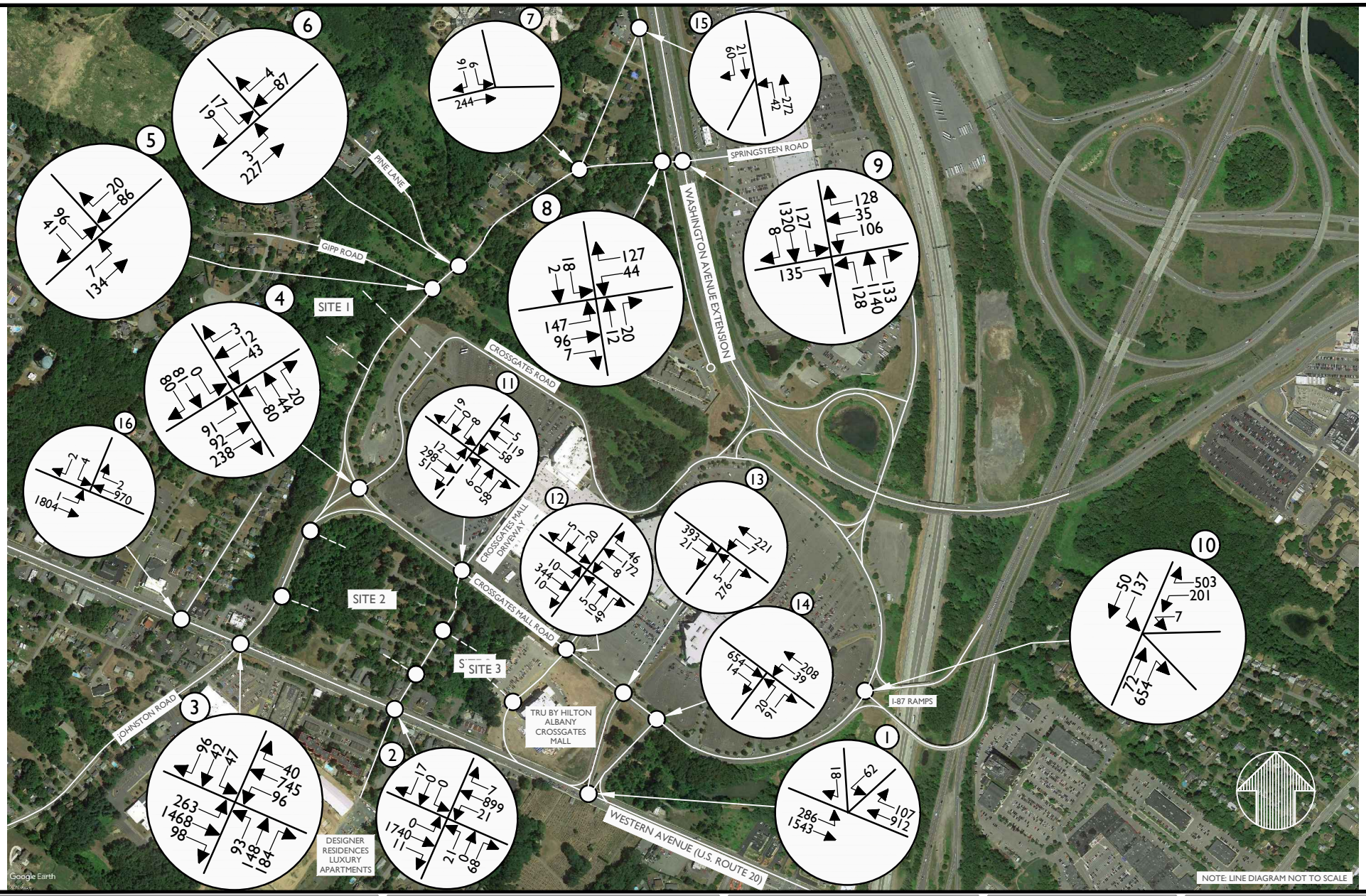
PROJECT NUMBER: 19002502A

DRAWING NAME: 19102IJFM_FIGURES - 02.17.2020 - 04.08.2020

SHEET TITLE:
SITE GENERATED TRAFFIC VOLUMES
SITE 2 - COSTCO
SATURDAY PEAK HOUR

SHEET NUMBER:
FIGURE NO. 23-A-R



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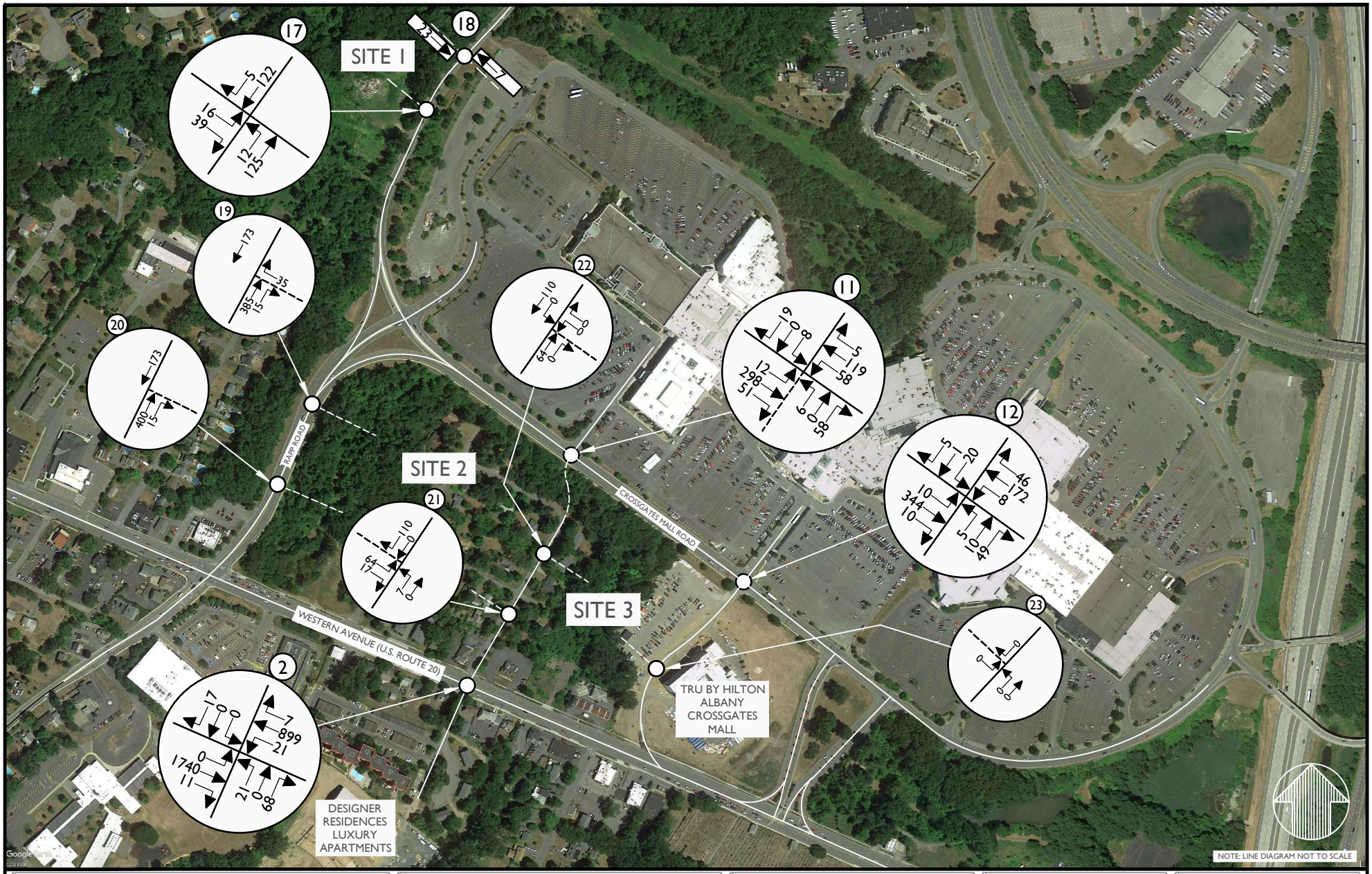
PROJECT NUMBER: 19002502A

DRAWING NAME: 19102IJFM_FIGURES - 02.17.2020 - 04.08.2020

SHEET TITLE:
2022 BUILD TRAFFIC VOLUMES
WEEKDAY PEAK AM HOUR

SHEET NUMBER:
FIGURE NO. 24-R



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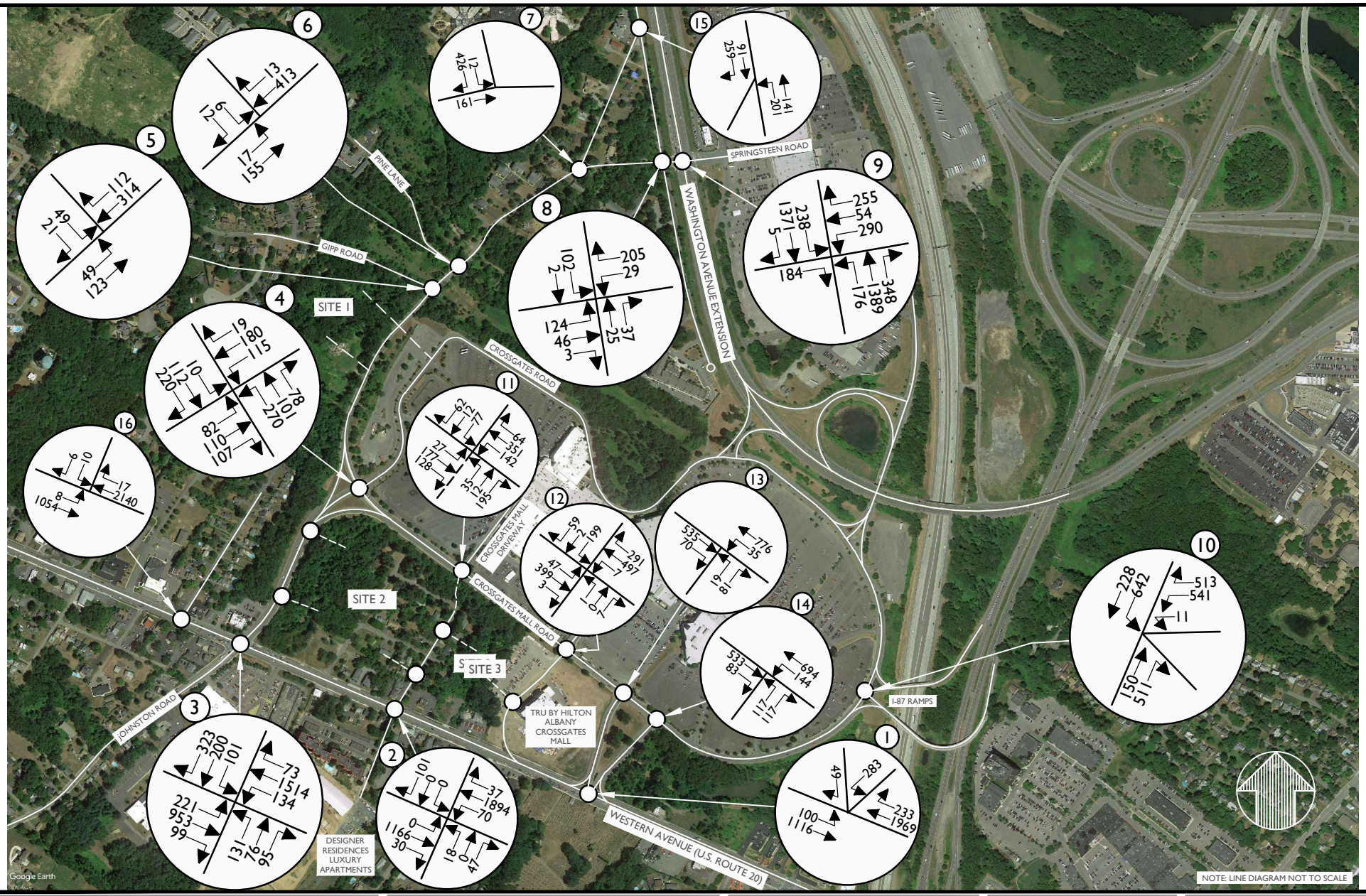
PROJECT NUMBER: 19002502A

DRAWING NAME: 191021JFM_FIGURES - 02.17.2020 - 04.08.2020

SHEET TITLE:
2022 BUILD TRAFFIC VOLUMES
WEEKDAY PEAK AM HOUR

SHEET NUMBER:
FIGURE NO. 24-A-R



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TRAFFIC IMPACT STUDY

SCALE:	DATE:	DRAWN BY:	CHECKED BY:
N.T.S.	04/08/20	N.S.T.	R.P.R.

PROJECT NUMBER: 19002502A

DRAWING NAME: 19102IFM_FIGURES - 02.17.2020 - 04.08.2020

SHEET TITLE:
2022 BUILD TRAFFIC VOLUMES
WEEKDAY PEAK PM HOUR

SHEET NUMBER:
FIGURE NO. 25-R

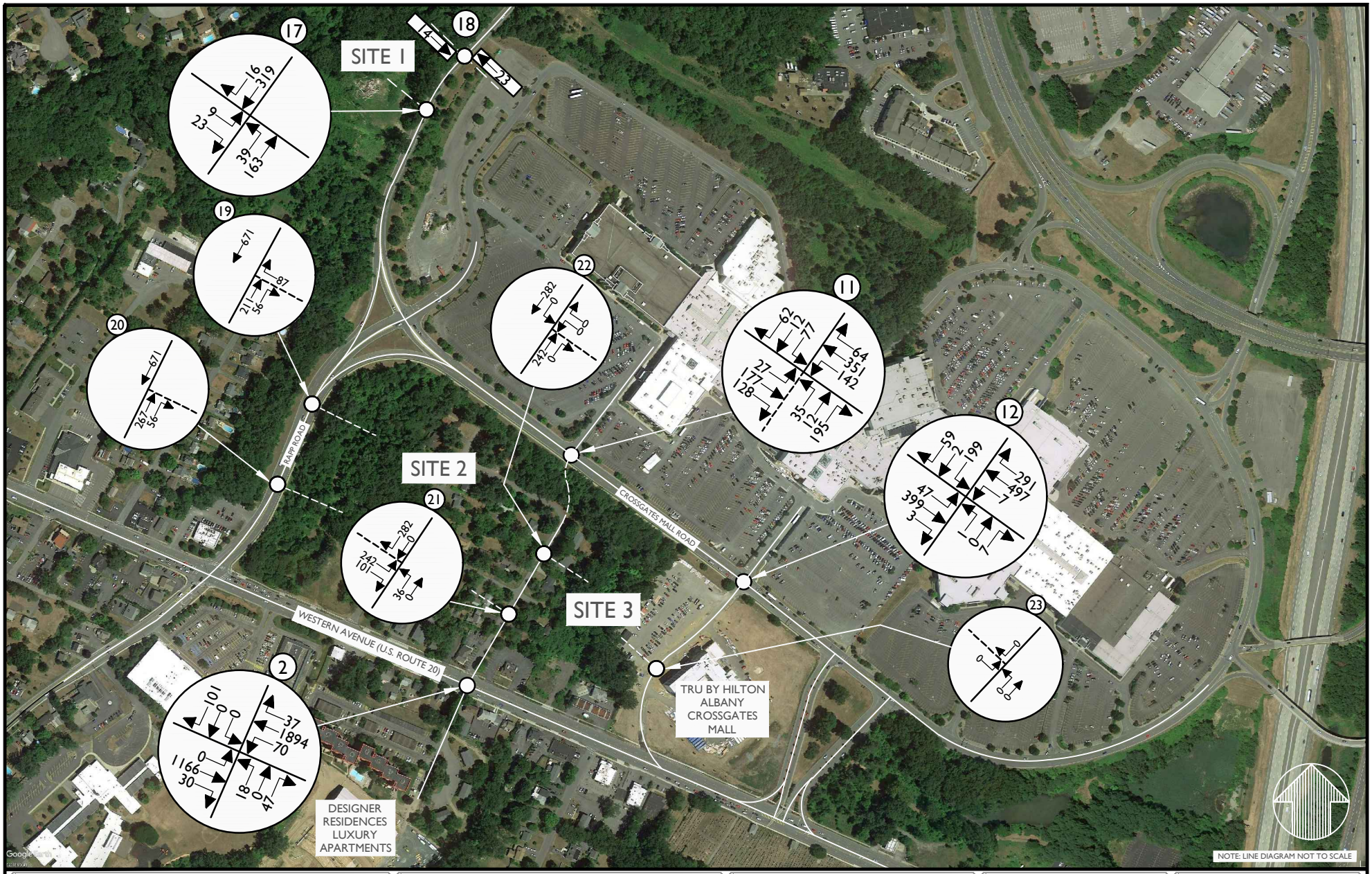

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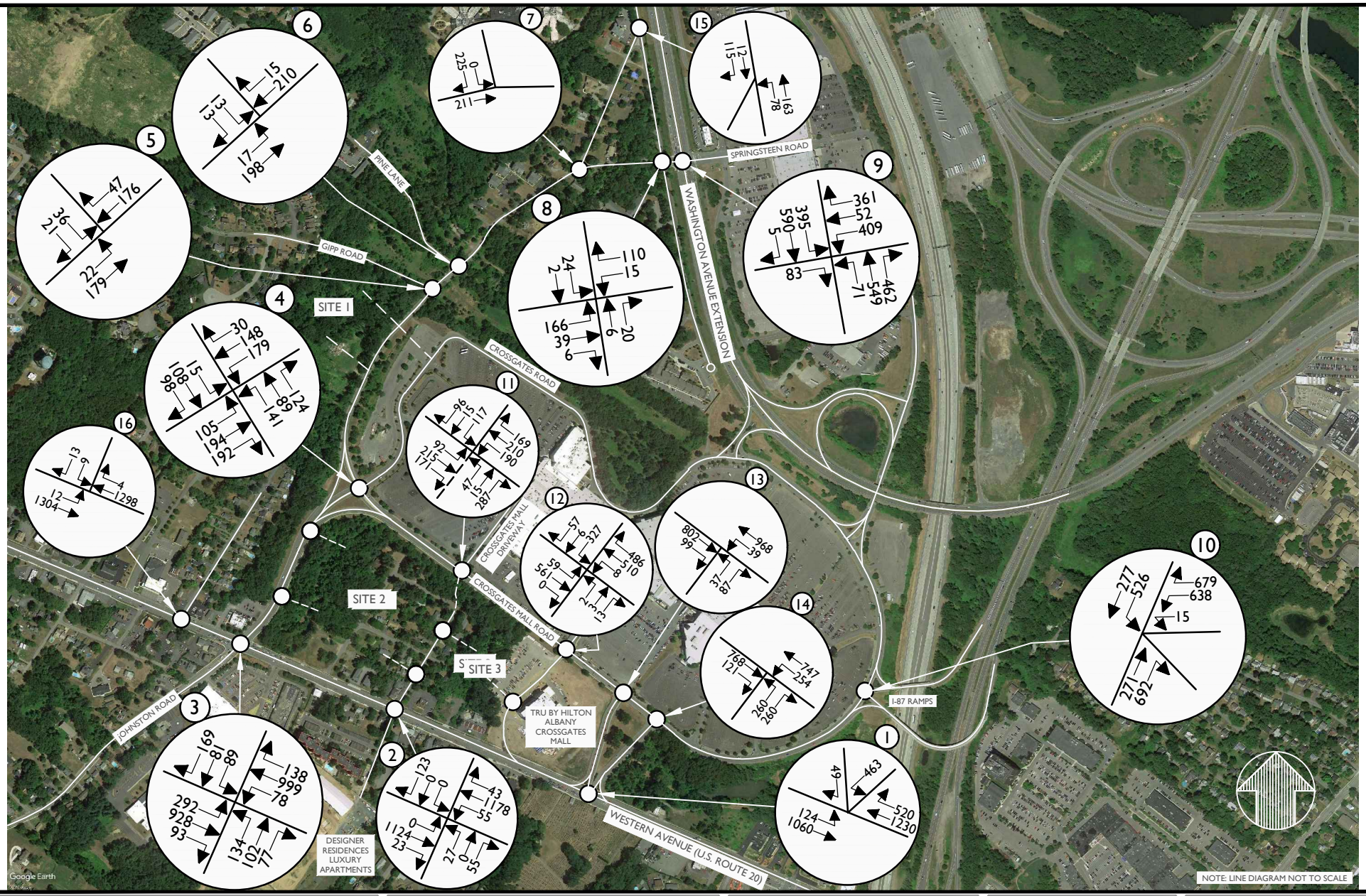
FIGURE NO. 25-A-R



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- Pittsburgh, PA
- Tampa, FL
- Orlando, FL
- Miami, FL
- Sterling, VA
- Norfolk, VA
- Albuquerque, NM
- Charlotte, NC

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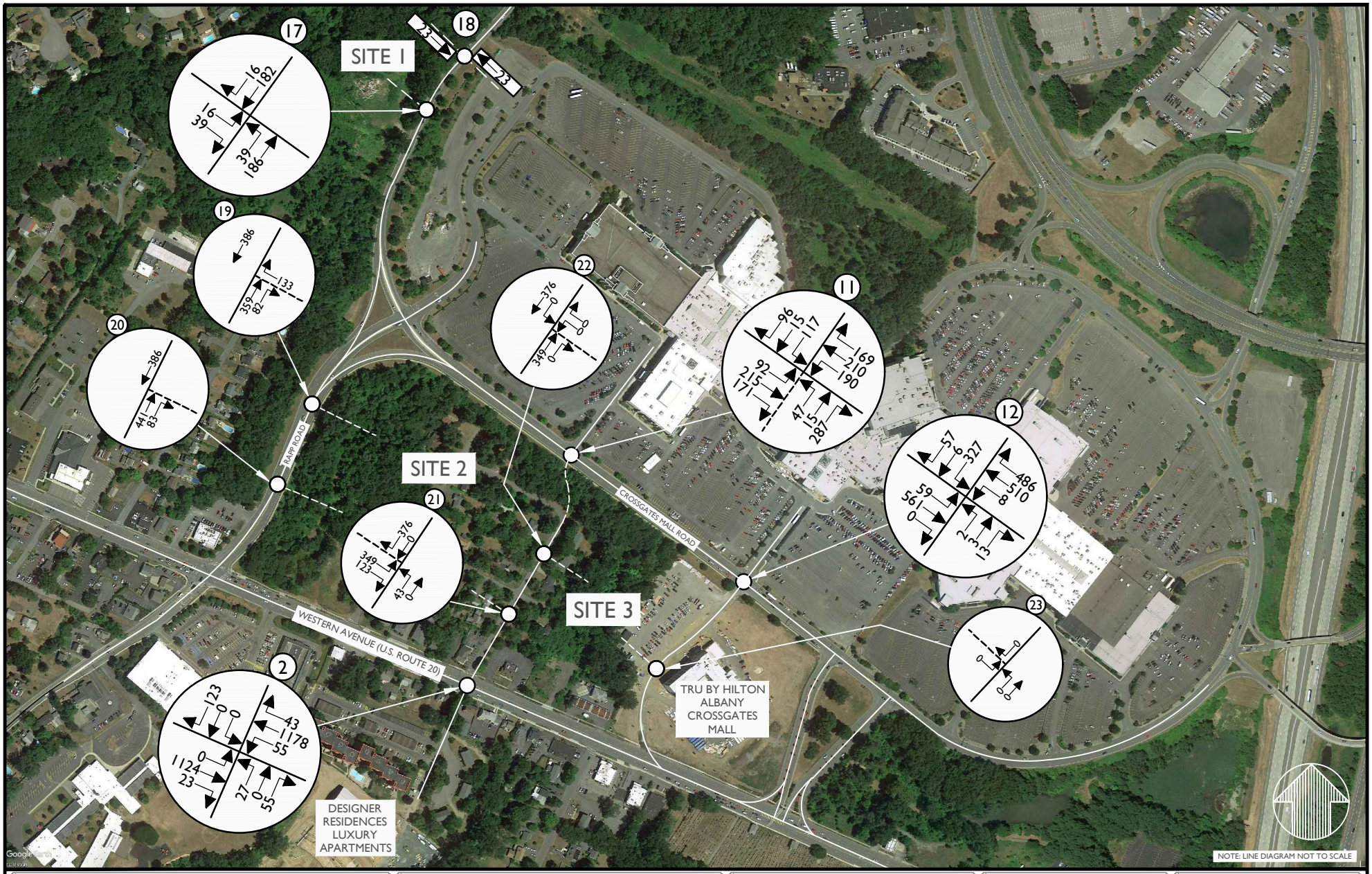
SCALE:	DATE:	DRAWN BY:	CHECKED BY:
N.T.S.	04/08/20	N.S.T.	R.P.R.

PROJECT NUMBER: 19002502A
DRAWING NAME: 19102IFM_FIGURES - 02.17.2020 - 04.08.2020

SHEET TITLE:
2022 BUILD TRAFFIC VOLUMES
SATURDAY PEAK HOUR

SHEET NUMBER:
FIGURE NO. 26-R



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SCALE:	DATE:	DRAWN BY:	CHECKED BY:
N.T.S.	04/08/20	N.S.T.	R.P.R.

PROJECT NUMBER: 19002502A

DRAWING NAME: 191021JFM_FIGURES - 02.17.2020 - 04.08.2020

SHEET TITLE:
2022 BUILD TRAFFIC VOLUMES
SATURDAY PEAK HOUR

SHEET NUMBER:
FIGURE NO. 26-A-R

TABLE NO. 3-R

LEVEL OF SERVICE SUMMARY TABLE

	LOCATION		YEAR 2019 EXISTING									YEAR 2022 NO-BUILD									YEAR 2022 BUILD								
			WEEKDAY AM			WEEKDAY PM			SATURDAY			WEEKDAY AM			WEEKDAY PM			SATURDAY			WEEKDAY AM			WEEKDAY PM			SATURDAY		
			LOS	DELAY	V/C	LOS	DELAY	V/C	LOS	DELAY	V/C	LOS	DELAY	V/C	LOS	DELAY	V/C	LOS	DELAY	V/C	LOS	DELAY	V/C	LOS	DELAY	V/C	LOS	DELAY	V/C
1	WESTERN AVENUE (U.S. ROUTE 20) & CROSSGATES MALL DRIVEWAY																												
	SIGNALIZED (COUPLET)																												
	WESTERN AVENUE (U.S. ROUTE 20)	EB T / T	A	8.5	0.64	A	6.5	0.47	A	6.3	0.44	A	9.0	0.67	A	6.7	0.48	A	6.5	0.47	A	9.0	0.67	A	6.6	0.47	A	6.4	0.45
		EB APPROACH	**A**	**8.5**	**----**	**A**	**6.5**	**----**	**A**	**6.3**	**----**	**A**	**9.0**	**----**	**A**	**6.7**	**----**	**A**	**6.5**	**----**	**A**	**9.0**	**----**	**A**	**6.6**	**----**	**A**	**6.4**	**----**
	WESTERN AVENUE (U.S. ROUTE 20)	WB T / T	A	5.1	0.30	A	7.5	0.61	A	6.3	0.50	A	5.1	0.31	A	7.8	0.64	A	6.5	0.52	A	5.2	0.32	A	7.9	0.64	A	6.6	0.53
		WB T-R	A	5.2	0.30	A	8.1	0.62	A	6.5	0.50	A	5.2	0.31	A	8.5	0.65	A	6.8	0.53	A	5.2	0.32	A	8.7	0.66	A	6.9	0.54
		WB APPROACH	**A**	**5.1**	**----**	**A**	**7.7**	**----**	**A**	**6.4**	**----**	**A**	**5.2**	**----**	**A**	**8.0**	**----**	**A**	**6.6**	**----**	**A**	**5.2**	**----**	**A**	**8.1**	**----**	**A**	**6.7**	**----**
	CROSSGATES MALL DRIVEWAY	SB L / L	C	34.5	0.09	D	38.4	0.41	D	43.2	0.68	C	34.5	0.09	D	38.5	0.42	D	43.5	0.69	C	34.7	0.11	D	40.2	0.52	D	49.3	0.85
		SB R	C	34.6	0.07	D	36.3	0.19	D	36.1	0.19	C	34.6	0.07	D	36.4	0.20	D	36.1	0.20	C	34.6	0.07	D	36.4	0.20	D	35.9	0.20
		SB APPROACH	**C**	**34.5**	**----**	**D**	**38.0**	**----**	**D**	**42.4**	**----**	**C**	**34.5**	**----**	**D**	**38.1**	**----**	**D**	**42.7**	**----**	**C**	**34.7**	**----**	**D**	**39.6**	**----**	**D**	**48.0**	**----**
	OVERALL INTERSECTION		**A**	**7.9**	**----**	**A**	**9.7**	**----**	**B**	**11.2**	**----**	**A**	**8.2**	**----**	**A**	**9.9**	**----**	**B**	**11.3**	**----**	**A**	**8.3**	**----**	**B**	**10.5**	**----**	**B**	**13.0**	**----**
2	WESTERN AVENUE (U.S. ROUTE 20) & GABRIEL TERRACE / 1700 DESIGNER RESIDENCES																												
	UNSIGNALIZED																												
	WESTERN AVENUE (U.S. ROUTE 20)	EB L	B	12.2	0.004	C	17.5	0.004	B	11.3	0.004	B	12.3	0.004	C	17.8	0.004	B	11.4	0.004	A	0.00	0.000	A	0.0	0.000	A	0.0	0.000
	WESTERN AVENUE (U.S. ROUTE 20)	WB L	C	18.1	0.022	B	11.7	0.044	B	11.3	0.014	C	19.4	0.081	B	12.7	0.138	B	12.1	0.103	C	19.5	0.082	B	12.5	0.135	B	11.8	0.099
	1700 DESIGNER RESIDENCES	NB L-T-R	D	28.8	0.138	F	127.9	0.502	F	59.9	0.195	F	473.1	1.644	F	732.1	2.034	F	205.4	1.053	F	518.8	1.735	F	1413.5	3.293	F	320.9	1.308
	GABRIEL TERRACE	SB L-T-R	A	0.0	0.000	F	191.8	0.286	F	65.3	0.110	A	0.000	0.000	F	306.8	0.414	F	100.1	0.164	B	11.8	0.033	D	31.2	0.444	C	17.0	0.302
3	WESTERN AVENUE (U.S. ROUTE 20) & JOHNSTON ROAD / RAPP ROAD																												
	SIGNALIZED																												
	WESTERN AVENUE (U.S. ROUTE 20)	EB L	C	25.6	0.37	E	55.5	0.83	C	22.5	0.49	C	26.9	0.39	E	57.8	0.84	C	23.2	0.51	C	28.5	0.44	E	66.0	0.90	C	30.3	0.85
		EB T	C	22.9	0.81	D	35.9	0.80	B	15.5	0.67	C	23.8	0.82	D	36.8	0.81	B	15.5	0.68	C	24.0	0.82	D	44.3	0.83	B	19.8	0.71
		EB T-R	C	23.4	0.82	D	35.8	0.80	B	15.5	0.67	C	24.4	0.83	D	36.7	0.81	B	15.5	0.68	C	24.7	0.84	D	44.2	0.83	B	19.7	0.71
		EB APPROACH	**C**	**23.4**	**----**	**D**	**38.2**	**----**	**B**	**16.5**	**----**	**C**	**24.5**	**----**	**D**	**39.2**	**----**	**B**	**16.6**	**----**	**C**	**25.0**	**----**	**D**	**48.0**	**----**	**C**	**22.1**	**----**
	WESTERN AVENUE (U.S. ROUTE 20)	WB L	E	58.8	0.81	D	35.6	0.29	C	20.4	0.23	E	60.4	0.81	D	37.6	0.30	C	20.9	0.24	E	60.7	0.82	D	36.2	0.25	B	19.5	0.18
		WB T	D	44.7	0.81	C	29.0	0.83	B	16.5	0.67	D	45.3	0.81	C	31.1	0.84	B	16.6	0.68	D	44.7	0.81	D	42.1	0.90	B	17.7	0.71
		WB T-R	D	44.5	0.81	C	28.9	0.83	B	16.5	0.67	D	45.1	0.81	C	31.1	0.85	B	16.5	0.68	D	44.5	0.81	D	42.8	0.91	B	17.7	0.71
		WB APPROACH	**D**	**46.3**	**----**	**C**	**29.5**	**----**	**B**	**16.7**	**----**	**D**	**46.9**	**----**	**C**	**31.6**	**----**	**B**	**16.8**	**----**	**D**	**46.4**	**----**	**D**	**42.0**	**----**	**B**	**17.8**	**----**
	JOHNSTON ROAD	NEB L	D	46.8	0.38	E	56.5	0.82	C	25.7	0.45	D	48.3	0.39	E	58.7	0.83	C	26.6	0.46	D	48.3	0.38	E	72.4	0.85	C	30.8	0.51
		NEB T-R	D	47.6	0.66	D	47.8	0.43	C	27.0	0.56	D	49.2	0.67	D	50.0	0.43	C	27.8	0.57	D	49.5	0.68	E	57.7	0.46	C	32.1	0.60
		NEB R	D	43.5	0.61	C	28.9	0.18	C	22.9	0.31	D	44.8	0.62	C	30.6	0.19	C	23.5	0.32	D	45.0	0.62	C	28.7	0.15	C	21.5	0.20
		NEB APPROACH	**D**	**45.9**	**----**	**D**	**46.2**	**----**	**C**	**25.4**	**----**	**D**	**47.3**	**----**	**D**	**48.3**	**----**	**C**	**26.2**	**----**	**D**	**47.5**	**----**	**E**	**55.9**	**----**	**C**	**28.9**	**----**
	RAPP ROAD	SWB L	E	55.9	0.40	D	42.7	0.31	C	25.7	0.29	E	57.7	0.42	D	44.2	0.31	C	26.6	0.30	E	58.0	0.48	D	53.9	0.39	C	31.3	0.39
		SWB T	D	49.1	0.25	D	43.2	0.59	C	26.9	0.49	D	50.6	0.25	D	45.4	0.61	C	27.7	0.50	D	50.9	0.25	E	56.7	0.71	C	32.0	0.51
		SWB R	B	19.2	0.14	D	49.1	0.84	C	23.9	0.61	C	20.2	0.14	D	52.6	0.86	C	24.6	0.63	C	21.3	0.16	D	50.8	0.78	C	26.9	0.58
		SWB APPROACH	**D**	**35.1**	**----**	**D**	**46.2**	**----**	**C**	**25.1**	**----**	**D**	**36.5**	**----**	**D**	**49.0**	**----**	**C**	**25.9**	**----**	**D**	**37.3**	**----**	**D**	**53.2**	**----**	**C**	**29.3**	**----**
	OVERALL INTERSECTION		**C**	**33.0**	**----**	**D**	**36.5**	**----**	**B**	**18.5**	**----**	**C**	**34.0**	**----**	**D**	**38.3**	**----**	**B**	**18.7**	**----**	**C**	**34.3**	**----**	**D**	**46.8**	**----**	**C**	**21.9**	**----**

TABLE NO. 3-R

LEVEL OF SERVICE SUMMARY TABLE

	LOCATION		YEAR 2019 EXISTING									YEAR 2022 NO-BUILD									YEAR 2022 BUILD								
			WEEKDAY AM			WEEKDAY PM			SATURDAY			WEEKDAY AM			WEEKDAY PM			SATURDAY			WEEKDAY AM			WEEKDAY PM			SATURDAY		
			LOS	DELAY	V/C	LOS	DELAY	V/C	LOS	DELAY	V/C	LOS	DELAY	V/C	LOS	DELAY	V/C	LOS	DELAY	V/C	LOS	DELAY	V/C	LOS	DELAY	V/C	LOS	DELAY	V/C
4	RAPP ROAD & CROSSGATES MALL ROAD																				**W/ EB & SB RIGHT TUNRS UNDER SIGNAL CONTROL**								
	SIGNALIZED																				**OPTIMIZED**			**OPTIMIZED**			**OPTIMIZED**		
	RAPP ROAD	EB L-T	B	19.4	0.27	B	18.3	0.18	B	19.3	0.27	B	19.4	0.27	B	18.4	0.19	B	19.4	0.28	B	18.4	0.30	C	22.1	0.40	B	16.4	0.41
		EB R	A	0.0	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.00	C	20.7	0.45	B	18.1	0.21	B	14.4	0.28
		EB APPROACH	**B**	**19.4**	**----**	**B**	**18.3**	**----**	**B**	**19.3**	**----**	**B**	**19.4**	**----**	**B**	**18.4**	**----**	**B**	**19.4**	**----**	**B**	**19.7**	**----**	**C**	**20.7**	**----**	**B**	**15.6**	**----**
	CROSSGATES MALL ROAD	WB L-T	B	16.9	0.02	B	18.8	0.22	B	18.9	0.23	B	16.9	0.02	B	18.9	0.22	B	18.9	0.23	C	21.4	0.13	C	31.8	0.49	C	27.9	0.49
		WB T-R	B	16.9	0.02	B	19.0	0.23	B	19.0	0.23	B	16.9	0.02	B	19.1	0.23	B	19.1	0.23	B	15.6	0.03	B	19.8	0.34	B	14.1	0.26
		WB APPROACH	**B**	**16.9**	**----**	**B**	**18.9**	**----**	**B**	**19.0**	**----**	**B**	**16.9**	**----**	**B**	**19.0**	**----**	**B**	**19.0**	**----**	**B**	**19.9**	**----**	**C**	**25.2**	**----**	**C**	**21.0**	**----**
	RAPP ROAD	SEB L-T	C	21.1	0.10	C	21.5	0.13	C	21.1	0.10	C	21.1	0.10	C	21.5	0.14	C	21.1	0.10	B	18.7	0.15	C	22.8	0.25	C	23.6	0.25
		SEB R	A	0.0	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.00	B	19.0	0.17	C	28.7	0.56	C	23.6	0.24
		SEB APPROACH	**C**	**21.1**	**----**	**C**	**21.5**	**----**	**C**	**21.1**	**----**	**C**	**21.1**	**----**	**C**	**21.5**	**----**	**C**	**21.1**	**----**	**B**	**18.9**	**----**	**C**	**26.6**	**----**	**C**	**23.6**	**----**
	CROSSGATES MALL ROAD	NWB L	B	10.1	0.13	B	12.2	0.35	B	10.4	0.17	B	10.1	0.13	B	12.3	0.36	B	10.4	0.17	B	11.9	0.14	B	14.7	0.48	B	16.4	0.28
		NWB T-R	A	8.6	0.07	A	9.3	0.16	A	9.4	0.18	A	8.6	0.07	A	9.3	0.16	A	9.5	0.18	C	9.7	0.08	B	10.4	0.23	B	15.3	0.31
		NWB APPROACH	**A**	**9.5**	**----**	**B**	**11.3**	**----**	**A**	**9.9**	**----**	**A**	**9.5**	**----**	**B**	**11.3**	**----**	**A**	**9.9**	**----**	**B**	**10.9**	**----**	**B**	**12.9**	**----**	**B**	**15.8**	**----**
	OVERALL INTERSECTION		**B**	**15.6**	**----**	**B**	**15.2**	**----**	**B**	**15.7**	**----**	**B**	**15.6**	**----**	**B**	**15.3**	**----**	**B**	**15.7**	**----**	**B**	**17.9**	**----**	**C**	**20.7**	**----**	**B**	**18.3**	**----**
5	RAPP ROAD & GIPP ROAD																												
	UNSIGNALIZED																												
	RAPP ROAD	NEB L-T	A	7.4	0.005	A	8.3	0.049	A	7.6	0.018	A	7.4	0.005	A	8.4	0.050	A	7.7	0.018	A	7.5	0.006	A	8.5	0.052	A	7.8	0.019
	GIPP ROAD	EB L-R	B	10.6	0.195	B	13.6	0.160	B	10.7	0.092	B	10.6	0.198	B	13.8	0.165	B	10.7	0.095	B	11.0	0.211	C	15.1	0.184	B	11.7	0.108
6	RAPP ROAD & PINE LANE																												
	UNSIGNALIZED																												
	RAPP ROAD	NEB L-T	A	8.5	0.256	A	8.6	0.195	A	8.1	0.190	A	8.5	0.261	A	8.6	0.198	A	8.1	0.192	A	8.8	0.296	A	9.1	0.253	A	8.7	0.261
	RAPP ROAD	SWB T-R	A	7.7	0.096	A	8.3	0.030	A	7.9	0.035	A	7.7	0.097	B	11.2	0.506	A	8.1	0.202	A	7.9	0.123	B	12.3	0.568	A	8.6	0.268
	PINE LANE	EB L-R	A	7.6	0.049	B	11.0	0.498	A	8.1	0.200	A	7.6	0.050	A	8.3	0.030	A	7.9	0.035	A	7.7	0.051	A	8.5	0.031	A	8.1	0.037
	OVERALL INTERSECTION		**A**	**8.2**	**----**	**B**	**10.3**	**----**	**A**	**8.1**	**----**	**A**	**8.2**	**----**	**B**	**10.4**	**----**	**A**	**8.1**	**----**	**A**	**8.5**	**----**	**B**	**11.3**	**----**	**A**	**8.6**	**----**
7	RAPP ROAD & SPRINGSTEEN ROAD																												
	UNSIGNALIZED																												
	RAPP ROAD	SB L-R	A	8.8	0.08	B	10.8	0.426	A	9.0	0.166	A	8.8	0.084	B	10.9	0.433	A	9.0	0.169	A	8.9	0.104	B	11.4	0.479	A	9.2	0.220
8	SPRINGSTEEN ROAD & S. FRONTAGE ROAD																												
	UNSIGNALIZED																												
	SPRINGSTEEN ROAD	EB L	A	9.3	0.201	A	9.4	0.150	A	9.0	0.174	A	9.4	0.204	A	9.4	0.151	A	9.1	0.177	A	9.8	0.249	A	9.9	0.213	A	9.8	0.261
	SPRINGSTEEN ROAD	EB T-R	A	8.3	0.155	A	8.2	0.074	A	7.6	0.062	A	8.3	0.156	A	8.3	0.076	A	7.6	0.063	A	8.3	0.156	A	8.3	0.076	A	7.6	0.063
	SPRINGSTEEN ROAD	WB L-R	A	8.4	0.224	A	8.8	0.289	A	7.5	0.142	A	8.4	0.229	A	8.9	0.293	A	7.5	0.144	A	8.5	0.231	A	9.0	0.298	A	7.6	0.147
	S. FRONTAGE ROAD	NB T-R	A	7.9	0.048	A	8.1	0.085	A	7.3	0.032	A	8.0	0.048	A	8.1	0.087	A	7.3	0.032	A	8.0	0.049	A	8.2	0.089	A	7.5	0.034
	S. FRONTAGE ROAD	SB L-T	A	8.4	0.033	A	9.1	0.157	A	8.0	0.037	A	8.4	0.034	A	9.1	0.161	A	8.0	0.037	A	8.5	0.034	A	9.3	0.164	A	8.2	0.039
	OVERALL INTERSECTION		**A**	**8.6**	**----**	**A**	**8.8**	**----**	**A**	**8.0**	**----**	**A**	**8.6**	**----**	**A**	**8.9**	**----**	**A**	**8.1**	**----**	**A**	**8.8**	**----**	**A**	**9.1**	**----**	**A**	**8.6**	**----**
9	WASHINGTON AVENUE EXTENSION & SPRINGSTEEN ROAD / CROSSGATES COMMONS																												
	SIGNALIZED																												
	SPRINGSTEEN ROAD	EB R	C	29.3	0.44	D	37.1	0.48	D	39.9	0.40	C	29.9	0.44	D	38.1	0.49	D	40.4	0.40	C	30.1	0.44	D	38.5	0.49	D	40.4	0.40
		EB APPROACH	**C**	**29.3**	**----**	**D**	**37.1**	**----**	**D**	**39.9**	**----**	**C**	**29.9**	**----**	**D**	**38.1**	**----**	**D**	**40.4**	**----**	**C**	**30.1**	**----**	**D**	**38.5**	**----**	**D**	**40.4**	**----**
	CROSSGATES COMMONS	WB L / L	D	39.4	0.61	D	50.3	0.81	D	41.8	0.82	D	40.3	0.62	D	51.8	0.81	D	42.6	0.82	D	40.5	0.62	D	52.4	0.81	D	42.7	0.82
		WB T-R	C	27.7	0.47	D	36.4	0.69	D	37.4	0.92	C	28.5	0.49	D	37.6	0.70	D	37.9	0.92	C	28.7	0.49	D	38.0	0.70	D	38.0	0.92
		WB APPROACH	**C**	**32.3**	**----**	**D**	**43.1**	**----**	**D**	**39.6**	**----**	**C**	**33.2**	**----**	**D**	**44.5**	**----**	**D**	**40.3**	**----**	**C**	**33.4**	**----**	**D**	**45.0**	**----**	**D**	**40.3**	**----**
	WASHINGTON AVE. EXT.	NB L	D	39.7	0.79	E	58.2	0.86	D	50.8	0.77	D	40.5	0.80	E	61.7	0.86	D	51.6	0.77	D	40.8	0.80	E	62.8	0.86	D	51.6	0.77
		NB T / T / T	B	15.8	0.52	C	28.2	0.69	C	24.0	0.31	B	16.1	0.52	C	29.0	0.70	C	24.2	0.31	B	16.1	0.52	C	29.2	0.70	C	24.3	0.32
		NB R	B	13.3	0.21	C	27.0	0.57	D	36.2	0.87	B	13.5	0.21	C	27.6	0.58	D	36.7	0.87	B	13.5	0.21	C	27.6	0.57	D	36.6	0.87
		NB APPROACH	**B**	**17.8**	**----**	**C**	**30.7**	**----**	**C**	**31.1**	**----**	**B**	**18.1**	**----**	**C**	**31.8**	**----**	**C**	**31.5**	**----**	**B**	**18.1**	**----**	**C**	**32.0**	**----**	**C**	**31.4**	**----**
	WASHINGTON AVE. EXT.	SB L	D	39.8	0.80	E	69.1	0.90	F	111.1	1.09	D	40.6	0.80	E	72.8	0.90	F	125.2	1.12	D	40.9	0.80	E	73.9	0.90	F	126.0	1.13
		SB T / T	C	21.6	0.85	C	34.6	0.90	B	15.2	0.33	C	22.2	0.85	D	36.2	0.90	B	15.6	0.33	C	22.3	0.85	D	36.9	0.91	B	15.7	0.35
		SB R	B	11.9	0.01	B	17.5	0.01	B	12.7	0.01	B	12.0	0.01	B	17.9	0.01	B	13.0	0.01	B	12.0	0.01	B	17.9	0.01	B	13.0	0.01
		SB APPROACH	**C**	**23.2**	**----**	**D**	**39.7**	**----**	**D**	**54.2**	**----**	**C**	**23.8**	**----**	**D**	**41.6**	**----**	**E**	**60.2**	**----**	**C**	**23.9**	**----**	**D**	**42.3**	**----**	**E**	**59.7**	**----**
	OVERALL INTERSECTION		**C**	**21.9**	**----**	**D**	**36.1**	**----**	**D**	**41.4**	**----**	**C**	**22.4**	**----**	**D**	**37.5**	**----**	**D**	**43.7**	**----**	**C**	**22.4**	**----**	**D**	**37.9**	**----**	**D**	**43.5**	**----**
10	CROSSGATES MALL ROAD & I-87 ON/OFF RAMPS																												
	SIGNALIZED																												
	I-87 OFF RAMP	WB L	A	7.4	0.22	C	22.8	0.68	C	23.3	0.63	A	7.4	0.22	C	23.6	0.69	C	24.1	0.64	A	7.8	0.31	C	32.4	0.85	D	35.6	0.86
		WB L-R	B	11.7	0.79	D	35.8	0.89	D	49.7	0.96	B	11.8	0.79	D	38.2	0.90	D	54.0	0.97	B	11.6	0.79	D	41.9	0.92	D	54.0	0.97
		WB APPROACH	**B**	**10.7**	**----**	**C**	**29.9**	**----**	**D**	**38.7**	**----**	**B**	**10.8**	**----**	**C**	**31.6**	**----**	**D**	**41.6**	**----**	**B**	**10.5**	**----**	**D**	**37.2**	**----**	**D**	**45.0**	**----**
	CROSSGATES MALL ROAD	NB T	B	16.0	0.37	D	36.0	0.71	E	59.1	0.88	B	16.3	0.38	D	37.1	0.72	E	61.7	0.88	B	16.5	0.39	D	38.4	0.73	E	61.7	0.88
		NB R	A	0.0	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.00
		NB APPROACH	**B**	**16.0**	**----**	**D**	**36.0**	**----**	**E**	**59.1**	**----**	**B**	**16.3**	**----**	**D**	**37.1**	**----**	**E**	**61.7**	**----**	**B**	**16.5**	**----**	**D**	**38.4**	**----**	**E**	**61.7**	**----**
	CROSSGATES MALL ROAD	SB L	B	11.1	0.32	C	24.6	0.87	D	47.7	0.95	B	11.2	0.32	C	26.4	0.88	D	52.1	0.96	B	11.4	0.33	C	28.3	0.89	D	52.1	0.96
		SB T	A	8.5	0.10	B	10.2	0.26	B	16.2	0.33	A	8.6	0.10	B	10.4	0.26	B	16.5	0.33	A	8.8	0.10	B	10.9	0.26	B	16.5	0.33
		SB APPROACH	**B**	**10.4**	**----**	**C**	**20.8**	**----**	**C**	**36.9**	**----**	**B**	**10.5**	**----**	**C**	**22.2**	**----**	**D**	**39.8**	**----**	**B**	**10.7**	**----**	**C**	**23.8**	**----**	**D**	**39.8**	**----**
	OVERALL INTERSECTION		**B**	**11.1**	**----**	**C**	**26.3**	**----**	**D**	**40.5**	**----**	**B**	**11.2**	**----**	**C**	**27.9**	**----**	**D**	**43.4**	**----**	**B**	**11.0**	**----**	**C**	**31.7**	**----**	**D**	**45.1**	**----**

TABLE NO. 3-R

LEVEL OF SERVICE SUMMARY TABLE

	LOCATION		YEAR 2019 EXISTING									YEAR 2022 NO-BUILD									YEAR 2022 BUILD								
			WEEKDAY AM			WEEKDAY PM			SATURDAY			WEEKDAY AM			WEEKDAY PM			SATURDAY			WEEKDAY AM			WEEKDAY PM			SATURDAY		
			LOS	DELAY	V/C	LOS	DELAY	V/C	LOS	DELAY	V/C	LOS	DELAY	V/C	LOS	DELAY	V/C	LOS	DELAY	V/C	LOS	DELAY	V/C	LOS	DELAY	V/C	LOS	DELAY	V/C
11	CROSSGATES MALL ROAD & MALL DRIVEWAY #1																												
	UNSIGNALIZED																												
	CROSSGATES MALL ROAD	SEB L-T	A	7.5	0.008	A	8.3	0.026	A	8.4	0.085	A	7.5	0.008	A	8.3	0.026	A	8.4	0.086	----	----	----	----	----	----	----	----	----
	MALL DRIVEWAY #1	SWB L-R	B	10.7	0.043	C	15.5	0.306	C	21.0	0.508	B	10.8	0.043	C	15.7	0.313	C	21.8	0.524	----	----	----	----	----	----	----	----	----
	W/ GABRIEL TERRACE CONNECTOR ROAD																												
	CROSSGATES MALL ROAD	SEB L	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	A	7.5	0.009	A	8.3	0.027	A	8.4	0.087
	CROSSGATES MALL ROAD	NWB L	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	A	8.2	0.054	A	8.4	0.126	A	8.9	0.182
	GABRIEL TERRACE CONNECTOR ROAD	NEB L-T-R	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	B	11.4	0.110	D	26.4	0.620	F	171.4	1.248
	MALL DRIVEWAY #1	SWB L-T-R	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	B	12.3	0.057	F	235.1	1.275	F	1582.3	4.200
	W/ SIGNALIZATION																												
	CROSSGATES MALL ROAD	SEB L	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	A	6.1	0.020	A	9.8	0.080	B	11.7	0.250
		SEB T-R	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	A	9.0	0.630	B	13.7	0.680	C	20.2	0.810
		SEB APPROACH	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	A	8.9	----	B	13.4	----	B	18.6	----
	CROSSGATES MALL ROAD	NWB L	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	A	6.1	0.120	A	9.2	0.330	B	12.2	0.490
		NWB T-R	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	A	6.1	0.200	B	12.6	0.740	B	15.1	0.690
		NWB APPROACH	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	A	6.1	----	B	11.8	----	B	14.1	----
	GABRIEL TERRACE CONNECTOR ROAD	NEB L-T-R	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	B	12.7	0.260	B	14.2	0.550	B	17.6	0.680
		NEB APPROACH	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	B	12.7	----	B	14.2	----	B	17.6	----
	MALL DRIVEWAY #1	SWB L-T-R	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	B	12,1	0.100	B	12.7	0.330	B	16.2	0.530
		SWB APPROACH	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	B	12.1	----	B	12.7	----	B	16.2	----
	OVERALL INTERSECTION		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	A	8.6	----	B	12.8	----	B	16.5	----
12	CROSSGATES MALL ROAD & HOTEL CONNECTOR ROAD / MALL DRIVEWAY #2																												
	SIGNALIZED																												
	CROSSGATES MALL ROAD	SEB L-T	A	8.3	0.18	A	8.2	0.17	B	11.2	0.35	A	8.3	0.18	A	8.3	0.18	B	11.5	0.37	A	8.6	0.23	A	9.2	0.31	B	15.6	0.64
		SEB T-R	A	8.4	0.20	A	8.3	0.17	A	9.0	0.27	A	8.5	0.20	A	8.3	0.18	A	9.1	0.28	A	8.9	0.26	A	9.4	0.32	B	11.5	0.49
		SEB APPROACH	**A**	**8.3**	**----**	**A**	**8.2**	**----**	**B**	**10.0**	**----**	**A**	**8.4**	**----**	**A**	**8.3**	**----**	**B**	**10.2**	**----**	**A**	**8.8**	**----**	**A**	**9.3**	**----**	**B**	**13.4**	**----**
	CROSSGATES MALL ROAD	NWB L-T	A	7.8	0.11	B	10.5	0.43	B	10.4	0.42	A	7.8	0.11	B	10.6	0.44	B	10.4	0.42	A	8.1	0.15	B	11.9	0.54	B	14.2	0.66
		NWB T-R	A	8.0	0.13	B	12.2	0.51	C	28.9	0.88	A	8.0	0.13	B	12.3	0.51	C	30.4	0.90	A	8.4	0.18	B	14.0	0.60	C	30.4	0.90
		NWB APPROACH	**A**	**7.9**	**----**	**B**	**11.3**	**----**	**C**	**21.4**	**----**	**A**	**7.9**	**----**	**B**	**11.4**	**----**	**C**	**22.3**	**----**	**A**	**8.2**	**----**	**B**	**12.9**	**----**	**C**	**22.1**	**----**
	HOTEL CONNECTOR ROAD	NEB L-T-R	A	9.3	0.19	A	7.3	0.01	A	7.3	0.03	A	9.4	0.20	A	7.3	0.01	A	7.3	0.03	A	9.4	0.20	A	7.3	0.01	A	7.3	0.03
		NEB APPROACH	**A**	**9.3**	**----**	**A**	**7.3**	**----**	**A**	**7.3**	**----**	**A**	**9.4**	**----**	**A**	**7.3**	**----**	**A**	**7.3**	**----**	**A**	**9.4**	**----**	**A**	**7.3**	**----**	**A**	**7.3**	**----**
	MALL DRIVEWAY #2	SWB L	A	7.4	0.03	A	9.3	0.27	B	11.5	0.46	A	7.4	0.03	A	9.3	0.27	B	11.6	0.47	A	7.4	0.03	A	9.3	0.27	B	11.6	0.47
		SWB T-R	A	7.3	0.01	A	7.7	0.08	A	7.7	0.08	A	7.3	0.01	A	7.7	0.08	A	7.7	0.08	A	7.3	0.01	A	7.8	0.10	A	7.8	0.10
		SWB APPROACH	**A**	**7.3**	**----**	**A**	**8.9**	**----**	**B**	**11.1**	**----**	**A**	**7.3**	**----**	**A**	**9.0**	**----**	**B**	**11.1**	**----**	**A**	**7.3**	**----**	**A**	**8.9**	**----**	**B**	**11.0**	**----**
	OVERALL INTERSECTION		**A**	**8.3**	**----**	**B**	**10.1**	**----**	**B**	**16.3**	**----**	**A**	**8.3**	**----**	**B**	**10.2**	**----**	**B**	**16.8**	**----**	**A**	**8.6**	**----**	**B**	**11.1**	**----**	**B**	**17.2**	**----**
13/14	CROSSGATES MALL ROAD & CROSSGATES MALL MAIN DRIVEWAY																												
	SIGNALIZED																												
	CROSSGATES MALL ROAD	SEB T	A	7.9	0.16	A	8.0	0.20	B	17.1	0.38	B	12.0	0.19	A	8.2	0.20	B	17.5	0.39	B	12.5	0.24	A	9.0	0.30	C	20.4	0.57
		SEB T-R	A	7.9	0.16	A	8.1	0.20	B	17.2	0.38	B	12.0	0.19	A	8.2	0.21	B	17.6	0.39	B	12.5	0.24	A	9.0	0.30	C	20.5	0.57
		SEB APPROACH	**A**	**7.9**	**----**	**A**	**8.0**	**----**	**B**	**17.1**	**----**	**B**	**12.0**	**----**	**A**	**8.2**	**----**	**B**	**17.5**	**----**	**B**	**12.5**	**----**	**A**	**9.0**	**----**	**C**	**20.4**	**----**
	CROSSGATES MALL ROAD	NWB L	A	6.1	0.01	A	5.1	0.25	B	11.0	0.55	A	8.7	0.08	A	5.2	0.26	B	11.2	0.56	A	8.9	0.09	A	5.6	0.31	B	15.2	0.71
		NWB T	A	5.6	0.14	A	5.2	0.39	A	9.6	0.44	A	7.9	0.13	A	5.3	0.39	A	9.8	0.45	A	8.3	0.20	A	6.1	0.50	B	11.7	0.61
		NWB APPROACH	**A**	**5.6**	**----**	**A**	**5.2**	**----**	**B**	**10.1**	**----**	**A**	**8.1**	**----**	**A**	**5.3**	**----**	**B**	**10.3**	**----**	**A**	**8.4**	**----**	**A**	**6.0**	**----**	**B**	**12.7**	**----**
	CROSSGATES MALL DRIVEWAY	NEB L	C	31.1	0.02	D	39.9	0.52	D	36.3	0.68	C	26.8	0.06	D	39.8	0.51	D	36.4	0.69	C	26.8	0.06	D	39.8	0.51	D	36.4	0.69
		NEB R	D	52.9	0.90	D	47.9	0.84	D	53.9	0.90	E	59.3	0.93	D	47.8	0.84	D	54.3	0.90	E	59.3	0.93	D	47.8	0.84	D	54.3	0.90
		NEB APPROACH	**D**	**52.5**	**----**	**D**	**44.7**	**----**	**D**	**45.8**	**----**	**E**	**57.3**	**----**	**D**	**44.6**	**----**	**D**	**46.0**	**----**	**E**	**57.3**	**----**	**D**	**44.6**	**----**	**D**	**46.0**	**----**
	OVERALL INTERSECTION		**C**	**23.6**	**----**	**B**	**15.1**	**----**	**C**	**23.3**	**----**	**C**	**30.8**	**----**	**B**	**15.2**	**----**	**C**	**23.5**	**----**	**C**	**28.2**	**----**	**B**	**14.3**	**----**	**C**	**23.9**	**----**
15	S. FRONTAGE ROAD & RAPP ROAD																												
	UNSIGNALIZED																												
	S. FRONTAGE ROAD	NB L	A	7.4	0.03	A	8.6	0.18	A	7.5	0.06	A	7.4	0.03	A	8.6	0.18	A	7.5	0.06	A	7.5	0.03	A	8.8	0.19	A	7.6	0.06
16	WESTERN AVENUE (U.S. ROUTE 20) & WESTMERE TERRACE																												
	UNSIGNALIZED																												
	WESTERN AVENUE (U.S. ROUTE 20)	EB L	B	10.2	0.002	C	19.4	0.03	B	11.5	0.02	B	10.3	0.002	C	20.0	0.03	B	11.7	0.02	B	10.5	0.002	C	20.7	0.035	B	12.2	0.024
	WESTMERE TERRACE	SB L-R	F	54.0	0.08	F	261.3	0.61	E	40.5	0.19	F	58.4	0.09	F	276.4	0.634	E	43.9	0.20	F	61.7	0.094	F	331.5	0.717	F	51.4	0.229
17/18	RAPP ROAD & SITE 1 DRIVEWAY																												
	UNSIGNALIZED																												
	SITE 1 DRIVEWAY	EB L-R	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	A	9.7	0.072	B	11.5	0.059	B	10.5	0.084
	RAPP ROAD	NEB L-T	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	A	7.5	0.009	A	8.1	0.035	A	7.7	0.031
19	RAPP ROAD & SITE 2 NORTHERLY DRIVEWAY																												
	UNSIGNALIZED																												
	RAPP ROAD	SB L-T	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	PHASE 1 DRIVEWAY (NW)	WB R	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	A	9.8	0.048	A	9.6	0.108	B	10.8	0.190
20	RAPP ROAD & SITE 2 SOUTHERLY DRIVEWAY																												
	UNSIGNALIZED																												
	PHASE 1 DRIVEWAY (SW)	NB R	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	A	----	----	A	----	----	A	----	----
21	GABRIEL TERRACE CONNECTOR ROAD & SITE 2 DRIVEWAY																												
	UNSIGNALIZED																												
	GABRIEL TERRACE	NB L-T	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	A	7.5	0.005	A	8.0	0.031	A	8.3	0.041
	PHASE 1 DRIVEWAY (E)	EB L-R	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	A	9.5	0.099	B	13.9	0.482	C	22.7	0.731

THE ABOVE REPRESENTS THE LEVELS OF SERVICE, VEHICLE DELAY IN SECONDS AND VOLUME-TO-CAPACITY (V/C) RATIO FOR THE ABOVE INTERSECTIONS.

LEVEL OF SERVICE STANDARDS

LEVEL OF SERVICE FOR SIGNALIZED INTERSECTIONS

Level of Service (LOS) can be characterized for the entire intersection, each intersection approach, and each lane group. Control delay alone is used to characterize LOS for the entire intersection or an approach. Control delay and volume-to-capacity (v/c) ratio are used to characterize LOS for a lane group. Delay quantifies the increase in travel time due to traffic signal control. It is also a measure of driver discomfort and fuel consumption. The volume-to-capacity ratio quantifies the degree to which a phase's capacity is utilized by a lane group.

LOS A describes operations with a control delay of 10 s/veh or less and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is low and either progression is exceptionally favorable or the cycle length is very short. If it is due to favorable progression, most vehicles arrive during the green indication and travel through the intersection without stopping.

LOS B describes operations with control delay between 10 and 20 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is low and either progression is highly favorable or the cycle length is short. More vehicles stop than with LOS A.

LOS C describes operations with control delay between 20 and 35 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when progression is favorable or the cycle length is moderate.

LOS D describes operations with control delay between 35 and 55 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is high and either progression is ineffective or the cycle length is long.

LOS E describes operations with control delay between 55 and 80 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is high, progression is unfavorable, and the cycle length is long.

LOS F describes operations with control delay exceeding 80 s/veh or a volume-to-capacity ratio greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long.

A lane group can incur a delay less than 80 s/veh when the volume-to-capacity ratio exceeds 1.0. This condition typically occurs when the cycle length is short, the signal progression is favorable, or both. As a result, both the delay and volume-to-capacity ratio are considered when lane group LOS is established. A ratio of 1.0 or more indicates that cycle capacity is fully utilized and represents failure from a capacity perspective (just as delay in excess of 80 s/veh represents failure from a delay perspective).

The Level of Service Criteria for signalized intersections are given in Exhibit 18-4 from the *2010 Highway Capacity Manual* published by the Transportation Research Board.

Exhibit 18-4

	LOS by Volume-to-Capacity Ratio	
Control Delay (s/veh)	**v/c ≤1.0**	**v/c >1.0**
≤10	A	F
>10-20	B	F
>20-35	C	F
>35-55	D	F
>55-80	E	F
>80	F	F

For approach-based and intersection wide assessments, LOS is defined solely by control delay.

LEVEL OF SERVICE CRITERIA
FOR TWO-WAY STOP-CONTROLLED (TWSC) UNSIGNALIZED INTERSECTIONS

Level of Service (LOS) for a two-way stop-controlled (TWSC) intersection is determined by the computed or measured control delay. For motor vehicles, LOS is determined for each minor-street movement (or shared movement) as well as major-street left turns. LOS is not defined for the intersection as a whole or for major-street approaches.

The Level of Service Criteria for TWSC unsignalized intersections are given in Exhibit 19-1 from the *2010 Highway Capacity Manual* published by the Transportation Research Board.

Exhibit 19-1

	LOS by Volume-to-Capacity Ratio	
Control Delay (s/veh)	**v/c ≤1.0**	**v/c >1.0**
0-10	A	F
>10-15	B	F
>15-25	C	F
>25-35	D	F
>35-50	E	F
>50	F	F

The LOS criteria apply to each lane on a given approach and to each approach on the minor street.
LOS is not calculated for major-street approaches or for the intersection as a whole.

As Exhibit 19-1 notes, LOS F is assigned to the movement if the volume-to-capacity ratio for the movement exceeds 1.0, regardless of the control delay.

The Level of Service Criteria for unsignalized intersections are somewhat different from the criteria for signalized intersections.

LEVEL OF SERVICE CRITERIA
FOR ALL-WAY STOP-CONTROLLED (AWSC) UNSIGNALIZED INTERSECTIONS

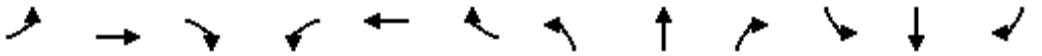
The Levels of Service (LOS) for all-way stop-controlled (AWSC) intersections are given in Exhibit 20-2. As the exhibit notes, LOS F is assigned if the volume-to-capacity (v/c) ratio of a lane exceeds 1.0, regardless of the control delay. For assessment of LOS at the approach and intersection levels, LOS is based solely on control delay.

The Level of Service Criteria for AWSC unsignalized intersections are given in Exhibit 20-2 from the *2010 Highway Capacity Manual* published by the Transportation Research Board.

Exhibit 20-2

	LOS by Volume-to-Capacity Ratio	
Control Delay (s/veh)	**v/c ≤1.0**	**v/c >1.0**
0-10	A	F
>10-15	B	F
>15-25	C	F
>25-35	D	F
>35-50	E	F
>50	F	F

For approaches and intersection wide assessment, LOS is defined solely by control delay.



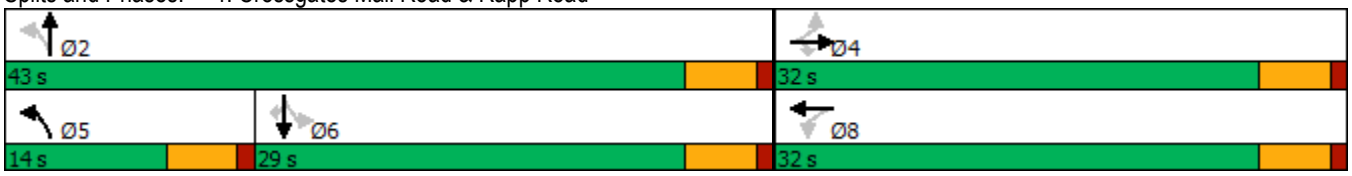
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	91	92	238	43	12	3	80	44	20	0	81	80
Future Volume (vph)	91	92	238	43	12	3	80	44	20	0	81	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	14	14	14	12	12	12	12	12	13
Grade (%)		-2%			4%			2%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		150
Storage Lanes	0		1	0		0	1		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.993			0.953				0.850
Flt Protected		0.976			0.964		0.950					
Satd. Flow (prot)	0	1873	1631	0	3605	0	1702	1776	0	0	1900	1669
Flt Permitted		0.820			0.746		0.577					
Satd. Flow (perm)	0	1574	1631	0	2790	0	1034	1776	0	0	1900	1669
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			270		3			23				102
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		467			504			785			915	
Travel Time (s)		10.6			11.5			17.8			20.8	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	0%	0%	0%	0%	1%	0%	5%	0%	3%	0%	0%	0%
Adj. Flow (vph)	103	105	270	49	14	3	91	50	23	0	92	91
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	208	270	0	66	0	91	73	0	0	92	91
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.94	0.94	0.94	1.01	1.01	1.01	1.00	1.00	0.96
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	1	1	1		1	1		1	1	1
Detector Template	Left			Left						Left		
Leading Detector (ft)	20	6	6	20	6		6	6		20	6	6
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6	6	20	6		6	6		20	6	6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA			NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8			2			6		6
Detector Phase	4	4	4	8	8		5	2		6	6	6
Switch Phase												

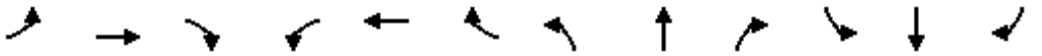
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	21.0	21.0	21.0	21.0	21.0		9.0	21.0		21.0	21.0	21.0
Total Split (s)	32.0	32.0	32.0	32.0	32.0		14.0	43.0		29.0	29.0	29.0
Total Split (%)	42.7%	42.7%	42.7%	42.7%	42.7%		18.7%	57.3%		38.7%	38.7%	38.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)		5.0	5.0		5.0		5.0	5.0			5.0	5.0
Lead/Lag							Lead			Lag	Lag	Lag
Lead-Lag Optimize?							Yes			Yes	Yes	Yes
Recall Mode	Max	Max	Max	Max	Max		Max	Max		Max	Max	Max
v/c Ratio		0.37	0.36		0.07		0.15	0.08			0.15	0.15
Control Delay		20.1	3.9		15.5		10.4	7.4			19.1	4.4
Queue Delay		0.0	0.0		0.0		0.0	0.0			0.0	0.0
Total Delay		20.1	3.9		15.5		10.4	7.4			19.1	4.4
Queue Length 50th (ft)		70	0		10		21	11			30	0
Queue Length 95th (ft)		121	42		22		42	29			61	24
Internal Link Dist (ft)		387			424			705			835	
Turn Bay Length (ft)												150
Base Capacity (vph)		566	759		1006		604	911			608	603
Starvation Cap Reductn		0	0		0		0	0			0	0
Spillback Cap Reductn		0	0		0		0	0			0	0
Storage Cap Reductn		0	0		0		0	0			0	0
Reduced v/c Ratio		0.37	0.36		0.07		0.15	0.08			0.15	0.15

Intersection Summary

Area Type: Other
Cycle Length: 75
Actuated Cycle Length: 75
Natural Cycle: 55
Control Type: Semi Act-Uncoord

Splits and Phases: 4: Crossgates Mall Road & Rapp Road





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	91	92	238	43	12	3	80	44	20	0	81	80
Future Volume (veh/h)	91	92	238	43	12	3	80	44	20	0	81	80
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1979	1979	1979	1863	1863	1863	1802	1876	1876	1900	1900	1976
Adj Flow Rate, veh/h	103	105	270	49	14	3	91	50	23	0	92	91
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	0	0	0	1	1	1	5	0	0	0	0	0
Cap, veh/h	351	338	604	373	487	104	632	616	283	0	608	536
Arrive On Green	0.36	0.36	0.36	0.36	0.36	0.36	0.12	0.51	0.51	0.00	0.32	0.32
Sat Flow, veh/h	775	940	1677	768	1353	290	1717	1216	559	0	1900	1675
Grp Volume(v), veh/h	208	0	270	49	0	17	91	0	73	0	92	91
Grp Sat Flow(s),veh/h/ln	1715	0	1677	768	0	1643	1717	0	1776	0	1900	1675
Q Serve(g_s), s	4.3	0.0	9.2	2.8	0.0	0.5	2.2	0.0	1.6	0.0	2.6	2.9
Cycle Q Clear(g_c), s	6.3	0.0	9.2	9.1	0.0	0.5	2.2	0.0	1.6	0.0	2.6	2.9
Prop In Lane	0.50		1.00	1.00		0.18	1.00		0.32	0.00		1.00
Lane Grp Cap(c), veh/h	689	0	604	373	0	591	632	0	900	0	608	536
V/C Ratio(X)	0.30	0.00	0.45	0.13	0.00	0.03	0.14	0.00	0.08	0.00	0.15	0.17
Avail Cap(c_a), veh/h	689	0	604	373	0	591	632	0	900	0	608	536
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	17.3	0.0	18.3	20.7	0.0	15.5	11.4	0.0	9.5	0.0	18.2	18.3
Incr Delay (d2), s/veh	1.1	0.0	2.4	0.7	0.0	0.1	0.5	0.0	0.2	0.0	0.5	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	2.7	0.0	3.8	0.7	0.0	0.2	0.9	0.0	0.6	0.0	1.2	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.4	0.0	20.7	21.4	0.0	15.6	11.9	0.0	9.7	0.0	18.7	19.0
LnGrp LOS	B	A	C	C	A	B	B	A	A	A	B	B
Approach Vol, veh/h		478			66			164			183	
Approach Delay, s/veh		19.7			19.9			10.9			18.9	
Approach LOS		B			B			B			B	

Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		43.0		32.0	14.0	29.0		32.0				
Change Period (Y+Rc), s		5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s		38.0		27.0	9.0	24.0		27.0				
Max Q Clear Time (g_c+I1), s		3.6		11.2	4.2	4.9		11.1				
Green Ext Time (p_c), s		0.2		1.2	0.1	0.4		0.1				

Intersection Summary												
HCM 6th Ctrl Delay			17.9									
HCM 6th LOS			B									

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	12	298	51	58	119	5	6	0	58	8	0	19
Future Volume (vph)	12	298	51	58	119	5	6	0	58	8	0	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	12	12	12	12	12	15	12	15
Grade (%)		-2%			2%			0%			4%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.978			0.994			0.878			0.905	
Flt Protected	0.950			0.950				0.995			0.985	
Satd. Flow (prot)	1762	1749	0	1752	1870	0	0	1627	0	0	1384	0
Flt Permitted	0.950			0.950				0.995			0.985	
Satd. Flow (perm)	1762	1749	0	1752	1870	0	0	1627	0	0	1384	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		785			786			351			287	
Travel Time (s)		17.8			17.9			8.0			6.5	
Peak Hour Factor	0.91	0.91	0.92	0.92	0.91	0.91	0.92	0.92	0.92	0.91	0.92	0.91
Heavy Vehicles (%)	0%	4%	2%	2%	0%	0%	2%	2%	2%	1%	2%	28%
Adj. Flow (vph)	13	327	55	63	131	5	7	0	63	9	0	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	13	382	0	63	136	0	0	70	0	0	30	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.03	1.03	0.99	1.01	1.01	1.01	1.00	1.00	1.00	0.91	1.03	0.91
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	2.5

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	12	298	51	58	119	5	6	0	58	8	0	19
Future Vol, veh/h	12	298	51	58	119	5	6	0	58	8	0	19
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	0	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-2	-	-	2	-	-	0	-	-	4	-
Peak Hour Factor	91	91	92	92	91	91	92	92	92	91	92	91
Heavy Vehicles, %	0	4	2	2	0	0	2	2	2	1	2	28
Mvmt Flow	13	327	55	63	131	5	7	0	63	9	0	21

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	136	0	0	382	0	0	651	643	355	672	668	134
Stage 1	-	-	-	-	-	-	381	381	-	260	260	-
Stage 2	-	-	-	-	-	-	270	262	-	412	408	-
Critical Hdwy	4.1	-	-	4.12	-	-	7.12	6.52	6.22	7.91	7.32	6.88
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.91	6.32	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.91	6.32	-
Follow-up Hdwy	2.2	-	-	2.218	-	-	3.518	4.018	3.318	3.509	4.018	3.552
Pot Cap-1 Maneuver	1461	-	-	1176	-	-	382	392	689	319	327	838
Stage 1	-	-	-	-	-	-	641	613	-	705	654	-
Stage 2	-	-	-	-	-	-	736	691	-	565	545	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1461	-	-	1176	-	-	355	367	689	276	306	838
Mov Cap-2 Maneuver	-	-	-	-	-	-	355	367	-	276	306	-
Stage 1	-	-	-	-	-	-	635	607	-	699	619	-
Stage 2	-	-	-	-	-	-	679	654	-	509	540	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	0.2	2.6	11.4	12.3
HCM LOS			B	B

Minor Lane/Major Mvmt	NELn1	NWL	NWT	NWR	SEL	SET	SER	SWLn1
Capacity (veh/h)	633	1176	-	-	1461	-	-	523
HCM Lane V/C Ratio	0.11	0.054	-	-	0.009	-	-	0.057
HCM Control Delay (s)	11.4	8.2	-	-	7.5	-	-	12.3
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.4	0.2	-	-	0	-	-	0.2

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	35	385	15	0	173
Future Volume (vph)	0	35	385	15	0	173
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%		-2%			-1%
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt		0.865	0.994			
Flt Protected						
Satd. Flow (prot)	0	1611	3622	0	0	3557
Flt Permitted						
Satd. Flow (perm)	0	1611	3622	0	0	3557
Link Speed (mph)	30		30			30
Link Distance (ft)	234		275			114
Travel Time (s)	5.3		6.3			2.6
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	0%	2%	2%	2%
Adj. Flow (vph)	0	38	418	16	0	188
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	38	434	0	0	188
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	0		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	0.99	0.99	0.99	0.99
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	0.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	35	385	15	0	173
Future Vol, veh/h	0	35	385	15	0	173
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	-2	-	-	-1
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	0	2	2	2
Mvmt Flow	0	38	418	16	0	188

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	217	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	787	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	787	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.8	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	787	-
HCM Lane V/C Ratio	-	-	0.048	-
HCM Control Delay (s)	-	-	9.8	-
HCM Lane LOS	-	-	A	-
HCM 95th %tile Q(veh)	-	-	0.2	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	400	15	0	173
Future Volume (vph)	0	0	400	15	0	173
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%		-2%			-1%
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt			0.995			
Flt Protected						
Satd. Flow (prot)	0	1863	3625	0	0	3557
Flt Permitted						
Satd. Flow (perm)	0	1863	3625	0	0	3557
Link Speed (mph)	30		30			30
Link Distance (ft)	236		346			275
Travel Time (s)	5.4		7.9			6.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	0%	2%	2%	2%
Adj. Flow (vph)	0	0	435	16	0	188
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	451	0	0	188
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	0		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	0.99	0.99	0.99	0.99
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

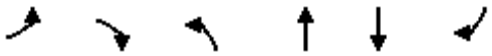
Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	400	15	0	173
Future Vol, veh/h	0	0	400	15	0	173
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	-2	-	-	-1
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	0	2	2	2
Mvmt Flow	0	0	435	16	0	188

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	226	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	777	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	777	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	-
HCM Lane LOS	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	64	17	7	0	0	110
Future Volume (vph)	64	17	7	0	0	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			0%	-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.972				0.865	
Flt Protected	0.962			0.950		
Satd. Flow (prot)	1742	0	0	1770	1619	0
Flt Permitted	0.962			0.950		
Satd. Flow (perm)	1742	0	0	1770	1619	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	212			295	294	
Travel Time (s)	4.8			6.7	6.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	70	18	8	0	0	120
Shared Lane Traffic (%)						
Lane Group Flow (vph)	88	0	0	8	120	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane					Yes	
Headway Factor	1.00	1.00	1.00	1.00	0.99	0.99
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

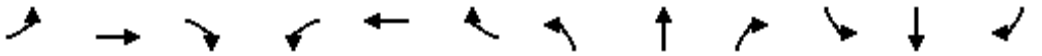
Intersection	
Int Delay, s/veh	4.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	64	17	7	0	0	110
Future Vol, veh/h	64	17	7	0	0	110
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-1	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	70	18	8	0	0	120

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	76	60	120	0	-	0
Stage 1	60	-	-	-	-	-
Stage 2	16	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	927	1005	1468	-	-	-
Stage 1	963	-	-	-	-	-
Stage 2	1007	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	922	1005	1468	-	-	-
Mov Cap-2 Maneuver	865	-	-	-	-	-
Stage 1	958	-	-	-	-	-
Stage 2	1007	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.5	7.5	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1468	-	891	-	-
HCM Lane V/C Ratio	0.005	-	0.099	-	-
HCM Control Delay (s)	7.5	0	9.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-

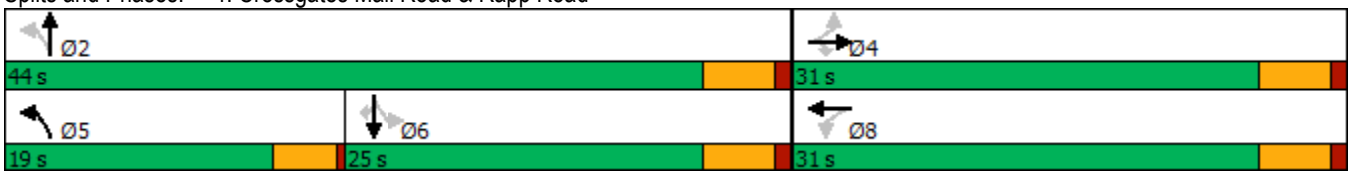


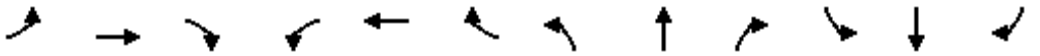
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	82	110	107	115	180	19	270	101	78	10	112	220
Future Volume (vph)	82	110	107	115	180	19	270	101	78	10	112	220
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	14	14	14	12	12	12	12	12	13
Grade (%)		-2%			4%			2%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		150
Storage Lanes	0		1	0		0	1		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.991			0.935				0.850
Flt Protected		0.979			0.982		0.950				0.996	
Satd. Flow (prot)	0	1879	1631	0	3651	0	1702	1736	0	0	1892	1669
Flt Permitted		0.718			0.738		0.557				0.971	
Satd. Flow (perm)	0	1378	1631	0	2744	0	998	1736	0	0	1845	1669
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			122		10			77				250
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		467			504			785			915	
Travel Time (s)		10.6			11.5			17.8			20.8	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	0%	0%	0%	0%	1%	0%	5%	0%	3%	0%	0%	0%
Adj. Flow (vph)	93	125	122	131	205	22	307	115	89	11	127	250
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	218	122	0	358	0	307	204	0	0	138	250
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.94	0.94	0.94	1.01	1.01	1.01	1.00	1.00	0.96
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	1	1	1		1	1		1	1	1
Detector Template	Left			Left						Left		
Leading Detector (ft)	20	6	6	20	6		6	6		20	6	6
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6	6	20	6		6	6		20	6	6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8			2			6		6
Detector Phase	4	4	4	8	8		5	2		6	6	6
Switch Phase												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	21.0	21.0	21.0	21.0	21.0		8.0	21.0		21.0	21.0	21.0
Total Split (s)	31.0	31.0	31.0	31.0	31.0		19.0	44.0		25.0	25.0	25.0
Total Split (%)	41.3%	41.3%	41.3%	41.3%	41.3%		25.3%	58.7%		33.3%	33.3%	33.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		3.5	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		0.5	1.0		1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)		5.0	5.0		5.0		4.0	5.0			5.0	5.0
Lead/Lag							Lead			Lag	Lag	Lag
Lead-Lag Optimize?							Yes			Yes	Yes	Yes
Recall Mode	Max	Max	Max	Max	Max		Max	Max		Max	Max	Max
v/c Ratio		0.46	0.19		0.37		0.46	0.22			0.28	0.40
Control Delay		22.9	4.5		19.3		12.5	6.6			23.7	5.4
Queue Delay		0.0	0.0		0.0		0.0	0.0			0.0	0.0
Total Delay		22.9	4.5		19.3		12.5	6.6			23.7	5.4
Queue Length 50th (ft)		77	0		62		76	29			51	0
Queue Length 95th (ft)		135	31		95		122	60			93	47
Internal Link Dist (ft)		387			424			705			835	
Turn Bay Length (ft)												150
Base Capacity (vph)		477	645		957		673	939			492	628
Starvation Cap Reductn		0	0		0		0	0			0	0
Spillback Cap Reductn		0	0		0		0	0			0	0
Storage Cap Reductn		0	0		0		0	0			0	0
Reduced v/c Ratio		0.46	0.19		0.37		0.46	0.22			0.28	0.40

Intersection Summary	
Area Type:	Other
Cycle Length: 75	
Actuated Cycle Length: 75	
Natural Cycle: 50	
Control Type: Semi Act-Uncoord	

Splits and Phases: 4: Crossgates Mall Road & Rapp Road





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	82	110	107	115	180	19	270	101	78	10	112	220
Future Volume (veh/h)	82	110	107	115	180	19	270	101	78	10	112	220
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1979	1979	1979	1863	1863	1863	1802	1876	1876	1900	1900	1976
Adj Flow Rate, veh/h	93	125	122	131	205	22	307	115	89	11	127	250
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	0	0	0	1	1	1	5	0	0	0	0	0
Cap, veh/h	241	303	581	276	568	65	642	510	395	66	484	447
Arrive On Green	0.35	0.35	0.35	0.35	0.35	0.35	0.20	0.52	0.52	0.27	0.27	0.27
Sat Flow, veh/h	499	875	1677	546	1638	186	1717	981	759	53	1816	1675
Grp Volume(v), veh/h	218	0	122	162	0	196	307	0	204	138	0	250
Grp Sat Flow(s),veh/h/ln	1374	0	1677	709	0	1661	1717	0	1740	1869	0	1675
Q Serve(g_s), s	5.0	0.0	3.8	8.4	0.0	6.6	8.3	0.0	4.8	0.0	0.0	9.7
Cycle Q Clear(g_c), s	11.6	0.0	3.8	20.0	0.0	6.6	8.3	0.0	4.8	4.3	0.0	9.7
Prop In Lane	0.43		1.00	0.81		0.11	1.00		0.44	0.08		1.00
Lane Grp Cap(c), veh/h	545	0	581	333	0	576	642	0	905	550	0	447
V/C Ratio(X)	0.40	0.00	0.21	0.49	0.00	0.34	0.48	0.00	0.23	0.25	0.00	0.56
Avail Cap(c_a), veh/h	545	0	581	333	0	576	642	0	905	550	0	447
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.9	0.0	17.3	26.8	0.0	18.1	12.1	0.0	9.8	21.7	0.0	23.7
Incr Delay (d2), s/veh	2.2	0.0	0.8	5.0	0.0	1.6	2.5	0.0	0.6	1.1	0.0	5.0
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	3.3	0.0	1.5	3.0	0.0	2.6	3.3	0.0	1.8	2.0	0.0	4.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.1	0.0	18.1	31.8	0.0	19.8	14.7	0.0	10.4	22.8	0.0	28.7
LnGrp LOS	C	A	B	C	A	B	B	A	B	C	A	C
Approach Vol, veh/h		340			358			511			388	
Approach Delay, s/veh		20.7			25.2			12.9			26.6	
Approach LOS		C			C			B			C	

Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		44.0		31.0	19.0	25.0		31.0				
Change Period (Y+Rc), s		5.0		5.0	4.0	5.0		5.0				
Max Green Setting (Gmax), s		39.0		26.0	15.0	20.0		26.0				
Max Q Clear Time (g_c+I1), s		6.8		13.6	10.3	11.7		22.0				
Green Ext Time (p_c), s		0.5		0.8	0.4	0.7		0.4				

Intersection Summary												
HCM 6th Ctrl Delay			20.7									
HCM 6th LOS			C									

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	27	177	128	142	351	64	35	12	195	77	12	62
Future Volume (vph)	27	177	128	142	351	64	35	12	195	77	12	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	12	12	12	12	12	15	12	15
Grade (%)		-2%			2%			0%			4%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.938			0.977			0.891			0.945	
Flt Protected	0.950			0.950				0.993			0.975	
Satd. Flow (prot)	1762	1687	0	1752	1838	0	0	1648	0	0	1530	0
Flt Permitted	0.950			0.950				0.993			0.975	
Satd. Flow (perm)	1762	1687	0	1752	1838	0	0	1648	0	0	1530	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		785			786			351			287	
Travel Time (s)		17.8			17.9			8.0			6.5	
Peak Hour Factor	0.91	0.91	0.92	0.92	0.91	0.91	0.92	0.92	0.92	0.91	0.92	0.91
Heavy Vehicles (%)	0%	4%	2%	2%	0%	0%	2%	2%	2%	1%	2%	28%
Adj. Flow (vph)	30	195	139	154	386	70	38	13	212	85	13	68
Shared Lane Traffic (%)												
Lane Group Flow (vph)	30	334	0	154	456	0	0	263	0	0	166	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.03	1.03	0.99	1.01	1.01	1.01	1.00	1.00	1.00	0.91	1.03	0.91
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	33.8

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	27	177	128	142	351	64	35	12	195	77	12	62
Future Vol, veh/h	27	177	128	142	351	64	35	12	195	77	12	62
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	0	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-2	-	-	2	-	-	0	-	-	4	-
Peak Hour Factor	91	91	92	92	91	91	92	92	92	91	92	91
Heavy Vehicles, %	0	4	2	2	0	0	2	2	2	1	2	28
Mvmt Flow	30	195	139	154	386	70	38	13	212	85	13	68

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	456	0	0	334	0	0	1095	1089	265	1166	1123	421
Stage 1	-	-	-	-	-	-	325	325	-	729	729	-
Stage 2	-	-	-	-	-	-	770	764	-	437	394	-
Critical Hdwy	4.1	-	-	4.12	-	-	7.12	6.52	6.22	7.91	7.32	6.88
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.91	6.32	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.91	6.32	-
Follow-up Hdwy	2.2	-	-	2.218	-	-	3.518	4.018	3.318	3.509	4.018	3.552
Pot Cap-1 Maneuver	1115	-	-	1225	-	-	191	215	774	132	160	554
Stage 1	-	-	-	-	-	-	687	649	-	354	364	-
Stage 2	-	-	-	-	-	-	393	413	-	545	554	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1115	-	-	1225	-	-	138	183	774	~ 80	136	554
Mov Cap-2 Maneuver	-	-	-	-	-	-	138	183	-	~ 80	136	-
Stage 1	-	-	-	-	-	-	668	631	-	344	318	-
Stage 2	-	-	-	-	-	-	289	361	-	377	539	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	0.7	2.1	26.4	235.1
HCM LOS			D	F

Minor Lane/Major Mvmt	NELn1	NWL	NWT	NWR	SEL	SET	SERSWLn1
Capacity (veh/h)	424	1225	-	-	1115	-	- 130
HCM Lane V/C Ratio	0.62	0.126	-	-	0.027	-	- 1.275
HCM Control Delay (s)	26.4	8.4	-	-	8.3	-	- 235.1
HCM Lane LOS	D	A	-	-	A	-	- F
HCM 95th %tile Q(veh)	4.1	0.4	-	-	0.1	-	- 10.4

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

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	87	211	56	0	671
Future Volume (vph)	0	87	211	56	0	671
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%		-2%			-1%
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt		0.865	0.968			
Flt Protected						
Satd. Flow (prot)	0	1611	3515	0	0	3557
Flt Permitted						
Satd. Flow (perm)	0	1611	3515	0	0	3557
Link Speed (mph)	30		30			30
Link Distance (ft)	234		275			114
Travel Time (s)	5.3		6.3			2.6
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	0%	2%	2%	2%
Adj. Flow (vph)	0	95	229	61	0	729
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	95	290	0	0	729
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	0		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	0.99	0.99	0.99	0.99
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	0.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	87	211	56	0	671
Future Vol, veh/h	0	87	211	56	0	671
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	-2	-	-	-1
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	0	2	2	2
Mvmt Flow	0	95	229	61	0	729

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	145	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	876	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	876	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	876	-
HCM Lane V/C Ratio	-	-	0.108	-
HCM Control Delay (s)	-	-	9.6	-
HCM Lane LOS	-	-	A	-
HCM 95th %tile Q(veh)	-	-	0.4	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	267	56	0	671
Future Volume (vph)	0	0	267	56	0	671
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%		-2%			-1%
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt			0.974			
Flt Protected						
Satd. Flow (prot)	0	1863	3539	0	0	3557
Flt Permitted						
Satd. Flow (perm)	0	1863	3539	0	0	3557
Link Speed (mph)	30		30			30
Link Distance (ft)	236		346			275
Travel Time (s)	5.4		7.9			6.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	0%	2%	2%	2%
Adj. Flow (vph)	0	0	290	61	0	729
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	351	0	0	729
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	0		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	0.99	0.99	0.99	0.99
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

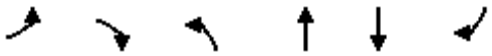
Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	267	56	0	671
Future Vol, veh/h	0	0	267	56	0	671
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	-2	-	-	-1
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	0	2	2	2
Mvmt Flow	0	0	290	61	0	729

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	176	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	837	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	837	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	-
HCM Lane LOS	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	242	101	36	0	0	282
Future Volume (vph)	242	101	36	0	0	282
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			0%	-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.960				0.865	
Flt Protected	0.966			0.950		
Satd. Flow (prot)	1727	0	0	1770	1619	0
Flt Permitted	0.966			0.950		
Satd. Flow (perm)	1727	0	0	1770	1619	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	212			295	294	
Travel Time (s)	4.8			6.7	6.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	263	110	39	0	0	307
Shared Lane Traffic (%)						
Lane Group Flow (vph)	373	0	0	39	307	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	0.99	0.99
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

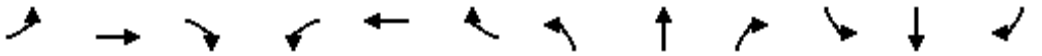
Intersection	
Int Delay, s/veh	7.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	242	101	36	0	0	282
Future Vol, veh/h	242	101	36	0	0	282
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-1	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	263	110	39	0	0	307

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	232	154	307	0	-	0
Stage 1	154	-	-	-	-	-
Stage 2	78	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	756	892	1254	-	-	-
Stage 1	874	-	-	-	-	-
Stage 2	945	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	733	892	1254	-	-	-
Mov Cap-2 Maneuver	733	-	-	-	-	-
Stage 1	847	-	-	-	-	-
Stage 2	945	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.9	8	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1254	-	774	-	-
HCM Lane V/C Ratio	0.031	-	0.482	-	-
HCM Control Delay (s)	8	0	13.9	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	2.6	-	-



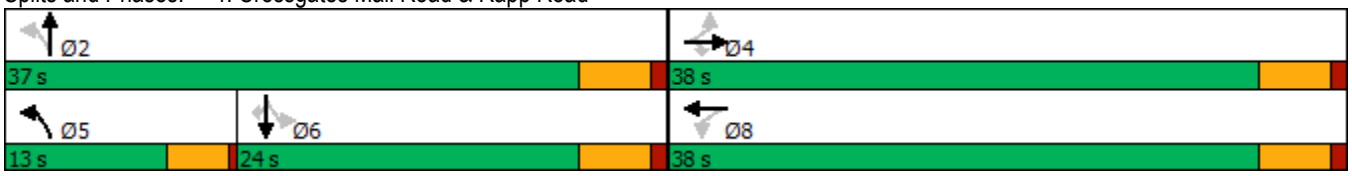
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	194	192	179	148	30	141	89	124	15	108	98
Future Volume (vph)	105	194	192	179	148	30	141	89	124	15	108	98
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	14	14	14	12	12	12	12	12	13
Grade (%)		-2%			4%			2%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		150
Storage Lanes	0		1	0		0	1		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.987			0.913				0.850
Flt Protected		0.983			0.976		0.950				0.994	
Satd. Flow (prot)	0	1860	1584	0	3567	0	1702	1632	0	0	1889	1669
Flt Permitted		0.748			0.653		0.557				0.949	
Satd. Flow (perm)	0	1415	1584	0	2386	0	998	1632	0	0	1803	1669
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			202		17			117				103
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		467			504			785			913	
Travel Time (s)		10.6			11.5			17.8			20.8	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	4%	0%	3%	3%	1%	0%	5%	0%	9%	0%	0%	0%
Adj. Flow (vph)	111	204	202	188	156	32	148	94	131	16	114	103
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	315	202	0	376	0	148	225	0	0	130	103
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.94	0.94	0.94	1.01	1.01	1.01	1.00	1.00	0.96
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	1	1	1		1	1		1	1	1
Detector Template	Left			Left						Left		
Leading Detector (ft)	20	6	6	20	6		6	6		20	6	6
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6	6	20	6		6	6		20	6	6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8			2			6		6
Detector Phase	4	4	4	8	8		5	2		6	6	6
Switch Phase												

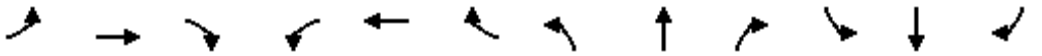
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	21.0	21.0	21.0	21.0	21.0		8.0	21.0		21.0	21.0	21.0
Total Split (s)	38.0	38.0	38.0	38.0	38.0		13.0	37.0		24.0	24.0	24.0
Total Split (%)	50.7%	50.7%	50.7%	50.7%	50.7%		17.3%	49.3%		32.0%	32.0%	32.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		3.5	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		0.5	1.0		1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)		5.0	5.0		5.0		4.0	5.0			5.0	5.0
Lead/Lag							Lead			Lag	Lag	Lag
Lead-Lag Optimize?							Yes			Yes	Yes	Yes
Recall Mode	Max	Max	Max	Max	Max		Max	Max		Max	Max	Max
v/c Ratio		0.51	0.25		0.36		0.28	0.29			0.29	0.21
Control Delay		18.7	3.0		14.5		14.6	8.0			24.6	6.3
Queue Delay		0.0	0.0		0.0		0.0	0.0			0.0	0.0
Total Delay		18.7	3.0		14.5		14.6	8.0			24.6	6.3
Queue Length 50th (ft)		101	0		55		41	30			49	0
Queue Length 95th (ft)		173	34		87		76	73			93	35
Internal Link Dist (ft)		387			424			705			833	
Turn Bay Length (ft)												150
Base Capacity (vph)		622	810		1059		523	763			456	499
Starvation Cap Reductn		0	0		0		0	0			0	0
Spillback Cap Reductn		0	0		0		0	0			0	0
Storage Cap Reductn		0	0		0		0	0			0	0
Reduced v/c Ratio		0.51	0.25		0.36		0.28	0.29			0.29	0.21

Intersection Summary

Area Type: Other
Cycle Length: 75
Actuated Cycle Length: 75
Natural Cycle: 50
Control Type: Semi Act-Uncoord

Splits and Phases: 4: Crossgates Mall Road & Rapp Road





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	105	194	192	179	148	30	141	89	124	15	108	98
Future Volume (veh/h)	105	194	192	179	148	30	141	89	124	15	108	98
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1979	1979	1934	1863	1863	1863	1802	1876	1876	1900	1900	1976
Adj Flow Rate, veh/h	111	204	202	188	156	32	148	94	131	16	114	103
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	3	1	1	1	5	0	0	0	0	0
Cap, veh/h	279	490	721	380	600	123	525	303	422	80	440	424
Arrive On Green	0.44	0.44	0.44	0.44	0.44	0.44	0.12	0.43	0.43	0.25	0.25	0.25
Sat Flow, veh/h	486	1113	1639	645	1365	280	1717	710	989	101	1736	1675
Grp Volume(v), veh/h	315	0	202	188	0	188	148	0	225	130	0	103
Grp Sat Flow(s),veh/h/ln	1599	0	1639	645	0	1645	1717	0	1698	1837	0	1675
Q Serve(g_s), s	5.7	0.0	5.9	12.7	0.0	5.4	4.2	0.0	6.6	0.0	0.0	3.7
Cycle Q Clear(g_c), s	11.2	0.0	5.9	23.9	0.0	5.4	4.2	0.0	6.6	4.1	0.0	3.7
Prop In Lane	0.35		1.00	1.00		0.17	1.00		0.58	0.12		1.00
Lane Grp Cap(c), veh/h	769	0	721	380	0	724	525	0	725	519	0	424
V/C Ratio(X)	0.41	0.00	0.28	0.49	0.00	0.26	0.28	0.00	0.31	0.25	0.00	0.24
Avail Cap(c_a), veh/h	769	0	721	380	0	724	525	0	725	519	0	424
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.8	0.0	13.4	23.3	0.0	13.3	15.1	0.0	14.2	22.4	0.0	22.3
Incr Delay (d2), s/veh	1.6	0.0	1.0	4.6	0.0	0.9	1.3	0.0	1.1	1.2	0.0	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	0.0	2.2	3.2	0.0	2.0	1.7	0.0	2.6	1.9	0.0	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.4	0.0	14.4	27.9	0.0	14.1	16.4	0.0	15.3	23.6	0.0	23.6
LnGrp LOS	B	A	B	C	A	B	B	A	B	C	A	C
Approach Vol, veh/h		517			376			373			233	
Approach Delay, s/veh		15.6			21.0			15.8			23.6	
Approach LOS		B			C			B			C	

Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		37.0		38.0	13.0	24.0		38.0				
Change Period (Y+Rc), s		5.0		5.0	4.0	5.0		5.0				
Max Green Setting (Gmax), s		32.0		33.0	9.0	19.0		33.0				
Max Q Clear Time (g_c+I1), s		8.6		13.2	6.2	6.1		25.9				
Green Ext Time (p_c), s		0.6		1.4	0.1	0.5		0.8				

Intersection Summary												
HCM 6th Ctrl Delay			18.3									
HCM 6th LOS			B									

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	92	215	171	190	210	169	47	15	287	117	15	96
Future Volume (vph)	92	215	171	190	210	169	47	15	287	117	15	96
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	12	12	12	12	12	15	12	15
Grade (%)		-2%			2%			0%			4%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.934			0.933			0.889			0.943	
Flt Protected	0.950			0.950				0.993			0.975	
Satd. Flow (prot)	1745	1680	0	1752	1747	0	0	1644	0	0	1608	0
Flt Permitted	0.950			0.950				0.993			0.975	
Satd. Flow (perm)	1745	1680	0	1752	1747	0	0	1644	0	0	1608	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		785			786			351			287	
Travel Time (s)		17.8			17.9			8.0			6.5	
Confl. Peds. (#/hr)	1		1	1		1			1	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	4%	2%	2%	0%	1%	2%	2%	2%	0%	2%	15%
Adj. Flow (vph)	100	234	186	207	228	184	51	16	312	127	16	104
Shared Lane Traffic (%)												
Lane Group Flow (vph)	100	420	0	207	412	0	0	379	0	0	247	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.03	1.03	0.99	1.01	1.01	1.01	1.00	1.00	1.00	0.91	1.03	0.91
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	260.5

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	92	215	171	190	210	169	47	15	287	117	15	96
Future Vol, veh/h	92	215	171	190	210	169	47	15	287	117	15	96
Conflicting Peds, #/hr	1	0	1	1	0	1	0	0	1	1	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-2	-	-	2	-	-	0	-	-	4	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	1	4	2	2	0	1	2	2	2	0	2	15
Mvmt Flow	100	234	186	207	228	184	51	16	312	127	16	104

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	413	0	0	421	0	0	1322	1355	329	1427	1356	321
Stage 1	-	-	-	-	-	-	528	528	-	735	735	-
Stage 2	-	-	-	-	-	-	794	827	-	692	621	-
Critical Hdwy	4.11	-	-	4.12	-	-	7.12	6.52	6.22	7.9	7.32	6.75
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.9	6.32	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.9	6.32	-
Follow-up Hdwy	2.209	-	-	2.218	-	-	3.518	4.018	3.318	3.5	4.018	3.435
Pot Cap-1 Maneuver	1151	-	-	1138	-	-	133	149	712	~ 83	110	666
Stage 1	-	-	-	-	-	-	534	528	-	352	361	-
Stage 2	-	-	-	-	-	-	381	386	-	375	418	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1150	-	-	1137	-	-	77	111	711	~ 33	82	665
Mov Cap-2 Maneuver	-	-	-	-	-	-	77	111	-	~ 33	82	-
Stage 1	-	-	-	-	-	-	487	482	-	321	295	-
Stage 2	-	-	-	-	-	-	248	315	-	186	381	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	1.6	3	171.4	$ 1582.3
HCM LOS			F	F

Minor Lane/Major Mvmt	NELn1	NWL	NWT	NWR	SEL	SET	SERSWLn1
Capacity (veh/h)	304	1137	-	-	1150	-	- 59
HCM Lane V/C Ratio	1.248	0.182	-	-	0.087	-	- 4.2
HCM Control Delay (s)	171.4	8.9	-	-	8.4	-	- $ 1582.3
HCM Lane LOS	F	A	-	-	A	-	- F
HCM 95th %tile Q(veh)	17.5	0.7	-	-	0.3	-	- 27

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

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	133	359	82	0	386
Future Volume (vph)	0	133	359	82	0	386
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%		-2%			-1%
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt		0.865	0.972			
Flt Protected						
Satd. Flow (prot)	0	1611	3475	0	0	3557
Flt Permitted						
Satd. Flow (perm)	0	1611	3475	0	0	3557
Link Speed (mph)	30		30			30
Link Distance (ft)	234		275			114
Travel Time (s)	5.3		6.3			2.6
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	145	390	89	0	420
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	145	479	0	0	420
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	0		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	0.99	0.99	0.99	0.99
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	133	359	82	0	386
Future Vol, veh/h	0	133	359	82	0	386
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	-2	-	-	-1
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	145	390	89	0	420

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	240	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	761	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	761	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.8	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	761	-
HCM Lane V/C Ratio	-	-	0.19	-
HCM Control Delay (s)	-	-	10.8	-
HCM Lane LOS	-	-	B	-
HCM 95th %tile Q(veh)	-	-	0.7	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	441	83	0	386
Future Volume (vph)	0	0	441	83	0	386
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%		-2%			-1%
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt			0.976			
Flt Protected						
Satd. Flow (prot)	0	1863	3489	0	0	3557
Flt Permitted						
Satd. Flow (perm)	0	1863	3489	0	0	3557
Link Speed (mph)	30		30			30
Link Distance (ft)	236		346			275
Travel Time (s)	5.4		7.9			6.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	479	90	0	420
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	569	0	0	420
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	0		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	0.99	0.99	0.99	0.99
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

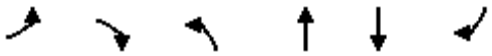
Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	441	83	0	386
Future Vol, veh/h	0	0	441	83	0	386
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	-2	-	-	-1
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	479	90	0	420

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	285	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	712	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	712	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	-
HCM Lane LOS	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	349	123	43	0	0	376
Future Volume (vph)	349	123	43	0	0	376
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			0%	-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.965				0.865	
Flt Protected	0.964			0.950		
Satd. Flow (prot)	1733	0	0	1770	1619	0
Flt Permitted	0.964			0.950		
Satd. Flow (perm)	1733	0	0	1770	1619	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	212			295	294	
Travel Time (s)	4.8			6.7	6.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	379	134	47	0	0	409
Shared Lane Traffic (%)						
Lane Group Flow (vph)	513	0	0	47	409	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	0.99	0.99
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	12.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	349	123	43	0	0	376
Future Vol, veh/h	349	123	43	0	0	376
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-1	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	379	134	47	0	0	409

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	299	205	409	0	-	0
Stage 1	205	-	-	-	-	-
Stage 2	94	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	692	836	1150	-	-	-
Stage 1	829	-	-	-	-	-
Stage 2	930	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	664	836	1150	-	-	-
Mov Cap-2 Maneuver	664	-	-	-	-	-
Stage 1	795	-	-	-	-	-
Stage 2	930	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	22.7	8.3	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1150	-	702	-	-
HCM Lane V/C Ratio	0.041	-	0.731	-	-
HCM Control Delay (s)	8.3	0	22.7	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.1	-	6.4	-	-

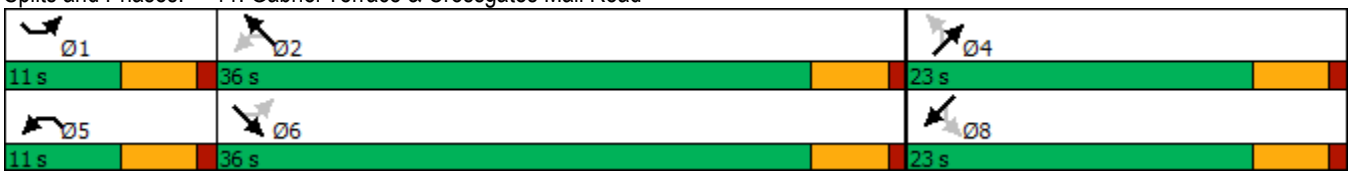
Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	12	298	51	58	119	5	6	0	58	8	0	19
Future Volume (vph)	12	298	51	58	119	5	6	0	58	8	0	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	12	12	12	12	12	15	12	15
Grade (%)		-2%			2%			0%			4%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.978			0.994			0.878			0.905	
Flt Protected	0.950			0.950				0.995			0.985	
Satd. Flow (prot)	1762	1749	0	1752	1870	0	0	1627	0	0	1384	0
Flt Permitted	0.670			0.503				0.960			0.874	
Satd. Flow (perm)	1243	1749	0	928	1870	0	0	1570	0	0	1228	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16			4			109			109	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		785			786			351			287	
Travel Time (s)		17.8			17.9			8.0			6.5	
Peak Hour Factor	0.91	0.91	0.92	0.92	0.91	0.91	0.92	0.92	0.92	0.91	0.92	0.91
Heavy Vehicles (%)	0%	4%	2%	2%	0%	0%	2%	2%	2%	1%	2%	28%
Adj. Flow (vph)	13	327	55	63	131	5	7	0	63	9	0	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	13	382	0	63	136	0	0	70	0	0	30	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.03	1.03	0.99	1.01	1.01	1.01	1.00	1.00	1.00	0.91	1.03	0.91
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left			Left			Left			Left		
Leading Detector (ft)	20	83		20	83		20	83		20	83	
Trailing Detector (ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Position(ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Size(ft)	20	40		20	40		20	40		20	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		43			43			43			43	
Detector 2 Size(ft)		40			40			40			40	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6			2			4			8		

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	9.0	21.0		9.0	21.0		21.0	21.0		21.0	21.0	
Total Split (s)	11.0	36.0		11.0	36.0		23.0	23.0		23.0	23.0	
Total Split (%)	15.7%	51.4%		15.7%	51.4%		32.9%	32.9%		32.9%	32.9%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0			5.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	Min		None	Min		None	None		None	None	
v/c Ratio	0.01	0.33		0.08	0.10			0.20			0.10	
Control Delay	3.3	8.1		3.4	5.4			4.0			0.7	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	3.3	8.1		3.4	5.4			4.0			0.7	
Queue Length 50th (ft)	1	31		4	10			0			0	
Queue Length 95th (ft)	5	131		13	47			16			0	
Internal Link Dist (ft)		705			706			271			207	
Turn Bay Length (ft)												
Base Capacity (vph)	897	1495		769	1597			884			702	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.01	0.26		0.08	0.09			0.08			0.04	

Intersection Summary

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 35.8
Natural Cycle: 55
Control Type: Actuated-Uncoordinated

Splits and Phases: 11: Gabriel Terrace & Crossgates Mall Road



Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	12	298	51	58	119	5	6	0	58	8	0	19
Future Volume (veh/h)	12	298	51	58	119	5	6	0	58	8	0	19
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1979	1919	1919	1847	1876	1876	1870	1870	1870	1847	1776	1847
Adj Flow Rate, veh/h	13	327	55	63	131	5	7	0	63	9	0	21
Peak Hour Factor	0.91	0.91	0.92	0.92	0.91	0.91	0.92	0.92	0.92	0.91	0.92	0.91
Percent Heavy Veh, %	0	4	4	2	0	0	2	2	2	2	2	2
Cap, veh/h	705	518	87	507	656	25	156	0	113	207	0	87
Arrive On Green	0.01	0.32	0.32	0.06	0.37	0.37	0.08	0.00	0.08	0.08	0.00	0.08
Sat Flow, veh/h	1884	1601	269	1759	1796	69	162	0	1462	478	0	1115
Grp Volume(v), veh/h	13	0	382	63	0	136	70	0	0	30	0	0
Grp Sat Flow(s),veh/h/ln	1884	0	1870	1759	0	1864	1625	0	0	1593	0	0
Q Serve(g_s), s	0.1	0.0	4.8	0.6	0.0	1.4	0.7	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.1	0.0	4.8	0.6	0.0	1.4	1.1	0.0	0.0	0.4	0.0	0.0
Prop In Lane	1.00		0.14	1.00		0.04	0.10		0.90	0.30		0.70
Lane Grp Cap(c), veh/h	705	0	605	507	0	681	270	0	0	293	0	0
V/C Ratio(X)	0.02	0.00	0.63	0.12	0.00	0.20	0.26	0.00	0.00	0.10	0.00	0.00
Avail Cap(c_a), veh/h	1088	0	2100	791	0	2093	1168	0	0	1113	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.1	0.0	7.9	6.0	0.0	6.0	12.2	0.0	0.0	11.9	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	1.1	0.1	0.0	0.1	0.5	0.0	0.0	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	1.3	0.1	0.0	0.3	0.3	0.0	0.0	0.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.1	0.0	9.0	6.1	0.0	6.1	12.7	0.0	0.0	12.1	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	B	A	A	B	A	A
Approach Vol, veh/h		395			199			70			30	
Approach Delay, s/veh		8.9			6.1			12.7			12.1	
Approach LOS		A			A			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.4	15.1		7.1	6.5	13.9		7.1				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	6.0	31.0		18.0	6.0	31.0		18.0				
Max Q Clear Time (g_c+I1), s	2.1	3.4		3.1	2.6	6.8		2.4				
Green Ext Time (p_c), s	0.0	0.6		0.2	0.0	2.1		0.1				

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

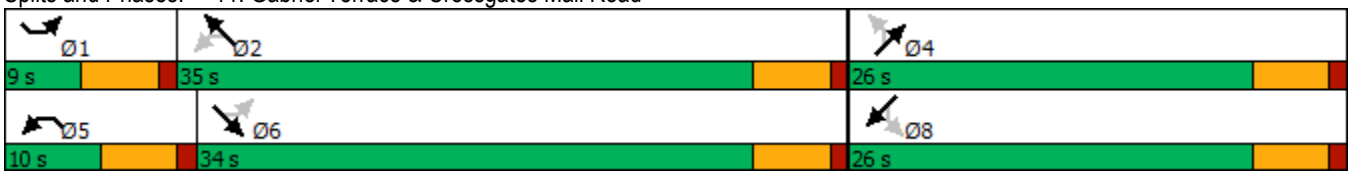
Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	27	177	128	142	351	64	35	12	195	77	12	62
Future Volume (vph)	27	177	128	142	351	64	35	12	195	77	12	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	12	12	12	12	12	15	12	15
Grade (%)		-2%			2%			0%			4%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.938			0.977			0.891			0.945	
Flt Protected	0.950			0.950				0.993			0.975	
Satd. Flow (prot)	1762	1687	0	1752	1838	0	0	1648	0	0	1530	0
Flt Permitted	0.455			0.441				0.935			0.673	
Satd. Flow (perm)	844	1687	0	813	1838	0	0	1552	0	0	1056	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		63			16			212			51	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		785			786			351			287	
Travel Time (s)		17.8			17.9			8.0			6.5	
Peak Hour Factor	0.91	0.91	0.92	0.92	0.91	0.91	0.92	0.92	0.92	0.91	0.92	0.91
Heavy Vehicles (%)	0%	4%	2%	2%	0%	0%	2%	2%	2%	1%	2%	28%
Adj. Flow (vph)	30	195	139	154	386	70	38	13	212	85	13	68
Shared Lane Traffic (%)												
Lane Group Flow (vph)	30	334	0	154	456	0	0	263	0	0	166	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.03	1.03	0.99	1.01	1.01	1.01	1.00	1.00	1.00	0.91	1.03	0.91
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left			Left			Left			Left		
Leading Detector (ft)	20	83		20	83		20	83		20	83	
Trailing Detector (ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Position(ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Size(ft)	20	40		20	40		20	40		20	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		43			43			43			43	
Detector 2 Size(ft)		40			40			40			40	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6			2			4			8		

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	9.0	21.0		9.0	21.0		21.0	21.0		21.0	21.0	
Total Split (s)	9.0	34.0		10.0	35.0		26.0	26.0		26.0	26.0	
Total Split (%)	12.9%	48.6%		14.3%	50.0%		37.1%	37.1%		37.1%	37.1%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0			5.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	Min		None	Min		None	None		None	None	
v/c Ratio	0.07	0.53		0.30	0.54			0.49			0.56	
Control Delay	6.7	14.1		8.0	13.3			8.5			21.0	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	6.7	14.1		8.0	13.3			8.5			21.0	
Queue Length 50th (ft)	3	54		17	57			10			24	
Queue Length 95th (ft)	15	142		54	219			67			92	
Internal Link Dist (ft)		705			706			271			207	
Turn Bay Length (ft)												
Base Capacity (vph)	440	1170		511	1288			892			560	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.07	0.29		0.30	0.35			0.29			0.30	

Intersection Summary

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 45.8
Natural Cycle: 55
Control Type: Actuated-Uncoordinated

Splits and Phases: 11: Gabriel Terrace & Crossgates Mall Road



Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	27	177	128	142	351	64	35	12	195	77	12	62
Future Volume (veh/h)	27	177	128	142	351	64	35	12	195	77	12	62
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1979	1919	1919	1847	1876	1876	1870	1870	1870	1847	1776	1847
Adj Flow Rate, veh/h	30	195	139	154	386	70	38	13	212	85	13	68
Peak Hour Factor	0.91	0.91	0.92	0.92	0.91	0.91	0.92	0.92	0.92	0.91	0.92	0.91
Percent Heavy Veh, %	0	4	4	2	0	0	2	2	2	2	2	2
Cap, veh/h	364	288	205	466	525	95	141	40	297	289	69	148
Arrive On Green	0.03	0.28	0.28	0.09	0.34	0.34	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	1884	1042	743	1759	1546	280	137	170	1276	618	298	635
Grp Volume(v), veh/h	30	0	334	154	0	456	263	0	0	166	0	0
Grp Sat Flow(s),veh/h/ln	1884	0	1785	1759	0	1826	1583	0	0	1551	0	0
Q Serve(g_s), s	0.4	0.0	6.3	2.3	0.0	8.3	2.3	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.4	0.0	6.3	2.3	0.0	8.3	5.7	0.0	0.0	3.2	0.0	0.0
Prop In Lane	1.00		0.42	1.00		0.15	0.14		0.81	0.51		0.41
Lane Grp Cap(c), veh/h	364	0	494	466	0	620	478	0	0	506	0	0
V/C Ratio(X)	0.08	0.00	0.68	0.33	0.00	0.74	0.55	0.00	0.00	0.33	0.00	0.00
Avail Cap(c_a), veh/h	510	0	1377	539	0	1457	983	0	0	922	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	9.7	0.0	12.1	8.8	0.0	10.9	13.2	0.0	0.0	12.3	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.0	1.6	0.4	0.0	1.7	1.0	0.0	0.0	0.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	2.1	0.7	0.0	2.7	1.7	0.0	0.0	1.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.8	0.0	13.7	9.2	0.0	12.6	14.2	0.0	0.0	12.7	0.0	0.0
LnGrp LOS	A	A	B	A	A	B	B	A	A	B	A	A
Approach Vol, veh/h		364			610			263			166	
Approach Delay, s/veh		13.4			11.8			14.2			12.7	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.1	17.8		13.8	8.4	15.4		13.8				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	4.0	30.0		21.0	5.0	29.0		21.0				
Max Q Clear Time (g_c+I1), s	2.4	10.3		7.7	4.3	8.3		5.2				
Green Ext Time (p_c), s	0.0	2.5		1.2	0.0	1.8		0.8				

Intersection Summary			
HCM 6th Ctrl Delay		12.8	
HCM 6th LOS		B	

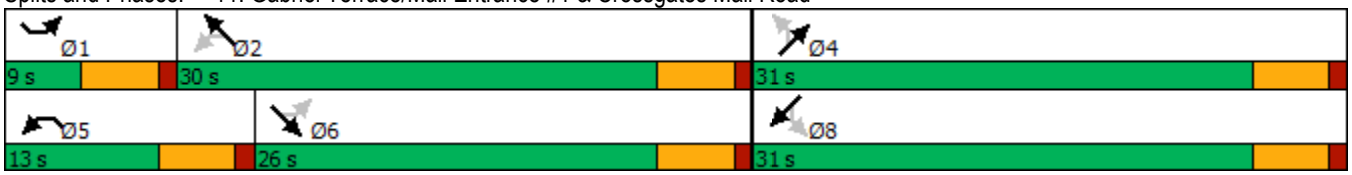
Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	92	215	171	190	210	169	47	15	287	117	15	96
Future Volume (vph)	92	215	171	190	210	169	47	15	287	117	15	96
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	12	12	12	12	12	15	12	15
Grade (%)		-2%			2%			0%			4%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	0.99		1.00	0.99			0.99			1.00	
Frt		0.934			0.933			0.889			0.943	
Flt Protected	0.950			0.950				0.993			0.975	
Satd. Flow (prot)	1745	1664	0	1752	1730	0	0	1626	0	0	1608	0
Flt Permitted	0.518			0.251				0.932			0.538	
Satd. Flow (perm)	950	1664	0	463	1730	0	0	1526	0	0	887	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		58			65			312			60	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		785			786			351			287	
Travel Time (s)		17.8			17.9			8.0			6.5	
Confl. Peds. (#/hr)	1		1	1		1			1	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	4%	2%	2%	0%	1%	2%	2%	2%	0%	2%	15%
Adj. Flow (vph)	100	234	186	207	228	184	51	16	312	127	16	104
Shared Lane Traffic (%)												
Lane Group Flow (vph)	100	420	0	207	412	0	0	379	0	0	247	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.03	1.03	0.99	1.01	1.01	1.01	1.00	1.00	1.00	0.91	1.03	0.91
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left			Left			Left			Left		
Leading Detector (ft)	20	83		20	83		20	83		20	83	
Trailing Detector (ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Position(ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Size(ft)	20	40		20	40		20	40		20	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		43			43			43			43	
Detector 2 Size(ft)		40			40			40			40	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6			2			4			8		
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	9.0	21.0		9.0	21.0		21.0	21.0		21.0	21.0	
Total Split (s)	9.0	26.0		13.0	30.0		31.0	31.0		31.0	31.0	
Total Split (%)	12.9%	37.1%		18.6%	42.9%		44.3%	44.3%		44.3%	44.3%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0			5.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	Min		None	Min		None	None		None	None	
v/c Ratio	0.24	0.78		0.49	0.55			0.58			0.83	
Control Delay	10.9	29.2		13.0	16.5			7.8			39.1	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	10.9	29.2		13.0	16.5			7.8			39.1	
Queue Length 50th (ft)	16	112		35	92			18			61	
Queue Length 95th (ft)	46	#281		88	209			77			#171	
Internal Link Dist (ft)		705			706			271			207	
Turn Bay Length (ft)												
Base Capacity (vph)	411	673		427	825			888			452	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.24	0.62		0.48	0.50			0.43			0.55	

Intersection Summary

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 57.1
Natural Cycle: 55
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 11: Gabriel Terrace/Mall Entrance #1 & Crossgates Mall Road



Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	92	215	171	190	210	169	47	15	287	117	15	96
Future Volume (veh/h)	92	215	171	190	210	169	47	15	287	117	15	96
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1964	1919	1919	1847	1876	1876	1870	1870	1870	1847	1776	1847
Adj Flow Rate, veh/h	100	234	186	207	228	184	51	16	312	127	16	104
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	4	4	2	0	0	2	2	2	2	2	2
Cap, veh/h	407	289	230	419	333	269	124	43	389	259	55	148
Arrive On Green	0.06	0.29	0.29	0.12	0.35	0.35	0.29	0.29	0.29	0.29	0.29	0.29
Sat Flow, veh/h	1870	989	786	1759	960	775	143	149	1360	517	193	517
Grp Volume(v), veh/h	100	0	420	207	0	412	379	0	0	247	0	0
Grp Sat Flow(s),veh/h/ln	1870	0	1775	1759	0	1736	1652	0	0	1227	0	0
Q Serve(g_s), s	1.8	0.0	10.7	3.9	0.0	10.0	1.5	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	1.8	0.0	10.7	3.9	0.0	10.0	10.1	0.0	0.0	8.6	0.0	0.0
Prop In Lane	1.00		0.44	1.00		0.45	0.13		0.82	0.51		0.42
Lane Grp Cap(c), veh/h	407	0	519	419	0	601	556	0	0	463	0	0
V/C Ratio(X)	0.25	0.00	0.81	0.49	0.00	0.69	0.68	0.00	0.00	0.53	0.00	0.00
Avail Cap(c_a), veh/h	446	0	762	504	0	887	934	0	0	757	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	11.4	0.0	16.1	11.2	0.0	13.7	16.1	0.0	0.0	15.3	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.0	4.2	0.9	0.0	1.4	1.5	0.0	0.0	1.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	4.3	1.3	0.0	3.5	3.6	0.0	0.0	2.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.7	0.0	20.2	12.2	0.0	15.1	17.6	0.0	0.0	16.2	0.0	0.0
LnGrp LOS	B	A	C	B	A	B	B	A	A	B	A	A
Approach Vol, veh/h		520			619			379			247	
Approach Delay, s/veh		18.6			14.1			17.6			16.2	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.0	22.0		19.0	10.6	19.3		19.0				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	4.0	25.0		26.0	8.0	21.0		26.0				
Max Q Clear Time (g_c+I1), s	3.8	12.0		12.1	5.9	12.7		10.6				
Green Ext Time (p_c), s	0.0	1.9		1.9	0.1	1.5		1.3				

Intersection Summary												
HCM 6th Ctrl Delay			16.5									
HCM 6th LOS			B									

RAPP ROAD RESIDENTIAL
COSTCO
WESTERN AVENUE MIXED-USE DEVELOPMENT

APPENDIX 3

CDTA - MARCH 9, 2020 LETTER

Carm Basile
Chief Executive Officer
518-437-6840
carmb@cdta.org

March 9, 2020

Kenneth Kovalchik
Guilderland Town Planner
P.O. Box 339
Guilderland, NY 12084

Dear Mr. Kovalchik:

Crossgates Mall is the highest volume stop in the CDTA network that stretches across four counties. Every day, we connect thousands of shoppers, visitors and employees to and from this vibrant hub of activity.

For the past 35 years, we have worked with Crossgates and the Pyramid team to enhance the experience of our customers. We have built a solid working relationship based on trust and success. Last fall, we relocated the stop at Crossgates to make it safer and more efficient for our customers and bus operators. This large transit station has eased traffic congestion and improved pedestrian access for everyone who travels to the Mall.

In addition, we recently started our Flex On-Demand Transit program, which provides an app-based transportation solution for our customers. Crossgates is one of our partners in the program and has already proven to be one of the most popular destinations in the defined service area.

The proposed development that Pyramid has presented to the Guilderland Planning Board is within the town's Transit-Oriented Development (TOD) District. Our team has had productive conversations with Pyramid management, and our shared goal is to provide the best possible experience for customers. We want more people to use transit and we are working with Pyramid to develop more services for new residents and guests. With fewer cars on the road and more people using CDTA services, we can make a positive impact on traffic and our environment.

Our team is working with Pyramid on their roadway/intersection design associated with the proposed development. New bus stops at/near the intersection of Rapp and Crossgates Mall Road will improve access to our services. In addition, we are offering Pyramid the option to join our Universal Access program to allow tenants with free access to our transit network – further increasing transit use and reducing traffic volumes.

We look forward to working with the Crossgates and Pyramid team to support their work. At the same time, we will continue our efforts at the federal and state level to secure the funding to implement our third Bus Rapid Transit line to the Crossgates area (Purple Line).

We support Pyramid's development and look forward to working with them to enhance service and connect people to economic opportunities.

Cordially,

Carm Basile
Chief Executive Officer

RAPP ROAD RESIDENTIAL
COSTCO
WESTERN AVENUE MIXED-USE DEVELOPMENT

APPENDIX 4

ALBANY COUNTY PLANNING BOARD RESPONSE LETTER

MASER CONSULTING P.A.

Engineers
Planners
Surveyors
Landscape Architects
Environmental Scientists

400 Columbus Avenue, Suite 180E
Valhalla, NY 10595
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www.maserconsulting.com

April 9, 2020

VIA EMAIL

Ms. Laura Travison
Albany County Planning Board
449 New Salem Road
Vorheesville, NY 12186

Re: Western Avenue/Crossgates
DEIS Traffic Study
Albany County Planning Board Comments
MC Project No. 19002502A

Dear Ms. Travison:

As you are aware, we have been working with the Town of Guilderland Planning Board and its traffic consultant GPI. The following items are in response to the memorandum received from your office dated March 13, 2020. The items are numbered according to their review comments.

Concept Plan

1. The following comments apply to the driveways on Crossgates Mall Road:

    a. There is a substantial crest vertical curve about halfway between the Mall Road/Rapp Road intersection and the main driveway. Has sight distance been evaluated?

Response: ***Based on the Town's (and other) comments, the northerly driveway will be modified to a right turn in/out. The southerly driveway will be a right turn in only driveway for the fueling station. Thus, the issue of sight distance due to left turns has been eliminated.***

    b. Unless the raised median is extended to the main driveway, violations of the left turn prohibition will be common. Drivers headed west or south may be unwilling to go around the block the make the turn.

Response: ***The proposed northerly (main) driveway (right in/out) will have geometric components incorporated to prevent left turns.***

c. Has moving the main entrance to the ring road been considered, perhaps at the Gabriel Terrace location? With the center turn lane, left turns out of the site could be provided.

Response: ***This has been analyzed by Costco on several occasions. Due to site constraints, i.e., building location, grades, etc., the main driveway cannot be moved.***

d. Care needs to be taken to make sure the right-in driveway is far enough from the Western Avenue intersection to prevent conflicts.

Response: ***The final design will locate the driveway to prevent conflict with Western Avenue.***

2. Since 4-to-3 lane conversions result in crash reductions from 19 to 47%, this treatment should be investigated for all four-lane segments of Crossgates Mall Road, not just the area proposed.

Response: ***Comment Noted. The Applicant will monitor the proposed changes to determine the appropriateness of similar conversion along the ring road. Note that the conversion will not require the addition of impervious surfaces.***

3. Low-cost interim improvements should be prepared for the mall road/flyover ramps intersection in case the BusPlus Purple Line project is delayed. Possibilities include signal retiming and skew reduction of the channelized right turn lanes (see Figure 9-19, 2018 Green Book).

Response: ***Depending on the timings of the proposed CDTA project, the Applicant will explore low cost interim improvements with the Town and the NYSDOT, including retiming of the traffic signal.***

4. If available, Costco should provide actual parking utilization rates from comparable stores rather than relying on parking minimums. This may allow impervious surface reduction.

Response: ***The parking design meets the needs for the prototypical Costco site criteria and is consistent with the Town's zoning code.***

Traffic Impact Study

Page 11: The discussion of the 1700 Designer Residences states the Town could prohibit left turns. NYSDOT has that authority, not the Town. Is there an acceptable alternate access for left turns?

Response: ***The NYSDOT (not the Town) has the authority to prohibit turns into and off of State highways. The Town's prohibition of left turns into/from Gabriel Terrace would need approval of the State. The document did not recommend restricting turns into or out of 1700 Designer Residences.***

Page 13-14: At the Rapp Road/Mall Road intersection, was conversion to a single-lane roundabout considered? There is plenty of room, and a 78% crash reduction can be expected (Highway Safety Manual Table 14-4, suburban one-lane roundabout).

The discussion of removing the channelized right turns should include the intent and expected effectiveness.

Response: ***In lieu of a single lane roundabout the Applicant has elected to implement several items included in the VHB Safety Evaluation Memorandum. The current design of this location is to eliminate the high speed channelized right turns and "tighten up" the intersection. Lane continuity, new signal installation, and intersection lighting will have a greater benefit to the motorist as well as bicyclists and pedestrians.***

Page 18: The Washington Avenue Extension frontage road should be realigned to the south at Springsteen Rd, providing more separation from the W.A.E. mainline.

Response: ***This location is somewhat distant and minimally impacted by the proposed development. Its geometrics have been in place for many years and therefore any comments should be directed to the City of Albany.***

Page 29: According to Highway Safety Manual Table 14-2, aligning Gabriel Terrace to the east to provide two three-leg intersections can reduce injury crashes by one third compared to the proposed four-leg intersection. This assumes the Gabriel Terrace and the Crossgates driveway AADTs will be over 30% of the Crossgates Mall Road driveway. The projected peak hour volumes support this assumption.

Response: ***The four-legged intersection calls for a future traffic signal based on traffic signal warrant criteria. Projected traffic for the Gabriel Terrace Driveway is anticipated to meet traffic signal warrants. This intersection can be monitored after the opening on Costco (Site 2) and prior to the Site 3 application to determine actual traffic volumes and if Traffic signal warrant will be met. If a traffic signal is not warranted, the Applicant will discuss with the Town the possibility of moving the Gabriel Terrace Driveway further to the east to provide two "T" intersections.***

VHB Safety Evaluation Memorandum

The memo from Albany County comments on the scope/content of the VHB memorandum.

The DEIS included for informational purposes the VHB Safety Evaluation Memorandum received in January 2020. In addition, since we (Maser Consulting) did not author the memorandum, we cannot comment on the information. We have analyzed traffic in and around Crossgates for over 35 years.
That said, we have adopted many of the recommendations enclosed therein, namely:

- **Elimination of the channelized right turns. These turns will now be made at lower speeds and under signal control.**
- **Installation of a state-of-the-art traffic signal with advance warning, protected left turn phases, and signal head alignment.**
- **Provision of sidewalks and pedestrian crosswalks as part of a new updated traffic signal. This will enhance pedestrian safety as called for with the Westmere Corridor Study.**
- **Intersection lighting to assist motorists and bicyclists during hours of darkness. Note since this intersection is used in off hours by the public, the lighting should be independent of Costco or mall lighting.**
- **Provision of bicycle lanes traveling through the intersection.**
- **The modification to the ring road approaching Rapp Road to three lanes.**

Pedestrian Access Plan

1. This should have been included in the Traffic Impact Study since the Vehicle and Traffic Law says pedestrians and bicyclists are traffic, too.

Response: ***Pedestrians and bicyclists considerations are included within the DEIS (Section 2 – Description of the Proposed Action, Section 3.5.1.4 Pedestrian Transportation System, and Trail Map Enlargement 1 – Figure 2) relative***

to the provision of sidewalks, crosswalks, bike lanes, and location of bike racks. The proposal for a "tighter" intersection at Rapp Road/ring road also considered these elements as part of the overall design.

2. The crosswalk at the end of the northbound to eastbound channelized right turn could cause problems. Crosswalks of channelized right turn roadways should be near the beginning of the roadway, to maximize visibility of the crossing. Make sure that adequate stopping sight distance is provided to the crosswalk. Better yet, eliminate the channelization, as discussed in the traffic impact study.

   Response: As noted previously, the channelized right turns have been eliminated. Appropriate pedestrian crosswalks, pedestrian signals, and intersection lighting have been incorporated into the design.

3. The multi-use path termini should connect bicycle parking near mall entrances to signalized crosswalks where people on bicycles can safely cross Western Avenue and Crossgates Mall Road. Attention to getting bicyclists riding in the contraflow direction back to the right side of the roadway is needed.

   Response: This has been incorporated into the design of the project.

4. A multi-use connection from the Washington Avenue south frontage road to the mall entrance by Uno's would be useful.

   Response: Comment noted.

If you have any questions regarding the above, please do not hesitate to contact us.

Very truly yours,

MASER CONSULTING P.A.

John T. Collins, Ph.D., P.E.
Executive Principal

cc: Albany County Planning Board Members
Ken Kovalchik, Town of Guilderland

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