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MEMORANDUM

DATE: 10/31/2016

TO: Phil Sundling
Project Manager Supervisor
City of Westfield

FROM: Matt Brown, PE/PTOE
Vice President
A&F Engineering Co., LLC

RE: Wood Wind Traffic Study – Pulte Homes

A&F Engineering performed a comprehensive Traffic Impact Study (TIS) on behalf of Pulte Homes for a proposed single family development along Towne Road near the existing Wood Wind Golf Course. The TIS was completed in mid-October and is attached. Since the completion of this document, Pulte has modified their plan such that the number of dwelling units assumed in the study has changed slightly. The following table summarizes the difference between the study assumptions and the new Pulte plan.

Area	Traffic Study Dwelling Units	New Pulte Plan Dwelling Units	Difference
1	144	165	+21
2	78	78	0
3	207	203	-4
4	391*	370	-21
5	211*	224	+13
TOTAL	1031	1040	+9

* Area 4 in the TIS is Pulte area 5 and area 5 in the TIS is Pulte area 4. The numbers above have been changed from TIS to match Pulte area designations.

As shown in the table, the new Pulte plan has an increase of 9 single family dwelling units when compared to the TIS assumptions. A trip generation review of the new plan shows that the additional 9 units will result in 7 additional AM Peak hour trips and 10 additional PM peak hour trips compared to the TIS calculations. This small incremental change in trip generation will not have any additional impact on the study roadways and/or intersections. In addition, all recommendations pertaining to roadway and intersection improvements within the study will remain unchanged.

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TRAFFIC IMPACT STUDY

PROPOSED MIXED-USE DEVELOPMENT

TOWNE ROAD

WESTFIELD, INDIANA

PREPARED FOR

Pulte Homes

OCTOBER 2016

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CERTIFICATION

I certify that this **TRAFFIC IMPACT STUDY** has been prepared by me and under my immediate supervision and that I have experience and training in the field of traffic and transportation engineering.

A&F ENGINEERING CO., LLC

R. MATTHEW BROWN
REGISTERED
No.10200056
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OF
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PROFESSIONAL ENGINEER

R. Matt Brown, P.E.
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Dixian Qiu, E.I
Traffic Engineer

INTRODUCTION

This **TRAFFIC IMPACT STUDY**, prepared at the request of City of Westfield, on behalf of Pulte Homes of Indiana, is for a proposed mixed-use development that is to be located along Towne Road in Westfield, Indiana.

PURPOSE

The purpose of this analysis is to determine what affect the traffic generated by the proposed development will have on the existing adjacent roadway system. This analysis will identify any roadway deficiencies that may occur when this site is developed.

Conclusions will be reached that will determine if the roadway system can accommodate the anticipated traffic volumes or will determine the modifications that will be required to the system if there will be deficiencies in the system resulting from the increased traffic volumes.

Recommendations will be made that will address the conclusions resulting from this analysis. These recommendations will address feasible roadway system improvements that will accommodate the proposed development traffic volumes such that there will be safe ingress and egress, to and from the proposed development, with minimal interference to traffic on the public street system.

SCOPE OF WORK

The scope of work for this analysis is as follows:

First, make manual turning movement counts at all existing study intersections. These counts will be made between the hours of 6:00 A.M. to 9:00 A.M. and 4:00 P.M. to 7:00 P.M. at the following intersections:

- Towne Road & 151st Street
- Towne Road & 156th Street
- Towne Road & 161st Street
- Towne Road & 166th Street

Second, collect 24-hour traffic volume machine counts along Shelbourne Road north of 151st Street.

Third, estimate year 2026 background traffic volumes based on a 2% per year non-compounded growth rate.

Fourth, estimate the number of peak hour trips that will be generated by the proposed development.

Fifth, assign and distribute the generated traffic volumes from the proposed development to the study intersections.

Sixth, conduct a turn lane analysis along existing public roadways at each proposed access drive based on the sum of existing traffic volumes and generated traffic volumes from proposed development and the sum of year 2026 background traffic volumes and generated traffic volumes from proposed development.

Seventh, prepare a capacity analysis and level of service analysis at the study intersections for each of the following scenarios:

Scenario 1: Existing Traffic Volumes – Based on existing intersection conditions and existing weekday peak hour traffic volumes.

Scenario 2: Existing Traffic Volumes + Proposed Development Traffic Volumes – Sum of the existing traffic volumes and generated traffic volumes from proposed development.

Scenario 3: Year 2026 Background Traffic Volumes – Based on the existing traffic volumes multiplied by 1.2 (2% growth over 10 years) to account for traffic growth due to other new development near the study area.

Scenario 4: Year 2026 Background Traffic Volumes + Proposed Development Traffic Volumes – Sum of year 2026 background traffic volumes and generated traffic volumes from proposed development.

Eighth, prepare recommendations for the roadway geometrics that will be needed to accommodate the total traffic volumes for each of the scenarios previously identified.

Finally, prepare a **TRAFFIC IMPACT STUDY** report documenting all data, analyses, conclusions and recommendations to provide for the safe and efficient movement of traffic through the study area.

DESCRIPTION OF THE PROPOSED DEVELOPMENT

The proposed development that is to be located along Towne Road will include the following 6 development areas:

- *Area 1*: A residential development located at the southeast quadrant of Towne Road & 166th Street, which is served by a full access drive (Drive 1A) along 166th Street and a full access drive (Drive 1B) along 161st Street.
- *Area 2*: A residential development located at the southeast quadrant of Towne Road & 161st Street, which is served by a full access drive (Drive 2A) along 156th Street.

- *Area 3:* A residential development located at the southeast quadrant of Towne Road & 156th Street, which is served by a full access drive (Drive 3A) along 156th Street, a full access drive (Drive 3B) along Towne Road and a full access drive (Drive 3C) along 151st Street.
- *Area 4:* A residential development located at the southeast quadrant of Shelbourne Road & 151st Street, which is served by two full access drives (Drive 4A and Drive 4B) along 151st Street.
- *Area 5:* A residential development located at the northwest quadrant of Towne Road & 151st Street, which is served by a full access drive (Drive 5A) aligned with Drive 4A, a full access drive (Drive 5B) aligned with Drive 3B and a full access drive (Drive 5C) along Shelbourne Road.
- *Area 6:* An apartment, retail and medical office development located at the southwest quadrant of Towne Road & 151st Street, which is served by a full access drive (Drive 6A) along Towne Road and other full access drives along the 146th Street Frontage Street.

Figure 1 is an area map showing the location and general layout of the site.

STUDY AREA

The study area for this analysis has been defined to include the following intersections:

- Towne Road & 151st Street
- Towne Road & 156th Street
- Towne Road & 161st Street
- Towne Road & 166th Street
- 166th Street & Drive 1A
- 161st Street & Drive 1B
- 156th Street & Drive 2A
- 156th Street & Drive 3A
- Towne Road & Drive 3B/Drive 5B
- 151st Street & Drive 3C
- 151st Street & Drive 4A/Drive 5A
- 151st Street & Drive 4B
- Shelbourne Road & Drive 5C
- Towne Road & Drive 6A

Figure 2 shows the existing intersection geometrics of each of the existing study intersections.

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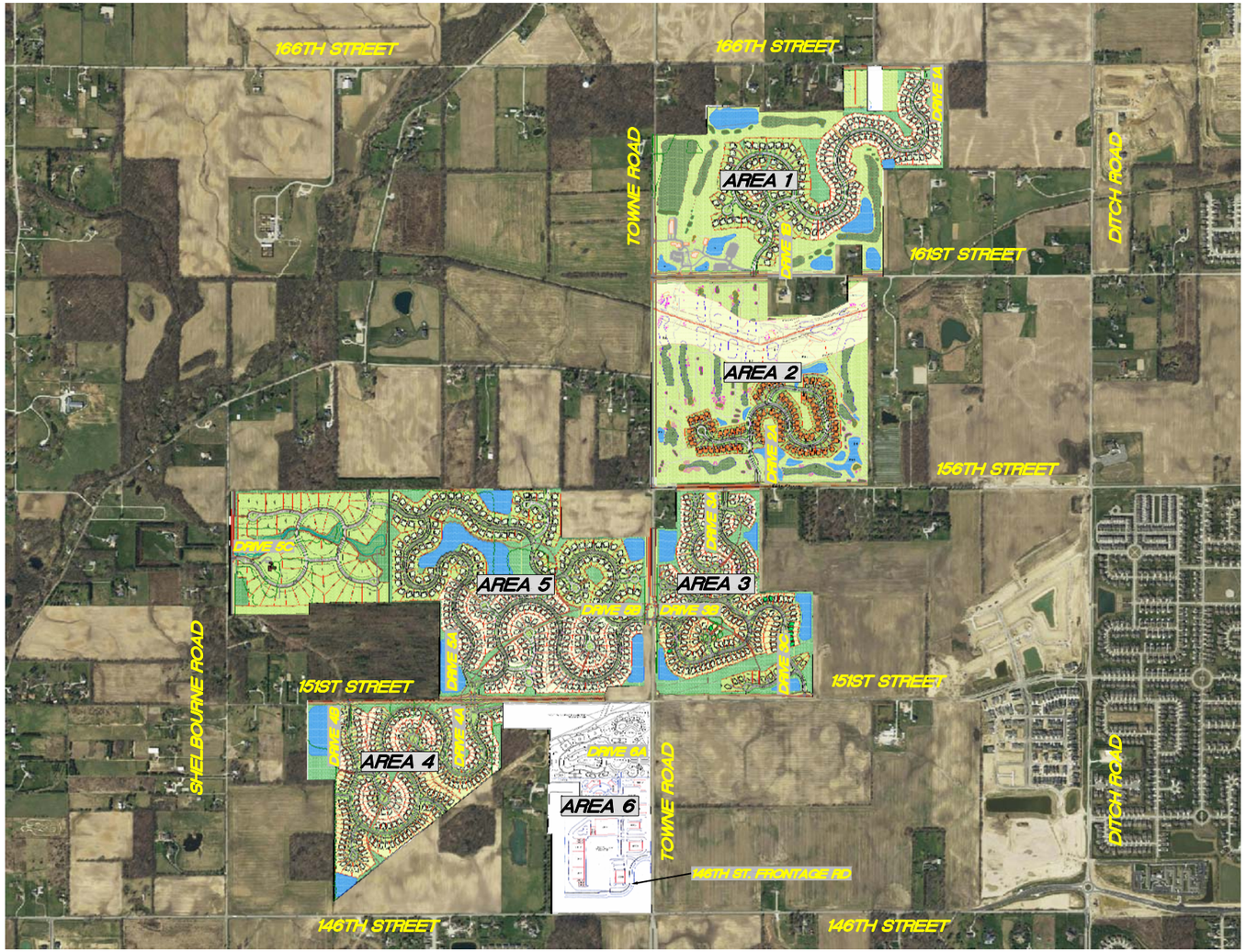

FIGURE 1

AREA MAP

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WESTFIELD, INDIANA
PULTE HOMES

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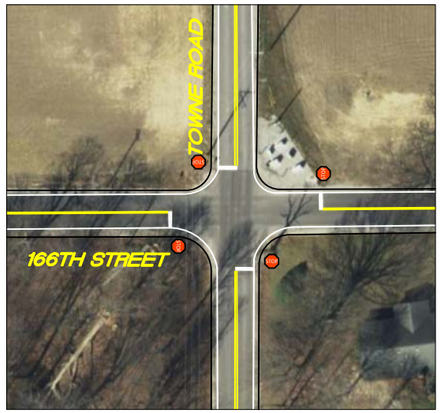

TOWNE ROAD & 166TH STREET

TOWNE ROAD & 161ST STREET

TOWNE ROAD & 156TH STREET

TOWNE ROAD & 151ST STREET

FIGURE 2

EXISTING INTERSECTION GEOMETRICS

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WESTFIELD, INDIANA
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DESCRIPTION OF ABUTTING STREET SYSTEM

The proposed development will be served by the public roadway system that includes Towne Road, Shelbourne Road, 166th Street, 161st Street, 156th Street, 151st Street and Eagletown Road.

TOWNE ROAD – is a north/south, two lane undivided roadway with a posted speed limit of 45 mph. According to the City of Westfield Thoroughfare Plan, Towne Road is classified as a Primary Arterial 2.

SHELBOURNE ROAD – is a north/south, two lane undivided roadway with a posted speed limit of 45 mph. According to the City of Westfield Thoroughfare Plan, Shelbourne Road is classified as a Secondary Arterial.

166TH STREET – is an east/west, two lane undivided roadway with a posted speed limit of 45 mph. According to the City of Westfield Thoroughfare Plan, 166th Street is classified as a Collector.

161ST STREET – is an east/west, two lane undivided roadway with a posted speed limit of 40 mph. According to the City of Westfield Thoroughfare Plan, 161st Street is classified as a Primary Arterial 2.

156TH STREET – is an east/west, two lane undivided roadway with a posted speed limit of 50 mph. According to the City of Westfield Thoroughfare Plan, 156th Street is classified as a Collector.

151ST STREET – is an east/west, two lane undivided roadway with a posted speed limit of 30 mph. According to the City of Westfield Thoroughfare Plan, 151st Street is classified as a Collector.

EAGLETOWN ROAD – is a north/south, two lane undivided roadway with a speed limit of 40 mph. According to the City of Westfield Thoroughfare Plan, Eagletown Road is classified as a Collector.

EXISTING TRAFFIC VOLUMES

Peak hour turning movement traffic volume counts were collected by A&F Engineering between the hours of 6:00 AM and 9:00 AM and 4:00 PM and 7:00 PM during a typical weekday in September 2016 under good weather conditions for each existing study intersection. In addition, a 24-hour roadway segment count was also conducted on Shelbourne Road north of 151st Street. The intersection and roadway count output summary sheets are included in the **Appendix** and the peak hour volumes are shown on **Figure 3**.

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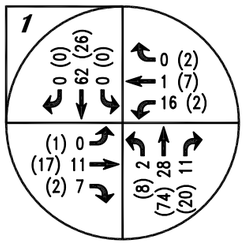

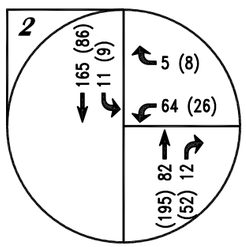

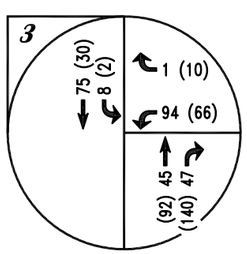

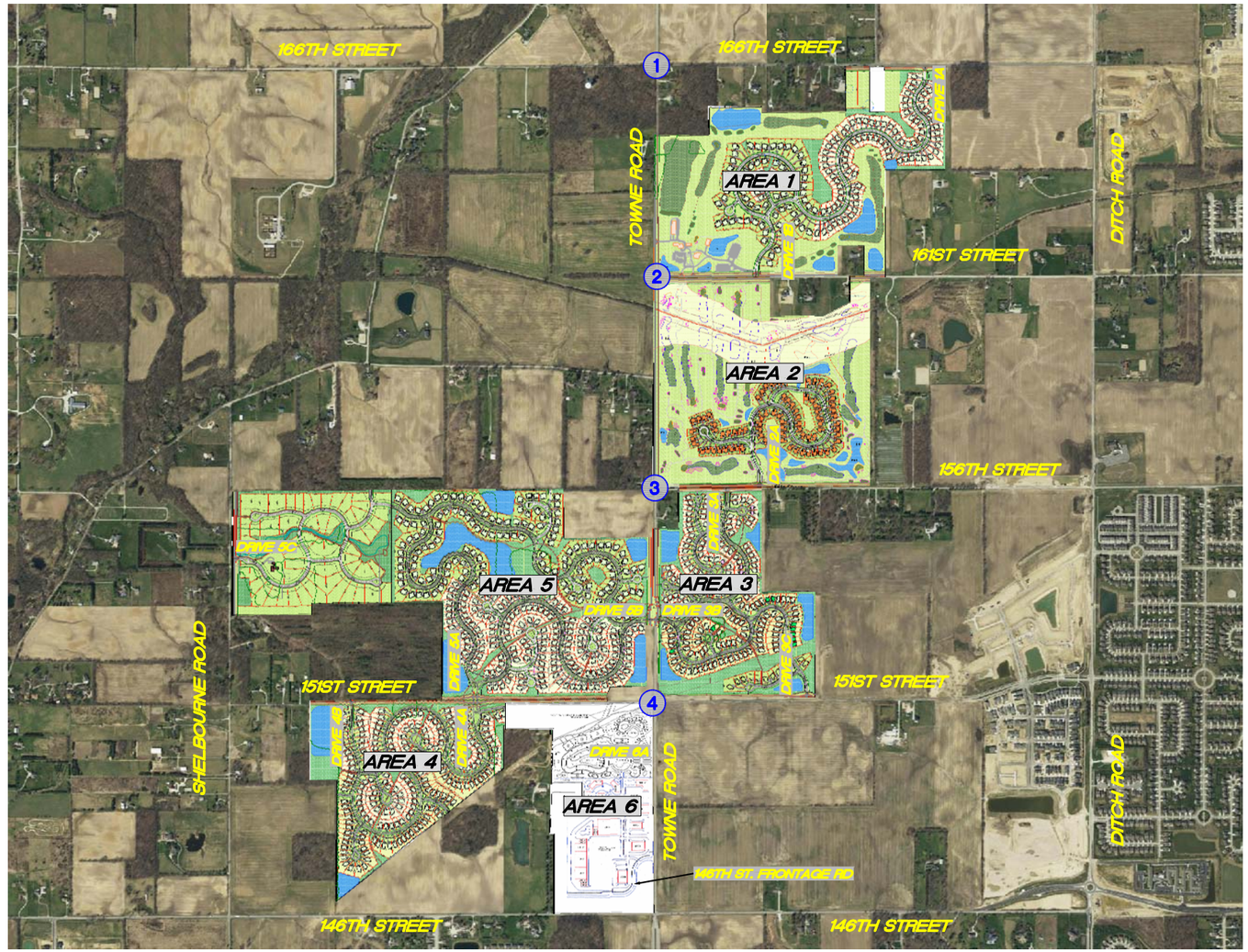

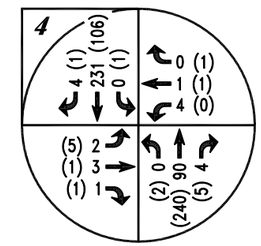

LEGEND
XX = A.M. PEAK HOUR
(XX) = P.M. PEAK HOUR
* = NEGLIGIBLE

FIGURE 3

EXISTING TRAFFIC VOLUMES

TRAFFIC IMPACT STUDY
WESTFIELD, INDIANA
PULTE HOMES

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YEAR 2026 BACKGROUND TRAFFIC VOLUMES

The proposed development is expected to be fully developed by 2026. In order to account for annual growth in traffic that would occur due to future development outside of the study area over the next 10 years, an annual growth rate is applied to the existing traffic volumes. A 2.0% per year non-compounded growth rate was considered for this analysis. Therefore, a growth rate factor of 1.20 was applied to the existing traffic volumes to obtain year 2026 background traffic volume estimates. A summary of these volumes at the study intersections for the weekday AM and PM peak hour is shown in **Figure 4**.

GENERATED TRAFFIC VOLUMES FOR PROPOSED DEVELOPMENT

The estimate of newly generated traffic is a function of the development size and of the character of the land use. The ITE *Trip Generation Manual*[1] was used to calculate the number of new trips that will be generated by the proposed development. This report is a compilation of trip data for various land uses as collected by transportation professionals throughout the United States in order to establish the average number of trips generated by those land uses. **Table 1** is a summary of the total trips that will be generated during AM and PM peak hours from the proposed development.

TABLE 1 – TOTAL GENERATED TRIPS FOR PROPOSED DEVELOPMENT

Development Area	DEVELOPMENT INFORMATION			GENERATED TRIPS			
	LAND USE	ITE CODE	SIZE	AM PEAK		PM PEAK	
				ENTER	EXIT	ENTER	EXIT
AREA 1	SF Residential	210	144 DU	28	83	92	54
AREA 2	SF Residential	210	78 DU	16	48	53	31
AREA 3	SF Residential	210	207 DU	39	116	127	75
AREA 4	SF Residential	210	211 DU	39	118	130	76
AREA 5	SF Residential	210	391 DU	71	212	226	132
AREA 6	Apartment	220	425 DU	42	170	163	88
	Shopping Center	820	185,000 SF	141	86	434	471
	Medical-Dental Office	720	85,000 SF	160	43	71	181
Total Generated Trips				536	876	1296	1108

PASS-BY & INTERNAL TRIPS

Pass-by trips are trips that are already in the existing traffic stream along the adjacent public roadway system that enter a site, utilize the site, and then return back to the existing traffic stream. A significant number of the generated trips from the proposed retail development in development

[1] *Trip Generation Manual*, Institute of Transportation Engineers, Ninth Edition, 2012.

area 6 will be pass-by trips. Therefore, the pass-by trip procedures outlined within the ITE *Trip Generation Handbook*[2] were used to estimate the pass-by trips.

An internal trip results when a trip is made between two or more land uses without traversing the external public roadway system. Internal trips will occur between different land-uses within area 6. These trips were calculated based on the methods described within the ITE *Trip Generation Handbook*. A summary of pass-by and internal trip reductions are shown in **Table 2**.

TABLE 2 – PASS-BY AND INTERNAL TRIP REDUCTIONS FOR THE DEVELOPMENT AREA 6

DEVELOPMENT INFORMATION			GENERATED TRIPS			
LAND USE	ITE CODE	SIZE	AM PEAK		PM PEAK	
			ENTER	EXIT	ENTER	EXIT
Apartment	**220**	**425 DU**	42	170	163	88
Apartment Internal Trips			1	5	79	41
Apartment External Trips			41	165	84	47
Shopping Center	**820**	**185,000 SF**	141	86	434	471
Shopping Center Internal Trips			14	7	72	84
Shopping Center External Trips			127	79	362	387
Shopping Center External Pass-by Trips (33%)			42	26	119	128
Shopping Center External Non Pass-by Trips (67%)			85	53	243	259
Medical-Dental Office Building	**720**	**85,000 SF**	160	43	71	181
Medical-Dental Office Building Internal Trips			9	12	13	39
Medical-Dental Office Building External Trips			151	31	58	142
TOTAL EXTERNAL PASS-BY TRIPS			42	26	119	128
TOTAL EXTERNAL NON PASS-BY TRIPS			277	249	385	448

ASSIGNMENT AND DISTRIBUTION OF GENERATED TRIPS

The study methodology used to determine the traffic volumes from the proposed development that will be added to the street system is defined as follows:

1. The volume of traffic that will enter and exit the project site must be assigned to the access points and to the public street system. Using the traffic volume data collected for this analysis, traffic to and from the proposed development has been assigned to the proposed driveways and to the public street system that will be serving the site.
2. To determine the volumes of traffic that will be added to the public roadway system, the generated traffic must be distributed by direction to the public roadways at their

[2] *Trip Generation Handbook*, Institute of Transportation Engineers, 2014.

intersection with the driveways. For the proposed development, the trip distribution was based on the location of the development, the location of nearby population centers, the existing traffic patterns, and the assignment of generated traffic.

The figures showing the assignment and distribution of the generated traffic volumes from proposed development for each development area are included in **Appendix**.

GENERATED TRIPS ADDED TO THE STREET SYSTEM

The total generated traffic volumes that can be expected from the proposed development have been assigned to each of the study intersections. These volumes were determined based on the previously discussed trip generation data, assignment of generated traffic and distribution of generated traffic using the recognized computer program *Synchro/SimTraffic*[3]. The total AM and PM peak hour generated traffic volumes from the proposed development are shown in **Figure 5**.

TURN LANE ANALYSIS

Turn lane analyses were conducted along public roadways at the proposed access drives based on the sum of existing traffic volumes and generated traffic volumes from the proposed development and the sum of year 2026 background traffic volumes and generated traffic volumes from proposed development according to Section 46-4.01 of the INDOT *Design Manual*[4]. According to the analysis, the following turn lanes are warranted:

- Northbound left-turn lane and southbound right-turn lane along Towne Road at Drive 6A.
- Northbound left-turn lane along Towne Road at Drive 3B/Drive 5B.

However, in order to relieve the congestion due to left-turning vehicles, passing blisters are recommended for all the left-turn movements except the following:

- Westbound left-turn along 166st Street at Drive 1A.

In addition, the following turn lanes are also recommended in order to better serve the traffic entering and exiting the proposed development:

- Right-turn lanes are recommended at all the access drives.
- Southbound left-turn lane along Towne Road at Drive 3B.

The left-turn lane warrants and the figures (46-4B) depicting the necessary criteria from the INDOT *Design Manual* used to determine the right-turn lane warrant is included in the **Appendix**.

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[3] *Synchro/SimTraffic 9.1*, Trafficware, 2015.
[4] INDOT *Design Manual*, Indiana Department of Transportation, 2013

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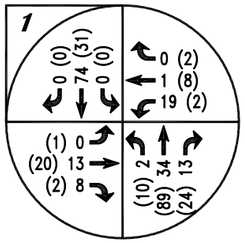

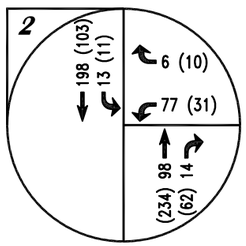

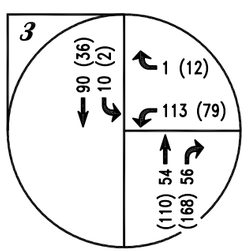

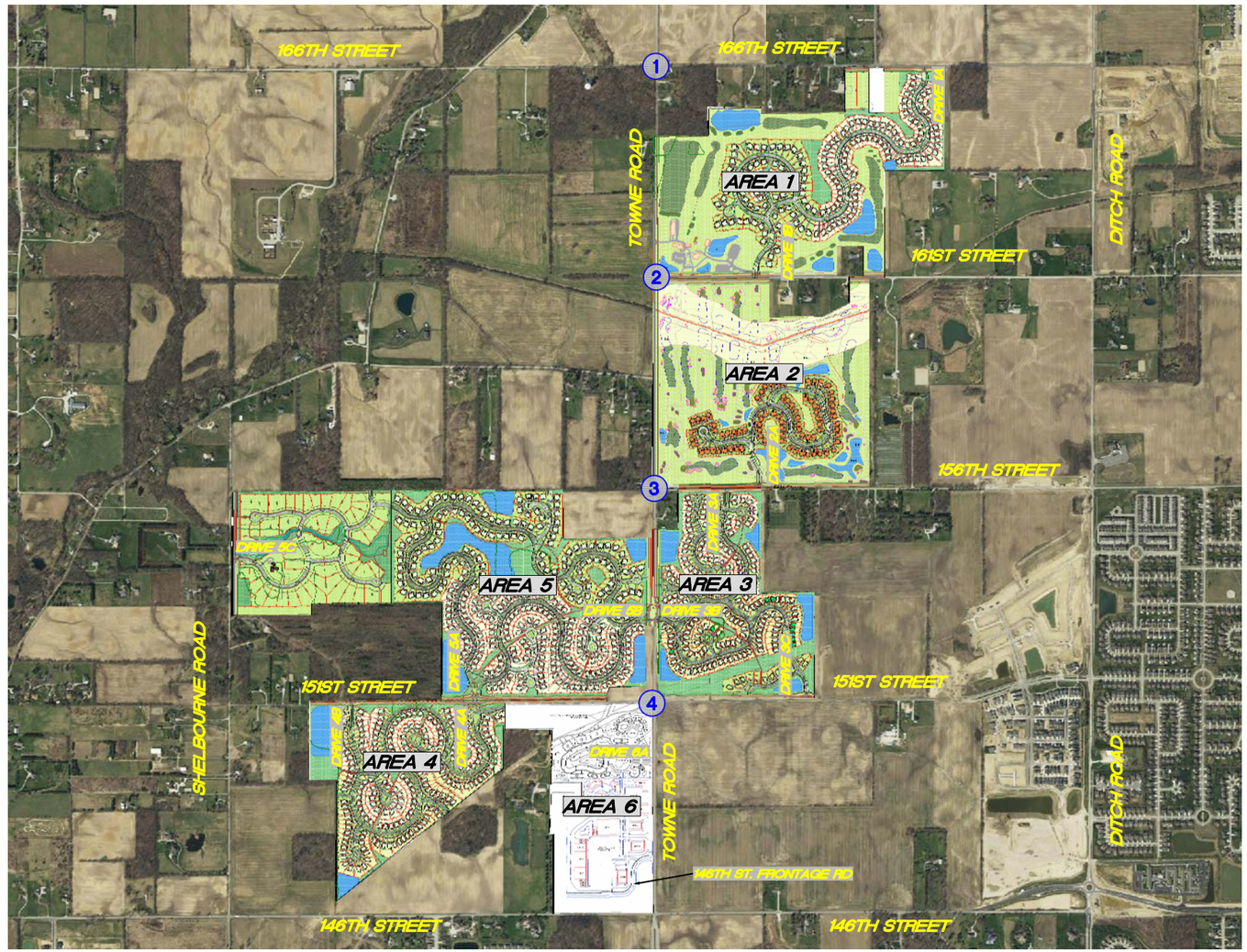

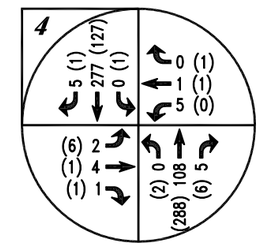

LEGEND
XX = A.M. PEAK HOUR
(XX) = P.M. PEAK HOUR
* = NEGLIGIBLE

FIGURE 4

YEAR 2026 BACKGROUND TRAFFIC VOLUMES

TRAFFIC IMPACT STUDY
WESTFIELD, INDIANA
PULTE HOMES

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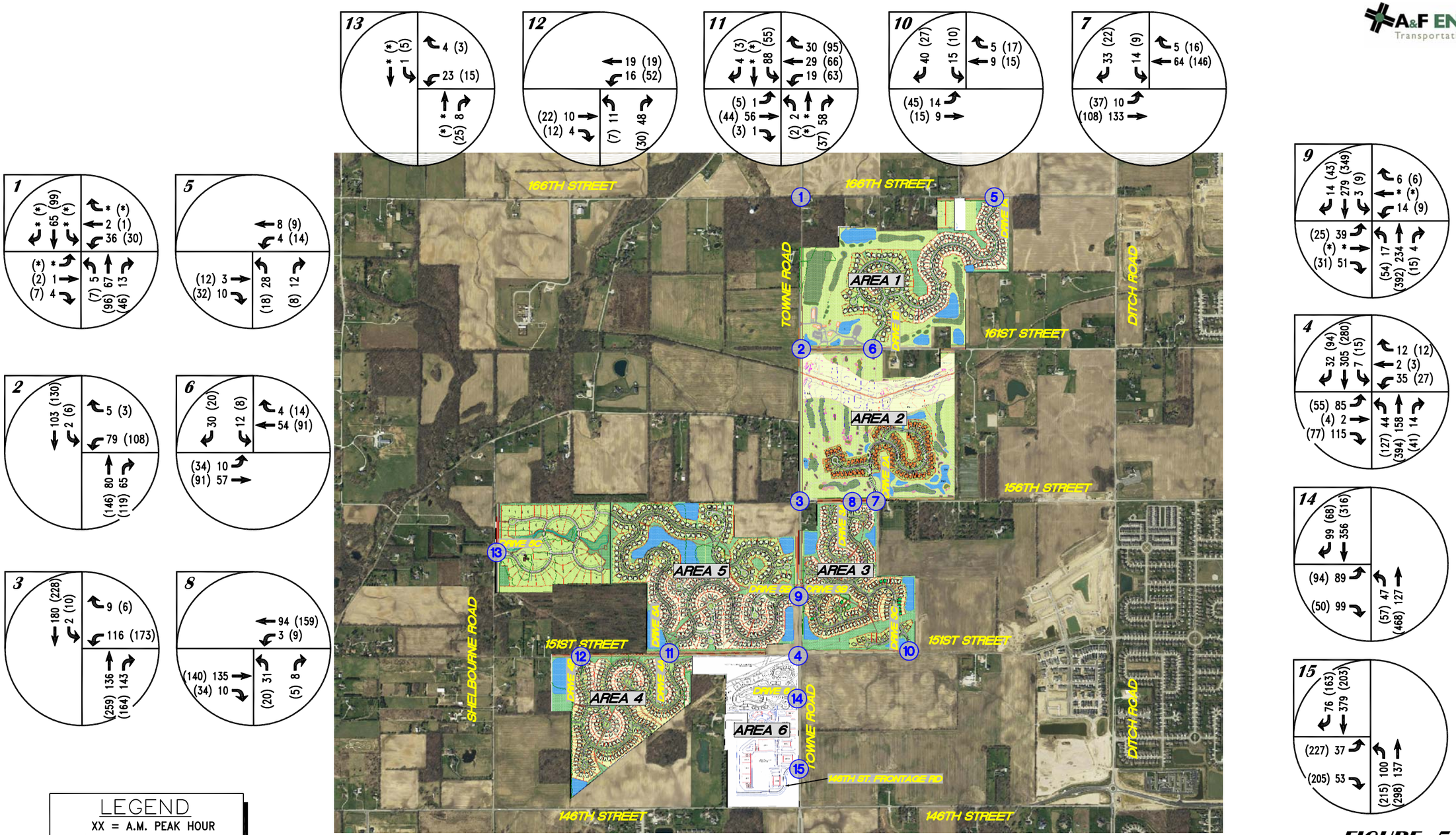

LEGEND
XX = A.M. PEAK HOUR
(XX) = P.M. PEAK HOUR
* = NEGLIGIBLE

FIGURE 5

TOTAL GENERATED TRAFFIC VOLUMES FROM PROPOSED DEVELOPMENT

TRAFFIC IMPACT STUDY
WESTFIELD, INDIANA
PULTE HOMES

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CAPACITY ANALYSIS

The "efficiency" of an intersection is based on its ability to accommodate the traffic volumes that approach the intersection. It is defined by the Level-of-Service (LOS) of the intersection. The LOS is determined by a series of calculations commonly called a "capacity analysis". Input data into a capacity analysis include traffic volumes, intersection geometry, and number and use of lanes. To determine the LOS at each of the study intersections, a capacity analysis has been made using the recognized computer program *Synchro/SimTraffic*. This program allows intersections to be analyzed and optimized using the capacity calculation methods outlined within the *Highway Capacity Manual (HCM)*[5]. The following list shows the delays related to the levels of service for signalized and unsignalized intersections:

Level of Service	Control Delay (seconds/vehicle)	
	UNSIGNALIZED	SIGNALIZED
A	Less than or equal to 10	Less than or equal to 10
B	Between 10.1 and 15	Between 10.1 and 20
C	Between 15.1 and 25	Between 20.1 and 35
D	Between 25.1 and 35	Between 35.1 and 55
E	Between 35.1 and 50	Between 55.1 and 80
F	greater than 50	greater than 80

CAPACITY ANALYSIS SCENARIOS

To evaluate the proposed development's effect on the public street system, a series of traffic volume scenarios were analyzed to determine the adequacy of the existing roadway network. In addition, recommendations can be made to improve the public street system so it will accommodate the future traffic volumes. An analysis has been made for the weekday AM peak hour and PM peak hour at the study intersections for the following scenarios:

Scenario 1: Existing Traffic Volumes – Based on existing intersection conditions and existing weekday and Saturday peak hour traffic volumes. **Figure 3** is a summary of the weekday AM and PM peak hour traffic volumes.

Scenario 2: Existing Traffic Volumes + Proposed Development Traffic Volumes – Sum of the existing traffic volumes and generated traffic volumes from proposed development. **Figure 6** summarizes these traffic volumes.

Scenario 3: Year 2026 Background Traffic Volumes – Based on the existing traffic volumes multiplied by 1.2 (2% growth over 10 years) to account for traffic growth due to other new development near the study area. **Figure 4** is a summary of the weekday AM and PM peak hour traffic volumes.

[5] *Highway Capacity Manual (HCM)* Transportation Research Board, National Research Council, Washington, DC, 2010.

Scenario 4: Year 2026 Background Traffic Volumes + Proposed Development Traffic Volumes – Sum of year 2026 background traffic volumes and generated traffic volumes from proposed development. **Figure 7** summarizes these traffic volumes.

The following tables summarize the level of service results at each of the study intersections. The *Synchro* (*HCM* 2010) intersection reports illustrating the capacity analysis results are included in the **Appendix**.

TABLE 3 – LEVEL OF SERVICE SUMMARY: TOWNE ROAD & 166TH STREET

APPROACH	AM PEAK				PM PEAK			
	Scenario				Scenario			
	1	2	3	4	1	2	3	4
Northbound Approach	A	A	A	A	A	A	A	A
Southbound Approach	A	A	A	A	A	A	A	A
Eastbound Approach	A	A	A	A	A	A	A	A
Westbound Approach	A	A	A	A	A	A	A	A
Intersection	**A/7.4s**	**A/8.3s**	**A/7.5s**	**A/8.4s**	**A/7.4s**	**A/8.8s**	**A/7.6s**	**A/9.1s**

DESCRIPTION OF SCENARIOS:

SCENARIO 1: Existing Traffic Volumes with Existing Intersection Geometrics and All-way Stop Control.

SCENARIO 2: Sum of Existing Traffic Volumes and Generated Traffic Volumes from Proposed Development with Existing Intersection Geometrics and All-way Stop Control.

SCENARIO 3: Year 2026 Traffic Volumes with Existing Intersection Geometrics and All-way Stop Control.

SCENARIO 4: Sum of Year 2026 Traffic Volumes and Generated Traffic Volumes from Proposed Development with Existing Intersection Geometrics and All-way Stop Control.

TABLE 4 – LEVEL OF SERVICE SUMMARY: TOWNE ROAD & 161ST STREET

APPROACH	AM PEAK				PM PEAK			
	Scenario				Scenario			
	1	2	3	4	1	2	3	4
Southbound Left-Turn	A	A	A	A	A	A	A	A
Westbound Approach	B	B	B	C	B	C	B	C

DESCRIPTION OF SCENARIOS:

SCENARIO 1: Existing Traffic Volumes with Existing Intersection Geometrics and Two-way Stop Control.

SCENARIO 2: Sum of Existing Traffic Volumes and Generated Traffic Volumes from Proposed Development with Proposed Intersection Geometrics* and Two-way Stop Control.

SCENARIO 3: Year 2026 Traffic Volumes with Existing Intersection Geometrics and Two-way Stop Control.

SCENARIO 4: Sum of Year 2026 Traffic Volumes and Generated Traffic Volumes from Proposed Development with Proposed Intersection Geometrics* and Two-way Stop Control.

* the proposed intersection geometrics are as follows:

- Northbound: one through lane and one right-turn lane.
- Southbound: one shared through/left-turn lane.
- Westbound: one left-turn lane and one right-turn lane.

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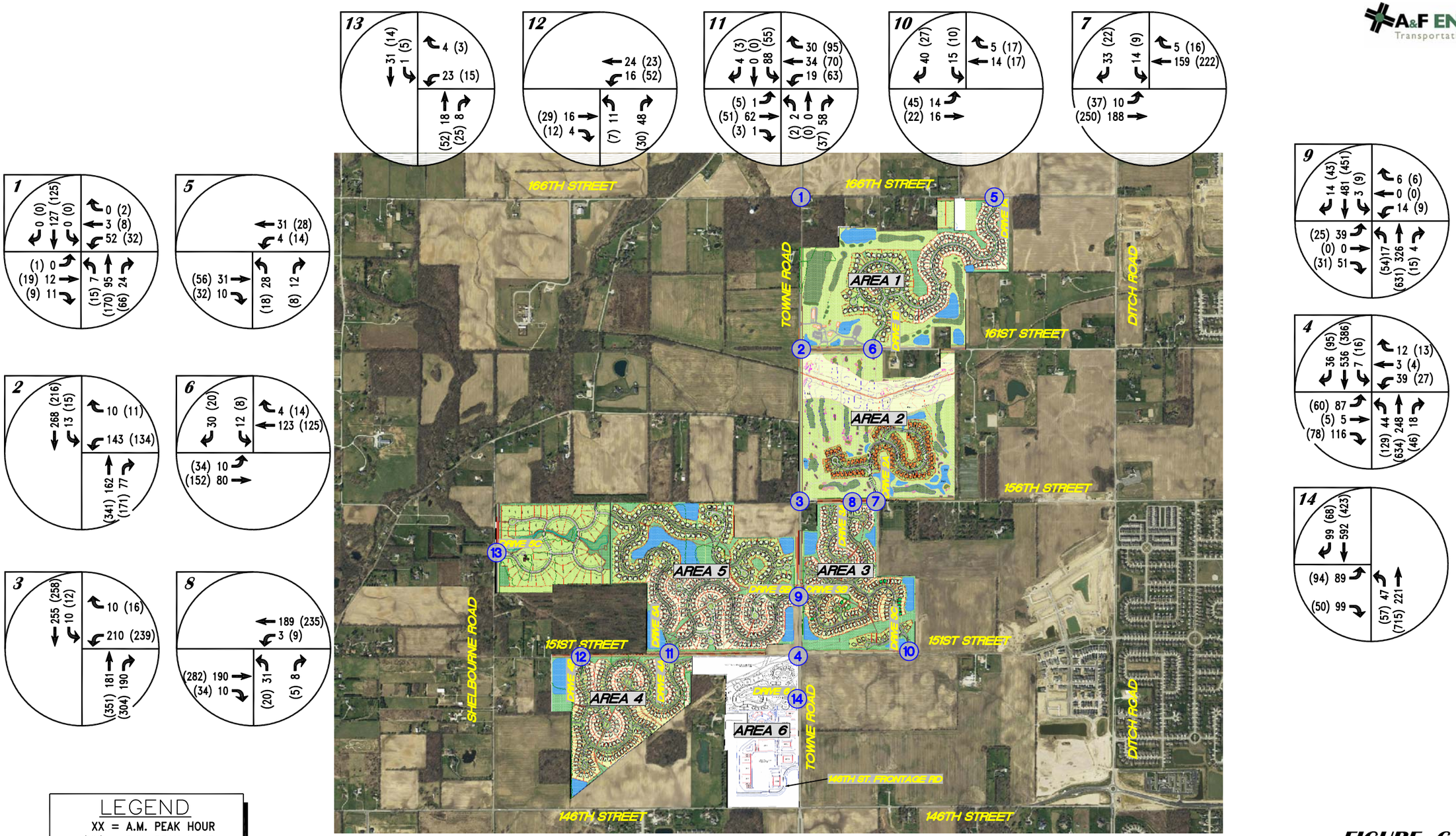

LEGEND
XX = A.M. PEAK HOUR
(XX) = P.M. PEAK HOUR
* = NEGLIGIBLE

FIGURE 6

SUM OF EXISTING TRAFFIC VOLUMES & GENERATED TRAFFIC VOLUMES FOR PROPOSED DEVELOPMENT

TRAFFIC IMPACT STUDY
WESTFIELD, INDIANA
PULTE HOMES

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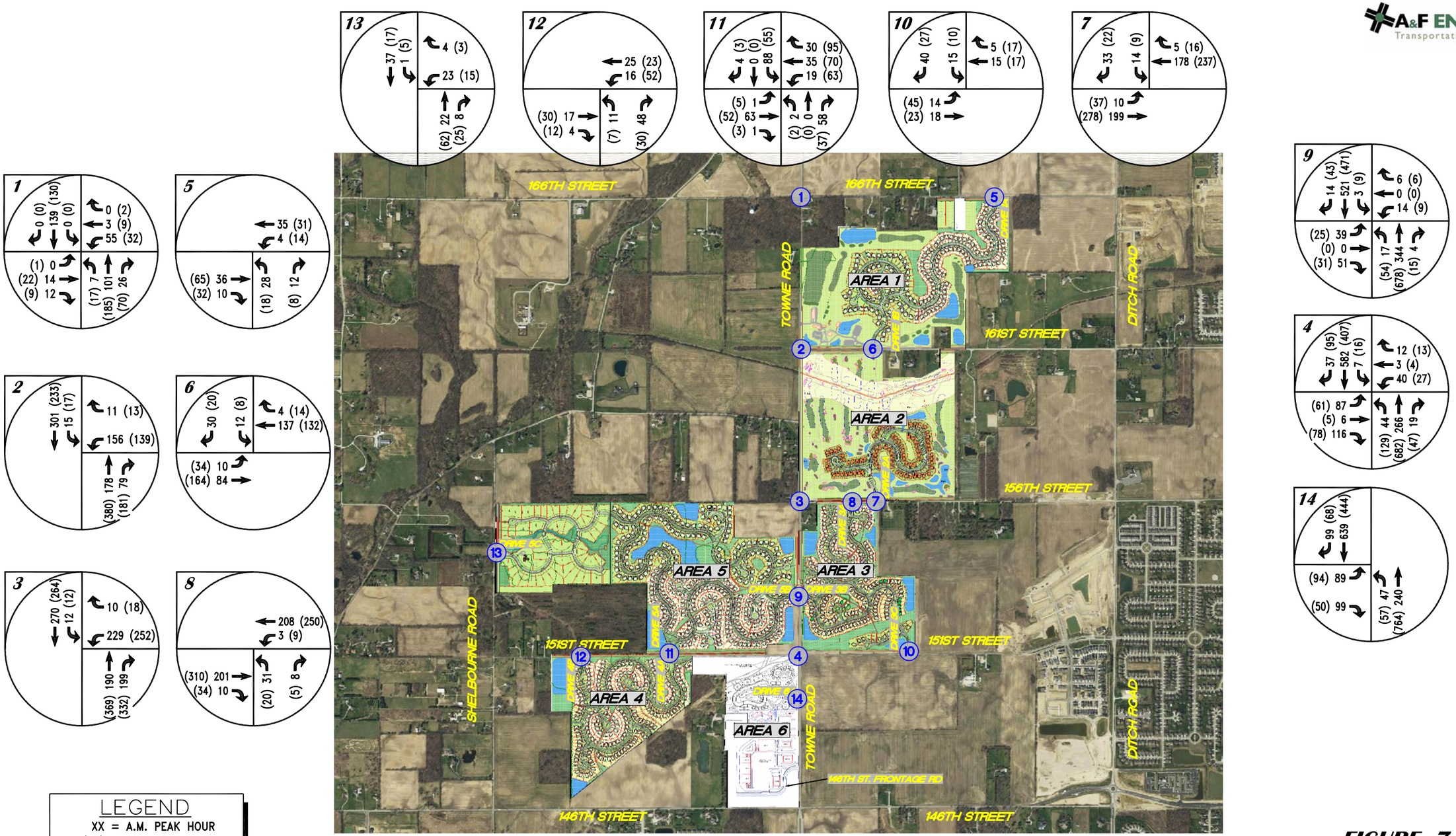

LEGEND
XX = A.M. PEAK HOUR
(XX) = P.M. PEAK HOUR
* = NEGLIGIBLE

FIGURE 7

SUM OF YEAR 2026 BACKGROUND TRAFFIC VOLUMES AND GENERATED TRAFFIC VOLUMES FOR PROPOSED DEVELOPMENT

TRAFFIC IMPACT STUDY
WESTFIELD, INDIANA
PULTE HOMES

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TABLE 5 – LEVEL OF SERVICE SUMMARY: TOWNE ROAD & 156TH STREET

APPROACH	AM PEAK				PM PEAK			
	Scenario				Scenario			
	1	2	3	4	1	2	3	4
Southbound Left-Turn	A	A	A	A	A	A	A	A
Westbound Approach	B	C	B	C	B	D	B	E

DESCRIPTION OF SCENARIOS:

SCENARIO 1: Existing Traffic Volumes with Existing Intersection Geometrics and Two-way Stop Control.

SCENARIO 2: Sum of Existing Traffic Volumes and Generated Traffic Volumes from Proposed Development with Proposed Intersection Geometrics* and Two-way Stop Control.

SCENARIO 3: Year 2026 Traffic Volumes with Existing Intersection Geometrics and Two-way Stop Control.

SCENARIO 4: Sum of Year 2026 Traffic Volumes and Generated Traffic Volumes from Proposed Development with Proposed Intersection Geometrics* and Two-way Stop Control.

* the proposed intersection geometrics are as follows:

- Northbound: one through lane and one right-turn lane.
- Southbound: one shared through/left-turn lane.
- Westbound: one left-turn lane and one right-turn lane.

TABLE 6 – LEVEL OF SERVICE SUMMARY: TOWNE ROAD & 151ST STREET

APPROACH	AM PEAK				PM PEAK			
	Scenario				Scenario			
	1	2	3	4	1	2	3	4
Northbound Approach	A	A	A	A	A	D	A	E
Southbound Approach	A	B	A	B	A	B	A	B
Eastbound Approach	B	B	A	B	B	A	A	A
Westbound Approach	B	A	A	A	B	A	A	B
Intersection	**-**	**B/10.8s**	**A/5.5s**	**B/12.0s**	**-**	**C/21.1s**	**A/5.6s**	**C/26.5s**

DESCRIPTION OF SCENARIOS:

SCENARIO 1: Existing Traffic Volumes with Existing Intersection Geometrics and Two-way Stop Control.

SCENARIO 2: Sum of Existing Traffic Volumes and Generated Traffic Volumes from Proposed Development with Planned Intersection Conditions.*

SCENARIO 3: Year 2026 Traffic Volumes with Planed Intersection Conditions.*

SCENARIO 4: Sum of Year 2026 Traffic Volumes and Generated Traffic Volumes from Proposed Development with Planed Intersection Conditions.*

*City of Westfield is planning to build a roundabout at this intersection in the near future.

TABLE 7 – LEVEL OF SERVICE SUMMARY: 166TH STREET & DRIVE 1A

APPROACH	AM PEAK		PM PEAK	
	Scenario		Scenario	
	2	4	2	4
Northbound Approach	A	A	A	A
Westbound Left-Turn	A	A	A	A

DESCRIPTION OF SCENARIOS:

SCENARIO 2: Sum of Existing Traffic Volumes and Generated Traffic Volumes from Proposed Development with Proposed Intersection Conditions.*

SCENARIO 4: Sum of Year 2026 Traffic Volumes and Generated Traffic Volumes from Proposed Development with Proposed Intersection Conditions.*

*the proposed intersection conditions include construction of a northbound approach with at least one inbound lane and two outbound lanes, which will stop for 166th Street, and the addition of a eastbound right-turn lane along 166th Street.

TABLE 8 – LEVEL OF SERVICE SUMMARY: 161ST STREET & DRIVE 1B

APPROACH	AM PEAK		PM PEAK	
	Scenario		Scenario	
	2	4	2	4
Southbound Approach	A	A	A	A
Eastbound Left-Turn	A	A	A	A

DESCRIPTION OF SCENARIOS:

SCENARIO 2: Sum of Existing Traffic Volumes and Generated Traffic Volumes from Proposed Development with Proposed Intersection Conditions.*

SCENARIO 4: Sum of Year 2026 Traffic Volumes and Generated Traffic Volumes from Proposed Development with Proposed Intersection Conditions.*

*the proposed intersection conditions include construction of a southbound approach with at least one inbound lane and two outbound lanes which will stop for 161st Street, addition of a westbound right-turn lane and a passing blister along 161st Street.

TABLE 9 – LEVEL OF SERVICE SUMMARY: 156TH STREET & DRIVE 2A

APPROACH	AM PEAK		PM PEAK	
	Scenario		Scenario	
	2	4	2	4
Southbound Approach	A	B	B	B
Eastbound Left-Turn	A	A	A	A

DESCRIPTION OF SCENARIOS:

SCENARIO 2: Sum of Existing Traffic Volumes and Generated Traffic Volumes from Proposed Development with Proposed Intersection Conditions.*

SCENARIO 4: Sum of Year 2026 Traffic Volumes and Generated Traffic Volumes from Proposed Development with Proposed Intersection Conditions.*

*the proposed intersection conditions include construction of a southbound approach with at least one inbound lane and two outbound lanes which will stop for 156th Street, the addition of the westbound right-turn lane and the addition of a passing blister along 156th Street.

TABLE 10 – LEVEL OF SERVICE SUMMARY: 156TH STREET & DRIVE 3A

APPROACH	AM PEAK		PM PEAK	
	Scenario		Scenario	
	2	4	2	4
Northbound Approach	B	B	B	B
Westbound Left-Turn	A	A	A	A

DESCRIPTION OF SCENARIOS:

SCENARIO 2: Sum of Existing Traffic Volumes and Generated Traffic Volumes from Proposed Development with Proposed Intersection Conditions.*

SCENARIO 4: Sum of Year 2026 Traffic Volumes and Generated Traffic Volumes from Proposed Development with Proposed Intersection Conditions.*

*the proposed intersection conditions include construction of a northbound approach with at least one inbound lane and two outbound lanes which will stop for 156th Street, the addition of the eastbound right-turn lane and the addition of a passing blister along 156th Street.

TABLE 11 – LEVEL OF SERVICE SUMMARY: TOWNE ROAD & DRIVE 3B/DRIVE 5B

APPROACH	AM PEAK		PM PEAK	
	Scenario		Scenario	
	2	4	2	4
Northbound Left-Turn	A	A	A	A
Southbound Left-Turn	A	A	A	A
Eastbound Approach	C	C	D	D
Westbound Approach	C	C	D	D

DESCRIPTION OF SCENARIOS:

SCENARIO 2: Sum of Existing Traffic Volumes and Generated Traffic Volumes from Proposed Development with Proposed Intersection Conditions.*

SCENARIO 4: Sum of Year 2026 Traffic Volumes and Generated Traffic Volumes from Proposed Development with Proposed Intersection Conditions.*

*the proposed intersection conditions include construction of an eastbound approach and a westbound approach with at least one inbound lane and two outbound lanes which will stop for Towne Road, the addition of northbound left-turn and right-turn lanes and the addition of the southbound left-turn and right-turn lanes along Towne Road.

TABLE 12 – LEVEL OF SERVICE SUMMARY: 151ST STREET & DRIVE 3C

APPROACH	AM PEAK		PM PEAK	
	Scenario		Scenario	
	2	4	2	4
Southbound Approach	A	A	A	A
Eastbound Left-Turn	A	A	A	A

DESCRIPTION OF SCENARIOS:

SCENARIO 2: Sum of Existing Traffic Volumes and Generated Traffic Volumes from Proposed Development with Proposed Intersection Conditions.*

SCENARIO 4: Sum of Year 2026 Traffic Volumes and Generated Traffic Volumes from Proposed Development with Proposed Intersection Conditions.*

*the proposed intersection conditions include construction of a southbound approach with at least one inbound lane and two outbound lanes which will stop for 151st Street, the addition of a westbound right-turn lane along 151st Street and the addition of a passing blister along 151st Street.

TABLE 13 – LEVEL OF SERVICE SUMMARY: 151ST STREET & DRIVE 4A/DRIVE 5A

APPROACH	AM PEAK		PM PEAK	
	Scenario		Scenario	
	2	4	2	4
Northbound Approach	A	A	A	A
Southbound Approach	B	B	B	B
Eastbound Left-Turn	A	A	A	A
Westbound Left-Turn	A	A	A	A

DESCRIPTION OF SCENARIOS:

SCENARIO 2: Sum of Existing Traffic Volumes and Generated Traffic Volumes from Proposed Development with Proposed Intersection Conditions.*

SCENARIO 4: Sum of Year 2026 Traffic Volumes and Generated Traffic Volumes from Proposed Development with Proposed Intersection Conditions.*

*the proposed intersection conditions include construction of a northbound approach and a southbound approach with at least one inbound lane and two outbound lanes which will stop for 151st Street and the addition of the eastbound and westbound right-turn lanes along 151st Street.

TABLE 14 – LEVEL OF SERVICE SUMMARY: 151ST STREET & DRIVE 4B

APPROACH	AM PEAK		PM PEAK	
	Scenario		Scenario	
	2	4	2	4
Northbound Approach	A	A	A	A
Westbound Left-Turn	A	A	A	A

DESCRIPTION OF SCENARIOS:

SCENARIO 2: Sum of Existing Traffic Volumes and Generated Traffic Volumes from Proposed Development with Proposed Intersection Conditions.*

SCENARIO 4: Sum of Year 2026 Traffic Volumes and Generated Traffic Volumes from Proposed Development with Proposed Intersection Conditions.*

*the proposed intersection conditions include construction of a northbound approach with at least one inbound lane and two outbound lanes which will stop for 151st Street, the addition of the eastbound right-turn lane along 151st Street and the addition of a passing blister along 151st Street.

TABLE 15 – LEVEL OF SERVICE SUMMARY: SHELBOURNE ROAD & DRIVE 5C

APPROACH	AM PEAK		PM PEAK	
	Scenario		Scenario	
	2	4	2	4
Southbound Left-Turn	A	A	A	A
Westbound Approach	A	A	A	A

DESCRIPTION OF SCENARIOS:

SCENARIO 2: Sum of Existing Traffic Volumes and Generated Traffic Volumes from Proposed Development with Proposed Intersection Conditions.*

SCENARIO 4: Sum of Year 2026 Traffic Volumes and Generated Traffic Volumes from Proposed Development with Proposed Intersection Conditions.*

*the proposed intersection conditions include construction of a westbound approach with at least one inbound lane and one outbound lane which will stop for Shelbourne Road, the addition of the northbound right-turn lane along Shelbourne Road and the addition of a passing blister along Shelbourne Road.

TABLE 16 – LEVEL OF SERVICE SUMMARY: TOWNE ROAD & DRIVE 6A

APPROACH	AM PEAK		PM PEAK	
	Scenario		Scenario	
	2	4	2	4
Northbound Left-Turn	A	A	A	A
Eastbound Approach	C	C	E	F

DESCRIPTION OF SCENARIOS:

SCENARIO 2: Sum of Existing Traffic Volumes and Generated Traffic Volumes from Proposed Development with Proposed Intersection Conditions.*

SCENARIO 4: Sum of Year 2026 Traffic Volumes and Generated Traffic Volumes from Proposed Development with Proposed Intersection Conditions.*

*the proposed intersection conditions include construction of an eastbound approach with at least one inbound lane and two outbound lanes which will stop for Towne Road and the addition of a northbound left-turn lane and a southbound right-turn lane at this intersection along Towne Road.

CONCLUSIONS & RECOMMENDATIONS

The conclusions that follow are based on existing traffic volume data, year 2026 background traffic volume data, trip generation, assignment and distribution of generated traffic, turn lane analysis, capacity analyses/level of service results and a field review conducted at the site. Based on the analysis and the resulting conclusions of this study, recommendations are also made to ensure that the roadway system will accommodate the increased traffic volumes from the site.

TOWNE ROAD & 166TH STREET

- Capacity analyses for all the traffic volume scenarios have shown that this intersection operates and will continue to operate at acceptable levels of service during the weekday AM and PM peak hour with the existing intersection geometrics and all-way stop control.

TOWNE ROAD & 161ST STREET

- Capacity analyses for existing traffic volumes and year 2026 background traffic volumes have shown that this intersection operates and will continue to operate at acceptable levels of service during the weekday AM and PM peak hour with the existing intersection geometrics and two-way stop control.
- Capacity analyses for the sum of existing traffic volumes and generated traffic volumes from the proposed development and the sum of year 2026 background traffic volumes and generated traffic volumes from the proposed development have shown that this intersection will continue to operate at acceptable levels of service during the weekday AM and PM peak hour with the following proposed intersection geometrics and two-way stop control:

- Northbound: one through lane and one right-turn lane.
- Southbound: one shared through/left-turn lane.
- Westbound: one left-turn lane and one right-turn lane.

TOWNE ROAD & 156TH STREET

- Capacity analyses for existing traffic volumes and year 2026 background traffic volumes have shown that this intersection operates and will continue to operate at acceptable levels of service during the weekday AM and PM peak hour with the existing intersection geometrics and two-way stop control.
- Capacity analyses for the sum of existing traffic volumes and generated traffic volumes from the proposed development and the sum of year 2026 background traffic volumes and generated traffic volumes from the proposed development have shown that this intersection will continue to operate at acceptable levels of service during the weekday AM peak hour with the following proposed intersection geometrics and two-way stop control while during the PM peak hour the westbound approach at this intersection will experience increased delay:
    - Northbound: one through lane and one right-turn lane.
    - Southbound: one shared through/left-turn lane.
    - Westbound: one left-turn lane and one right-turn lane.

TOWNE ROAD & 151ST STREET

- Capacity analyses for existing traffic volumes has shown that this intersection operates at acceptable levels of service during the weekday AM and PM peak hour with the existing intersection geometrics and two-way stop control.
- Capacity analyses for year 2026 background traffic volumes, the sum of existing traffic volumes and generated traffic volumes from the proposed development and the sum of year 2026 background traffic volumes and generated traffic volumes from the proposed development have shown that this intersection will continue to operate at acceptable levels of service during the weekday AM and PM peak hours with the following planned intersection conditions:
    - Construction of a roundabout at this intersection

166TH STREET & DRIVE 1A

- Capacity analyses for the sum of existing traffic volumes and generated traffic volumes from the proposed development and the sum of year 2026 background traffic volumes and generated traffic volumes from the proposed development have shown that this intersection will continue to operate at acceptable levels of service during the weekday AM and PM peak hours with the following proposed intersection geometrics and two-way stop control:
    - Construction of a northbound approach with at least one inbound lane and two outbound lanes.
    - Addition of an eastbound right-turn lane along 166th Street.
    - Stop-sign control, with the driveway stopping for 166th Street.

161ST STREET & DRIVE 1B

- Capacity analyses for the sum of existing traffic volumes and generated traffic volumes from the proposed development and the sum of year 2026 background traffic volumes and generated traffic volumes from the proposed development have shown that this intersection will operate at acceptable levels of service during the weekday AM and PM peak hours with the following proposed intersection conditions:
    - Construction of a southbound approach with at least one inbound lane and two outbound lanes.
    - Addition of a westbound right-turn lane and a passing blister along 161st Street.
    - Stop-sign control, with the driveway stopping for 161st Street.

156TH STREET & DRIVE 2A

- Capacity analyses for the sum of existing traffic volumes and generated traffic volumes from the proposed development and the sum of year 2026 background traffic volumes and generated traffic volumes from the proposed development have shown that this intersection will operate at acceptable levels of service during the weekday AM and PM peak hours with the following proposed intersection conditions:
    - Construction of a southbound approach with at least one inbound lane and two outbound lanes.
    - Addition of a westbound right-turn lane and a passing blister along 156th Street.
    - Stop-sign control, with the driveway stopping for 156th Street.

156TH STREET & DRIVE 3A

- Capacity analyses for the sum of existing traffic volumes and generated traffic volumes from the proposed development and the sum of year 2026 background traffic volumes and generated traffic volumes from the proposed development have shown that this intersection will operate at acceptable levels of service during the weekday AM and PM peak hours with the following proposed intersection conditions:
    - Construction of a northbound approach with at least one inbound lane and two outbound lanes.
    - Addition of an eastbound right-turn lane and a passing blister along 156th Street.
    - Stop-sign control, with the driveway stopping for 161st Street.

TOWNE ROAD & DRIVE 3B/DRIVE 5B

- Capacity analyses for the sum of existing traffic volumes and generated traffic volumes from the proposed development and the sum of year 2026 background traffic volumes and generated traffic volumes from the proposed development have shown that this intersection will operate at acceptable levels of service during the weekday AM and PM peak hours with the following proposed intersection conditions:
    - Construction of an eastbound and a westbound approach with at least one inbound lane and two outbound lanes.
    - Addition of northbound left-turn and right-turn lanes and southbound left-turn and right-turn lanes along Towne Road.
    - Stop-sign control, with the driveway stopping for Towne Road.

151ST STREET & DRIVE 3C

- Capacity analyses for the sum of existing traffic volumes and generated traffic volumes from the proposed development and the sum of year 2026 background traffic volumes and generated traffic volumes from the proposed development have shown that this intersection will operate at acceptable levels of service during the weekday AM and PM peak hours with the following proposed intersection conditions:
    - Construction of a southbound approach with at least one inbound lane and two outbound lanes.
    - Addition of a westbound right-turn lane and a passing blister along 151st Street.

- Stop-sign control, with the driveway stopping for 151st Street.

151ST STREET & DRIVE 4A/DRIVE 5A

- Capacity analyses for the sum of existing traffic volumes and generated traffic volumes from the proposed development and the sum of year 2026 background traffic volumes and generated traffic volumes from the proposed development have shown that this intersection will operate at acceptable levels of service during the weekday AM and PM peak hours with the following proposed intersection conditions:
    - Construction of the northbound and southbound approaches with at least one inbound lane and two outbound lanes.
    - Addition of eastbound and westbound right-turn lanes along 151st Street.
    - Stop-sign control, with the driveway stopping for 151st Street.

151ST STREET & DRIVE 4B

- Capacity analyses for the sum of existing traffic volumes and generated traffic volumes from the proposed development and the sum of year 2026 background traffic volumes and generated traffic volumes from the proposed development have shown that this intersection will operate at acceptable levels of service during the weekday AM and PM peak hours with the following proposed intersection conditions:
    - Construction of a northbound approach with at least one inbound lane and two outbound lanes.
    - Addition of an eastbound right-turn lane and a passing blister along 151st Street.
    - Stop-sign control, with the driveway stopping for 151st Street.

SHELBOURNE ROAD & DRIVE 5C

- Capacity analyses for the sum of existing traffic volumes and generated traffic volumes from the proposed development and the sum of year 2026 background traffic volumes and generated traffic volumes from the proposed development have shown that this intersection will operate at acceptable levels of service during the weekday AM and PM peak hours with the following proposed intersection conditions:
    - Construction of a westbound approach with at least one inbound lane and one outbound lane.

- Addition of the northbound right-turn lane and a passing blister along Shelbourne Road.
- Stop-sign control, with the driveway stopping for Shelbourne Road.

TOWNE ROAD & DRIVE 6A

- Capacity analyses for the sum of existing traffic volumes and generated traffic volumes from the proposed development and the sum of year 2026 background traffic volumes and generated traffic volumes from the proposed development have shown that this intersection will operate at acceptable levels of service during the weekday AM peak hours with the following proposed intersection conditions:
    - Construction of an eastbound approach with at least one inbound lane and two outbound lanes.
    - Addition of the northbound left-turn lane and the southbound right-turn lane along Towne Road.
    - Stop-sign control, with the driveway stopping for Towne Road.
- It should be noticed that during the PM peak hour the eastbound approach at this intersection will experience delays as vehicles exiting the development. Those delays are primarily due to the amount of through traffic along Towne Road and are common during the peak hours where minor approaches intersect with primary roadways.

TRAFFIC IMPACT STUDY

APPENDIX

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ADDITIONAL FIGURES

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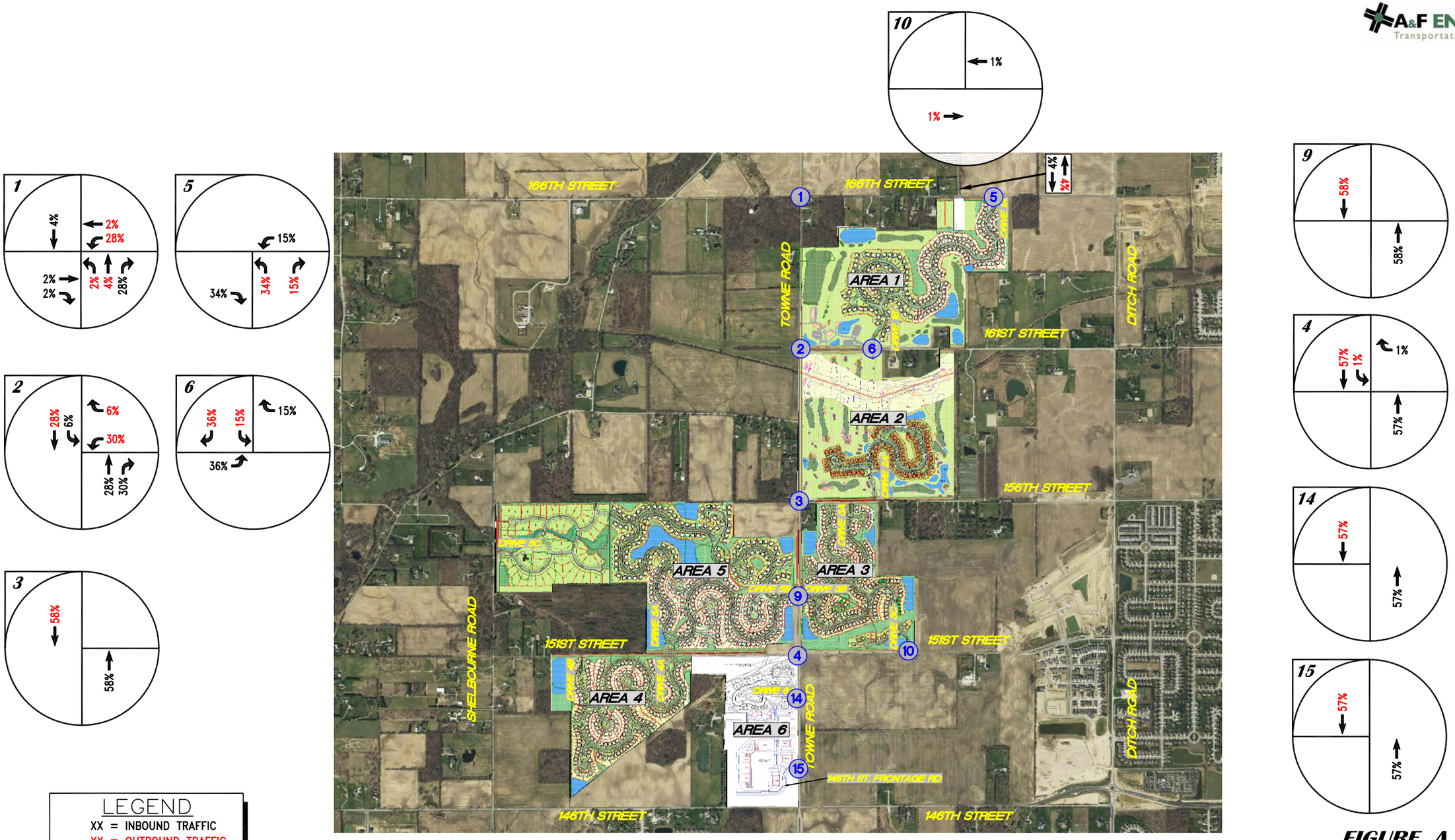

LEGEND
XX = INBOUND TRAFFIC
XX = OUTBOUND TRAFFIC
* = NEGLIGIBLE

TRAFFIC IMPACT STUDY
WESTFIELD, INDIANA
PULTE HOMES

FIGURE A

ASSIGNMENT & DISTRIBUTION OF GENERATED TRAFFIC VOLUMES FROM PROPOSED DEVELOPMENT - AREA 1

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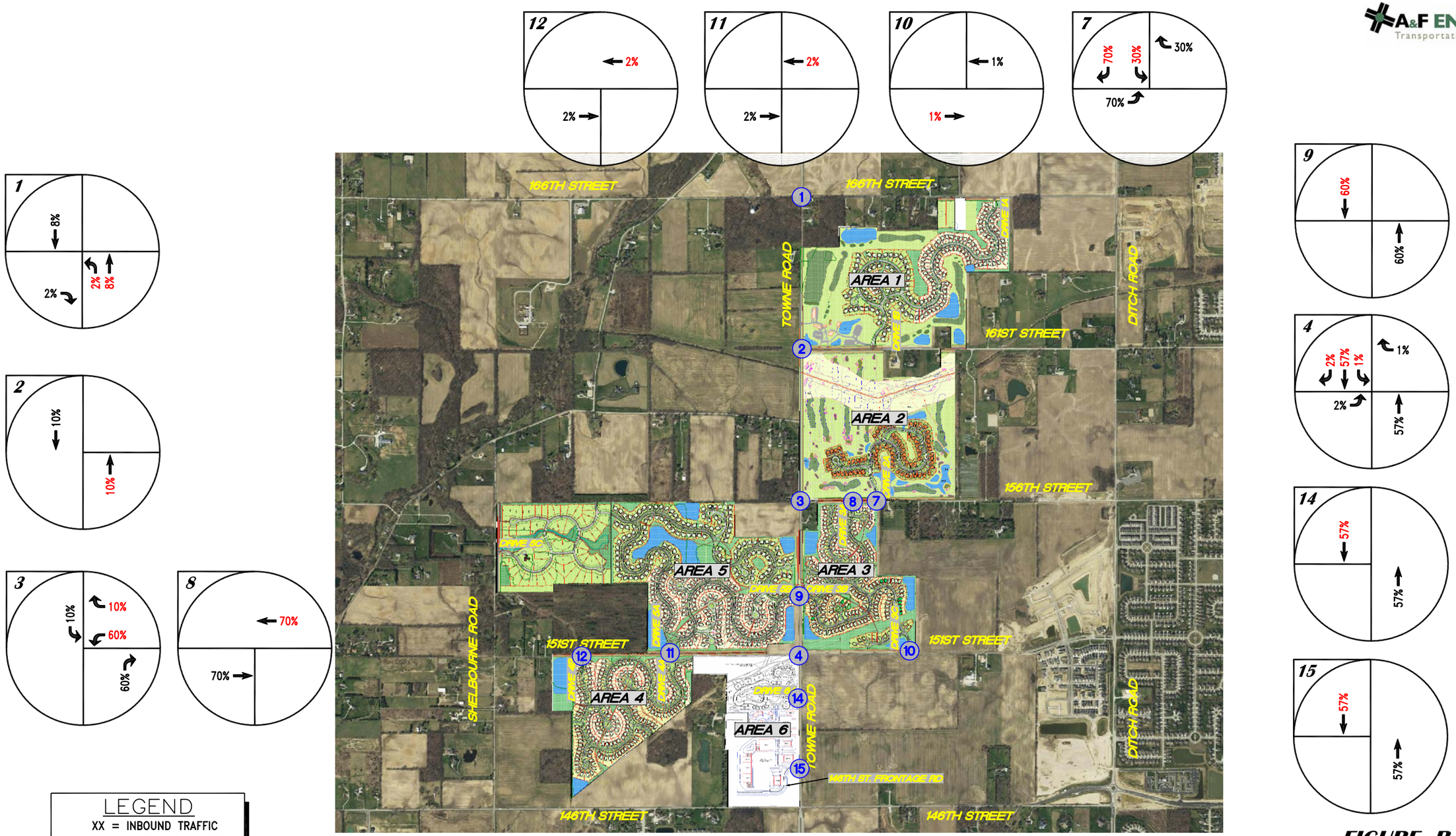

LEGEND
XX = INBOUND TRAFFIC
XX = OUTBOUND TRAFFIC
* = NEGLIGIBLE

FIGURE B

ASSIGNMENT & DISTRIBUTION OF GENERATED TRAFFIC VOLUMES FROM PROPOSED DEVELOPMENT - AREA 2

TRAFFIC IMPACT STUDY
WESTFIELD, INDIANA
PULTE HOMES

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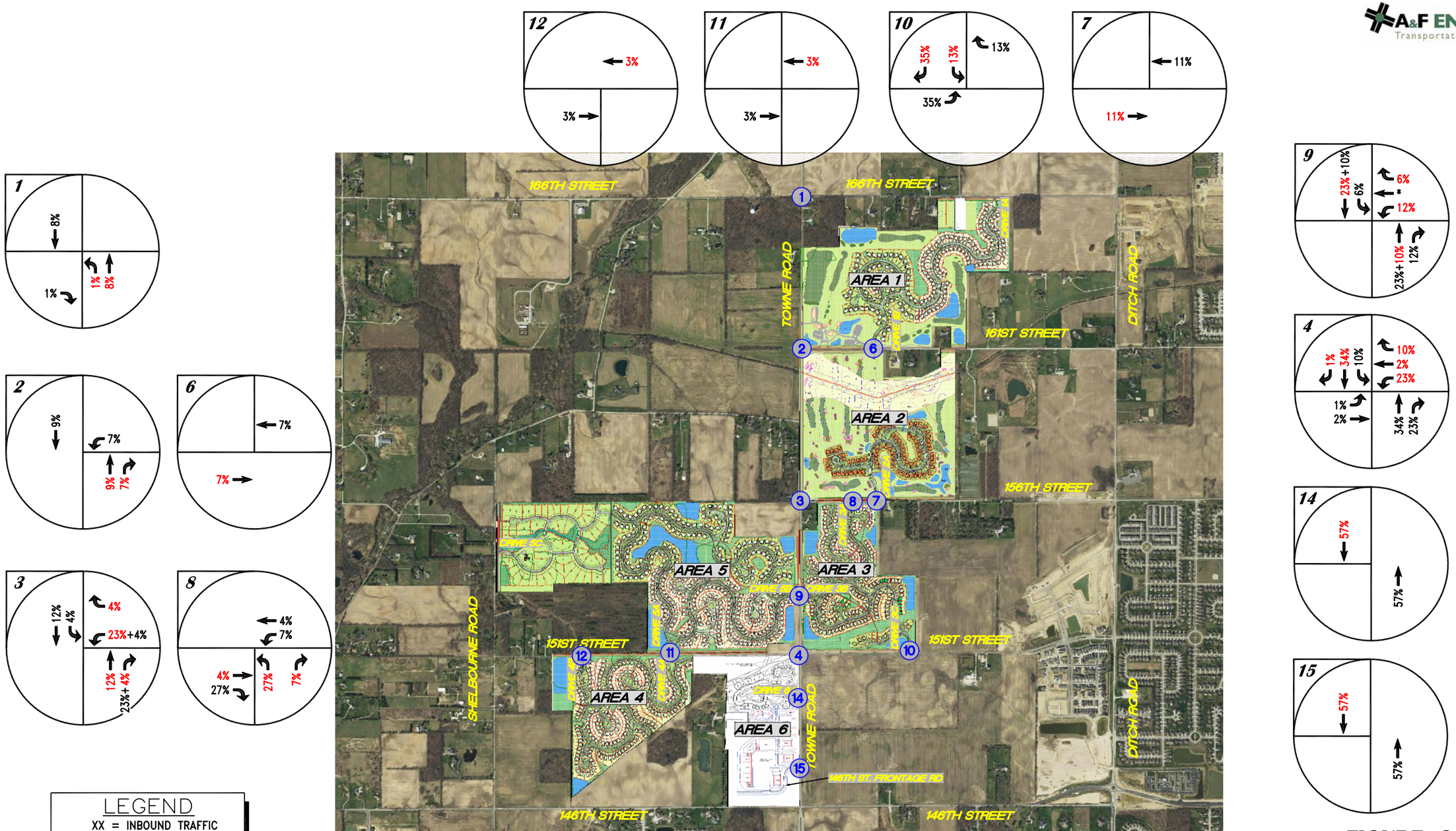

LEGEND
XX = INBOUND TRAFFIC
XX = OUTBOUND TRAFFIC
* = NEGLIGIBLE

TRAFFIC IMPACT STUDY
WESTFIELD, INDIANA
PULTE HOMES

FIGURE C

ASSIGNMENT & DISTRIBUTION OF GENERATED TRAFFIC VOLUMES FROM PROPOSED DEVELOPMENT - AREA 3

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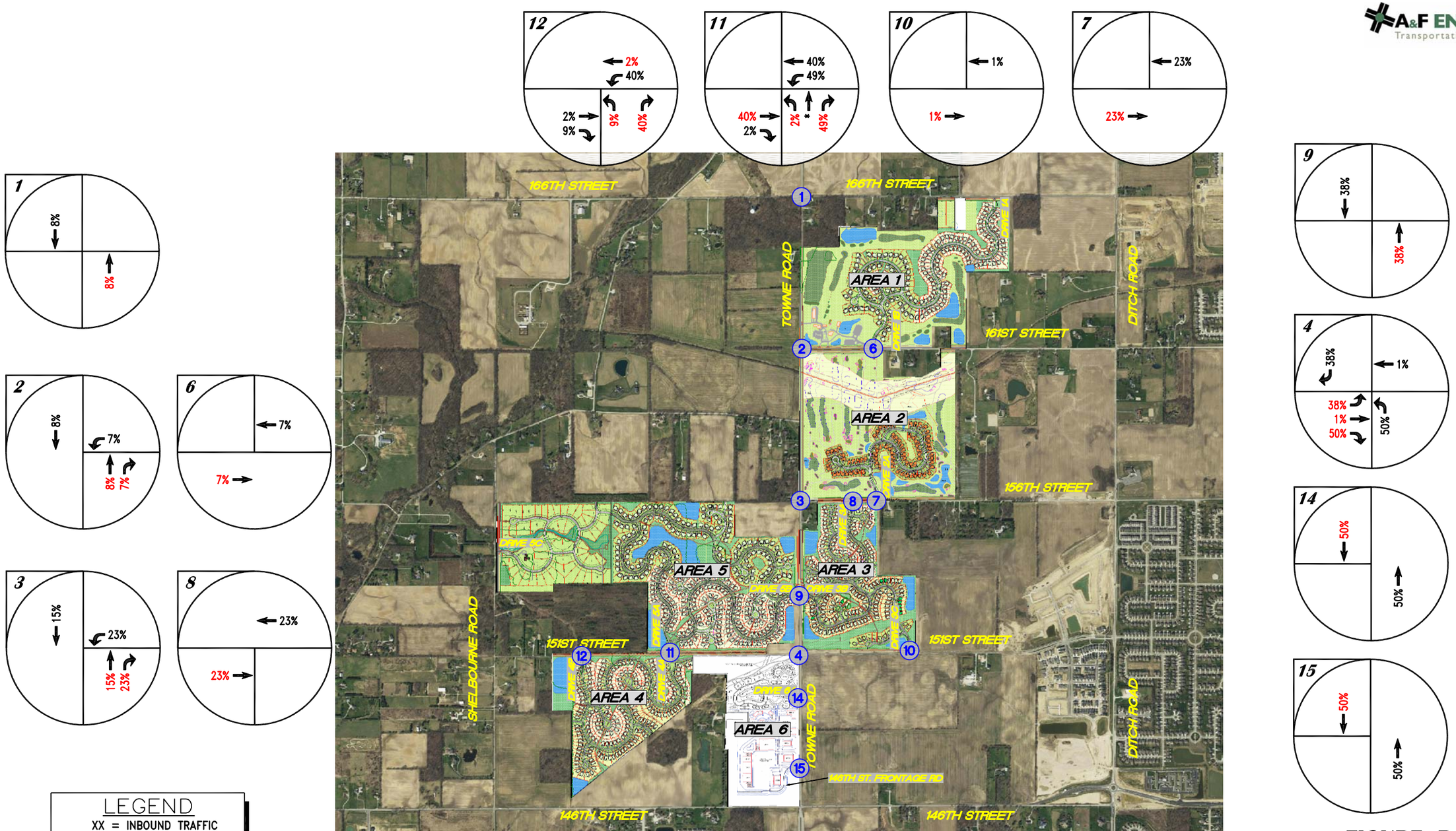

LEGEND
XX = INBOUND TRAFFIC
XX = OUTBOUND TRAFFIC
* = NEGLIGIBLE

TRAFFIC IMPACT STUDY
WESTFIELD, INDIANA
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FIGURE D

ASSIGNMENT & DISTRIBUTION OF GENERATED TRAFFIC VOLUMES FROM PROPOSED DEVELOPMENT - AREA 4

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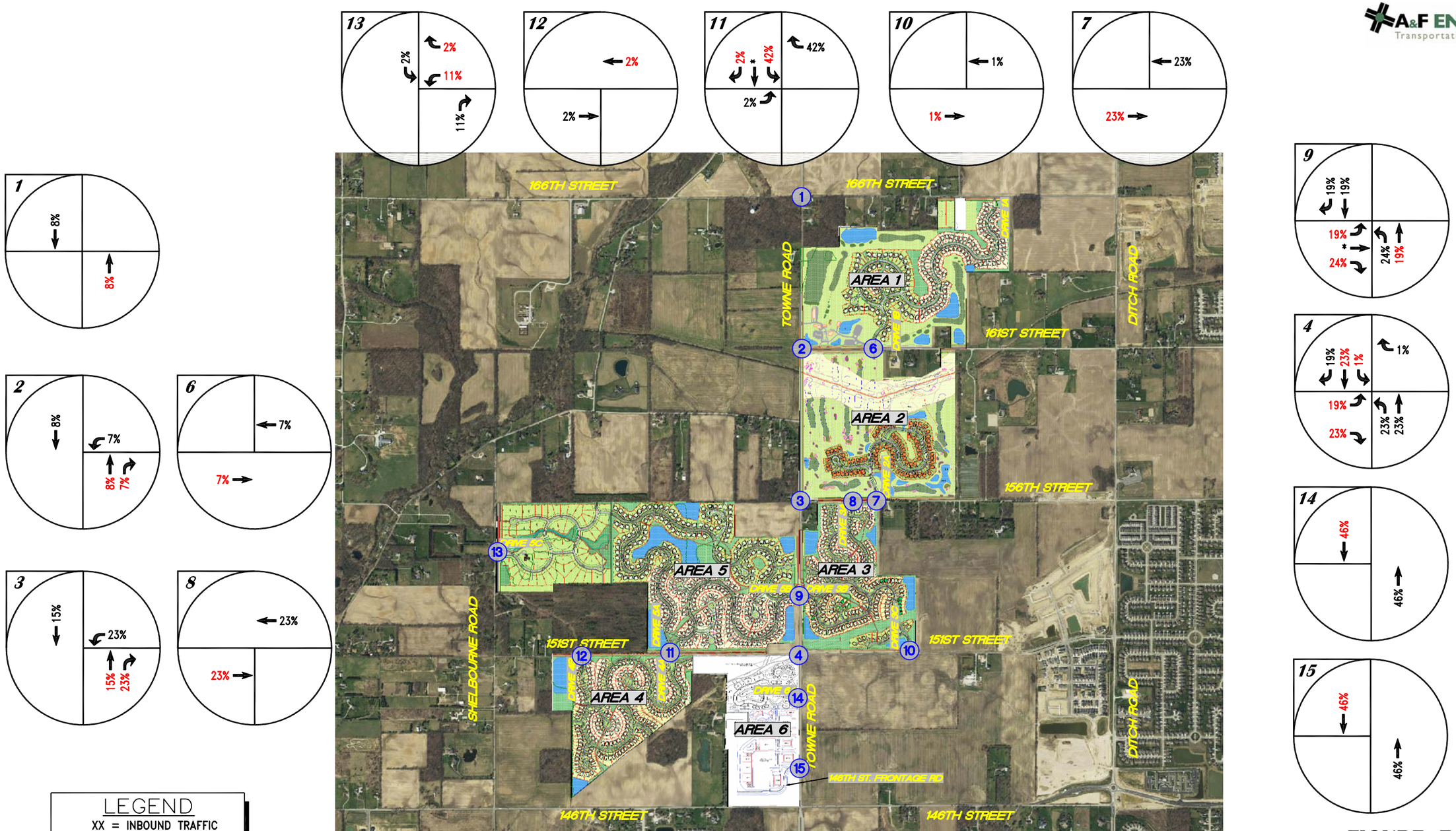


LEGEND
XX = INBOUND TRAFFIC
XX = OUTBOUND TRAFFIC
* = NEGLIGIBLE

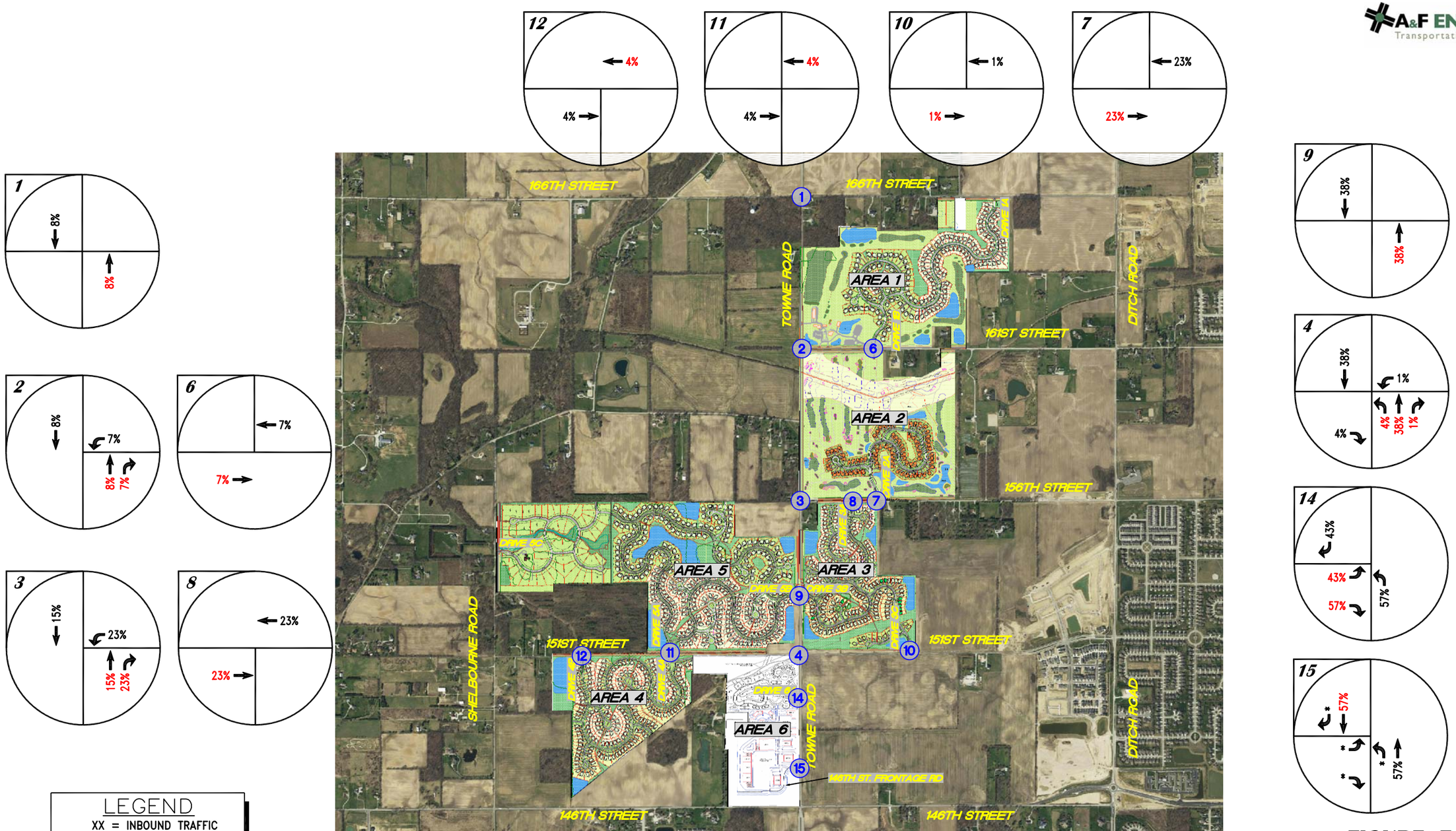
TRAFFIC IMPACT STUDY
WESTFIELD, INDIANA
PULTE HOMES

FIGURE E

ASSIGNMENT & DISTRIBUTION OF GENERATED TRAFFIC VOLUMES FROM PROPOSED DEVELOPMENT - AREA 5

Z:\2016\16065S Pulte Homes, TIS, Westfield\16065S-EXH.DWG 1=1 09-29-16 DQ

A&F ENGINEERING
Transportation & Site Engineering
Creating Order Since 1966



LEGEND
XX = INBOUND TRAFFIC
XX = OUTBOUND TRAFFIC
* = NEGLIGIBLE

TRAFFIC IMPACT STUDY
WESTFIELD, INDIANA
PULTE HOMES

FIGURE F

ASSIGNMENT & DISTRIBUTION OF GENERATED TRAFFIC VOLUMES FROM PROPOSED DEVELOPMENT - AREA 6 (APARTMENT)

Z:\2016\16065S Pulte Homes, TIS, Westfield\16065S-EXH.DWG 1=1 09-29-16 DQ

A&F ENGINEERING
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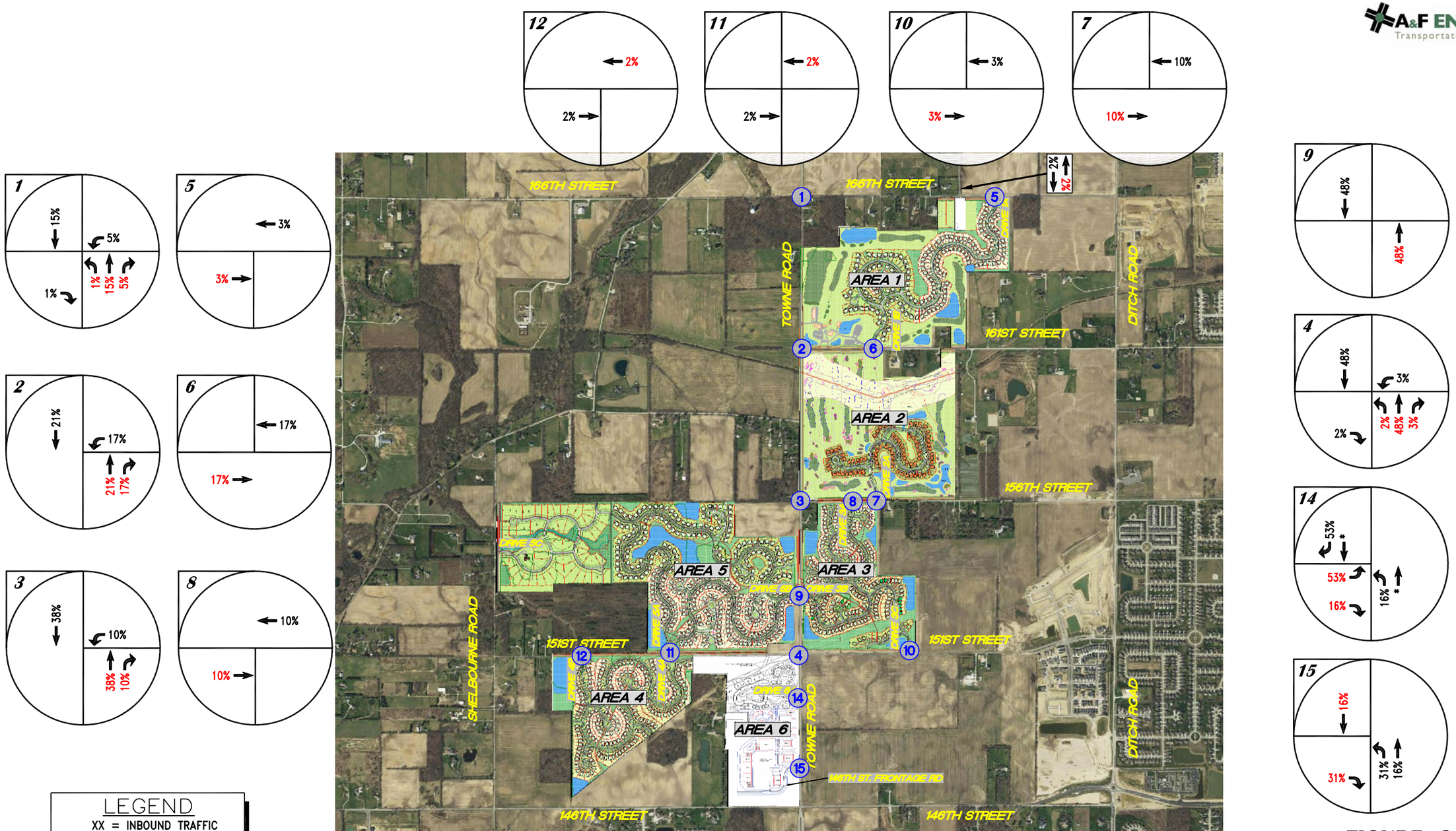

LEGEND
XX = INBOUND TRAFFIC
XX = OUTBOUND TRAFFIC
* = NEGLIGIBLE

TRAFFIC IMPACT STUDY
WESTFIELD, INDIANA
PULTE HOMES

FIGURE G

ASSIGNMENT & DISTRIBUTION OF GENERATED TRAFFIC VOLUMES FROM PROPOSED DEVELOPMENT - AREA 6 (OFFICE)

Z:\2016\16065S Pulte Homes, TIS, Westfield\16065S-EXH.DWG 1=1 09-29-16 DQ

A&F ENGINEERING
Transportation & Site Engineering
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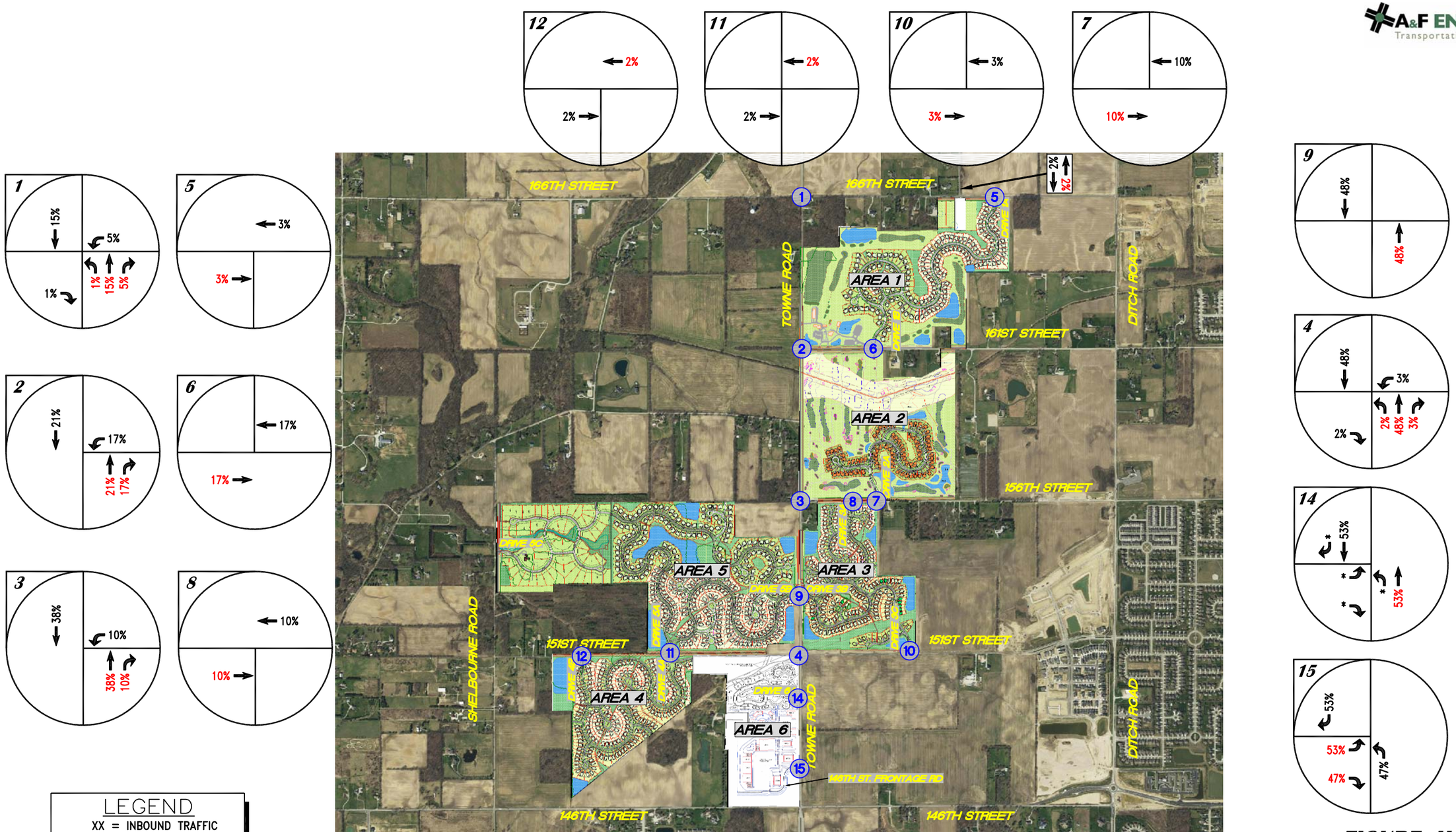

LEGEND
XX = INBOUND TRAFFIC
XX = OUTBOUND TRAFFIC
* = NEGLIGIBLE

TRAFFIC IMPACT STUDY
WESTFIELD, INDIANA
PULTE HOMES

FIGURE H

ASSIGNMENT & DISTRIBUTION OF GENERATED NON PASS-BY TRIPS FROM PROPOSED DEVELOPMENT - AREA 6 (RETAIL)

Z:\2016\16065S Pulte Homes, TIS, Westfield\16065S-EXH.DWG 1=1 09-29-16 DQ

A&F ENGINEERING
Transportation & Site Engineering
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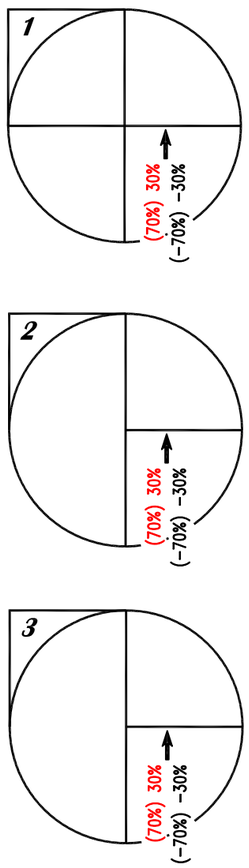
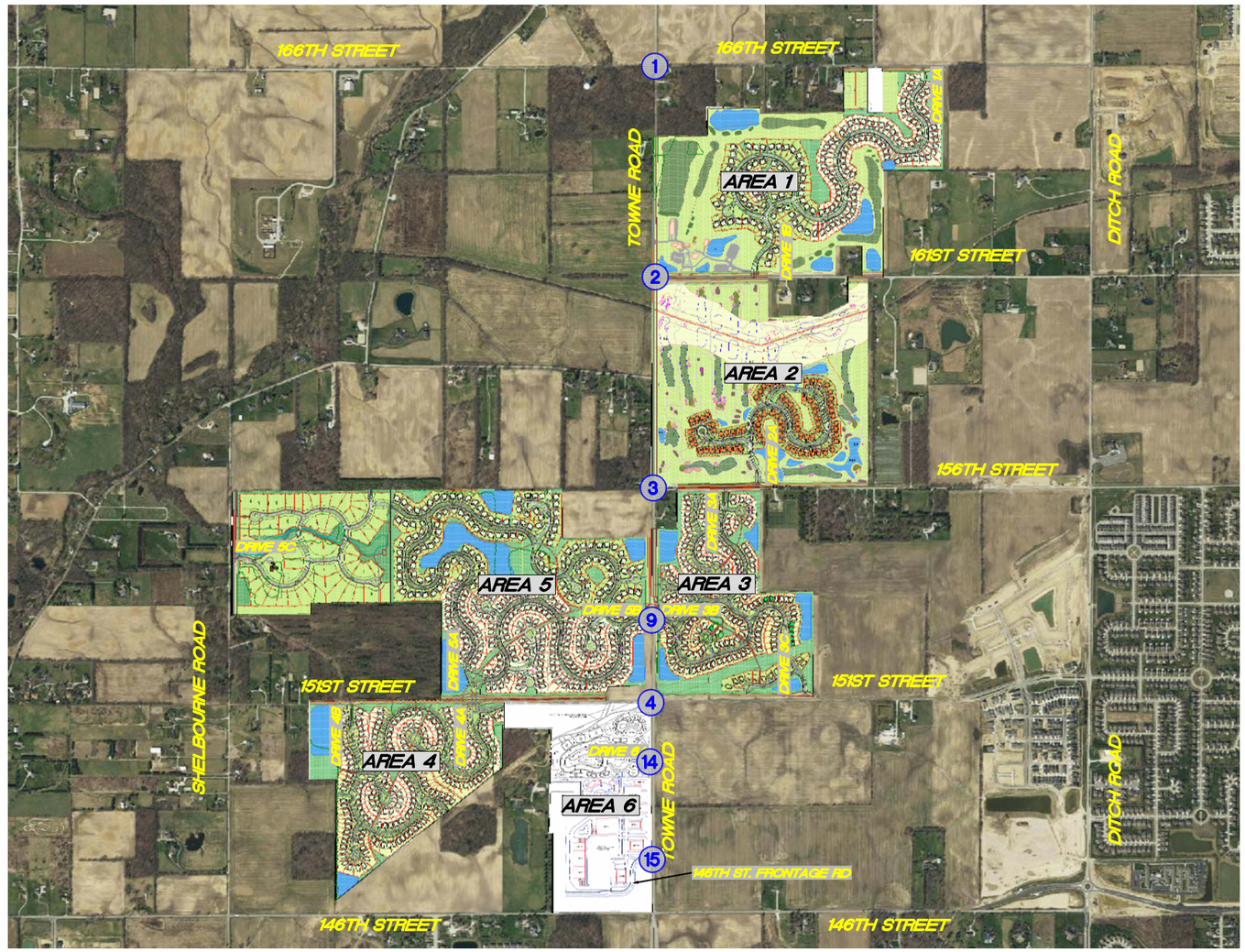
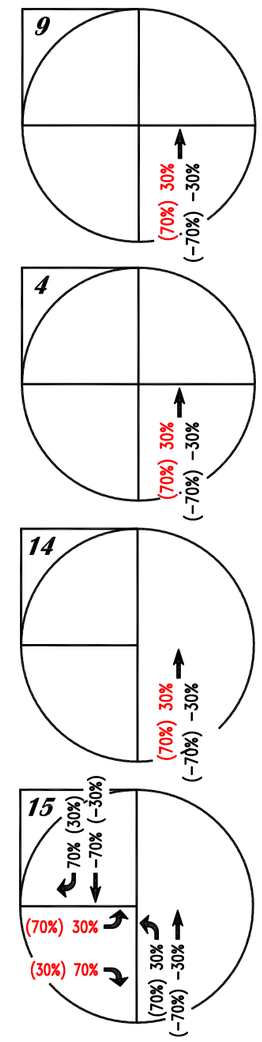






LEGEND

XX = A.M. INBOUND TRAFFIC
(XX) = P.M. INBOUND TRAFFIC
XX = A.M. OUTBOUND TRAFFIC
(XX) = P.M. OUTBOUND TRAFFIC
* = NEGLIGIBLE

TRAFFIC IMPACT STUDY
WESTFIELD, INDIANA
PULTE HOMES

FIGURE 1

ASSIGNMENT & DISTRIBUTION OF GENERATED PASS-BY TRIPS FROM PROPOSED DEVELOPMENT - AREA 6 (RETAIL)

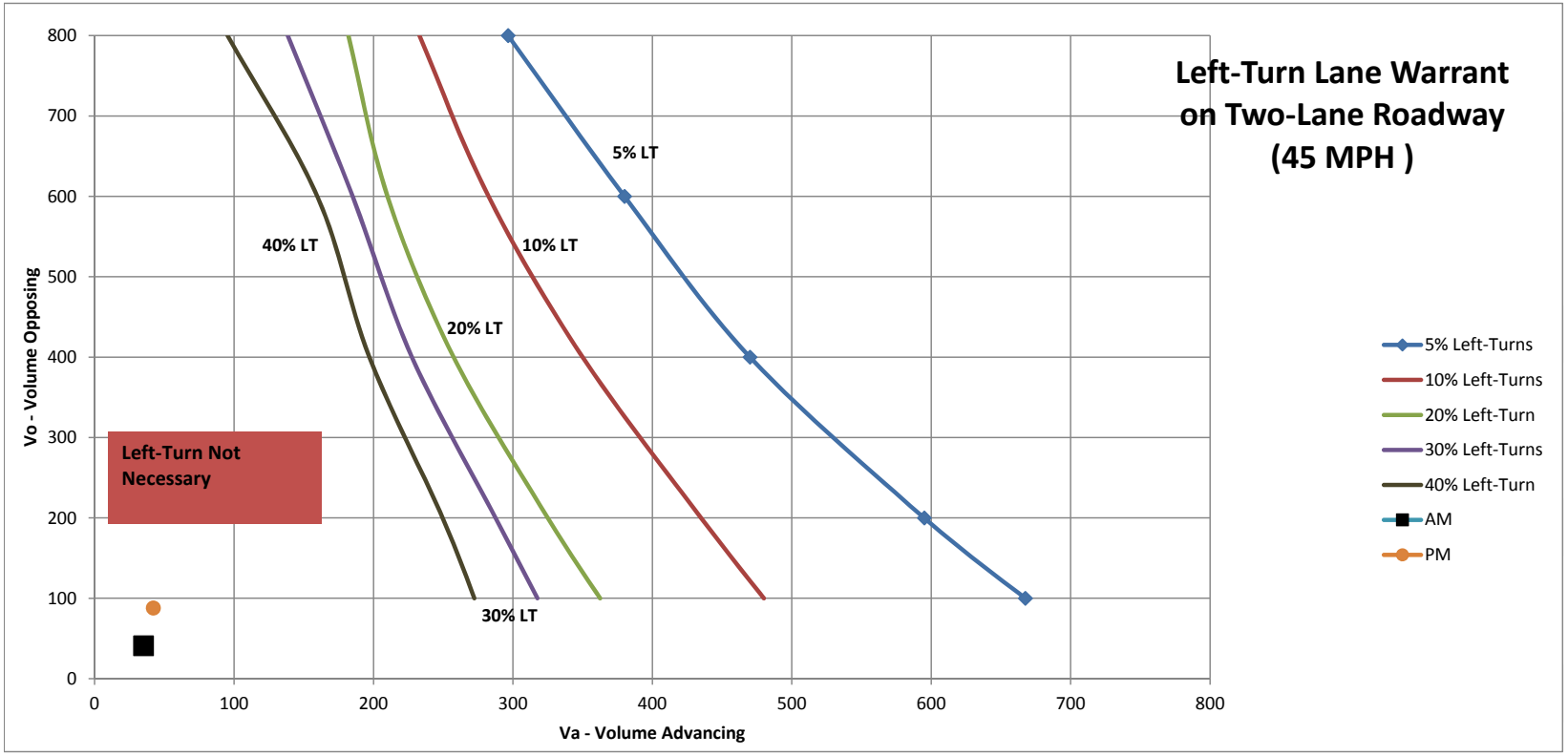
Z:\2016\16065S Pulte Homes, TIS, Westfield\16065S-EXH.DWG 1=1 09-29-16 DQ

TURN LANE ANALYSIS

166th Street & Drive 1A - Existing + Gen.

Operating Speed (mph)	Opposing Volume (veh/h)	Advancing Volume (veh/h)							
		5% Left Turns	10% Left Turns	15% Left Turns	20% Left Turns	25% Left Turns	30% Left Turns	35% Left Turns	40% Left Turns
45	800	297	233	208	182	160	139	117	95
	600	380	283	246	210	198	185	172	160
	400	470	350	304	258	243	228	212	197
	200	595	435	380	325	306	288	269	250
	100	668	480	421	363	340	318	295	272

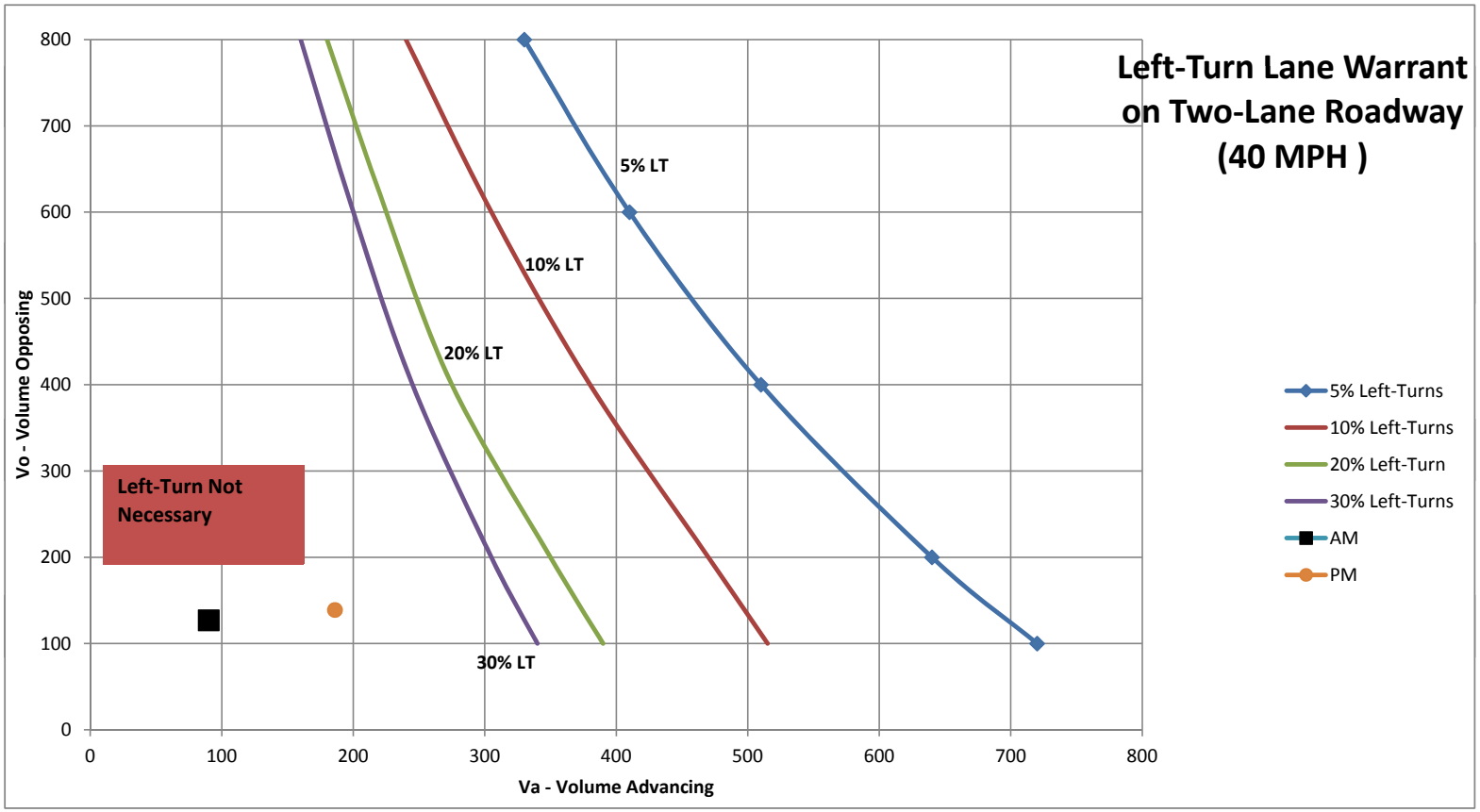
	INPUT		MET?
AM	**Advancing Volume (Va)**	35	NO
	Opposing Volume (Vo)	41	
	Left-Turn Pencentage	11%	
PM	**Advancing Volume (Va)**	42	NO
	Opposing Volume (Vo)	88	
	Left-Turn Pencentage	33%	



161st Street & Drive 1B - Existing + Gen.

Operating Speed (mph)	Opposing Volume (veh/h)	Advancing Volume (veh/h)			
		5% Left Turns	10% Left Turns	20% Left Turns	30% Left Turns
40	800	330	240	180	160
	600	410	305	225	200
	400	510	380	275	245
	200	640	470	350	305
	100	720	515	390	340

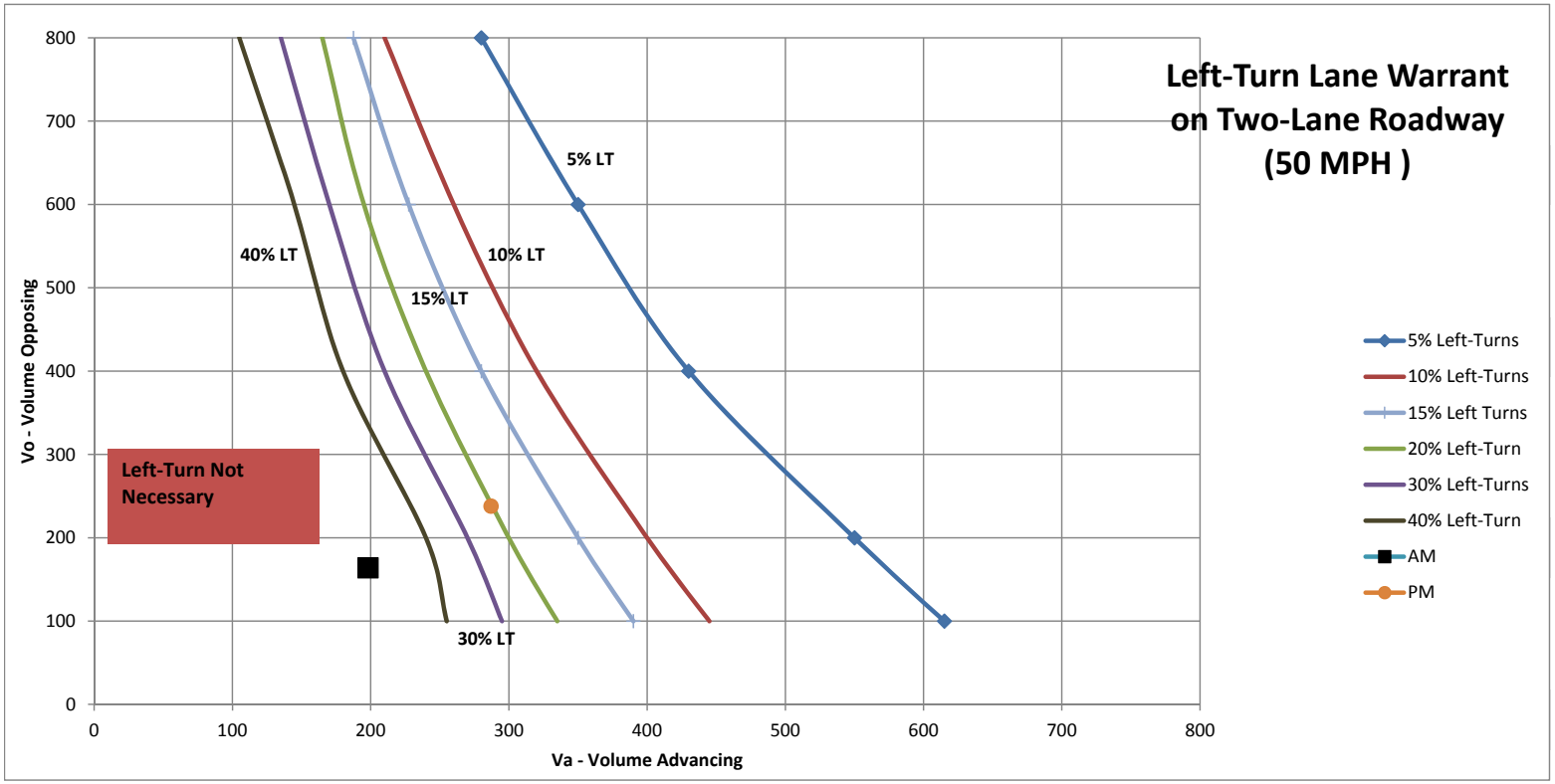
	INPUT		MET?
AM	**Advancing Volume (Va)**	90	NO
	Opposing Volume (Vo)	127	
	Left-Turn Pencentage	11%	
PM	**Advancing Volume (Va)**	186	NO
	Opposing Volume (Vo)	139	
	Left-Turn Pencentage	18%	



156th Street & Drive 2A - Existing + Gen.

Operating Speed (mph)	Opposing Volume (veh/h)	Advancing Volume (veh/h)							
		5% Left Turns	10% Left Turns	15% Left Turns	20% Left Turns	25% Left Turns	30% Left Turns	35% Left Turns	40% Left Turns
50	800	280	210	188	165	150	135	120	105
	600	350	260	228	195	183	170	157	145
	400	430	320	280	240	225	210	195	180
	200	550	400	350	300	285	270	255	240
	100	615	445	390	335	315	295	275	255

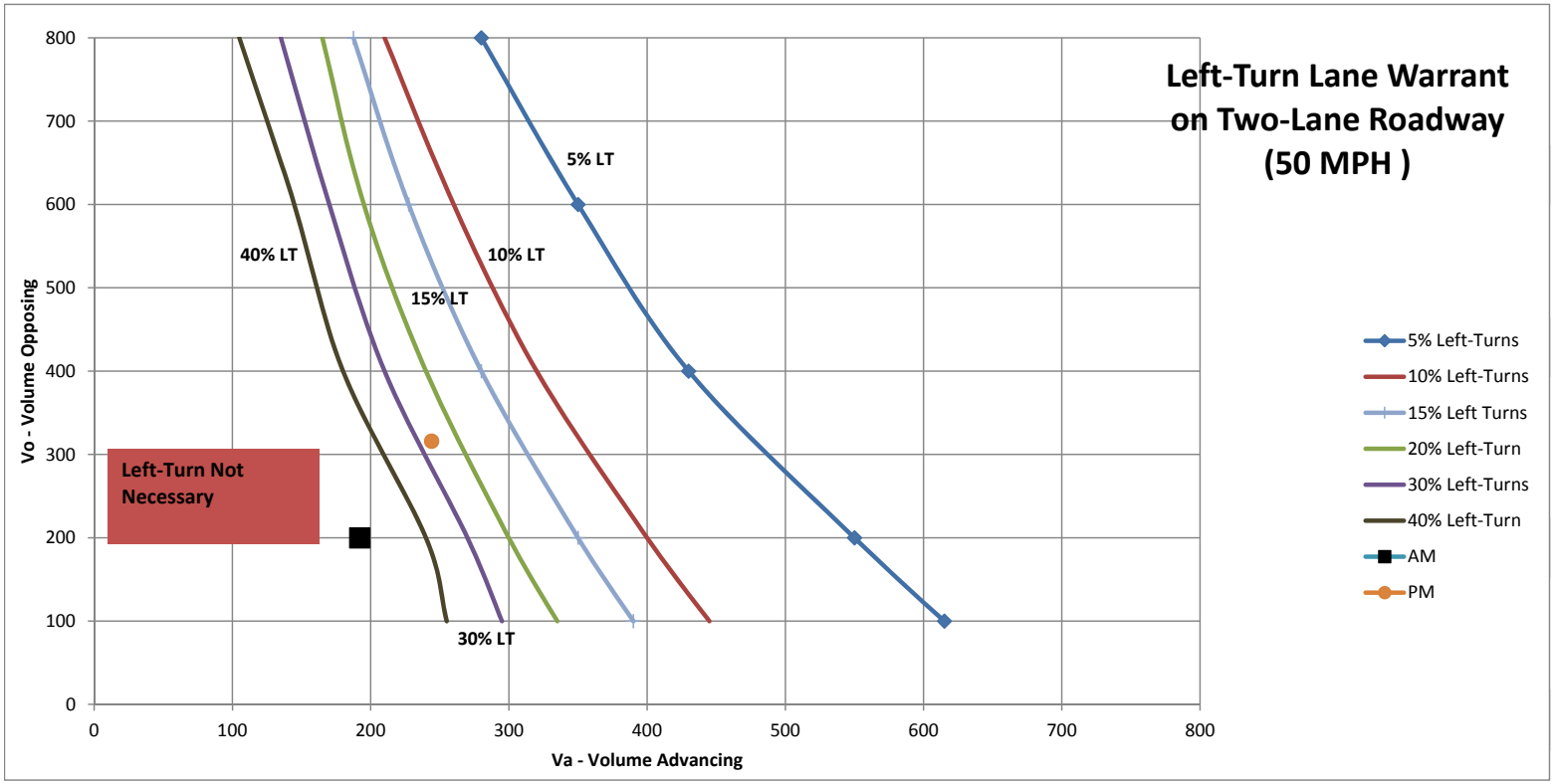
	INPUT		MET?
AM	**Advancing Volume (Va)**	198	NO
	Opposing Volume (Vo)	164	
	Left-Turn Pencentage	5.0%	
PM	**Advancing Volume (Va)**	287	NO
	Opposing Volume (Vo)	238	
	Left-Turn Pencentage	13%	



156th Street & Drive 3A - Existing + Gen.

Operating Speed (mph)	Opposing Volume (veh/h)	Advancing Volume (veh/h)							
		5% Left Turns	10% Left Turns	15% Left Turns	20% Left Turns	25% Left Turns	30% Left Turns	35% Left Turns	40% Left Turns
50	800	280	210	188	165	150	135	120	105
	600	350	260	228	195	183	170	157	145
	400	430	320	280	240	225	210	195	180
	200	550	400	350	300	285	270	255	240
	100	615	445	390	335	315	295	275	255

	INPUT		MET?
AM	**Advancing Volume (Va)**	192	NO
	Opposing Volume (Vo)	200	
	Left-Turn Pencentage	5.0%	
PM	**Advancing Volume (Va)**	244	NO
	Opposing Volume (Vo)	316	
	Left-Turn Pencentage	4%	

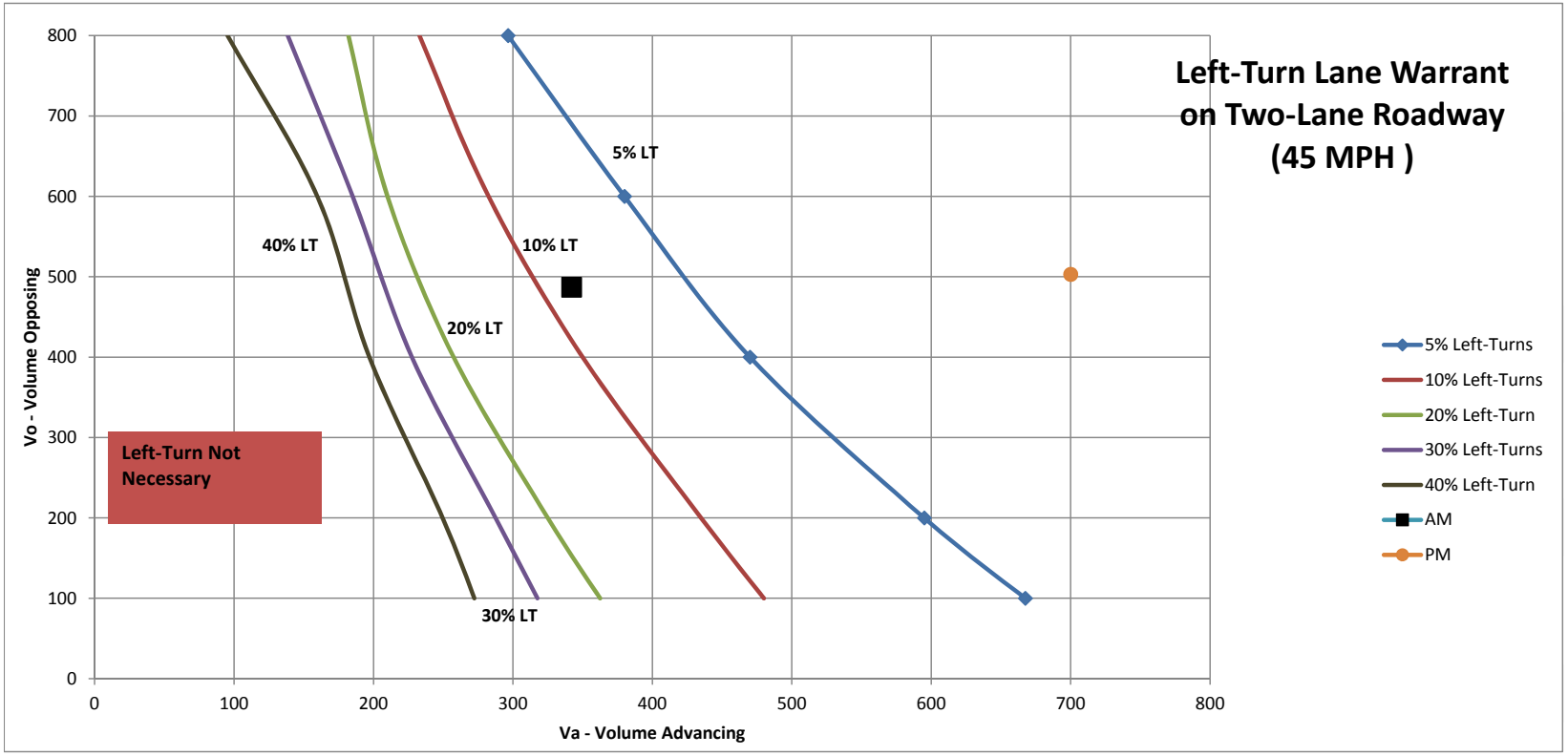


Towne Road & Drive 3B/Drive 5B - Existing + Gen.

Operating Speed (mph)	Opposing Volume (veh/h)	Advancing Volume (veh/h)							
		5% Left Turns	10% Left Turns	15% Left Turns	20% Left Turns	25% Left Turns	30% Left Turns	35% Left Turns	40% Left Turns
45	800	297	233	208	182	160	139	117	95
	600	380	283	246	210	198	185	172	160
	400	470	350	304	258	243	228	212	197
	200	595	435	380	325	306	288	269	250
	100	668	480	421	363	340	318	295	272

NBL

	INPUT		MET?
AM	Advancing Volume (Va)	342	NO
	Opposing Volume (Vo)	487	
	Left-Turn Pencentage	5%	
PM	Advancing Volume (Va)	700	YES
	Opposing Volume (Vo)	503	
	Left-Turn Pencentage	8%	

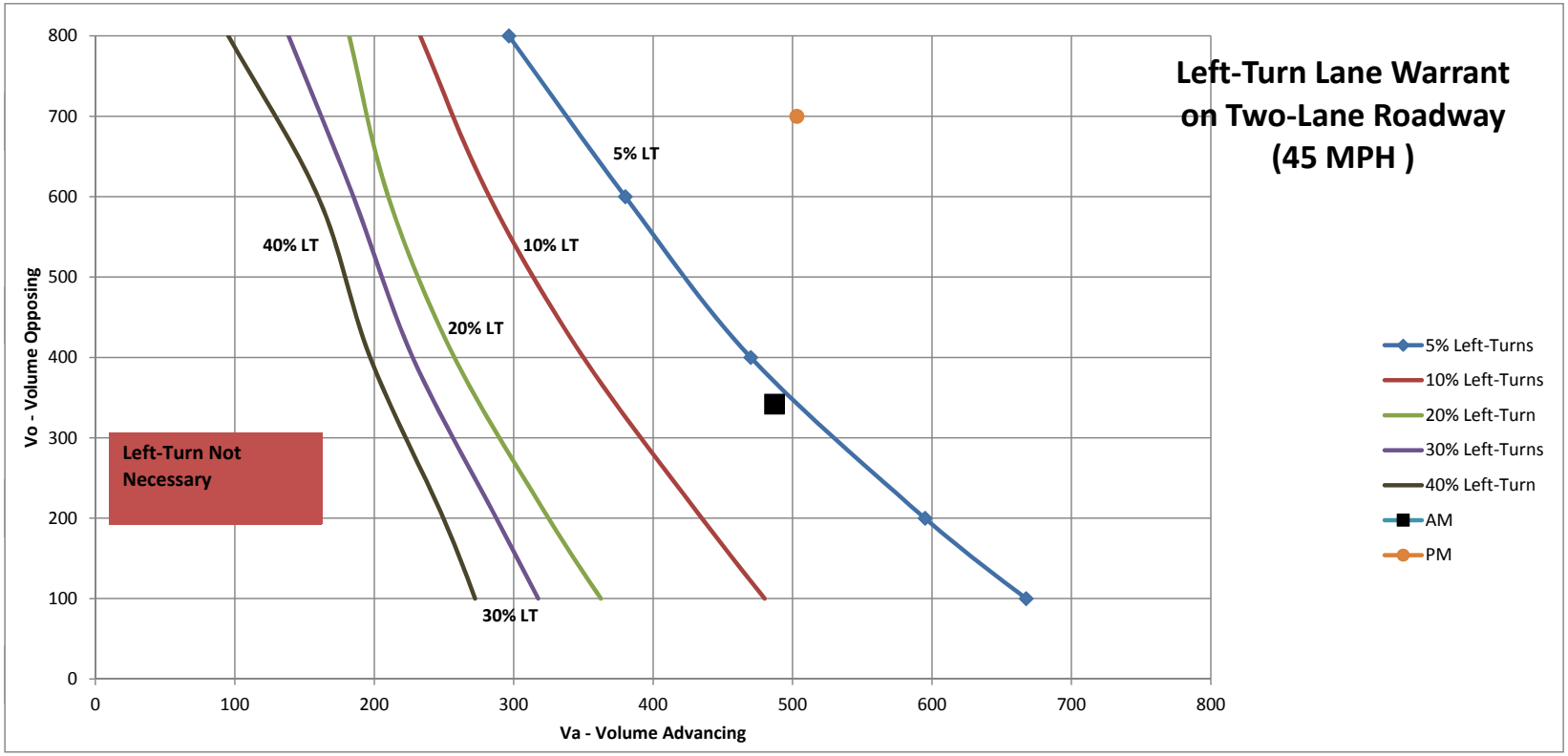


Towne Road & Drive 3B/Drive 5B - Existing + Gen.

Operating Speed (mph)	Opposing Volume (veh/h)	Advancing Volume (veh/h)							
		5% Left Turns	10% Left Turns	15% Left Turns	20% Left Turns	25% Left Turns	30% Left Turns	35% Left Turns	40% Left Turns
45	800	297	233	208	182	160	139	117	95
	600	380	283	246	210	198	185	172	160
	400	470	350	304	258	243	228	212	197
	200	595	435	380	325	306	288	269	250
	100	668	480	421	363	340	318	295	272

SBL

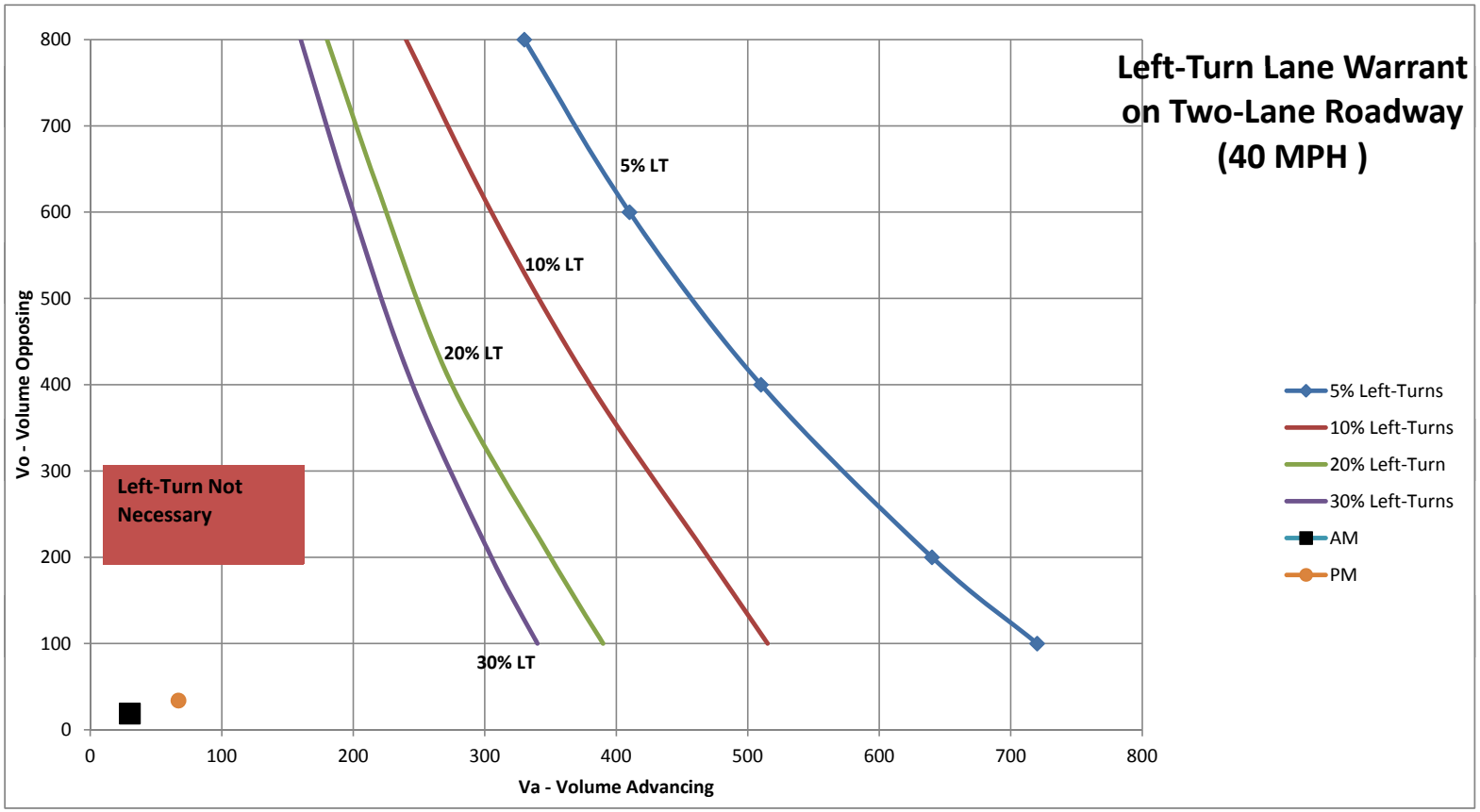
	INPUT		MET?
AM	**Advancing Volume (Va)**	487	NO
	Opposing Volume (Vo)	342	
	Left-Turn Pencentage	1%	
PM	**Advancing Volume (Va)**	503	NO
	Opposing Volume (Vo)	700	
	Left-Turn Pencentage	2%	



151st Street & Drive 3C - Existing + Gen.

Operating Speed (mph)	Opposing Volume (veh/h)	Advancing Volume (veh/h)			
		5% Left Turns	10% Left Turns	20% Left Turns	30% Left Turns
40	800	330	240	180	160
	600	410	305	225	200
	400	510	380	275	245
	200	640	470	350	305
	100	720	515	390	340

	INPUT		MET?
AM	**Advancing Volume (Va)**	30	NO
	Opposing Volume (Vo)	19	
	Left-Turn Pencentage	47%	
PM	**Advancing Volume (Va)**	67	NO
	Opposing Volume (Vo)	34	
	Left-Turn Pencentage	67%	

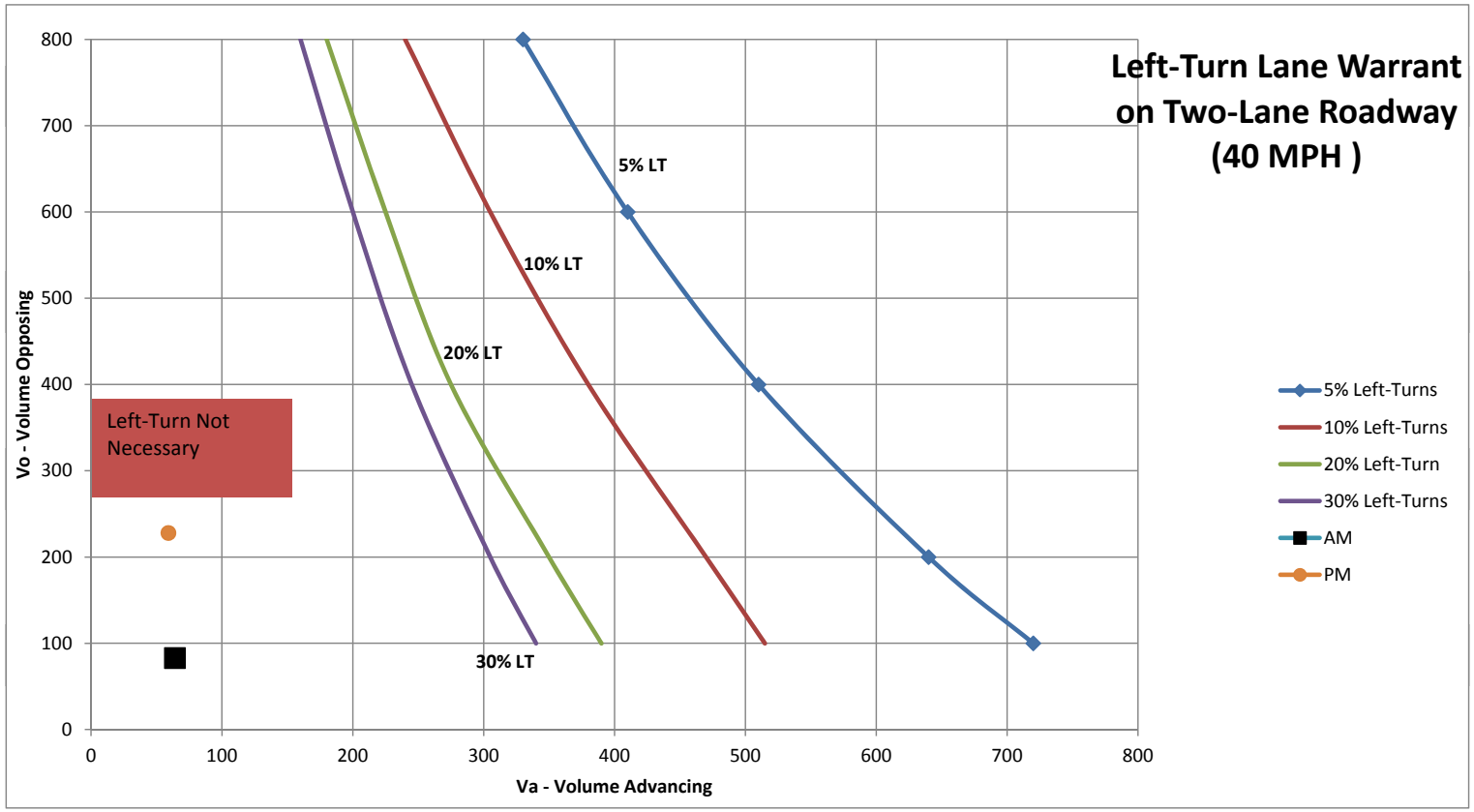


151st Street & Drive 4A/Drive 5A - Existing + Gen.

Operating Speed (mph)	Opposing Volume (veh/h)	Advancing Volume (veh/h)			
		5% Left Turns	10% Left Turns	20% Left Turns	30% Left Turns
40	800	330	240	180	160
	600	410	305	225	200
	400	510	380	275	245
	200	640	470	350	305
	100	720	515	390	340

EBL

	INPUT		MET?
AM	**Advancing Volume (Va)**	64	NO
	Opposing Volume (Vo)	83	
	Left-Turn Pencentage	2%	
PM	**Advancing Volume (Va)**	59	NO
	Opposing Volume (Vo)	228	
	Left-Turn Pencentage	8%	

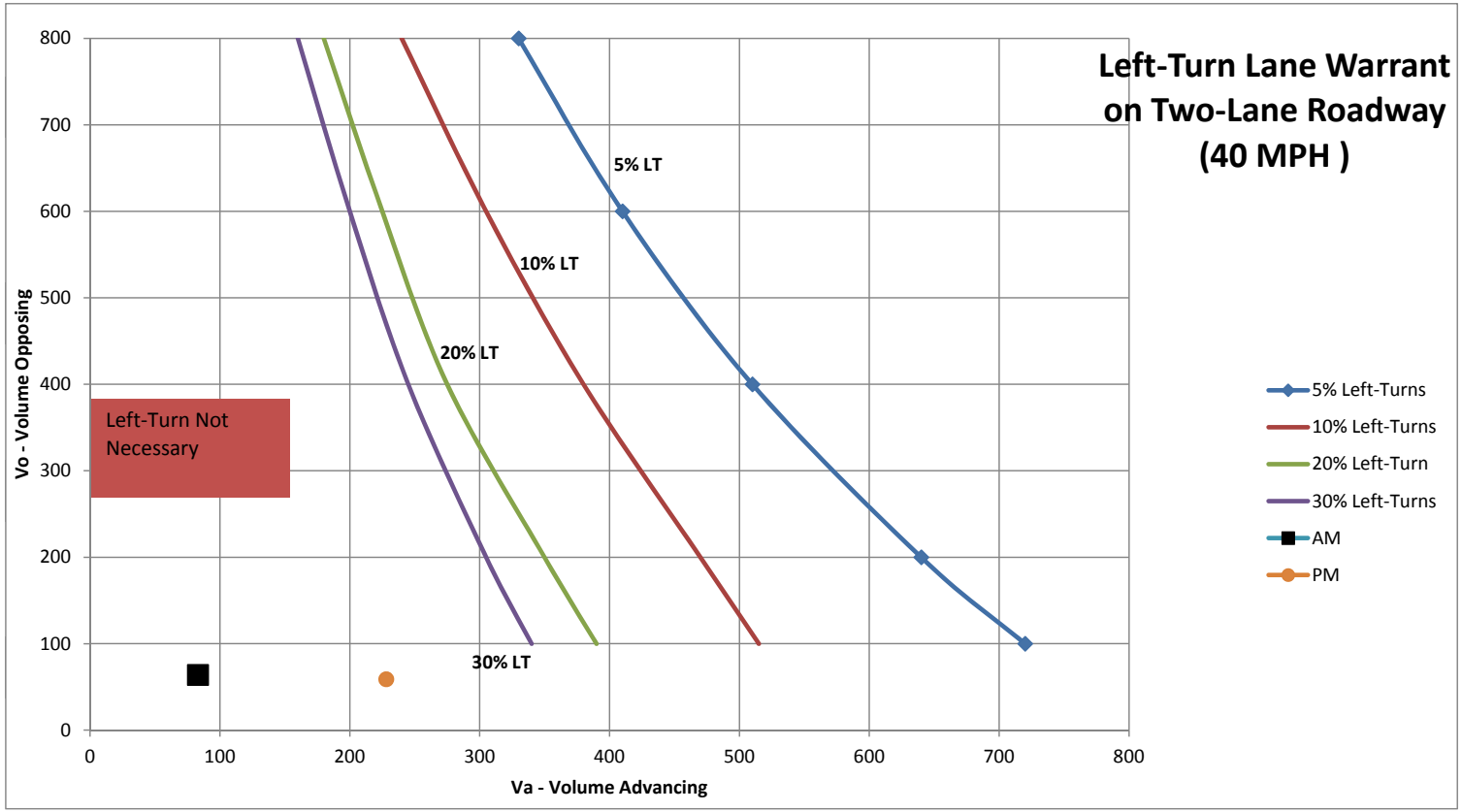


151st Street & Drive 4A/Drive 5A - Existing + Gen.

Operating Speed (mph)	Opposing Volume (veh/h)	Advancing Volume (veh/h)			
		5% Left Turns	10% Left Turns	20% Left Turns	30% Left Turns
40	800	330	240	180	160
	600	410	305	225	200
	400	510	380	275	245
	200	640	470	350	305
	100	720	515	390	340

WBL

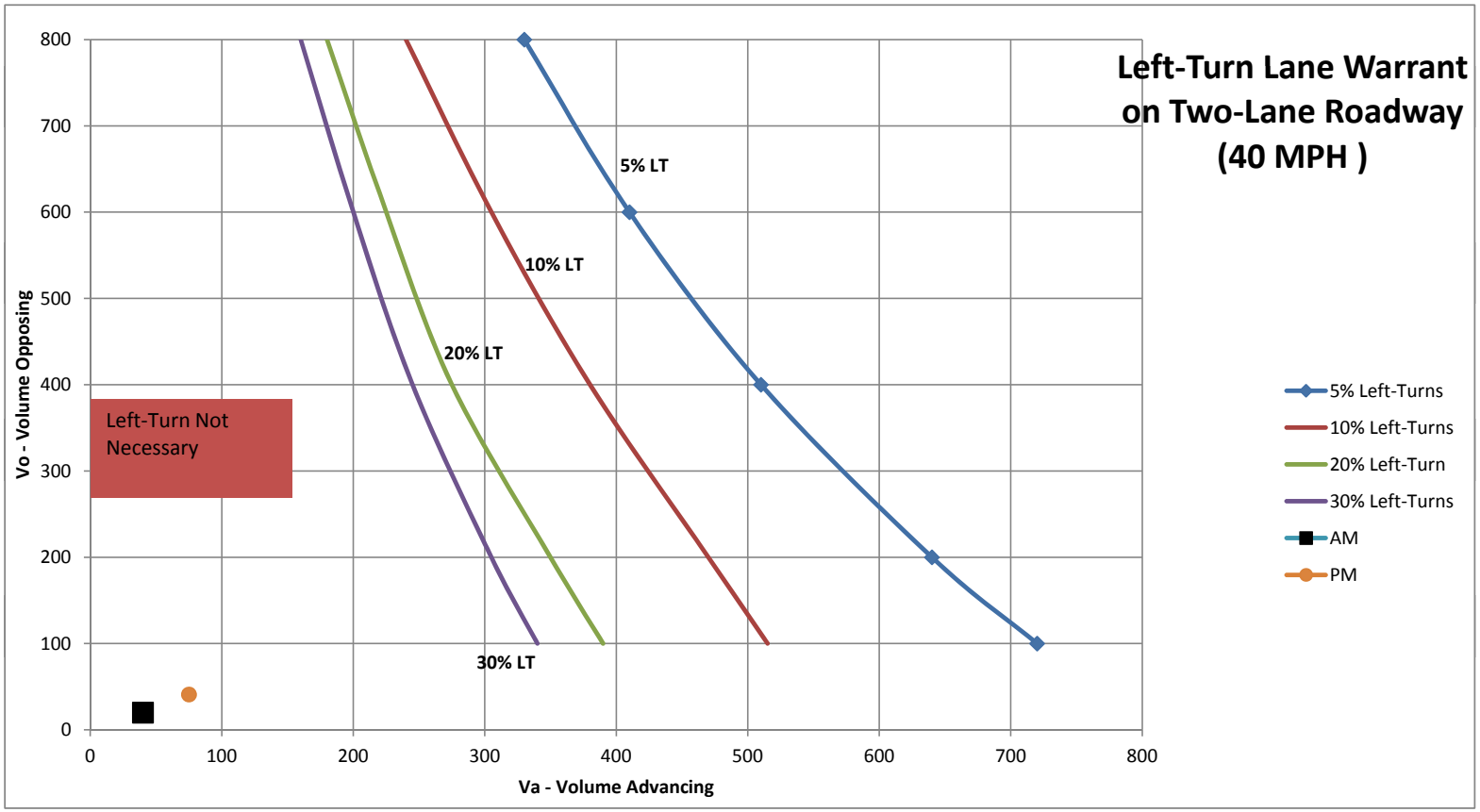
	INPUT		MET?
AM	**Advancing Volume (Va)**	83	NO
	Opposing Volume (Vo)	64	
	Left-Turn Pencentage	23%	
PM	**Advancing Volume (Va)**	228	NO
	Opposing Volume (Vo)	59	
	Left-Turn Pencentage	28%	



151st Street & Drive 4B - Existing + Gen.

Operating Speed (mph)	Opposing Volume (veh/h)	Advancing Volume (veh/h)			
		5% Left Turns	10% Left Turns	20% Left Turns	30% Left Turns
40	800	330	240	180	160
	600	410	305	225	200
	400	510	380	275	245
	200	640	470	350	305
	100	720	515	390	340

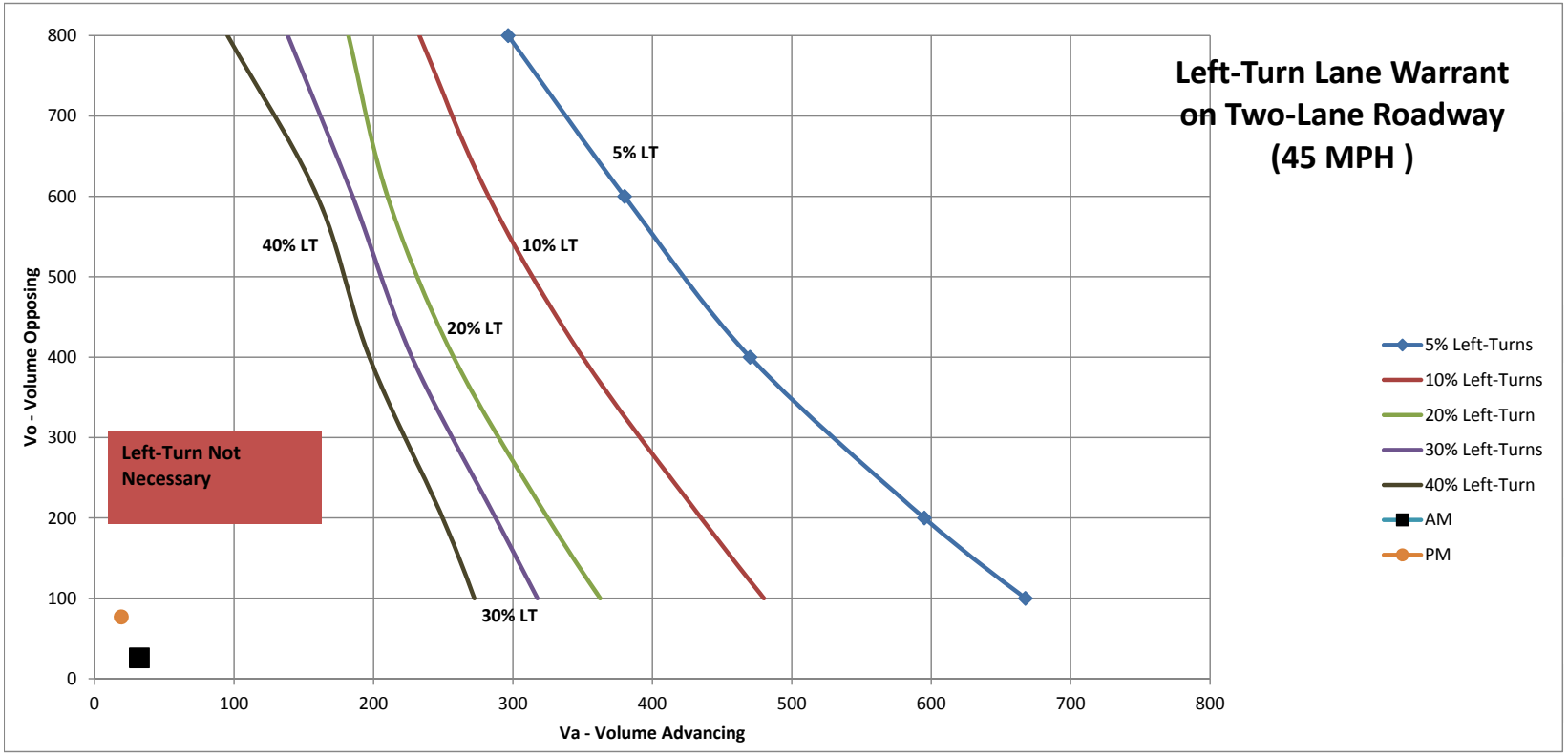
	INPUT		MET?
AM	Advancing Volume (Va)	40	NO
	Opposing Volume (Vo)	20	
	Left-Turn Pencentage	40%	
PM	Advancing Volume (Va)	75	NO
	Opposing Volume (Vo)	41	
	Left-Turn Pencentage	70%	



Shelbourne Road & Drive 5C - Existing + Gen.

Operating Speed (mph)	Opposing Volume (veh/h)	Advancing Volume (veh/h)							
		5% Left Turns	10% Left Turns	15% Left Turns	20% Left Turns	25% Left Turns	30% Left Turns	35% Left Turns	40% Left Turns
45	800	297	233	208	182	160	139	117	95
	600	380	283	246	210	198	185	172	160
	400	470	350	304	258	243	228	212	197
	200	595	435	380	325	306	288	269	250
	100	668	480	421	363	340	318	295	272

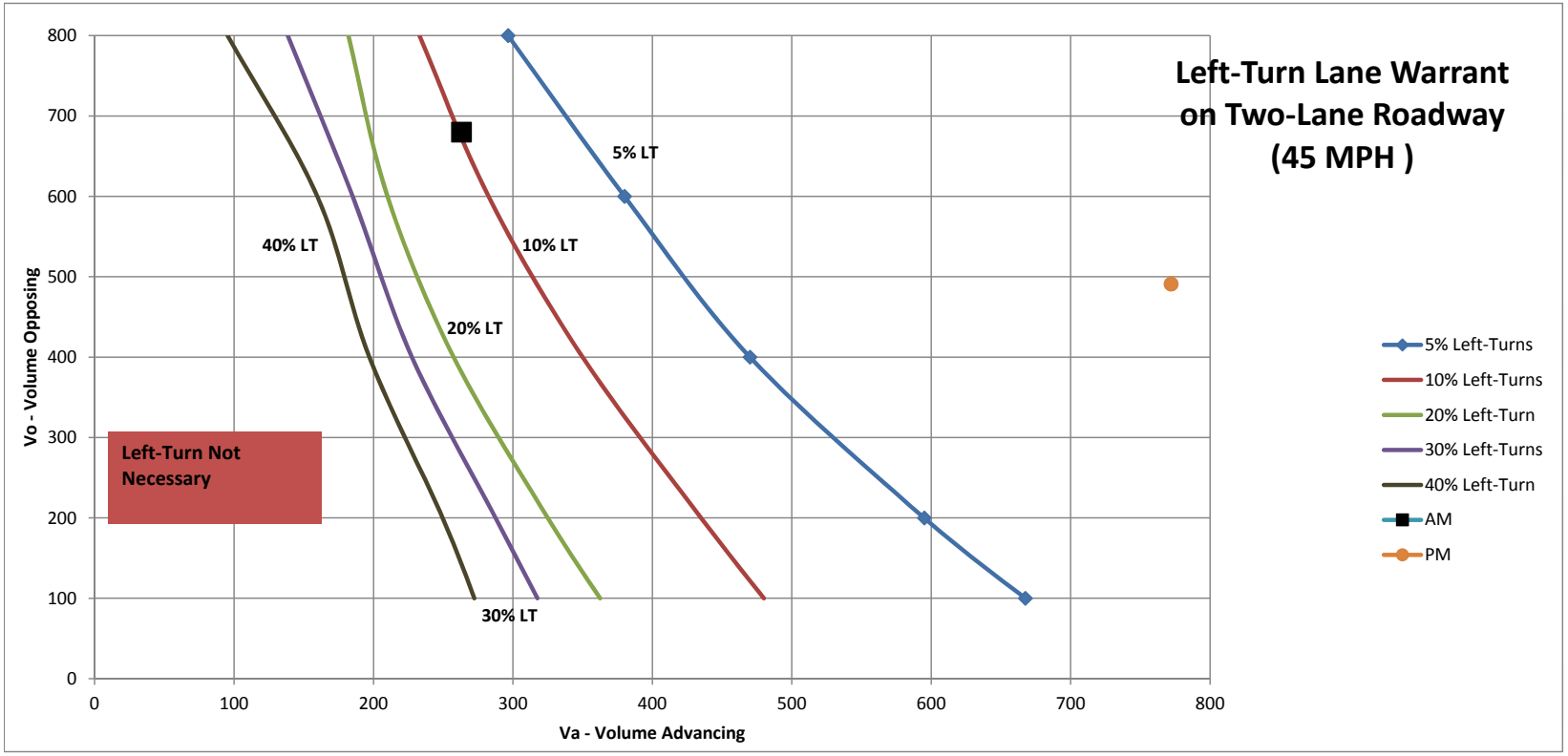
	INPUT		MET?
AM	**Advancing Volume (Va)**	32	NO
	Opposing Volume (Vo)	26	
	Left-Turn Pencentage	3%	
PM	**Advancing Volume (Va)**	19	NO
	Opposing Volume (Vo)	77	
	Left-Turn Pencentage	26%	



Towne Road & Drive 6A - Existing + Gen.

Operating Speed (mph)	Opposing Volume (veh/h)	Advancing Volume (veh/h)							
		5% Left Turns	10% Left Turns	15% Left Turns	20% Left Turns	25% Left Turns	30% Left Turns	35% Left Turns	40% Left Turns
45	800	297	233	208	182	160	139	117	95
	600	380	283	246	210	198	185	172	160
	400	470	350	304	258	243	228	212	197
	200	595	435	380	325	306	288	269	250
	100	668	480	421	363	340	318	295	272

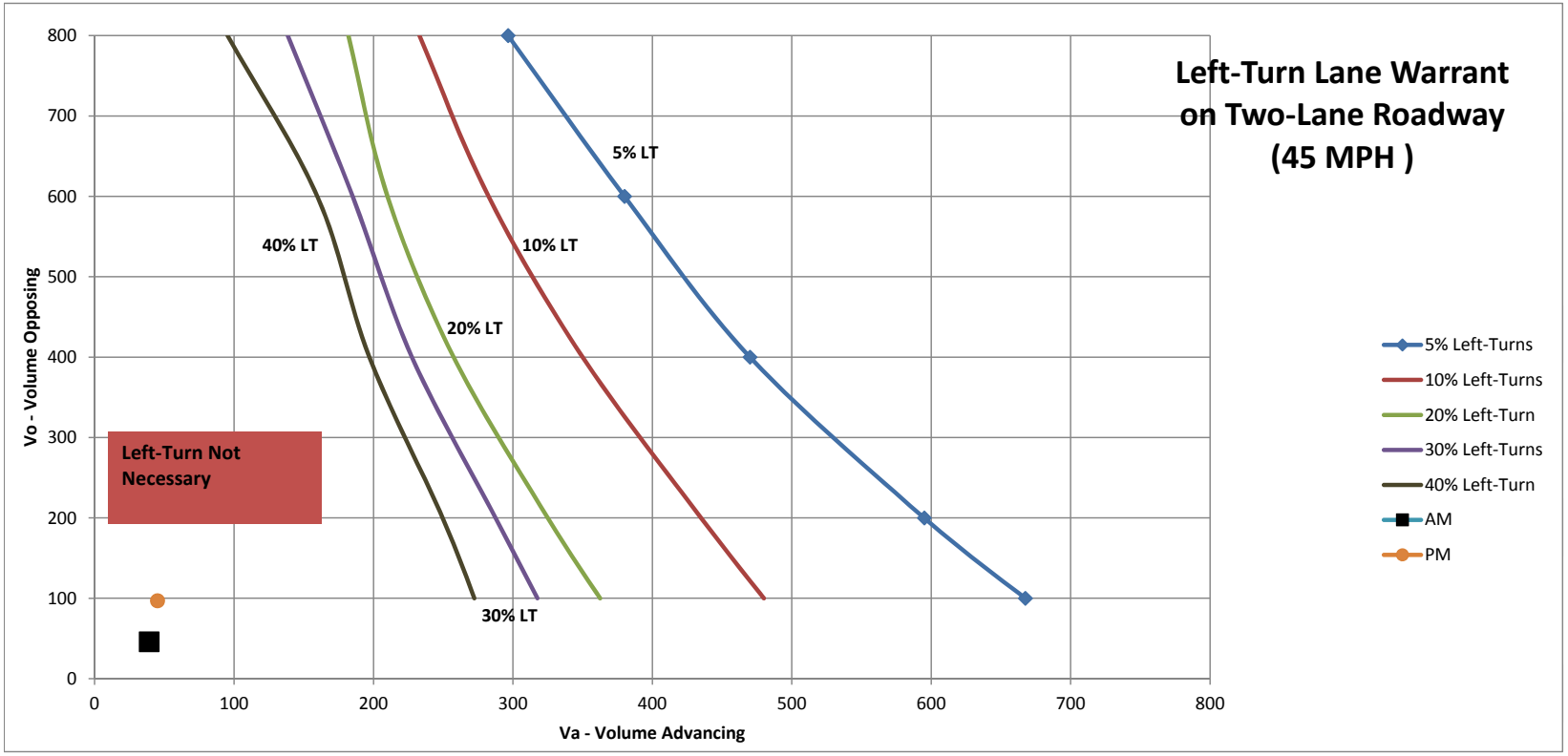
	INPUT		MET?
AM	**Advancing Volume (Va)**	263	YES
	Opposing Volume (Vo)	680	
	Left-Turn Pencentage	18%	
PM	**Advancing Volume (Va)**	772	YES
	Opposing Volume (Vo)	491	
	Left-Turn Pencentage	7%	



166th Street & Drive 1A - 2026 + Gen.

Operating Speed (mph)	Opposing Volume (veh/h)	Advancing Volume (veh/h)							
		5% Left Turns	10% Left Turns	15% Left Turns	20% Left Turns	25% Left Turns	30% Left Turns	35% Left Turns	40% Left Turns
45	800	297	233	208	182	160	139	117	95
	600	380	283	246	210	198	185	172	160
	400	470	350	304	258	243	228	212	197
	200	595	435	380	325	306	288	269	250
	100	668	480	421	363	340	318	295	272

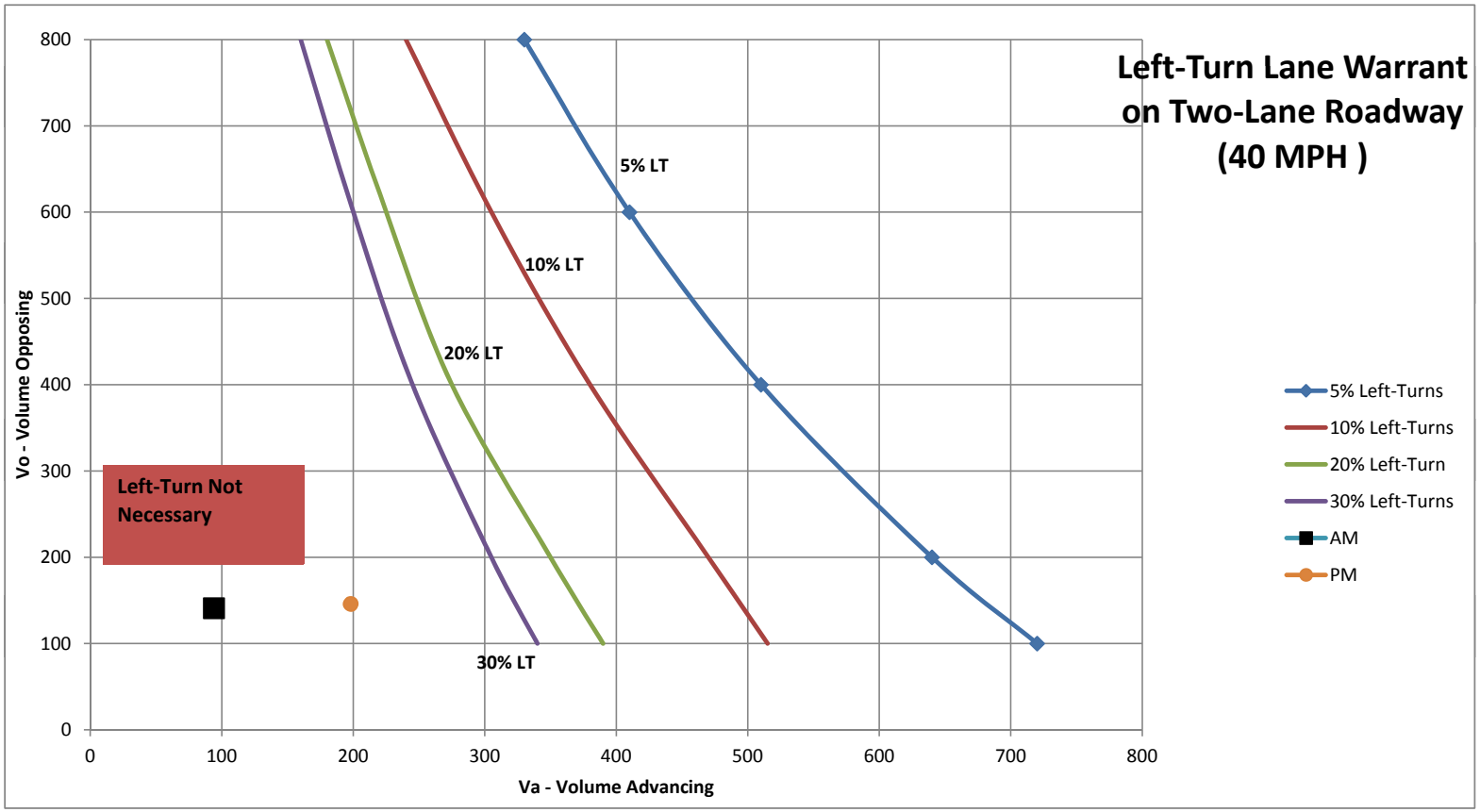
	INPUT		MET?
AM	**Advancing Volume (Va)**	39	NO
	Opposing Volume (Vo)	46	
	Left-Turn Pencentage	10%	
PM	**Advancing Volume (Va)**	45	NO
	Opposing Volume (Vo)	97	
	Left-Turn Pencentage	31%	



161st Street & Drive 1B - 2026 + Gen.

Operating Speed (mph)	Opposing Volume (veh/h)	Advancing Volume (veh/h)			
		5% Left Turns	10% Left Turns	20% Left Turns	30% Left Turns
40	800	330	240	180	160
	600	410	305	225	200
	400	510	380	275	245
	200	640	470	350	305
	100	720	515	390	340

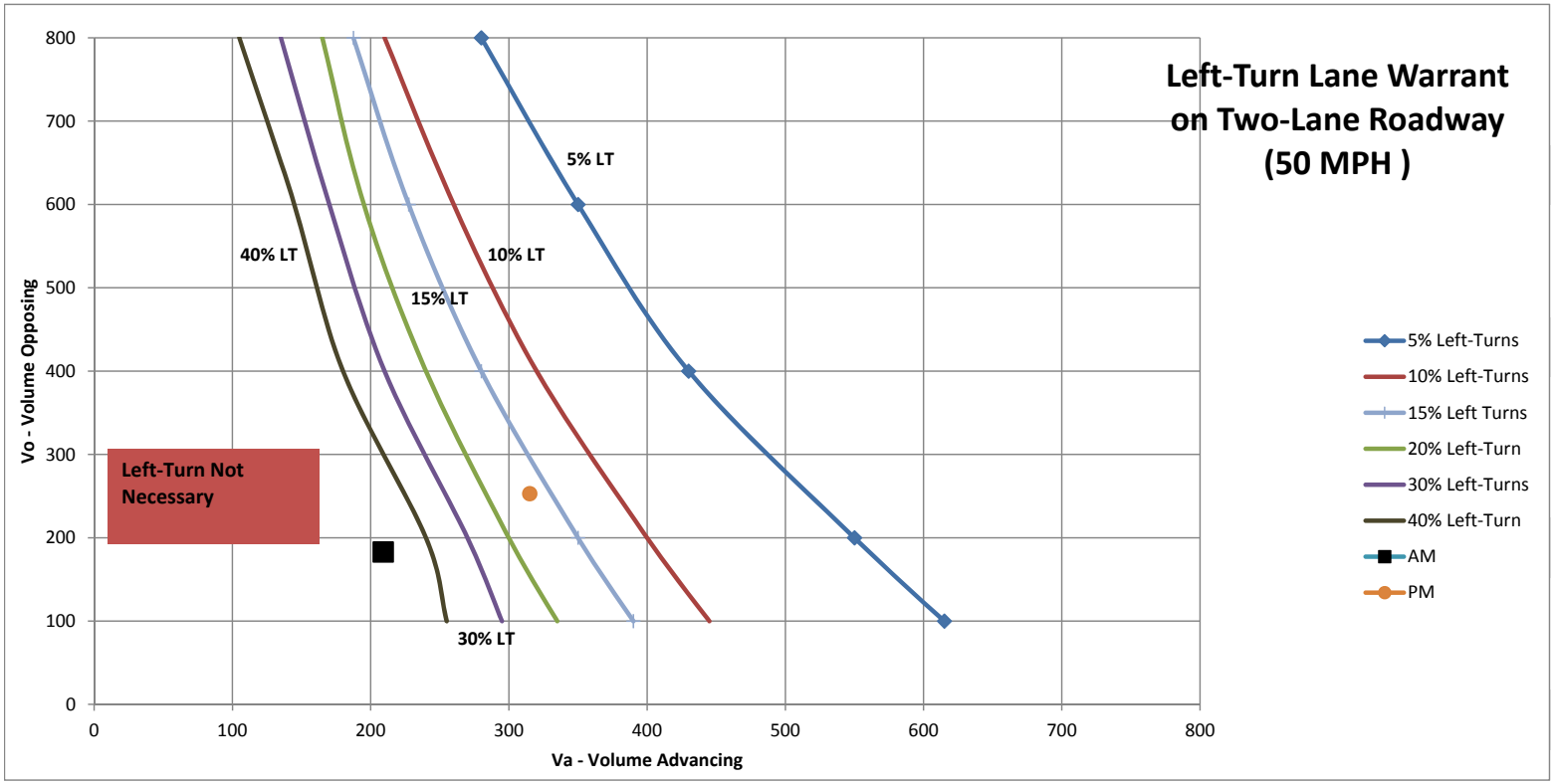
	INPUT		MET?
AM	Advancing Volume (Va)	94	NO
	Opposing Volume (Vo)	141	
	Left-Turn Pencentage	11%	
PM	Advancing Volume (Va)	198	NO
	Opposing Volume (Vo)	146	
	Left-Turn Pencentage	17%	



156th Street & Drive 2A - 2026 + Gen.

Operating Speed (mph)	Opposing Volume (veh/h)	Advancing Volume (veh/h)							
		5% Left Turns	10% Left Turns	15% Left Turns	20% Left Turns	25% Left Turns	30% Left Turns	35% Left Turns	40% Left Turns
50	800	280	210	188	165	150	135	120	105
	600	350	260	228	195	183	170	157	145
	400	430	320	280	240	225	210	195	180
	200	550	400	350	300	285	270	255	240
	100	615	445	390	335	315	295	275	255

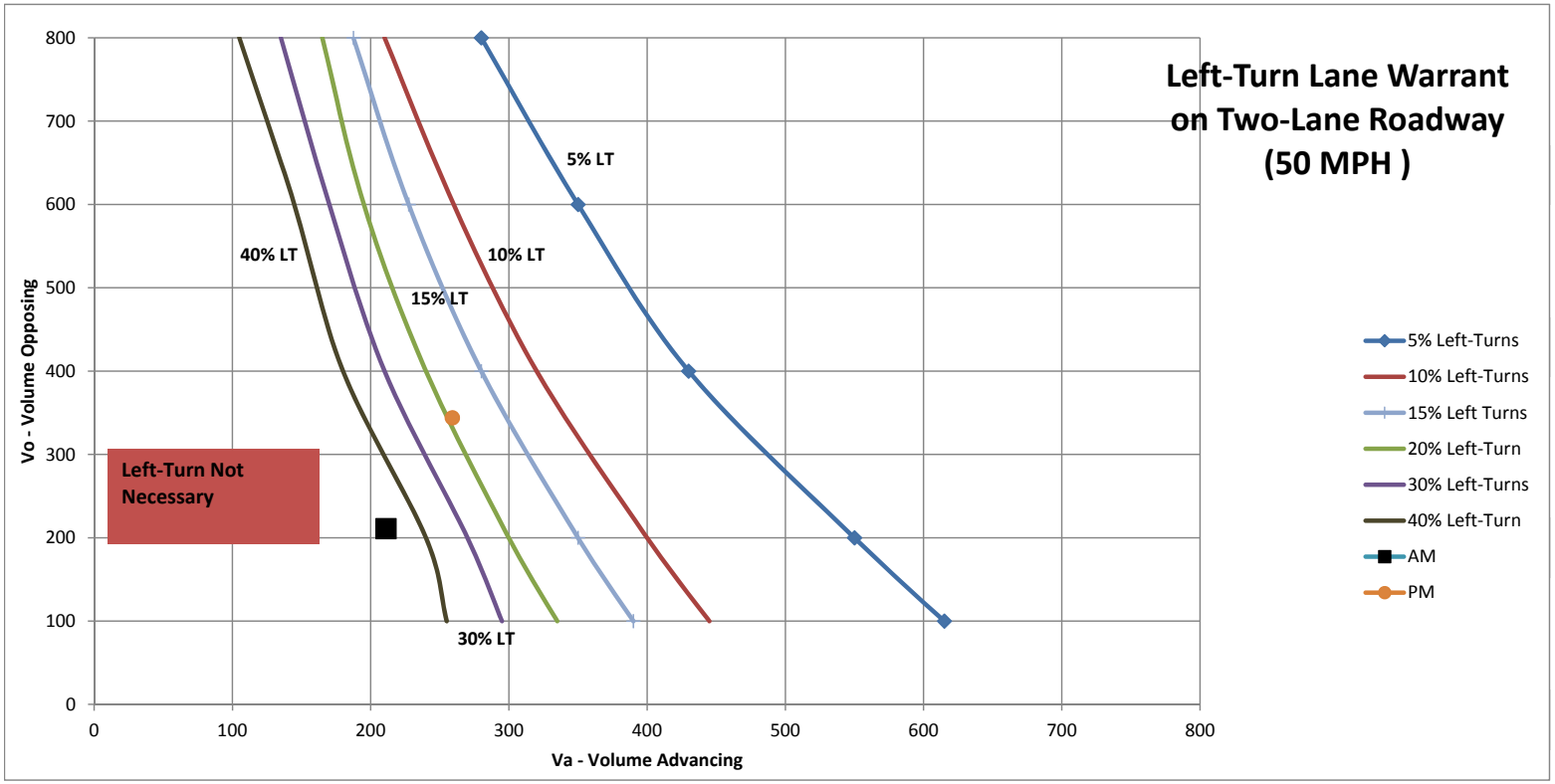
	INPUT		MET?
AM	**Advancing Volume (Va)**	209	NO
	Opposing Volume (Vo)	183	
	Left-Turn Pencentage	5.0%	
PM	**Advancing Volume (Va)**	315	NO
	Opposing Volume (Vo)	253	
	Left-Turn Pencentage	12%	



156th Street & Drive 3A - 2026 + Gen.

Operating Speed (mph)	Opposing Volume (veh/h)	Advancing Volume (veh/h)							
		5% Left Turns	10% Left Turns	15% Left Turns	20% Left Turns	25% Left Turns	30% Left Turns	35% Left Turns	40% Left Turns
50	800	280	210	188	165	150	135	120	105
	600	350	260	228	195	183	170	157	145
	400	430	320	280	240	225	210	195	180
	200	550	400	350	300	285	270	255	240
	100	615	445	390	335	315	295	275	255

	INPUT		MET?
AM	**Advancing Volume (Va)**	211	NO
	Opposing Volume (Vo)	211	
	Left-Turn Pencentage	1.0%	
PM	**Advancing Volume (Va)**	259	NO
	Opposing Volume (Vo)	344	
	Left-Turn Pencentage	3%	

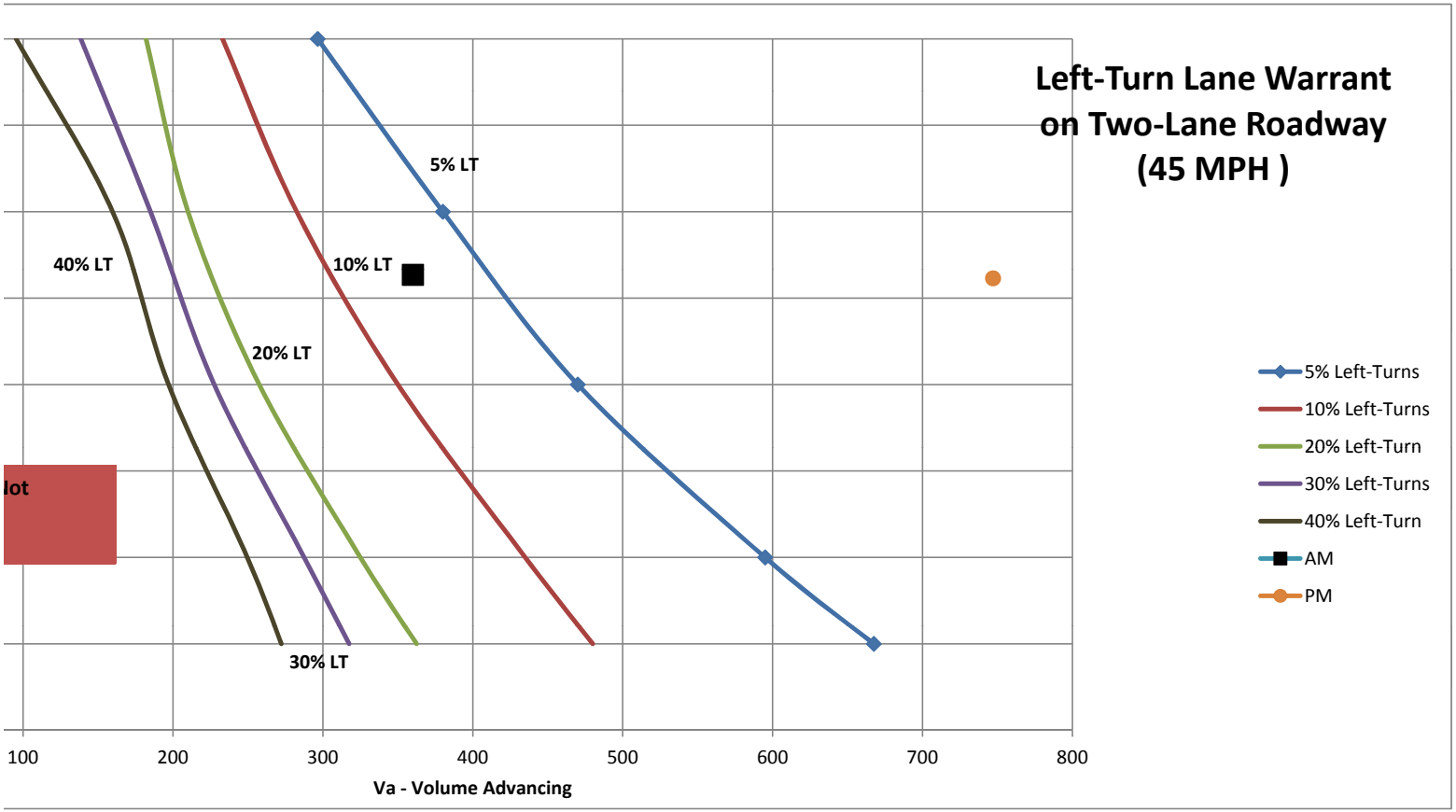


Towne Road & Drive 3B/Drive 5B - 2026 + Gen.

Advancing Volume (veh/h)							
5% Left Turns	10% Left Turns	15% Left Turns	20% Left Turns	25% Left Turns	30% Left Turns	35% Left Turns	40% Left Turns
297	233	208	182	160	139	117	95
380	283	246	210	198	185	172	160
470	350	304	258	243	228	212	197
595	435	380	325	306	288	269	250
668	480	421	363	340	318	295	272

NBL

	INPUT		MET?
AM	**Advancing Volume (Va)**	360	NO
	Opposing Volume (Vo)	527	
	Left-Turn Pencentage	5%	
PM	**Advancing Volume (Va)**	747	YES
	Opposing Volume (Vo)	523	
	Left-Turn Pencentage	7%	

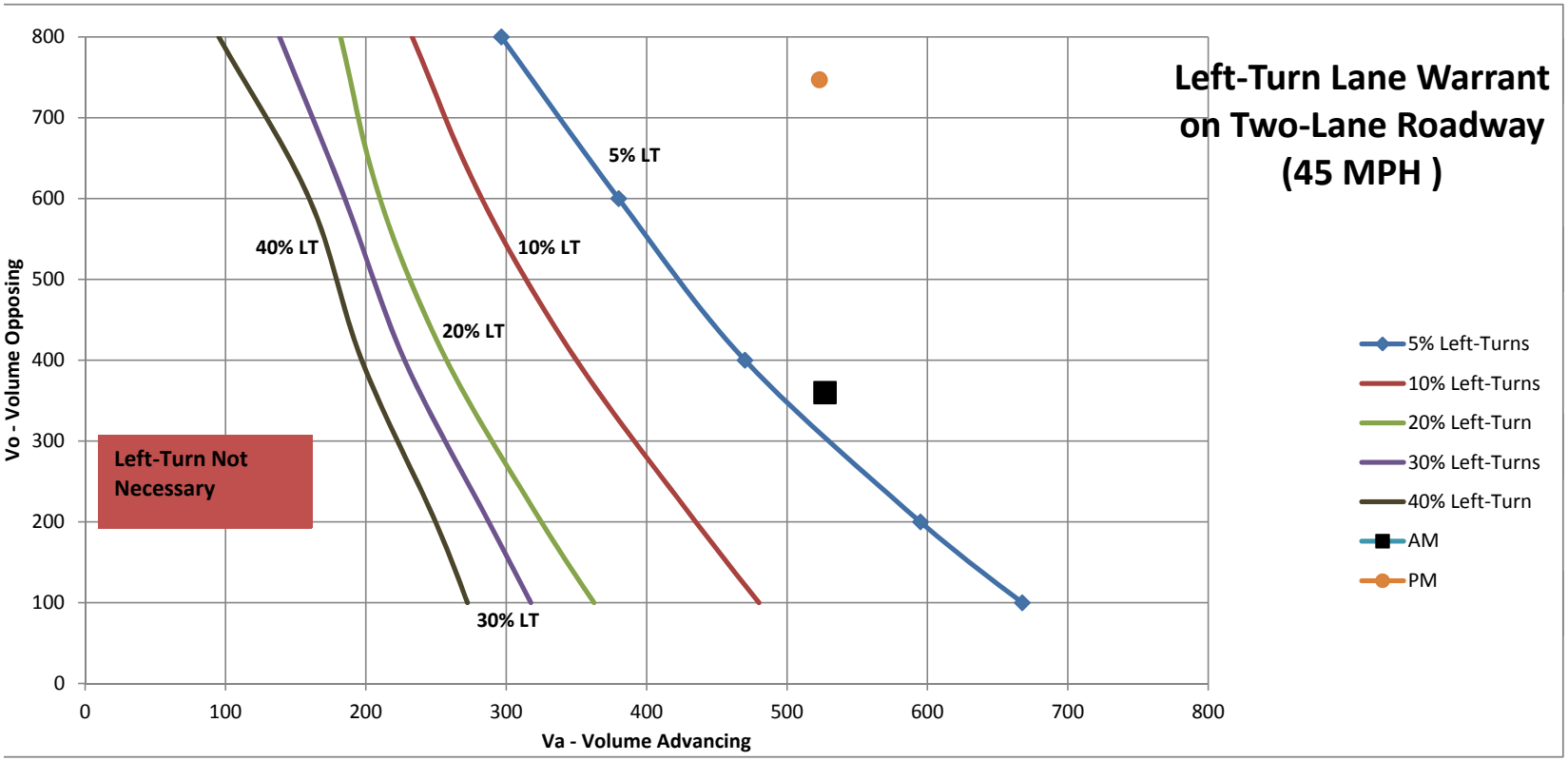


Towne Road & Drive 3B/Drive 5B - 2026 + Gen.

Advancing Volume (veh/h)							
5% Left Turns	10% Left Turns	15% Left Turns	20% Left Turns	25% Left Turns	30% Left Turns	35% Left Turns	40% Left Turns
297	233	208	182	160	139	117	95
380	283	246	210	198	185	172	160
470	350	304	258	243	228	212	197
595	435	380	325	306	288	269	250
668	480	421	363	340	318	295	272

SBL

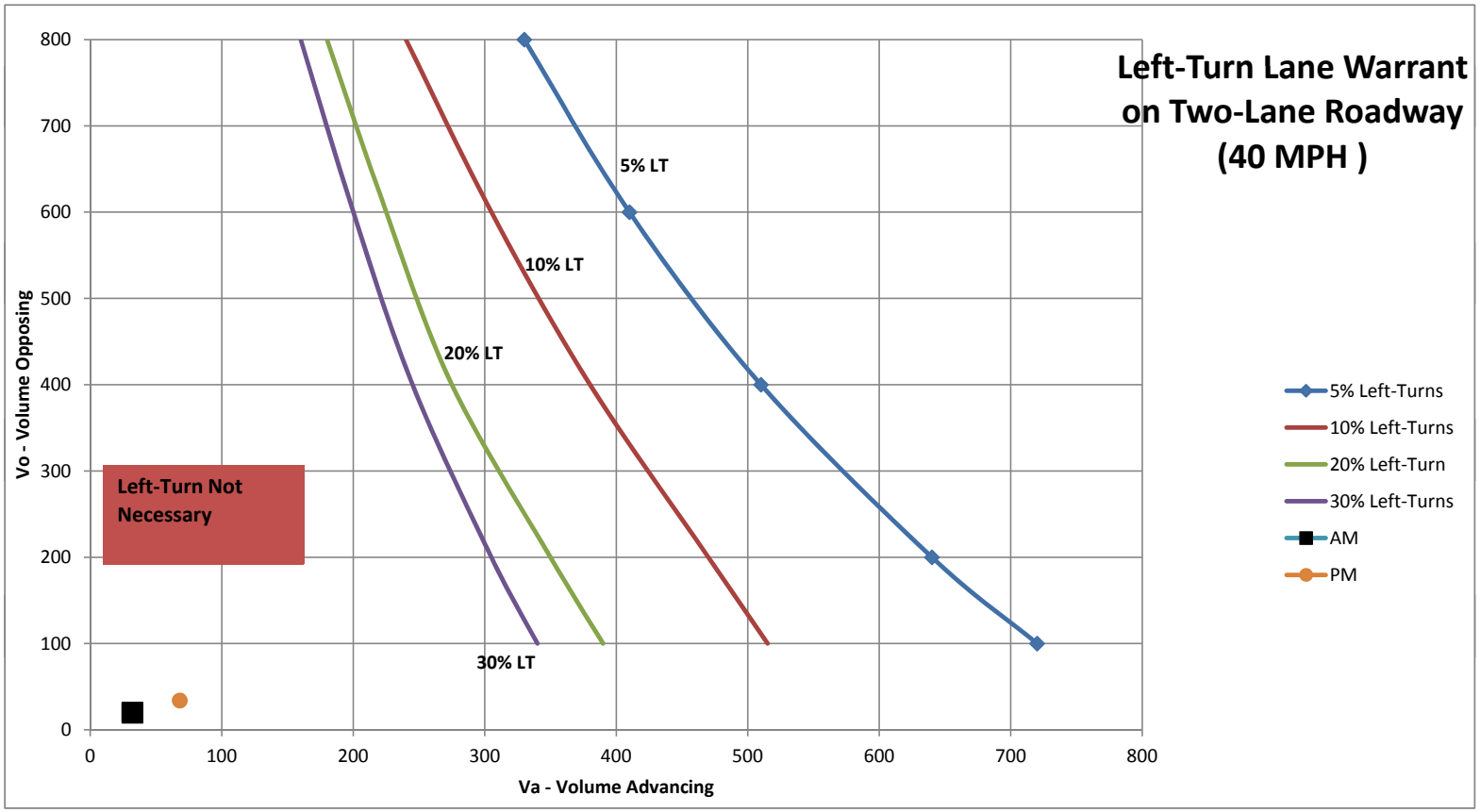
	INPUT		MET?
AM	Advancing Volume (Va)	527	NO
	Opposing Volume (Vo)	360	
	Left-Turn Pencentage	1%	
PM	Advancing Volume (Va)	523	NO
	Opposing Volume (Vo)	747	
	Left-Turn Pencentage	2%	



151st Street & Drive 3C - 2026 + Gen.

Operating Speed (mph)	Opposing Volume (veh/h)	Advancing Volume (veh/h)			
		5% Left Turns	10% Left Turns	20% Left Turns	30% Left Turns
40	800	330	240	180	160
	600	410	305	225	200
	400	510	380	275	245
	200	640	470	350	305
	100	720	515	390	340

	INPUT		MET?
AM	Advancing Volume (Va)	32	NO
	Opposing Volume (Vo)	20	
	Left-Turn Pencentage	44%	
PM	Advancing Volume (Va)	68	NO
	Opposing Volume (Vo)	34	
	Left-Turn Pencentage	66%	

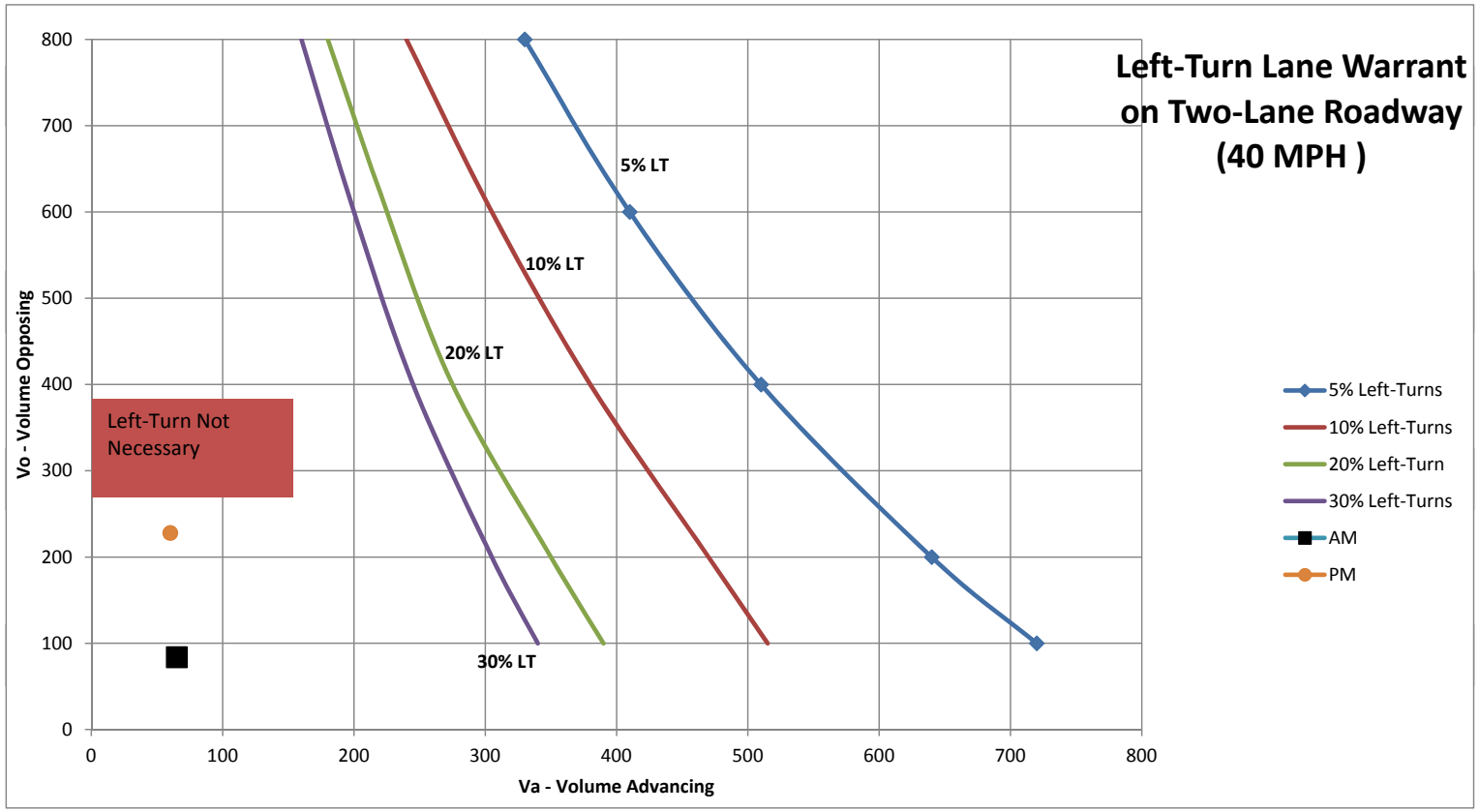


151st Street & Drive 4A/Drive 5A - 2026 + Gen.

Operating Speed (mph)	Opposing Volume (veh/h)	Advancing Volume (veh/h)			
		5% Left Turns	10% Left Turns	20% Left Turns	30% Left Turns
40	800	330	240	180	160
	600	410	305	225	200
	400	510	380	275	245
	200	640	470	350	305
	100	720	515	390	340

EBL

	INPUT		MET?
AM	**Advancing Volume (Va)**	65	NO
	Opposing Volume (Vo)	84	
	Left-Turn Pencentage	2%	
PM	**Advancing Volume (Va)**	60	NO
	Opposing Volume (Vo)	228	
	Left-Turn Pencentage	8%	

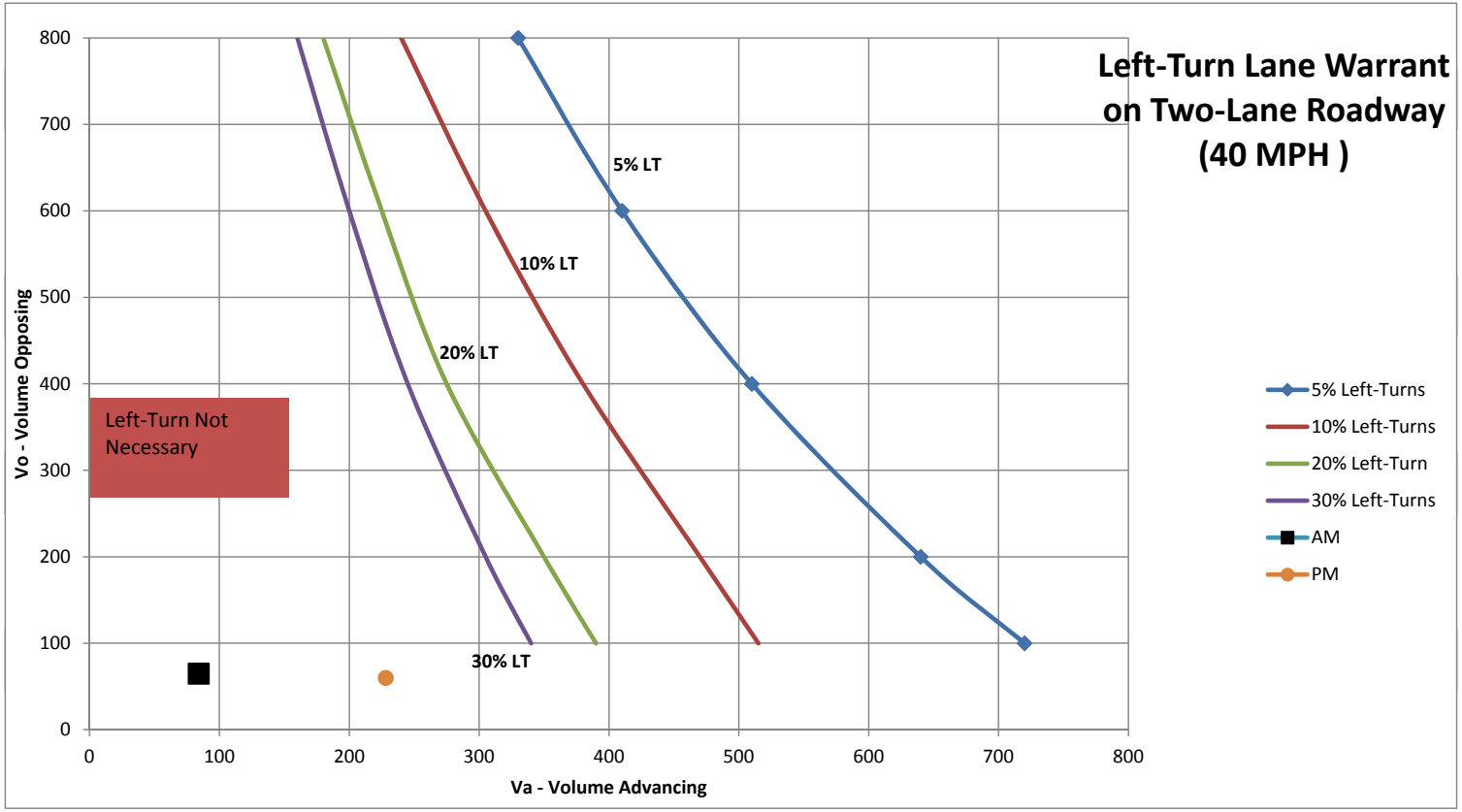


151st Street & Drive 4A/Drive 5A - 2026 + Gen.

Operating Speed (mph)	Opposing Volume (veh/h)	Advancing Volume (veh/h)			
		5% Left Turns	10% Left Turns	20% Left Turns	30% Left Turns
40	800	330	240	180	160
	600	410	305	225	200
	400	510	380	275	245
	200	640	470	350	305
	100	720	515	390	340

WBL

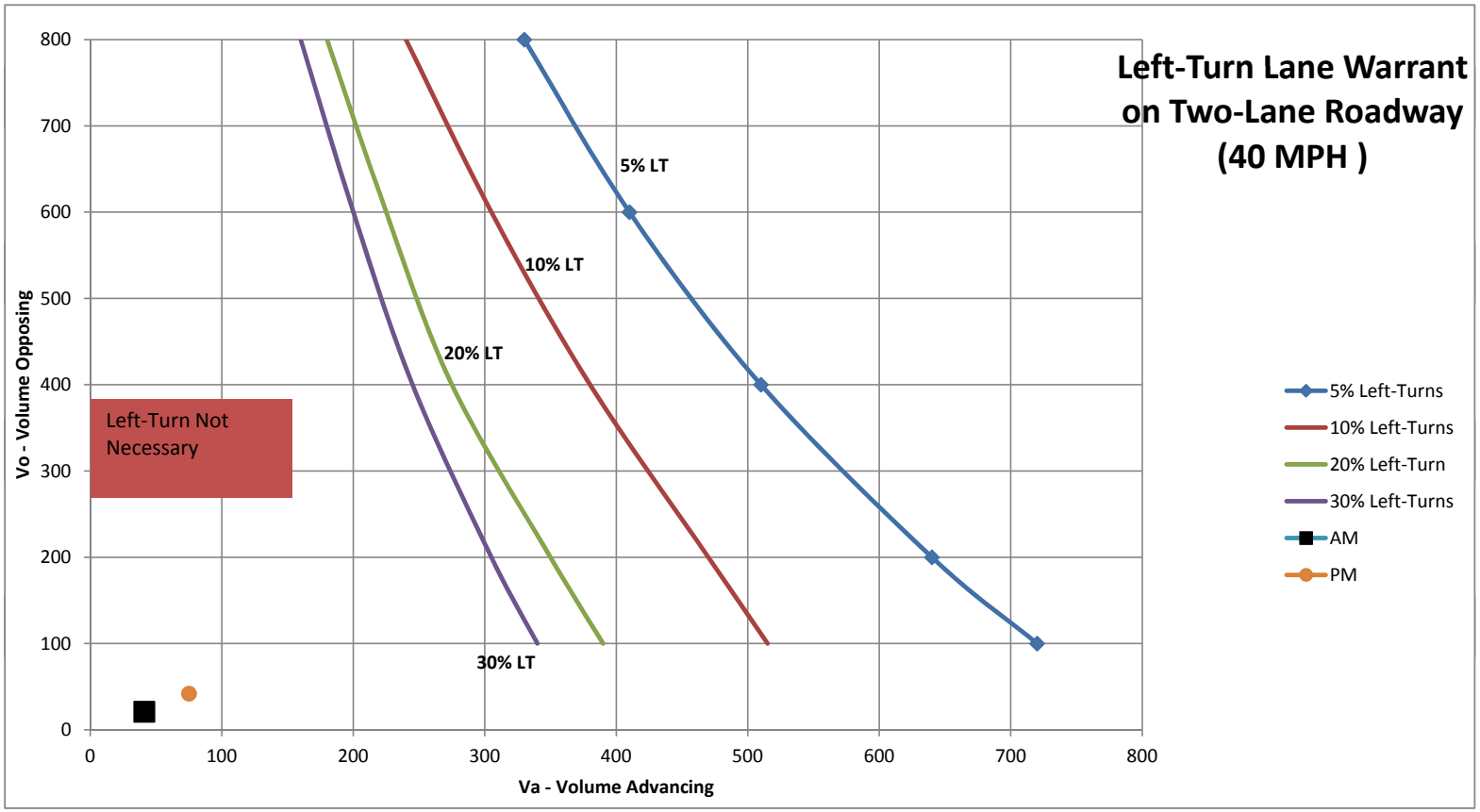
	INPUT		MET?
AM	**Advancing Volume (Va)**	84	NO
	Opposing Volume (Vo)	65	
	Left-Turn Pencentage	23%	
PM	**Advancing Volume (Va)**	228	NO
	Opposing Volume (Vo)	60	
	Left-Turn Pencentage	28%	



151st Street & Drive 4B - 2026 + Gen.

Operating Speed (mph)	Opposing Volume (veh/h)	Advancing Volume (veh/h)			
		5% Left Turns	10% Left Turns	20% Left Turns	30% Left Turns
40	800	330	240	180	160
	600	410	305	225	200
	400	510	380	275	245
	200	640	470	350	305
	100	720	515	390	340

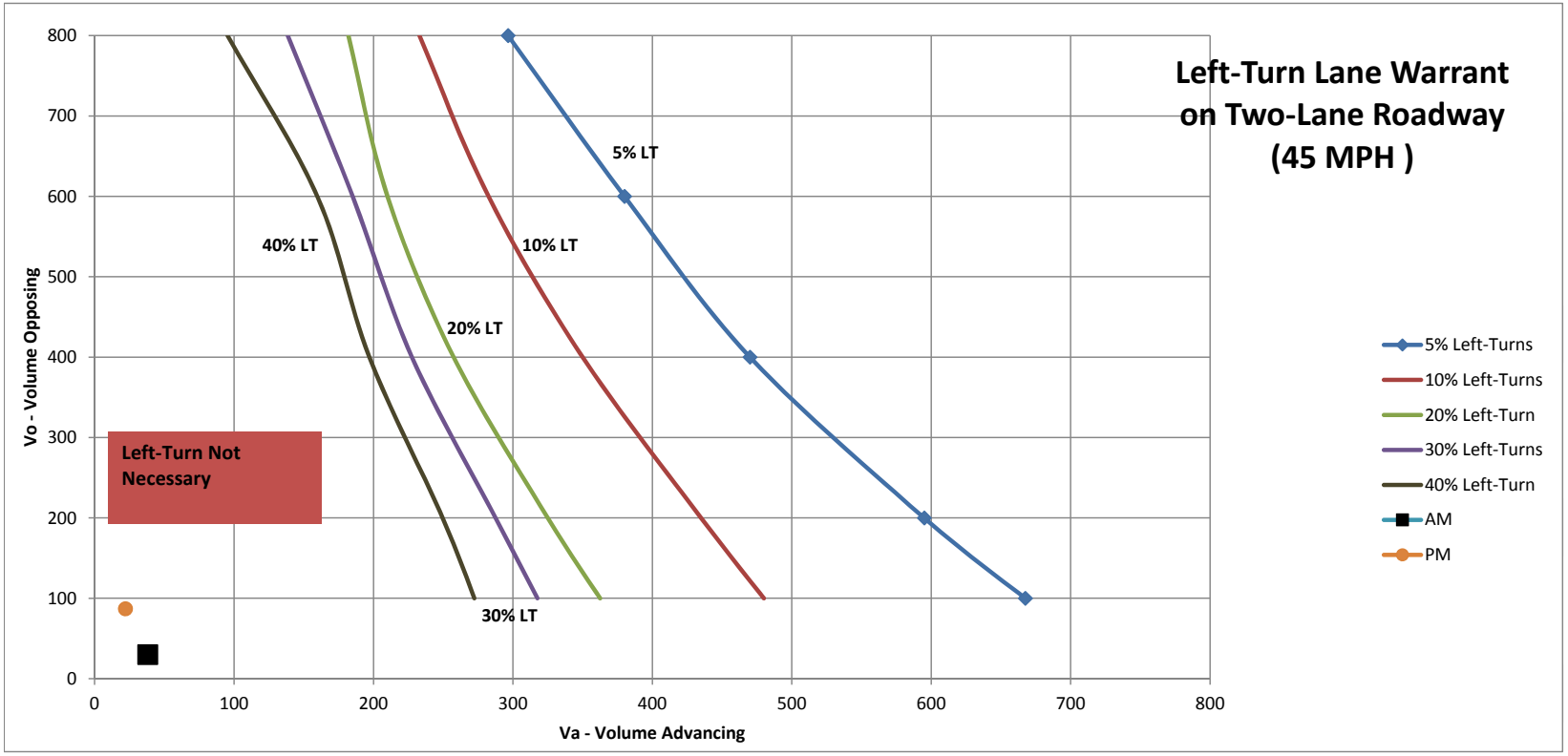
	INPUT		MET?
AM	**Advancing Volume (Va)**	41	NO
	Opposing Volume (Vo)	21	
	Left-Turn Pencentage	39%	
PM	**Advancing Volume (Va)**	75	NO
	Opposing Volume (Vo)	42	
	Left-Turn Pencentage	70%	



Shelbourne Road & Drive 5C - 2026 + Gen.

Operating Speed (mph)	Opposing Volume (veh/h)	Advancing Volume (veh/h)							
		5% Left Turns	10% Left Turns	15% Left Turns	20% Left Turns	25% Left Turns	30% Left Turns	35% Left Turns	40% Left Turns
45	800	297	233	208	182	160	139	117	95
	600	380	283	246	210	198	185	172	160
	400	470	350	304	258	243	228	212	197
	200	595	435	380	325	306	288	269	250
	100	668	480	421	363	340	318	295	272

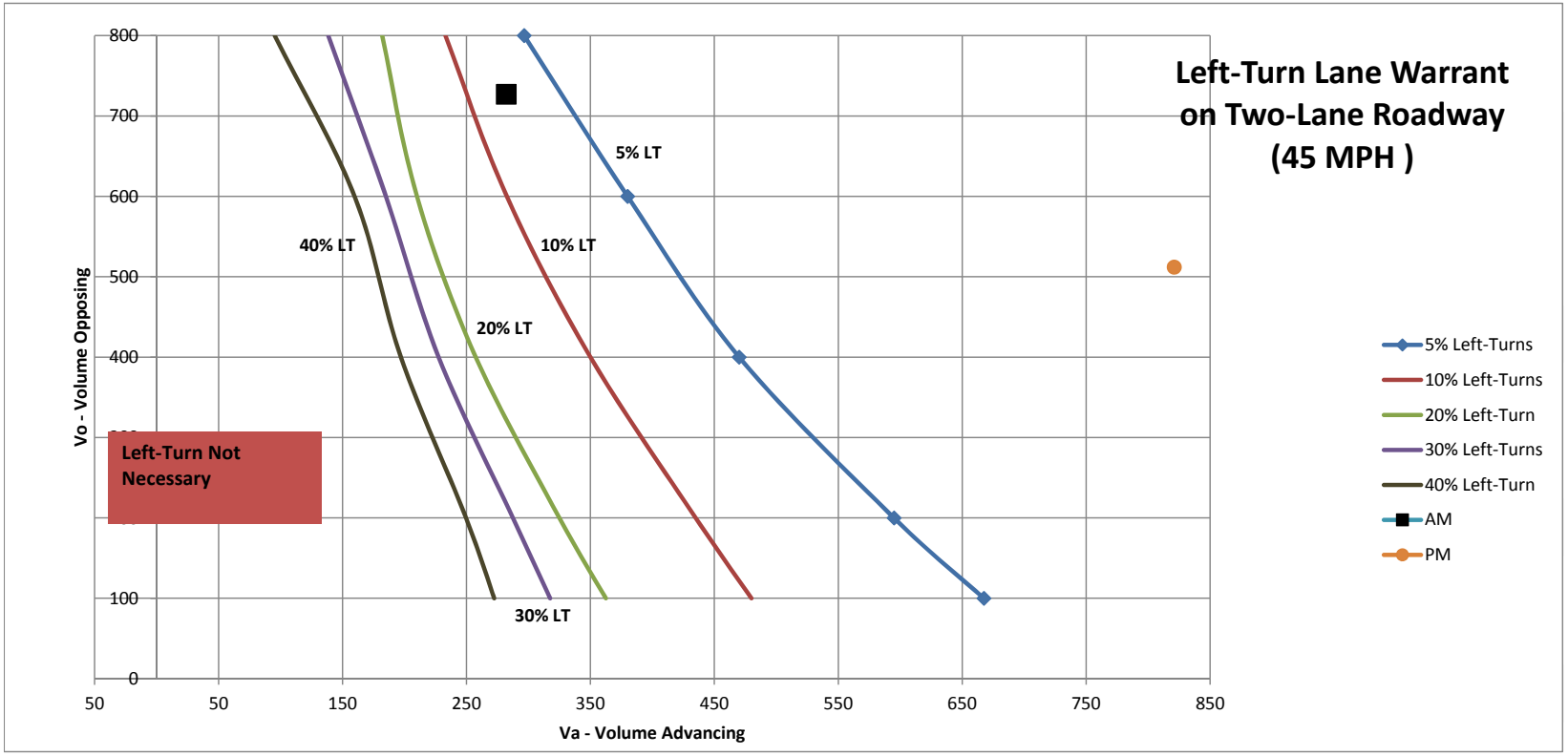
	INPUT		MET?
AM	**Advancing Volume (Va)**	38	NO
	Opposing Volume (Vo)	30	
	Left-Turn Pencentage	3%	
PM	**Advancing Volume (Va)**	22	NO
	Opposing Volume (Vo)	87	
	Left-Turn Pencentage	23%	



Towne Road & Drive 6A - 2026 + Gen.

Operating Speed (mph)	Opposing Volume (veh/h)	Advancing Volume (veh/h)							
		5% Left Turns	10% Left Turns	15% Left Turns	20% Left Turns	25% Left Turns	30% Left Turns	35% Left Turns	40% Left Turns
45	800	297	233	208	182	160	139	117	95
	600	380	283	246	210	198	185	172	160
	400	470	350	304	258	243	228	212	197
	200	595	435	380	325	306	288	269	250
	100	668	480	421	363	340	318	295	272

	INPUT		MET?
AM	**Advancing Volume (Va)**	282	YES
	Opposing Volume (Vo)	727	
	Left-Turn Pencentage	17%	
PM	**Advancing Volume (Va)**	821	YES
	Opposing Volume (Vo)	512	
	Left-Turn Pencentage	7%	



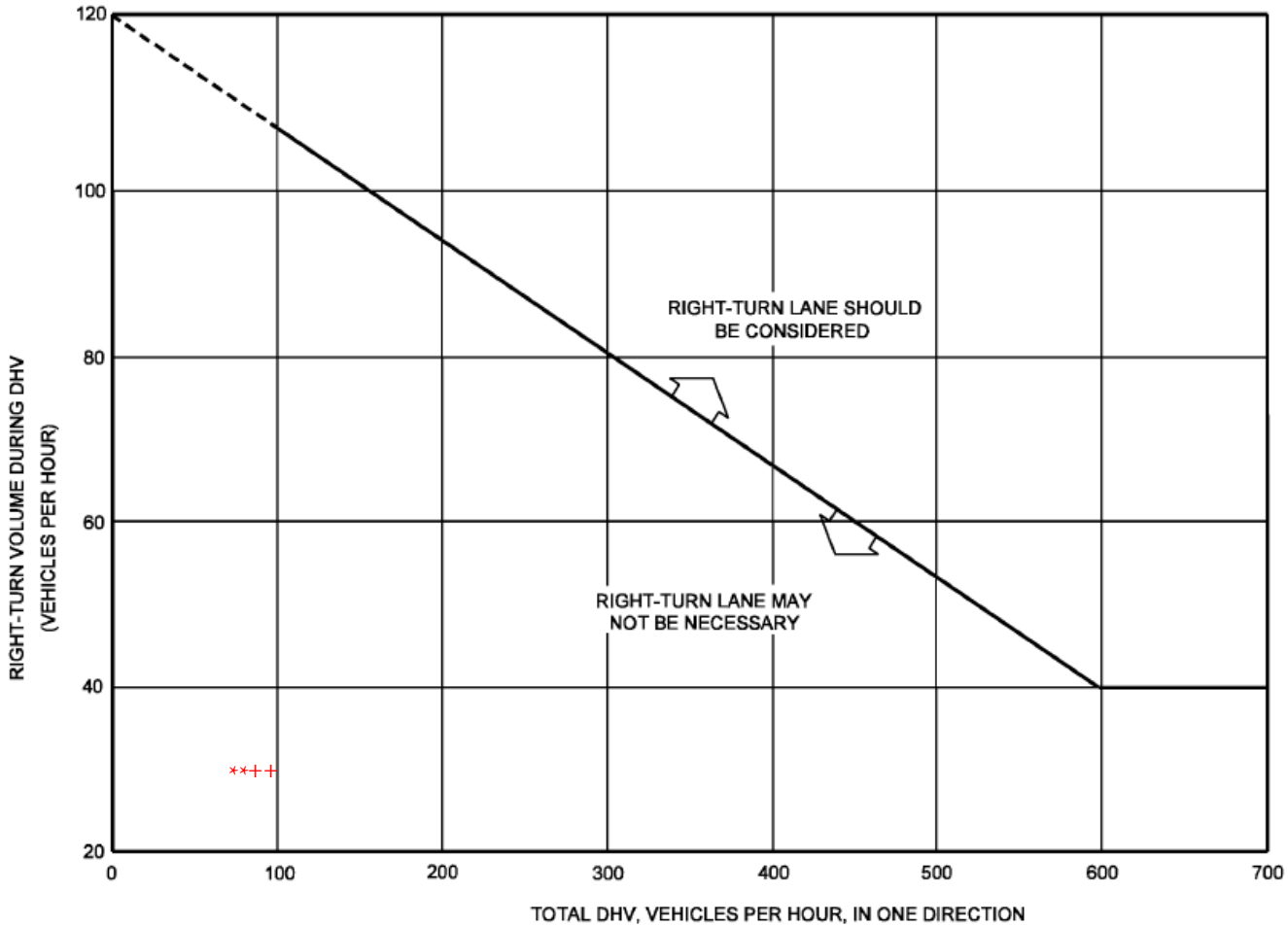
Eastbound Right-Turn:

Existing + Gen

** PM Peak

2026 + Gen

++ PM Peak



166th Street & Drive 1A:
An eastbound right-turn lane is not warranted at this intersection for all the peak traffic volumes.

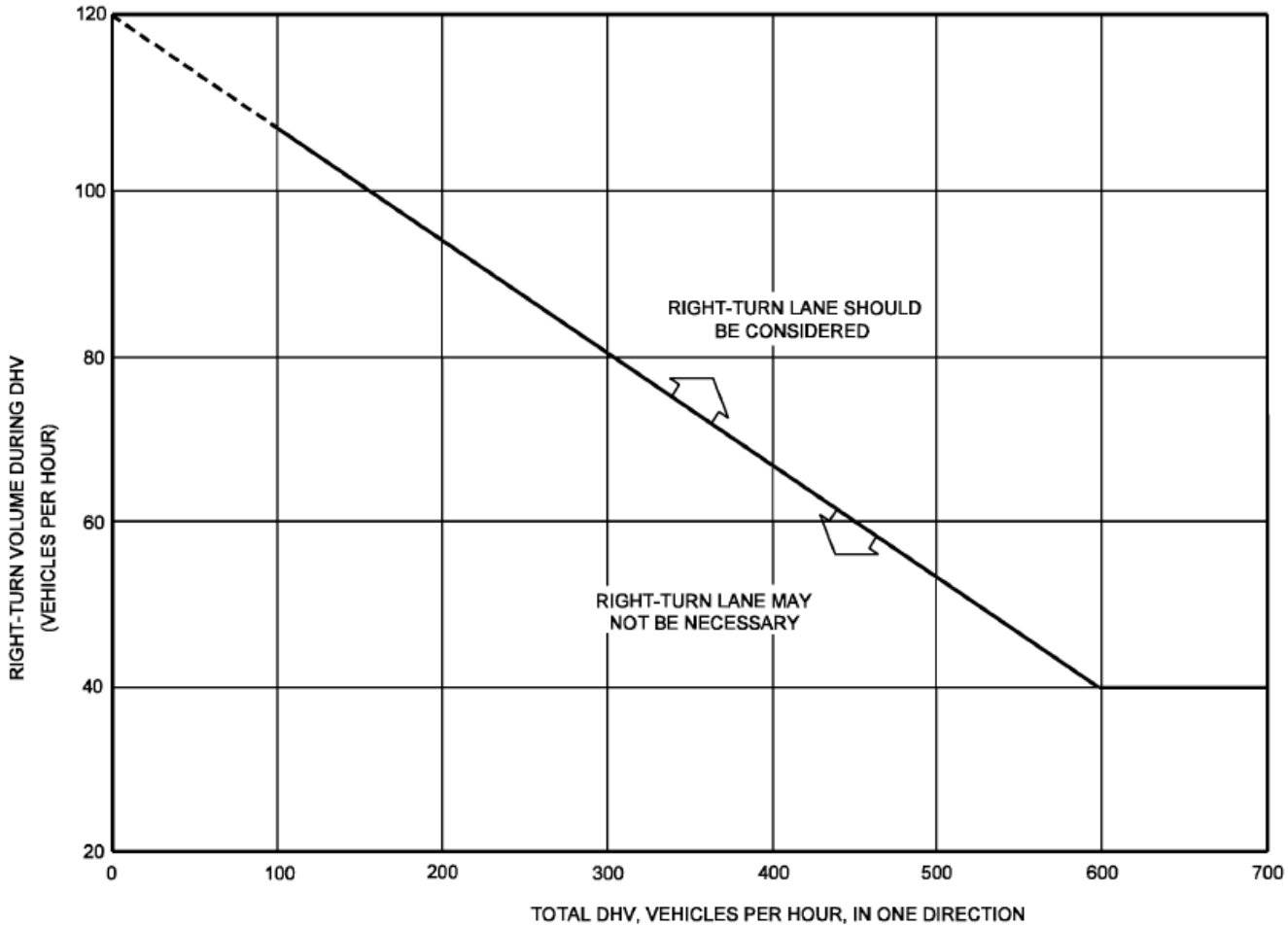
The AM peak values that are not shown fall below the graph limits.

GUIDELINES FOR RIGHT-TURN LANES AT UNSIGNALIZED INTERSECTIONS ON 2-LANE HIGHWAYS

Figure 46-4A

Back

Eastbound Right-Turn				
Scenarios	Peak Hours	RT Volume	Total DHV	Warranted
Existing +Gen.	AM Peak	10	41	NO
	PM Peak	32	88	NO
2026 +Gen.	AM Peak	10	46	NO
	PM Peak	32	97	NO



The peak values that are not shown either exceed the graph limits or fall below graph limits.

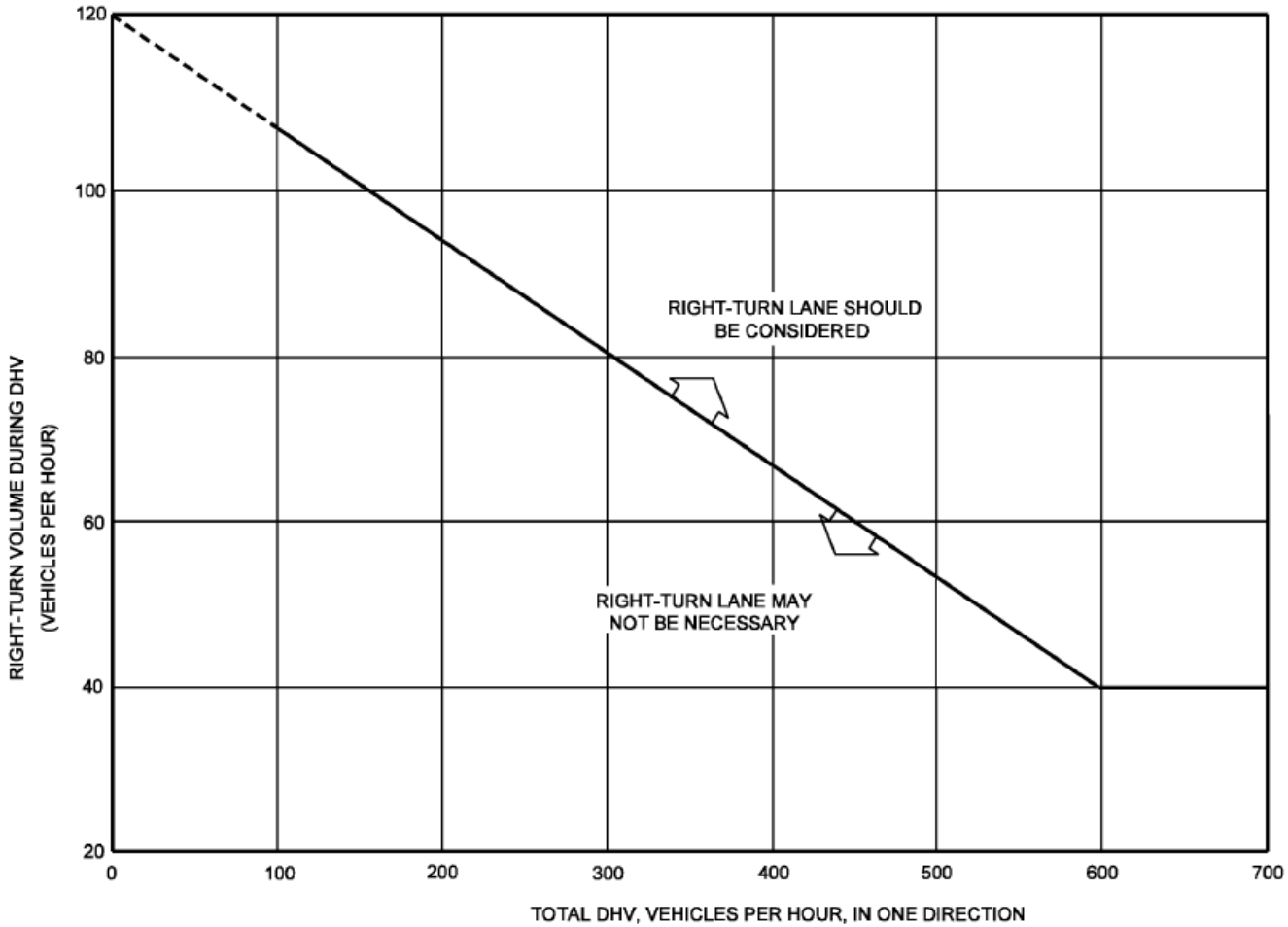
GUIDELINES FOR RIGHT-TURN LANES AT UNSIGNALIZED INTERSECTIONS ON 2-LANE HIGHWAYS

Figure 46-4A

Back

161st Street & Drive 1B:
A westbound right-turn lane is not warranted at this intersection for all the peak traffic volumes.

Westbound Right-Turn				
Scenarios	Peak Hours	RT Volume	Total DHV	Warranted
Existing +Gen.	AM Peak	4	127	NO
	PM Peak	14	139	NO
2026 +Gen.	AM Peak	4	141	NO
	PM Peak	14	146	NO



The AM peak and PM peak values that are not shown either exceeds the graph limits or fall below the graph limits.

GUIDELINES FOR RIGHT-TURN LANES AT UNSIGNALIZED INTERSECTIONS ON 2-LANE HIGHWAYS

Figure 46-4A

Back

156th Street & Drive 2A:
A westbound right-turn lane is not warranted at this intersection for all the peak traffic volumes.

Westbound Right-Turn				
Scenarios	Peak Hours	RT Volume	Total DHV	Warranted
Existing +Gen.	AM Peak	5	164	NO
	PM Peak	16	238	NO
2026 +Gen.	AM Peak	5	183	NO
	PM Peak	16	253	NO

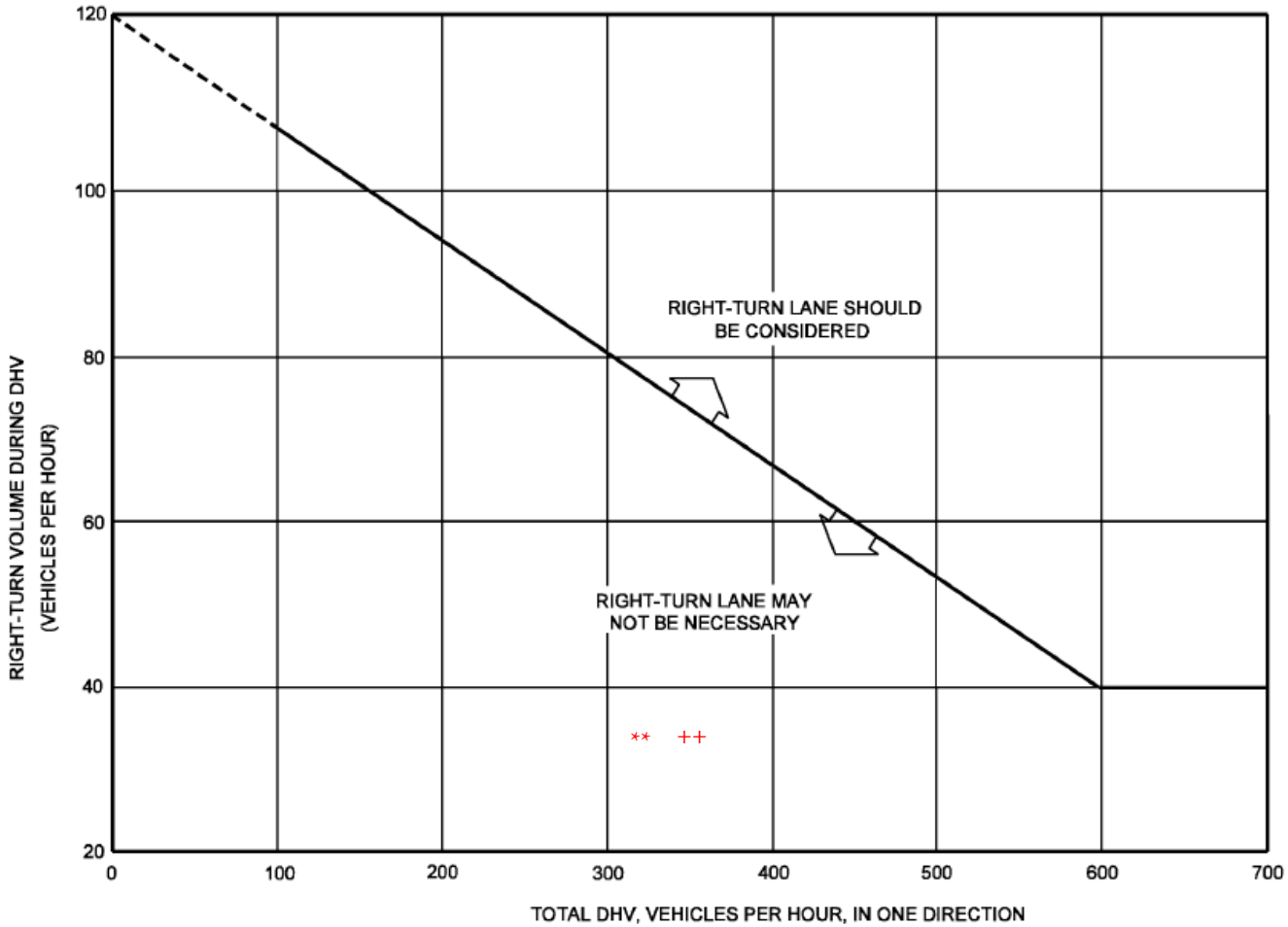
Eastbound Right-Turn:

Existing + Gen

** PM Peak

2026 + Gen

++ PM Peak



156th Street & Drive 3A:
An eastbound right-turn lane is not warranted at this intersection for all the peak traffic volumes.

The AM peak values that are not shown fall below the graph limits.

GUIDELINES FOR RIGHT-TURN LANES AT UNSIGNALIZED INTERSECTIONS ON 2-LANE HIGHWAYS

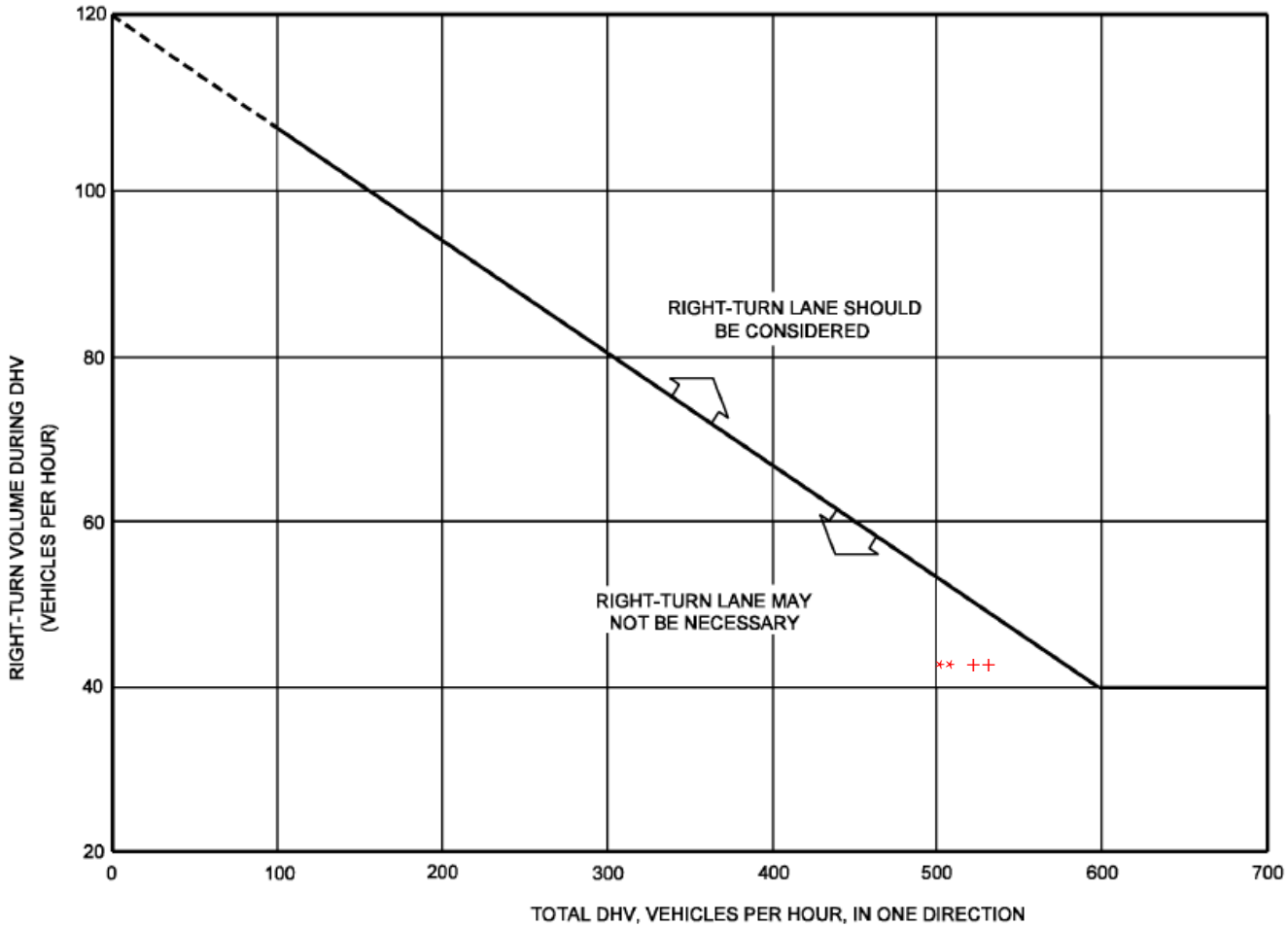
Figure 46-4A

Back

Eastbound Right-Turn				
Scenarios	Peak Hours	RT Volume	Total DHV	Warranted
Existing +Gen.	AM Peak	10	200	NO
	PM Peak	34	316	NO
2026 +Gen.	AM Peak	10	211	NO
	PM Peak	34	344	NO

Southbound Right-Turn:
Existing + Gen
** PM Peak

2026 + Gen
++ PM Peak



Towne Road & Drive 3B/Drive 5B:
A northbound and a southbound right-turn lane is not warranted at this intersection for all the peak traffic volumes.

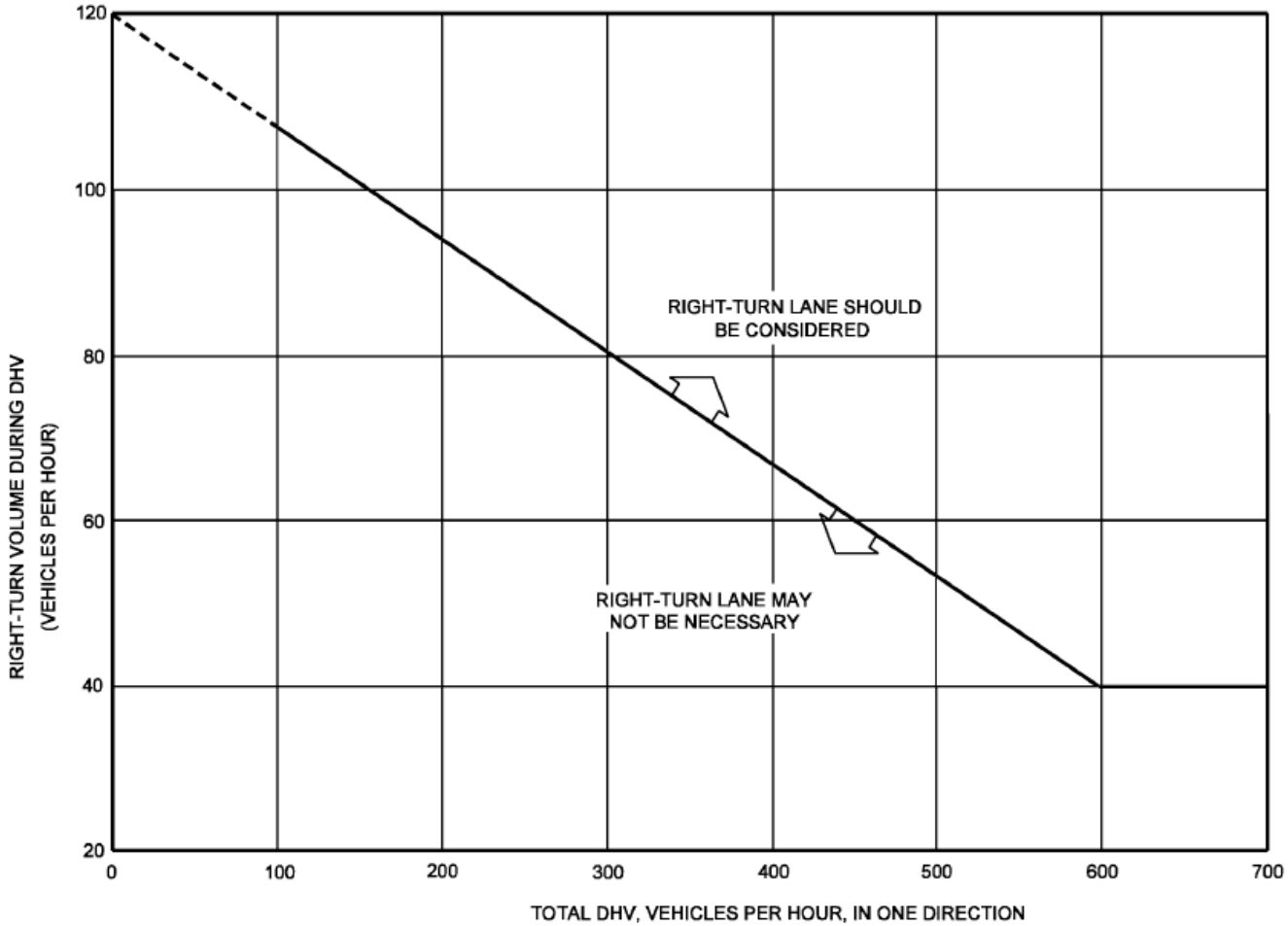
The peak values that are not shown fall below graph limits.

GUIDELINES FOR RIGHT-TURN LANES AT UNSIGNALIZED INTERSECTIONS ON 2-LANE HIGHWAYS

Figure 46-4A

Northbound Right-Turn				
Scenarios	Peak Hours	RT Volume	Total DHV	Warranted
Existing +Gen.	AM Peak	4	347	NO
	PM Peak	15	700	NO
2026 +Gen.	AM Peak	4	365	NO
	PM Peak	15	747	NO
Southbound Right-Turn				
Scenarios	Peak Hours	RT Volume	Total DHV	Warranted
Existing +Gen.	AM Peak	14	498	NO
	PM Peak	43	503	NO
2026 +Gen.	AM Peak	14	538	NO
	PM Peak	43	523	NO

Back



The AM peak and PM peak values exceeds the graph limits, hence not shown.

GUIDELINES FOR RIGHT-TURN LANES AT UNSIGNALIZED INTERSECTIONS ON 2-LANE HIGHWAYS

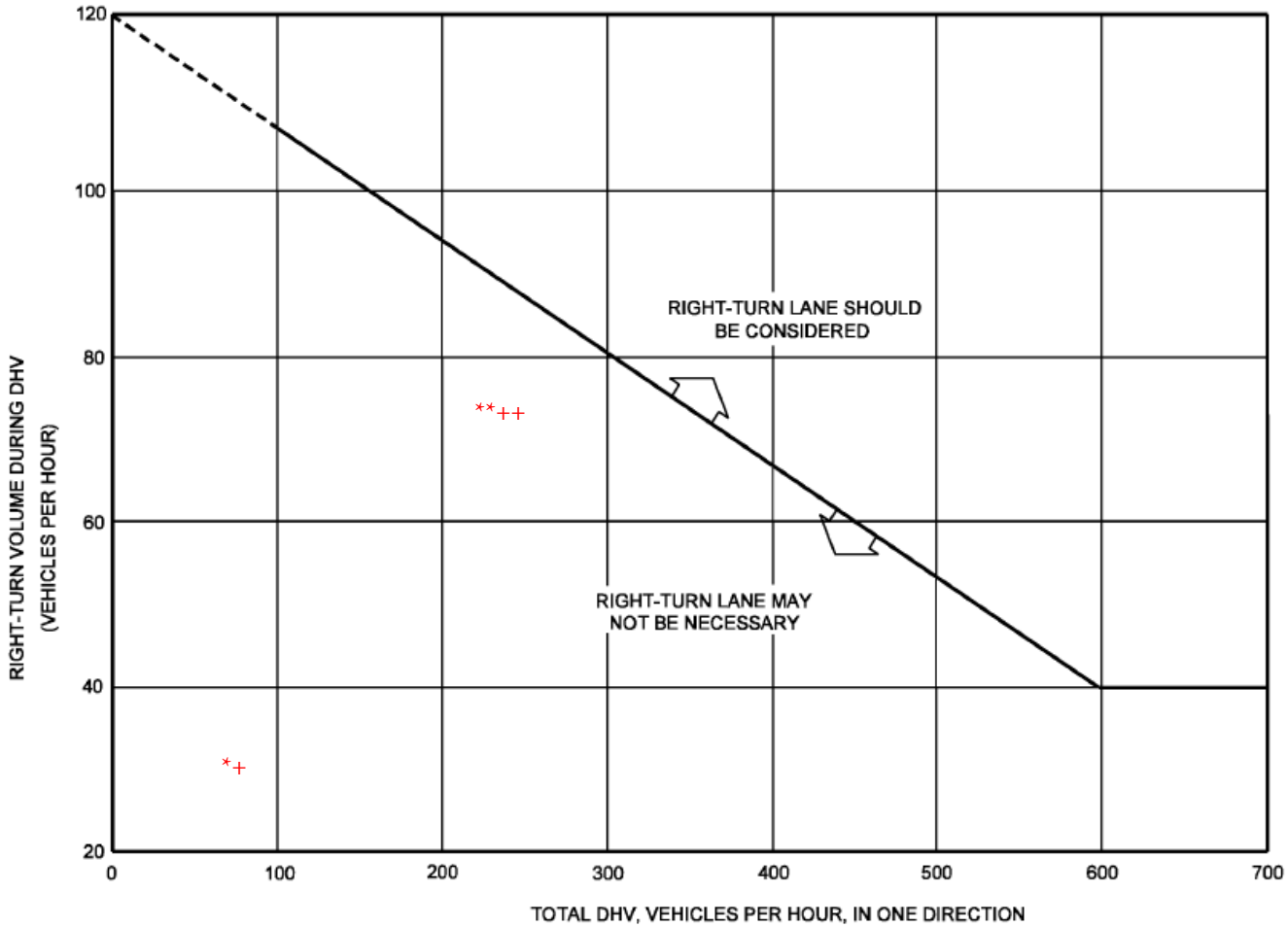
Figure 46-4A

<u>151st Street & Drive 3C:</u>
A westbound right-turn lane is not warranted at this intersection for all the peak traffic volumes.

Westbound Right-Turn				
Scenarios	Peak Hours	RT Volume	Total DHV	Warranted
Existing +Gen.	AM Peak	5	19	NO
	PM Peak	17	34	NO
2026 +Gen.	AM Peak	5	20	NO
	PM Peak	17	34	NO

Back

Westbound Right-Turn:
Existing + Gen
* AM Peak
** PM Peak
2026 + Gen
+ AM Peak
++ PM Peak



The peak values that are not shown fall below graph limits.

151st Street & Drive 4A/Drive 5A:
An eastbound and a westbound right-turn lane is not warranted at this intersection for all the peak traffic volumes.

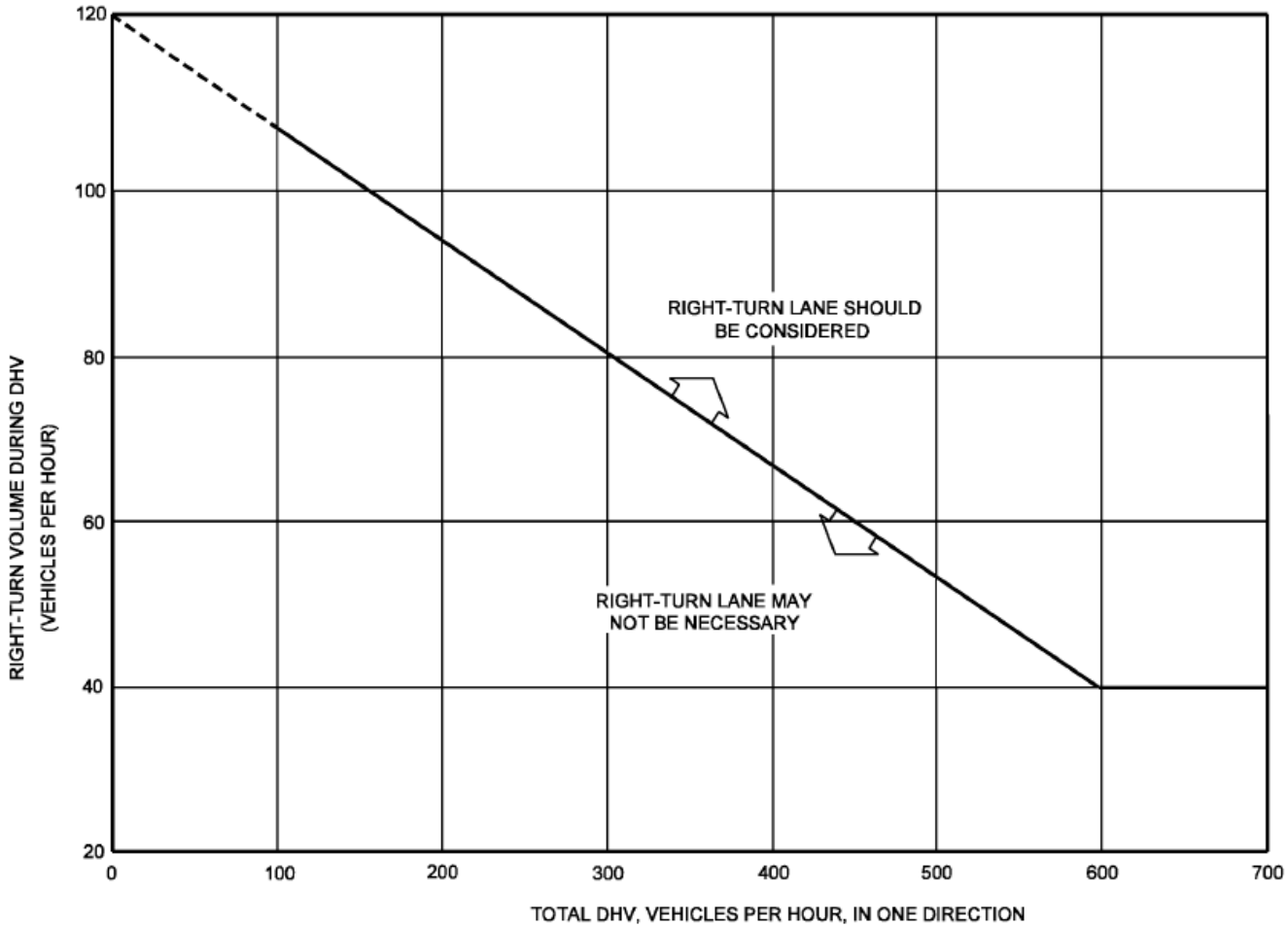
GUIDELINES FOR RIGHT-TURN LANES AT UNSIGNALIZED INTERSECTIONS ON 2-LANE HIGHWAYS

Figure 46-4A

Back

Eastbound Right-Turn				
Scenarios	Peak Hours	RT Volume	Total DHV	Warranted
Existing +Gen.	AM Peak	1	64	NO
	PM Peak	3	59	NO
2026 +Gen.	AM Peak	1	65	NO
	PM Peak	3	60	NO
Westbound Right-Turn				
Scenarios	Peak Hours	RT Volume	Total DHV	Warranted
Existing +Gen.	AM Peak	30	83	NO
	PM Peak	75*	228	NO
2026 +Gen.	AM Peak	30	84	NO
	PM Peak	75*	228	NO

*For highways with a design speed below 50mph with a DHV < 300 and where right turns > 40, 20 vehicles were subtracted from the right turns.



The AM peak and PM peak values that are not shown fall below the graph limits.

GUIDELINES FOR RIGHT-TURN LANES AT UNSIGNALIZED INTERSECTIONS ON 2-LANE HIGHWAYS

Figure 46-4A

151st Street & Drive 4B:
An eastbound right-turn lane is not warranted at this intersection for all the peak traffic volumes.

Eastbound Right-Turn				
Scenarios	Peak Hours	RT Volume	Total DHV	Warranted
Existing +Gen.	AM Peak	4	20	NO
	PM Peak	12	41	NO
2026 +Gen.	AM Peak	4	21	NO
	PM Peak	12	42	NO

Back

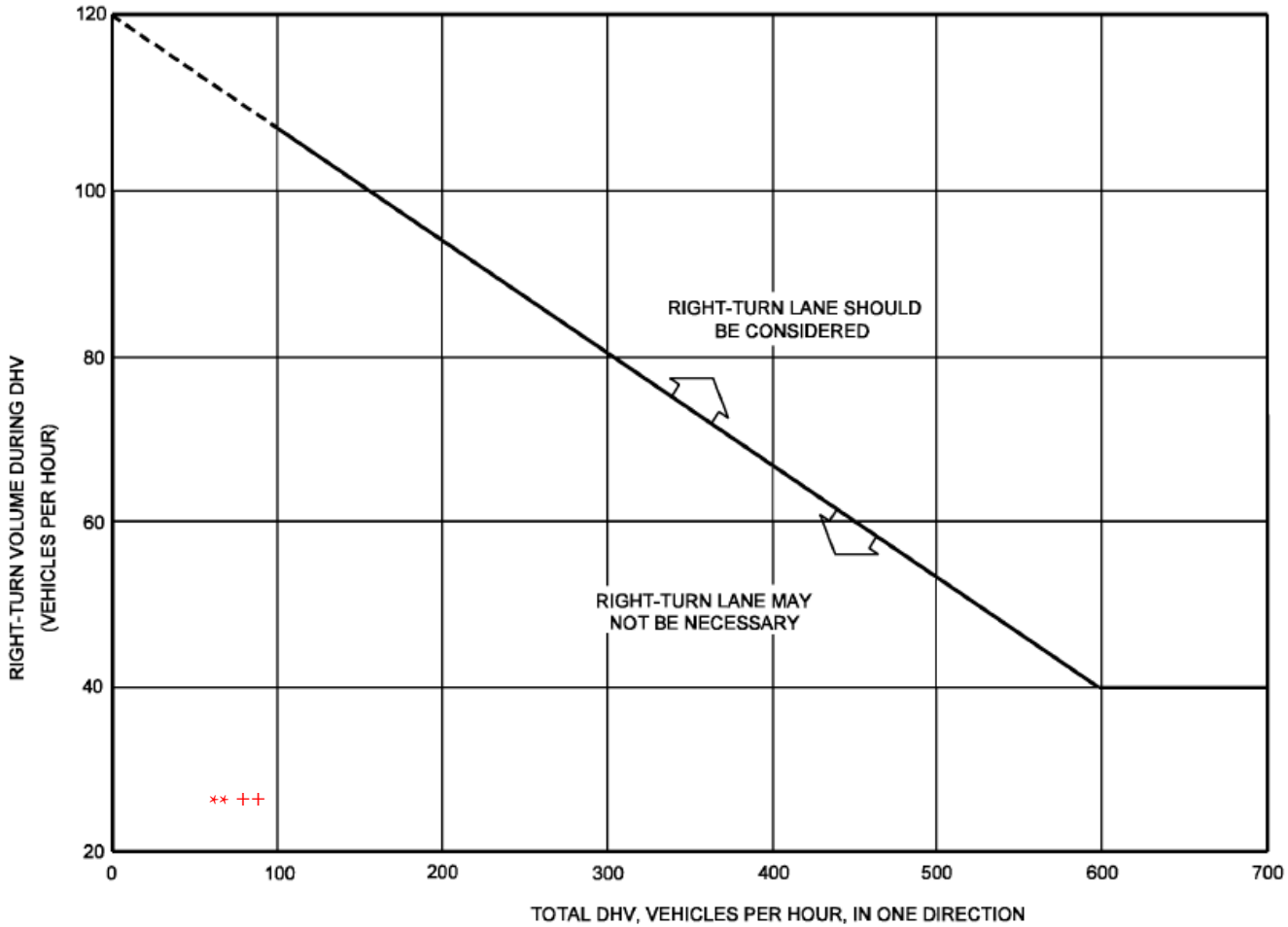
Northbound Right-Turn:

Existing + Gen

** PM Peak

2026 + Gen

++ PM Peak



Shelbourne Road & Drive 5C:
A northbound right-turn lane is not warranted at this intersection for all the peak traffic volumes.

The AM peak values that are not shown fall below the graph limits.

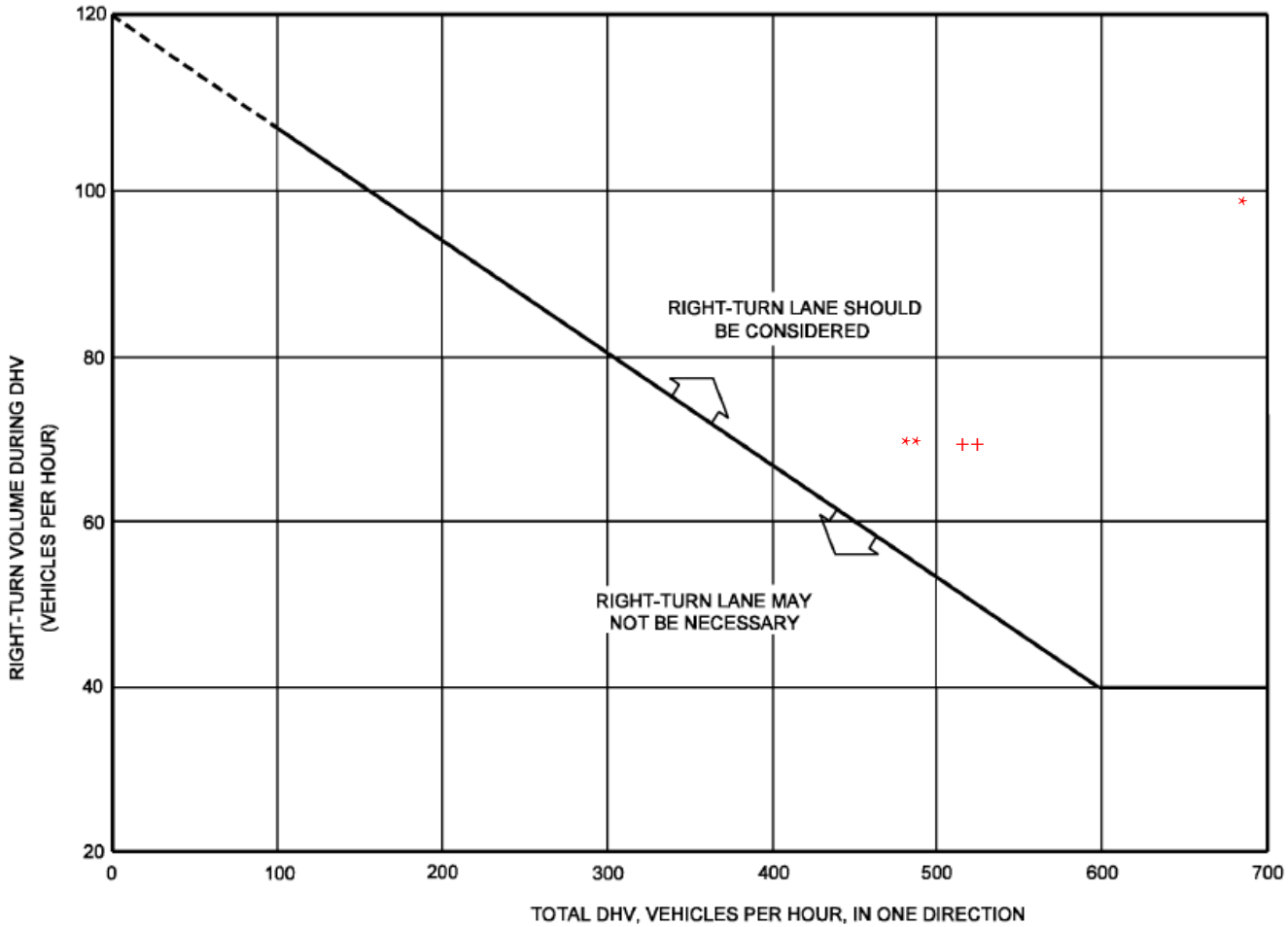
GUIDELINES FOR RIGHT-TURN LANES AT UNSIGNALIZED INTERSECTIONS ON 2-LANE HIGHWAYS

Figure 46-4A

Back

Northbound Right-Turn				
Scenarios	Peak Hours	RT Volume	Total DHV	Warranted
Existing +Gen.	AM Peak	8	26	NO
	PM Peak	25	77	NO
2026 +Gen.	AM Peak	8	30	NO
	PM Peak	25	87	NO

Southbound Right-Turn:
Existing + Gen
* AM Peak
** PM Peak
2026 + Gen
+ AM Peak
++ PM Peak



Towne Road & Drive 6A:
A southbound right-turn lane is warranted at this intersection for all the peak traffic volumes.

The AM peak value that is not shown exceeds the graph limits.

GUIDELINES FOR RIGHT-TURN LANES AT UNSIGNALIZED INTERSECTIONS ON 2-LANE HIGHWAYS

Figure 46-4A

Back

Southbound Right-Turn				
Scenarios	Peak Hours	RT Volume	Total DHV	Warranted
Existing +Gen.	AM Peak	99	691	YES
	PM Peak	68	491	YES
2026 +Gen.	AM Peak	99	738	YES
	PM Peak	68	512	YES

24-HOUR ROADWAY SEGMENT VOLUMES COUNTS

Basic Axle Classification Report: 151 N

Station ID : 151 N
Info Line 1 : ON SHELBOURNE NORTH OF 151ST
Info Line 2 :
GPS Lat/Lon :
DB File : 151 N.DB

Last Connected Device Type : OmegaX3
Version Number : 1.16
Serial Number : 010115-0000 OX3
Number of Lanes : 2
Posted Speed Limit : 0.0 mph

Lane #1 Configuration

#	Dir.	Information	Vehicle Sensors	Sensor Spacing	Loop Length	Comment
1.			Ax-Ax	4.0 ft	6.0 ft	

Lane #1 Basic Axle Classification Data From: 15:00 - 09/27/2016 To: 14:59 - 09/28/2016

Date	(DEFAULTC) Time	#1 Cycle	#2 Cars	#3 2A-4T	#4 Buses	#5 2A-SU	#6 3A-SU	#7 4A-SU	#8 4A-ST	#9 5A-ST	#10 6A-ST	#11 5A-MT	#12 6A-MT	#13 Other	Error	Total
09/27/16	15:00	0	0	3	0	1	0	0	0	0	0	0	0	0	0	4
Tue	15:15	0	4	3	0	1	0	0	0	0	0	0	0	0	0	8
	15:30	0	5	1	0	0	0	0	0	0	0	0	0	0	0	6
	15:45	0	3	5	0	0	0	0	0	0	0	0	0	0	0	8
	16:00	0	4	1	0	1	0	1	0	0	0	0	0	0	0	7
	16:15	0	10	5	0	0	0	0	0	0	0	0	0	0	0	15
	16:30	0	6	9	0	0	1	0	0	0	0	0	0	0	0	16
	16:45	1	1	4	0	1	0	0	1	0	0	0	0	0	0	8
	17:00	0	4	8	0	0	0	0	0	0	0	0	0	0	0	12
	17:15	0	5	5	0	0	0	0	0	0	0	0	0	0	0	10
	17:30	1	9	6	0	0	0	0	0	0	0	0	0	0	0	16
	17:45	2	3	11	0	0	0	0	0	0	0	0	0	0	0	16
	18:00	0	6	3	0	1	0	0	0	0	0	0	0	0	0	10
	18:15	0	5	3	0	0	0	0	0	0	0	0	0	0	0	8
	18:30	0	3	3	0	0	0	0	0	0	0	0	0	0	0	6
	18:45	0	1	5	0	0	1	0	0	0	0	0	0	0	0	7
	19:00	1	3	5	0	0	0	0	0	0	0	0	0	0	0	9
	19:15	0	1	1	0	0	0	0	0	0	0	0	0	0	0	2
	19:30	0	1	1	0	0	0	0	0	0	0	0	0	0	0	2
	19:45	0	2	3	0	0	0	0	0	0	0	0	0	0	0	5
	20:00	0	2	2	0	0	0	0	0	0	0	0	0	0	0	4
	20:15	0	1	1	0	0	0	0	0	0	0	0	0	0	0	2
	20:30	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
	20:45	0	1	2	0	0	0	0	0	0	0	0	0	0	0	3
	21:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
	21:15	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
	21:30	0	3	1	0	0	0	0	0	0	0	0	0	0	0	4
	21:45	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
	22:00	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
	22:15	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
	22:30	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
	22:45	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
	23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	23:15	0	1	1	0	0	0	0	0	0	0	0	0	0	0	2
	23:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

(DEFAULTC) Date	Time	#1 Cycle	#2 Cars	#3 2A-4T	#4 Buses	#5 2A-SU	#6 3A-SU	#7 4A-SU	#8 4A-ST	#9 5A-ST	#10 6A-ST	#11 5A-MT	#12 6A-MT	#13 Other	Error	Total
09/27/16	23:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Daily Total :		5	90	96	0	5	2	1	1	0	0	0	0	0	0	200
Percent :		3%	45%	48%	0%	3%	1%	1%	1%	0%	0%	0%	0%	0%	0%	
Average :		0	3	3	0	0	0	0	0	0	0	0	0	0	0	6

(DEFAULTC) Date	Time	#1 Cycle	#2 Cars	#3 2A-4T	#4 Buses	#5 2A-SU	#6 3A-SU	#7 4A-SU	#8 4A-ST	#9 5A-ST	#10 6A-ST	#11 5A-MT	#12 6A-MT	#13 Other	Error	Total
09/28/16	00:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Wed	00:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	00:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	00:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	01:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	01:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	01:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	02:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	02:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	02:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	03:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	03:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	03:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	04:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	04:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	04:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	05:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	05:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	05:45	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
	06:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
	06:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	06:30	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
	06:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	07:00	0	1	1	0	1	0	0	0	0	0	0	0	0	0	3
	07:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	07:30	0	2	3	0	0	0	0	0	0	0	0	0	0	0	5
	07:45	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2
	08:00	0	2	3	0	0	0	0	0	0	0	0	0	0	0	5
	08:15	0	2	3	0	0	0	0	0	0	0	0	0	0	0	5
	08:30	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2
	08:45	1	1	3	0	1	0	0	0	0	0	0	0	0	0	6
	09:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
	09:15	1	1	3	0	0	0	0	0	0	0	0	0	0	0	5
	09:30	0	1	2	0	1	0	0	0	0	0	0	0	0	0	4
	09:45	0	2	1	0	0	0	0	0	0	0	0	0	0	0	3
	10:00	0	1	4	0	0	0	0	0	0	0	0	0	0	0	5
	10:15	1	0	2	0	0	1	0	0	0	0	0	0	0	0	4
	10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	11:00	1	1	2	0	0	0	0	0	0	0	0	0	0	0	4
	11:15	0	0	2	0	1	0	0	0	0	0	0	0	0	0	3
	11:30	0	1	2	0	0	0	0	0	0	0	0	0	0	0	3
	11:45	1	0	1	0	0	0	0	0	0	0	0	0	0	0	2
	12:00	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
	12:15	1	1	1	0	0	0	0	0	0	0	0	0	0	0	3
	12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

(DEFAULTC) Date	Time	#1 Cycle	#2 Cars	#3 2A-4T	#4 Buses	#5 2A-SU	#6 3A-SU	#7 4A-SU	#8 4A-ST	#9 5A-ST	#10 6A-ST	#11 5A-MT	#12 6A-MT	#13 Other	Error	Total
09/28/16	12:45	0	1	1	0	0	0	0	0	0	0	0	0	0	0	2
Wed	13:00	0	2	3	0	0	0	0	0	0	0	0	0	0	0	5
	13:15	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2
	13:30	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
	13:45	0	2	1	0	0	0	1	0	0	0	0	0	0	0	4
	14:00	0	0	1	0	0	0	1	0	0	0	0	0	0	0	2
	14:15	0	1	3	0	0	0	0	0	0	0	0	0	0	0	4
	14:30	0	4	5	0	0	0	0	0	0	0	0	0	0	0	9
	14:45	0	0	1	0	1	0	0	0	0	0	0	0	0	0	2
Daily Total :		6	31	56	0	5	1	2	0	0	0	0	0	0	0	101
Percent :		6%	31%	55%	0%	5%	1%	2%	0%	0%	0%	0%	0%	0%	0%	
Average :		0	1	1	0	0	0	0	0	0	0	0	0	0	0	2

Lane #3 Configuration

#	Dir.	Information	Vehicle Sensors	Sensor Spacing	Loop Length	Comment
3.		Opp -	Ax-Ax	6.0 ft	0.0 ft	

Lane #3 Basic Axle Classification Data From: 15:00 - 09/27/2016 To: 14:59 - 09/28/2016

(DEFAULTC) Date	Time	#1 Cycle	#2 Cars	#3 2A-4T	#4 Buses	#5 2A-SU	#6 3A-SU	#7 4A-SU	#8 4A-ST	#9 5A-ST	#10 6A-ST	#11 5A-MT	#12 6A-MT	#13 Other	Error	Total
09/27/16	15:00	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
Tue	15:15	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
	15:30	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
	15:45	0	3	1	0	0	0	0	0	0	0	0	0	0	0	4
	16:00	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2
	16:15	0	3	2	0	0	0	0	0	0	0	0	0	0	0	5
	16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	16:45	0	2	1	0	0	0	0	0	0	0	0	0	0	0	3
	17:00	0	2	2	0	0	0	0	0	0	0	0	0	0	0	4
	17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	17:30	1	1	0	0	0	0	0	0	0	0	0	0	0	0	2
	17:45	0	3	2	0	0	0	0	0	0	0	0	0	0	0	5
	18:00	0	1	2	0	0	0	0	0	0	0	0	0	0	0	3
	18:15	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
	18:30	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
	18:45	2	1	2	0	0	0	0	0	0	0	0	0	0	0	5
	19:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	19:15	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
	19:30	1	3	2	0	0	0	0	0	0	0	0	0	0	0	6
	19:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	20:00	0	4	2	0	0	0	0	0	0	0	0	0	0	0	6
	20:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	20:30	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
	20:45	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
	21:00	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
	21:15	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
	21:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	21:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	22:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
	22:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	22:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	22:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	23:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	23:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	23:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Daily Total :		4	40	21	0	0	0	0	0	0	0	0	0	0	0	65
Percent :		6%	62%	32%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Average :		0	1	1	0	0	0	0	0	0	0	0	0	0	0	2

Date	(DEFAULTC) Time	#1 Cycle	#2 Cars	#3 2A-4T	#4 Buses	#5 2A-SU	#6 3A-SU	#7 4A-SU	#8 4A-ST	#9 5A-ST	#10 6A-ST	#11 5A-MT	#12 6A-MT	#13 Other	Error	Total
09/28/16	00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wed	00:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	00:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	00:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	01:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	01:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	01:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	02:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	02:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	02:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	03:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	03:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	03:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	04:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
	04:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	04:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	04:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	05:00	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
	05:15	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
	05:30	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
	05:45	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
	06:00	0	4	0	0	0	0	0	0	0	0	0	0	0	0	4
	06:15	0	3	1	0	0	0	0	0	0	0	0	0	0	0	4
	06:30	0	4	2	0	0	0	0	0	0	0	0	0	0	0	6
	06:45	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
	07:00	0	2	1	0	1	0	0	0	0	0	0	0	0	0	4
	07:15	0	7	6	0	1	0	0	0	0	0	0	0	0	0	14
	07:30	0	6	0	0	0	0	0	0	0	0	0	0	0	0	6
	07:45	0	4	2	0	0	0	0	0	0	0	0	0	0	0	6
	08:00	0	4	1	0	0	0	0	0	0	0	0	0	0	0	5
	08:15	0	4	2	0	0	0	0	0	0	0	0	0	0	0	6
	08:30	0	2	5	0	1	0	0	0	0	0	0	0	0	0	8
	08:45	0	2	1	0	0	0	0	0	0	0	0	0	0	0	3
	09:00	0	3	1	0	0	0	0	0	0	0	0	0	0	0	4
	09:15	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
	09:30	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
	09:45	0	4	2	0	0	0	0	0	0	0	0	0	0	0	6
	10:00	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
	10:15	0	0	3	0	0	0	0	0	0	0	0	0	0	0	3
	10:30	0	1	2	0	0	0	0	0	0	0	0	0	0	0	3
	10:45	0	1	1	0	0	0	0	0	0	0	0	0	0	0	2
	11:00	0	2	2	0	0	0	0	0	0	0	0	0	0	0	4
	11:15	0	2	3	0	0	0	0	0	0	0	0	0	0	0	5
	11:30	0	1	2	0	0	0	0	0	0	0	0	0	0	0	3
	11:45	0	1	0	0	1	0	0	0	0	0	0	0	0	0	2
	12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:15	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
	12:30	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1

(DEFAULTC) Date	Time	#1 Cycle	#2 Cars	#3 2A-4T	#4 Buses	#5 2A-SU	#6 3A-SU	#7 4A-SU	#8 4A-ST	#9 5A-ST	#10 6A-ST	#11 5A-MT	#12 6A-MT	#13 Other	Error	Total
09/28/16	12:45	0	2	1	0	0	0	0	0	0	0	0	0	0	0	3
Wed	13:00	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
	13:15	0	3	1	0	0	0	0	0	0	0	0	0	0	0	4
	13:30	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2
	13:45	0	5	3	0	0	0	0	0	0	0	0	0	0	0	8
	14:00	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
	14:15	0	1	2	0	0	1	0	0	0	0	0	0	0	0	4
	14:30	0	1	4	0	0	1	0	0	0	0	0	0	0	0	6
	14:45	0	4	0	0	0	0	0	0	0	0	0	0	0	0	4
Daily Total :		0	86	55	0	4	2	0	0	0	0	0	0	0	0	147
Percent :		0%	59%	37%	0%	3%	1%	0%	0%	0%	0%	0%	0%	0%	0%	
Average :		0	1	1	0	0	0	0	0	0	0	0	0	0	0	2

Basic Axle Class Summary: 151 N

(DEFAULTC) Description	Lane	#1 Cycle	#2 Cars	#3 2A-4T	#4 Buses	#5 2A-SU	#6 3A-SU	#7 4A-SU	#8 4A-ST	#9 5A-ST	#10 6A-ST	#11 5A-MT	#12 6A-MT	#13 Other	Error	Total
TOTAL COUNT :	#1.	11	121	152	0	10	3	3	1	0	0	0	0	0	0	301
	#3.	4	126	76	0	4	2	0	0	0	0	0	0	0	0	212
		15	247	228	0	14	5	3	1	0	0	0	0	0	0	513
Percents :	#1.	4%	40%	50%	0%	3%	1%	1%	0%	0%	0%	0%	0%	0%	0%	59%
	#3.	2%	59%	36%	0%	2%	1%	0%	0%	0%	0%	0%	0%	0%	0%	41%
		3%	48%	44%	0%	3%	1%	1%	0%	0%	0%	0%	0%	0%	0%	
Average :	#1.	0	1	2	0	0	0	0	0	0	0	0	0	0	0	3
	#3.	0	1	1	0	0	0	0	0	0	0	0	0	0	0	2
		0	2	3	0	0	0	0	0	0	0	0	0	0	0	5
Days & ADT :	#1.	1.0	301													
	#3.	1.0	212													
		1.0	513													

TOWNE ROAD & 166TH STREET

TRAFFIC VOLUME COUNTS
CAPACITY ANALYSIS

A & F ENGINEERING CO., LLC
TRAFFIC VOLUME SUMMARY

CLIENT :	Pulte Homes
INTERSECTION :	166th St & Towne Rd
DATE :	9/15/2016
COUNTED BY :	Miovision

	TOTAL VEHICLES (PASSENGER CARS + TRUCKS)											
	AM PEAK HOUR VOLUMES BEGINS 7:15 AM				OFF PEAK HOUR VOLUMES BEGINS				PM PEAK HOUR VOLUMES BEGINS 4:45 PM			
	L	T	R	TOTAL	L	T	R	TOTAL	L	T	R	TOTAL
NORTHBOUND	2	28	11	**41**					8	74	20	**102**
SOUTHBOUND	0	62	0	**62**					0	26	0	**26**
EASTBOUND	0	11	7	**18**					1	17	2	**20**
WESTBOUND	16	1	0	**17**					2	7	2	**11**

	PEAK HOUR FACTOR					
	AM PEAK HOUR FACTOR		OFF PEAK HOUR FACTOR		PM PEAK HOUR FACTOR	
	APPROACH	INTERSECTION	APPROACH	INTERSECTION	APPROACH	INTERSECTION
NORTHBOUND	0.85	0.77			0.80	0.85
SOUTHBOUND	0.78				0.65	
EASTBOUND	0.75				0.50	
WESTBOUND	0.47				0.92	

	TRUCK PERCENTAGE											
	AM PEAK HOUR PERCENTAGE				OFF PEAK HOUR PERCENTAGE				PM PEAK HOUR PERCENTAGE			
	L	T	R	TOTAL	L	T	R	TOTAL	L	T	R	TOTAL
NORTHBOUND	0.0%	0.0%	0.0%	0.0%					0.0%	6.8%	0.0%	4.9%
SOUTHBOUND	0.0%	6.5%	0.0%	6.5%					0.0%	0.0%	0.0%	0.0%
EASTBOUND	0.0%	18.2%	0.0%	11.1%					0.0%	0.0%	0.0%	0.0%
WESTBOUND	0.0%	0.0%	0.0%	0.0%					0.0%	0.0%	0.0%	0.0%

HOURLY SUMMARY									
HOUR			NB	SB	NB+SB	EB	WB	EB+WB	TOTAL
6:00 AM	TO	7:00 AM	13	20	33	8	11	19	52
7:00 AM	TO	8:00 AM	38	54	92	18	18	36	128
8:00 AM	TO	9:00 AM	33	36	69	10	20	30	99
4:00 PM	TO	5:00 PM	68	21	89	16	17	33	122
5:00 PM	TO	6:00 PM	104	28	132	10	10	20	152
6:00 PM	TO	7:00 PM	58	45	103	6	11	17	120
TOTAL VOLUME			314	204	518	68	87	155	673
PERCENTAGE			46.7%	30.3%	77.0%	10.1%	12.9%	23.0%	100.0%

A & F ENGINEERING CO., LLC
TRAFFIC VOLUME SUMMARY

CLIENT : Pulte Homes
INTERSECTION : 166th St & Towne Rd
DATE : 9/15/2016

DIRECTION OF TRAVEL : NORTHBOUND

HOUR	LEFT			THROUGH			RIGHT			TOTAL		
AM TIME PERIOD	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH
6:00 AM - 7:00 AM	0	0	0	9	0	9	4	0	4	13	0	13
7:00 AM - 8:00 AM	2	0	2	26	0	26	10	0	10	38	0	38
8:00 AM - 9:00 AM	4	0	4	22	3	25	4	0	4	30	3	33
PM TIME PERIOD	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH
4:00 PM - 5:00 PM	5	0	5	50	3	53	9	1	10	64	4	68
5:00 PM - 6:00 PM	10	0	10	69	4	73	21	0	21	100	4	104
6:00 PM - 7:00 PM	8	0	8	42	1	43	7	0	7	57	1	58
PASSENGER	29 100.0%			218 95.2%			55 98.2%			302 96.2%		
TRUCK	0 0.0%			11 4.8%			1 1.8%			12 3.8%		
BOTH	29 9.2%			229 72.9%			56 17.8%			314 100.0%		

DIRECTION OF TRAVEL : SOUTHBOUND

HOUR	LEFT			THROUGH			RIGHT			TOTAL		
AM TIME PERIOD	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH
6:00 AM - 7:00 AM	0	0	0	20	0	20	0	0	0	20	0	20
7:00 AM - 8:00 AM	0	0	0	52	2	54	0	0	0	52	2	54
8:00 AM - 9:00 AM	1	0	1	31	4	35	0	0	0	32	4	36
PM TIME PERIOD	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH
4:00 PM - 5:00 PM	0	0	0	20	0	20	1	0	1	21	0	21
5:00 PM - 6:00 PM	0	0	0	28	0	28	0	0	0	28	0	28
6:00 PM - 7:00 PM	0	0	0	44	1	45	0	0	0	44	1	45
PASSENGER	1 100.0%			195 96.5%			1 100.0%			197 96.6%		
TRUCK	0 0.0%			7 3.5%			0 0.0%			7 3.4%		
BOTH	1 0.5%			202 99.0%			1 0.5%			204 100.0%		

DIRECTION OF TRAVEL : EASTBOUND

HOUR	LEFT			THROUGH			RIGHT			TOTAL		
AM TIME PERIOD	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH
6:00 AM - 7:00 AM	0	0	0	3	0	3	5	0	5	8	0	8
7:00 AM - 8:00 AM	0	0	0	8	2	10	8	0	8	16	2	18
8:00 AM - 9:00 AM	0	0	0	5	0	5	5	0	5	10	0	10
PM TIME PERIOD	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH
4:00 PM - 5:00 PM	1	0	1	12	0	12	3	0	3	16	0	16
5:00 PM - 6:00 PM	0	0	0	9	0	9	1	0	1	10	0	10
6:00 PM - 7:00 PM	0	0	0	4	0	4	2	0	2	6	0	6
PASSENGER	1 100.0%			41 95.3%			24 100.0%			66 97.1%		
TRUCK	0 0.0%			2 4.7%			0 0.0%			2 2.9%		
BOTH	1 1.5%			43 63.2%			24 35.3%			68 100.0%		

DIRECTION OF TRAVEL : WESTBOUND

HOUR	LEFT			THROUGH			RIGHT			TOTAL		
AM TIME PERIOD	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH
6:00 AM - 7:00 AM	7	1	8	1	2	3	0	0	0	8	3	11
7:00 AM - 8:00 AM	17	0	17	0	0	0	0	1	1	17	1	18
8:00 AM - 9:00 AM	11	1	12	8	0	8	0	0	0	19	1	20
PM TIME PERIOD	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH
4:00 PM - 5:00 PM	8	0	8	7	0	7	2	0	2	17	0	17
5:00 PM - 6:00 PM	2	0	2	7	0	7	1	0	1	10	0	10
6:00 PM - 7:00 PM	3	0	3	7	0	7	1	0	1	11	0	11
PASSENGER	48 96.0%			30 93.8%			4 80.0%			82 94.3%		
TRUCK	2 4.0%			2 6.3%			1 20.0%			5 5.7%		
BOTH	50 57.5%			32 36.8%			5 5.7%			87 100.0%		

Intersection	
Intersection Delay, s/veh	7.4
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Vol, veh/h	0	0	11	7	0	16	1	0	0	2	28	11
Future Vol, veh/h	0	0	11	7	0	16	1	0	0	2	28	11
Peak Hour Factor	0.92	0.77	0.77	0.77	0.92	0.77	0.77	0.77	0.92	0.77	0.77	0.77
Heavy Vehicles, %	2	0	18	0	2	0	0	0	2	0	0	0
Mvmt Flow	0	0	14	9	0	21	1	0	0	3	36	14
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	7.4	7.5	7.2
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	5%	0%	94%	0%
Vol Thru, %	68%	61%	6%	100%
Vol Right, %	27%	39%	0%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	41	18	17	62
LT Vol	2	0	16	0
Through Vol	28	11	1	62
RT Vol	11	7	0	0
Lane Flow Rate	53	23	22	81
Geometry Grp	1	1	1	1
Degree of Util (X)	0.058	0.027	0.027	0.093
Departure Headway (Hd)	3.89	4.221	4.338	4.139
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	916	840	818	864
Service Time	1.934	2.289	2.405	2.174
HCM Lane V/C Ratio	0.058	0.027	0.027	0.094
HCM Control Delay	7.2	7.4	7.5	7.6
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.2	0.1	0.1	0.3

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Vol, veh/h	0	0	62	0
Future Vol, veh/h	0	0	62	0
Peak Hour Factor	0.92	0.77	0.77	0.77
Heavy Vehicles, %	2	0	7	0
Mvmt Flow	0	0	81	0
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	7.6
HCM LOS	A

Intersection	
Intersection Delay, s/veh	7.4
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Vol, veh/h	0	1	17	2	0	2	7	2	0	8	74	20
Future Vol, veh/h	0	1	17	2	0	2	7	2	0	8	74	20
Peak Hour Factor	0.92	0.85	0.85	0.85	0.92	0.85	0.85	0.85	0.92	0.85	0.85	0.85
Heavy Vehicles, %	2	0	0	0	2	0	0	0	2	0	7	0
Mvmt Flow	0	1	20	2	0	2	8	2	0	9	87	24
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	7.3	7.2	7.5
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	8%	5%	18%	0%
Vol Thru, %	73%	85%	64%	100%
Vol Right, %	20%	10%	18%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	102	20	11	26
LT Vol	8	1	2	0
Through Vol	74	17	7	26
RT Vol	20	2	2	0
Lane Flow Rate	120	24	13	31
Geometry Grp	1	1	1	1
Degree of Util (X)	0.13	0.027	0.015	0.034
Departure Headway (Hd)	3.885	4.121	4.106	4.055
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	923	861	864	880
Service Time	1.909	2.182	2.17	2.093
HCM Lane V/C Ratio	0.13	0.028	0.015	0.035
HCM Control Delay	7.5	7.3	7.2	7.2
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.4	0.1	0	0.1

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Vol, veh/h	0	0	26	0
Future Vol, veh/h	0	0	26	0
Peak Hour Factor	0.92	0.85	0.85	0.85
Heavy Vehicles, %	2	0	0	0
Mvmt Flow	0	0	31	0
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	7.2
HCM LOS	A

Intersection	
Intersection Delay, s/veh	8.3
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Vol, veh/h	0	0	11	7	0	16	1	0	0	2	23	11
Future Vol, veh/h	0	0	12	11	0	52	3	0	0	7	90	24
Peak Hour Factor	1.00	0.77	0.77	0.77	1.00	0.77	0.77	0.77	1.00	0.77	0.77	0.77
Heavy Vehicles, %	2	0	17	0	2	0	0	0	2	0	0	0
Mvmt Flow	0	0	16	14	0	68	4	0	0	9	117	31
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	7.9	8.3	8.2
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	6%	0%	95%	0%
Vol Thru, %	74%	52%	5%	100%
Vol Right, %	20%	48%	0%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	121	23	55	116
LT Vol	7	0	52	0
Through Vol	90	12	3	116
RT Vol	24	11	0	0
Lane Flow Rate	157	30	71	151
Geometry Grp	1	1	1	1
Degree of Util (X)	0.183	0.039	0.095	0.185
Departure Headway (Hd)	4.203	4.675	4.808	4.412
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	856	767	746	815
Service Time	2.218	2.697	2.828	2.426
HCM Lane V/C Ratio	0.183	0.039	0.095	0.185
HCM Control Delay	8.2	7.9	8.3	8.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.7	0.1	0.3	0.7

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Vol, veh/h	0	0	51	0
Future Vol, veh/h	0	0	116	0
Peak Hour Factor	1.00	0.77	0.77	0.77
Heavy Vehicles, %	2	0	6	0
Mvmt Flow	0	0	151	0
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	8.4
HCM LOS	A

Intersection	
Intersection Delay, s/veh	8.8
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Vol, veh/h	0	1	17	2	0	2	7	2	0	8	74	20
Future Vol, veh/h	0	1	19	9	0	32	8	2	0	15	170	66
Peak Hour Factor	0.92	0.85	0.85	0.85	0.92	0.85	0.85	0.85	0.92	0.85	0.85	0.85
Heavy Vehicles, %	2	0	0	0	2	0	0	0	2	0	5	0
Mvmt Flow	0	1	22	11	0	38	9	2	0	18	200	78
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	8	8.4	9.2
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	6%	3%	76%	0%
Vol Thru, %	68%	66%	19%	100%
Vol Right, %	26%	31%	5%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	251	29	42	125
LT Vol	15	1	32	0
Through Vol	170	19	8	125
RT Vol	66	9	2	0
Lane Flow Rate	295	34	49	147
Geometry Grp	1	1	1	1
Degree of Util (X)	0.338	0.045	0.069	0.18
Departure Headway (Hd)	4.119	4.738	5.019	4.402
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	874	755	714	816
Service Time	2.134	2.769	3.048	2.42
HCM Lane V/C Ratio	0.338	0.045	0.069	0.18
HCM Control Delay	9.2	8	8.4	8.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	1.5	0.1	0.2	0.7

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Vol, veh/h	0	0	26	0
Future Vol, veh/h	0	0	125	0
Peak Hour Factor	0.92	0.85	0.85	0.85
Heavy Vehicles, %	2	0	0	0
Mvmt Flow	0	0	147	0
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	8.4
HCM LOS	A

Intersection	
Intersection Delay, s/veh	7.5
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Vol, veh/h	0	0	11	7	0	16	1	0	0	2	28	11
Future Vol, veh/h	0	0	11	7	0	16	1	0	0	2	28	11
Peak Hour Factor	0.92	0.77	0.77	0.77	0.92	0.77	0.77	0.77	0.92	0.77	0.77	0.77
Heavy Vehicles, %	2	0	18	0	2	0	0	0	2	0	0	0
Mvmt Flow	0	0	17	11	0	25	2	0	0	3	44	17
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	7.5	7.6	7.3
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	5%	0%	94%	0%
Vol Thru, %	68%	61%	6%	100%
Vol Right, %	27%	39%	0%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	41	18	17	62
LT Vol	2	0	16	0
Through Vol	28	11	1	62
RT Vol	11	7	0	0
Lane Flow Rate	64	28	26	97
Geometry Grp	1	1	1	1
Degree of Util (X)	0.07	0.033	0.032	0.112
Departure Headway (Hd)	3.918	4.271	4.388	4.163
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	907	827	806	857
Service Time	1.972	2.354	2.471	2.206
HCM Lane V/C Ratio	0.071	0.034	0.032	0.113
HCM Control Delay	7.3	7.5	7.6	7.7
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.2	0.1	0.1	0.4

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Vol, veh/h	0	0	62	0
Future Vol, veh/h	0	0	62	0
Peak Hour Factor	0.92	0.77	0.77	0.77
Heavy Vehicles, %	2	0	7	0
Mvmt Flow	0	0	97	0
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	7.7
HCM LOS	A

Intersection	
Intersection Delay, s/veh	7.6
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Vol, veh/h	0	1	17	2	0	2	7	2	0	8	74	20
Future Vol, veh/h	0	1	17	2	0	2	7	2	0	8	74	20
Peak Hour Factor	0.92	0.85	0.85	0.85	0.92	0.85	0.85	0.85	0.92	0.85	0.85	0.85
Heavy Vehicles, %	2	0	0	0	2	0	0	0	2	0	7	0
Mvmt Flow	0	1	24	3	0	3	10	3	0	11	104	28
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	7.4	7.3	7.7
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	8%	5%	18%	0%
Vol Thru, %	73%	85%	64%	100%
Vol Right, %	20%	10%	18%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	102	20	11	26
LT Vol	8	1	2	0
Through Vol	74	17	7	26
RT Vol	20	2	2	0
Lane Flow Rate	144	28	16	37
Geometry Grp	1	1	1	1
Degree of Util (X)	0.156	0.033	0.018	0.042
Departure Headway (Hd)	3.902	4.175	4.162	4.085
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	917	848	849	872
Service Time	1.933	2.25	2.241	2.133
HCM Lane V/C Ratio	0.157	0.033	0.019	0.042
HCM Control Delay	7.7	7.4	7.3	7.3
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.6	0.1	0.1	0.1

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Vol, veh/h	0	0	26	0
Future Vol, veh/h	0	0	26	0
Peak Hour Factor	0.92	0.85	0.85	0.85
Heavy Vehicles, %	2	0	0	0
Mvmt Flow	0	0	37	0
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	7.3
HCM LOS	A

Intersection	
Intersection Delay, s/veh	8.4
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Vol, veh/h	0	0	13	8	0	19	1	0	0	2	29	13
Future Vol, veh/h	0	0	14	12	0	55	3	0	0	7	96	26
Peak Hour Factor	1.00	0.77	0.77	0.77	1.00	0.77	0.77	0.77	1.00	0.77	0.77	0.77
Heavy Vehicles, %	2	0	17	0	2	0	0	0	2	0	0	0
Mvmt Flow	0	0	18	16	0	71	4	0	0	9	125	34
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	8	8.5	8.3
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	5%	0%	95%	0%
Vol Thru, %	74%	54%	5%	100%
Vol Right, %	20%	46%	0%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	129	26	58	128
LT Vol	7	0	55	0
Through Vol	96	14	3	128
RT Vol	26	12	0	0
Lane Flow Rate	168	34	75	166
Geometry Grp	1	1	1	1
Degree of Util (X)	0.197	0.045	0.102	0.205
Departure Headway (Hd)	4.242	4.754	4.876	4.447
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	848	754	736	810
Service Time	2.259	2.779	2.898	2.465
HCM Lane V/C Ratio	0.198	0.045	0.102	0.205
HCM Control Delay	8.3	8	8.5	8.6
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.7	0.1	0.3	0.8

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Vol, veh/h	0	0	63	0
Future Vol, veh/h	0	0	128	0
Peak Hour Factor	1.00	0.77	0.77	0.77
Heavy Vehicles, %	2	0	6	0
Mvmt Flow	0	0	166	0
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	8.6
HCM LOS	A

Intersection	
Intersection Delay, s/veh	9.1
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Vol, veh/h	0	1	20	2	0	2	8	2	0	10	89	24
Future Vol, veh/h	0	1	22	9	0	32	9	2	0	17	185	70
Peak Hour Factor	1.00	0.85	0.85	0.85	1.00	0.85	0.85	0.85	1.00	0.85	0.85	0.85
Heavy Vehicles, %	2	0	0	0	2	0	0	0	2	0	5	0
Mvmt Flow	0	1	26	11	0	38	11	2	0	20	218	82
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	8.1	8.5	9.6
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	6%	3%	74%	0%
Vol Thru, %	68%	69%	21%	100%
Vol Right, %	26%	28%	5%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	272	32	43	130
LT Vol	17	1	32	0
Through Vol	185	22	9	130
RT Vol	70	9	2	0
Lane Flow Rate	320	38	51	153
Geometry Grp	1	1	1	1
Degree of Util (X)	0.368	0.05	0.072	0.189
Departure Headway (Hd)	4.145	4.828	5.092	4.442
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	870	741	704	809
Service Time	2.162	2.862	3.123	2.464
HCM Lane V/C Ratio	0.368	0.051	0.072	0.189
HCM Control Delay	9.6	8.1	8.5	8.5
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	1.7	0.2	0.2	0.7

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Vol, veh/h	0	0	31	0
Future Vol, veh/h	0	0	130	0
Peak Hour Factor	1.00	0.85	0.85	0.85
Heavy Vehicles, %	2	0	0	0
Mvmt Flow	0	0	153	0
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	8.5
HCM LOS	A

TOWNE ROAD & 161ST STREET

TRAFFIC VOLUME COUNTS
CAPACITY ANALYSIS

A & F ENGINEERING CO., LLC
TRAFFIC VOLUME SUMMARY

CLIENT :	Pulte Homes
INTERSECTION :	161th St & Towne Rd
DATE :	9/14/2016
COUNTED BY :	Miovision

	TOTAL VEHICLES (PASSENGER CARS + TRUCKS)											
	AM PEAK HOUR VOLUMES BEGINS 7:15 AM				OFF PEAK HOUR VOLUMES BEGINS				PM PEAK HOUR VOLUMES BEGINS 5:00 PM			
	L	T	R	TOTAL	L	T	R	TOTAL	L	T	R	TOTAL
NORTHBOUND		82	12	**94**						195	52	**247**
SOUTHBOUND	11	165		**176**					9	86		**95**
WESTBOUND	64		5	**69**					26		8	**34**

	PEAK HOUR FACTOR					
	AM PEAK HOUR FACTOR		OFF PEAK HOUR FACTOR		PM PEAK HOUR FACTOR	
	APPROACH	INTERSECTION	APPROACH	INTERSECTION	APPROACH	INTERSECTION
NORTHBOUND	0.84				0.86	
SOUTHBOUND	0.85	0.90			0.88	0.89
WESTBOUND	0.78				0.65	

	TRUCK PERCENTAGE											
	AM PEAK HOUR PERCENTAGE				OFF PEAK HOUR PERCENTAGE				PM PEAK HOUR PERCENTAGE			
	L	T	R	TOTAL	L	T	R	TOTAL	L	T	R	TOTAL
NORTHBOUND		2.4%	8.3%	3.2%						1.5%	0.0%	1.2%
SOUTHBOUND	9.1%	3.6%		4.0%					0.0%	2.3%		2.1%
WESTBOUND	0.0%		0.0%	0.0%					3.8%		0.0%	2.9%

HOURLY SUMMARY									
HOUR			NB	SB	NB+SB	EB	WB	EB+WB	TOTAL
6:00 AM	TO	7:00 AM	32	68	100		30	30	130
7:00 AM	TO	8:00 AM	82	184	266		68	68	334
8:00 AM	TO	9:00 AM	102	117	219		39	39	258
4:00 PM	TO	5:00 PM	195	67	262		20	20	282
5:00 PM	TO	6:00 PM	247	95	342		34	34	376
6:00 PM	TO	7:00 PM	153	94	247		20	20	267
TOTAL VOLUME			811	625	1436		211	211	1647
PERCENTAGE			49.2%	37.9%	87.2%		12.8%	12.8%	100.0%

A & F ENGINEERING CO., LLC
TRAFFIC VOLUME SUMMARY

CLIENT : Pulte Homes
INTERSECTION : 161th St & Towne Rd
DATE : 9/14/2016

DIRECTION OF TRAVEL : NORTHBOUND

HOUR	LEFT			THROUGH			RIGHT			TOTAL		
AM TIME PERIOD	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH
6:00 AM - 7:00 AM				29	0	29	3	0	3	32	0	32
7:00 AM - 8:00 AM				68	0	68	13	1	14	81	1	82
8:00 AM - 9:00 AM				79	7	86	15	1	16	94	8	102
PM TIME PERIOD	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH
4:00 PM - 5:00 PM				151	3	154	41	0	41	192	3	195
5:00 PM - 6:00 PM				192	3	195	52	0	52	244	3	247
6:00 PM - 7:00 PM				124	1	125	28	0	28	152	1	153
PASSENGER				643 97.9%			152 98.7%			795 98.0%		
TRUCK				14 2.1%			2 1.3%			16 2.0%		
BOTH				657 81.0%			154 19.0%			811 100.0%		

DIRECTION OF TRAVEL : SOUTHBOUND

HOUR	LEFT			THROUGH			RIGHT			TOTAL		
AM TIME PERIOD	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH
6:00 AM - 7:00 AM	1	0	1	66	1	67				67	1	68
7:00 AM - 8:00 AM	10	1	11	168	5	173				178	6	184
8:00 AM - 9:00 AM	3	1	4	110	3	113				113	4	117
PM TIME PERIOD	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH
4:00 PM - 5:00 PM	6	1	7	59	1	60				65	2	67
5:00 PM - 6:00 PM	9	0	9	84	2	86				93	2	95
6:00 PM - 7:00 PM	6	0	6	88	0	88				94	0	94
PASSENGER	35 92.1%			575 98.0%						610 97.6%		
TRUCK	3 7.9%			12 2.0%						15 2.4%		
BOTH	38 6.1%			587 93.9%						625 100.0%		

DIRECTION OF TRAVEL : WESTBOUND

HOUR	LEFT			THROUGH			RIGHT			TOTAL		
AM TIME PERIOD	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH
6:00 AM - 7:00 AM	27	0	27				3	0	3	30	0	30
7:00 AM - 8:00 AM	62	0	62				6	0	6	68	0	68
8:00 AM - 9:00 AM	35	2	37				2	0	2	37	2	39
PM TIME PERIOD	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH
4:00 PM - 5:00 PM	16	0	16				3	1	4	19	1	20
5:00 PM - 6:00 PM	25	1	26				8	0	8	33	1	34
6:00 PM - 7:00 PM	13	0	13				7	0	7	20	0	20
PASSENGER	178 98.3%						29 96.7%			207 98.1%		
TRUCK	3 1.7%						1 3.3%			4 1.9%		
BOTH	181 85.8%						30 14.2%			211 100.0%		

Intersection	
Int Delay, s/veh	2.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	64	5	82	12	11	165
Future Vol, veh/h	64	5	82	12	11	165
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	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	2	8	9	4
Mvmt Flow	71	6	91	13	12	183

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	306	98	0	0	104	0
Stage 1	98	-	-	-	-	-
Stage 2	208	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.19	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.281	-
Pot Cap-1 Maneuver	690	963	-	-	1445	-
Stage 1	931	-	-	-	-	-
Stage 2	832	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	684	963	-	-	1445	-
Mov Cap-2 Maneuver	684	-	-	-	-	-
Stage 1	931	-	-	-	-	-
Stage 2	825	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.8	0	0.5
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	699	1445	-
HCM Lane V/C Ratio	-	-	0.11	0.008	-
HCM Control Delay (s)	-	-	10.8	7.5	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.4	0	-

Intersection	
Int Delay, s/veh	1.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	26	8	195	52	9	86
Future Vol, veh/h	26	8	195	52	9	86
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	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	4	0	2	0	0	2
Mvmt Flow	29	9	219	58	10	97

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	365	248	0	0	278	0
Stage 1	248	-	-	-	-	-
Stage 2	117	-	-	-	-	-
Critical Hdwy	7.14	6.2	-	-	4.1	-
Critical Hdwy Stg 1	6.14	-	-	-	-	-
Critical Hdwy Stg 2	6.14	-	-	-	-	-
Follow-up Hdwy	3.536	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	587	796	-	-	1296	-
Stage 1	751	-	-	-	-	-
Stage 2	883	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	583	796	-	-	1296	-
Mov Cap-2 Maneuver	583	-	-	-	-	-
Stage 1	751	-	-	-	-	-
Stage 2	876	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.2	0	0.7
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	622	1296	-
HCM Lane V/C Ratio	-	-	0.061	0.008	-
HCM Control Delay (s)	-	-	11.2	7.8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Int Delay, s/veh	3.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	64	5	77	12	11	154
Future Vol, veh/h	143	10	157	77	13	257
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	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	2	2	8	3
Mvmt Flow	159	11	174	86	14	286

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	531	217	0	0	260	0
Stage 1	217	-	-	-	-	-
Stage 2	314	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.18	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.272	-
Pot Cap-1 Maneuver	512	828	-	-	1270	-
Stage 1	824	-	-	-	-	-
Stage 2	745	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	505	828	-	-	1270	-
Mov Cap-2 Maneuver	505	-	-	-	-	-
Stage 1	824	-	-	-	-	-
Stage 2	735	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.3	0	0.4
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	518	1270	-
HCM Lane V/C Ratio	-	-	0.328	0.011	-
HCM Control Delay (s)	-	-	15.3	7.9	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	1.4	0	-

Intersection	
Int Delay, s/veh	3.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	26	8	195	52	9	86
Future Vol, veh/h	134	11	341	171	15	216
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	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	1	0	2	0	0	1
Mvmt Flow	151	12	383	192	17	243

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	755	479	0	0	575	0
Stage 1	479	-	-	-	-	-
Stage 2	276	-	-	-	-	-
Critical Hdwy	6.41	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	378	591	-	-	1008	-
Stage 1	625	-	-	-	-	-
Stage 2	773	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	371	591	-	-	1008	-
Mov Cap-2 Maneuver	371	-	-	-	-	-
Stage 1	625	-	-	-	-	-
Stage 2	758	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	21.3	0	0.6
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	382	1008	-
HCM Lane V/C Ratio	-	-	0.426	0.017	-
HCM Control Delay (s)	-	-	21.3	8.6	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	2.1	0.1	-

Intersection	
Int Delay, s/veh	2.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	64	5	82	12	11	165
Future Vol, veh/h	64	5	82	12	11	165
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	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	2	8	9	4
Mvmt Flow	85	7	109	16	15	220

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	366	117	0	0	125	0
Stage 1	117	-	-	-	-	-
Stage 2	249	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.19	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.281	-
Pot Cap-1 Maneuver	638	941	-	-	1419	-
Stage 1	913	-	-	-	-	-
Stage 2	797	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	630	941	-	-	1419	-
Mov Cap-2 Maneuver	630	-	-	-	-	-
Stage 1	913	-	-	-	-	-
Stage 2	787	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.5	0	0.5
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	645	1419	-
HCM Lane V/C Ratio	-	-	0.143	0.01	-
HCM Control Delay (s)	-	-	11.5	7.6	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.5	0	-

Intersection	
Int Delay, s/veh	1.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	26	8	195	52	9	86
Future Vol, veh/h	26	8	195	52	9	86
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	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	4	0	2	0	0	2
Mvmt Flow	35	11	263	70	12	116

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	438	298	0	0	333	0
Stage 1	298	-	-	-	-	-
Stage 2	140	-	-	-	-	-
Critical Hdwy	6.44	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.44	-	-	-	-	-
Critical Hdwy Stg 2	5.44	-	-	-	-	-
Follow-up Hdwy	3.536	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	572	746	-	-	1238	-
Stage 1	749	-	-	-	-	-
Stage 2	882	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	566	746	-	-	1238	-
Mov Cap-2 Maneuver	566	-	-	-	-	-
Stage 1	749	-	-	-	-	-
Stage 2	873	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.5	0	0.8
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	600	1238	-
HCM Lane V/C Ratio	-	-	0.076	0.01	-
HCM Control Delay (s)	-	-	11.5	7.9	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Int Delay, s/veh	4.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	77	6	93	14	13	187
Future Vol, veh/h	156	11	173	79	15	290
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	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	2	2	8	3
Mvmt Flow	173	12	192	88	17	322

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	592	236	0	0	280	0
Stage 1	236	-	-	-	-	-
Stage 2	356	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.18	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.272	-
Pot Cap-1 Maneuver	472	808	-	-	1249	-
Stage 1	808	-	-	-	-	-
Stage 2	713	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	464	808	-	-	1249	-
Mov Cap-2 Maneuver	464	-	-	-	-	-
Stage 1	808	-	-	-	-	-
Stage 2	701	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	17.3	0	0.4
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	477	1249	-
HCM Lane V/C Ratio	-	-	0.389	0.013	-
HCM Control Delay (s)	-	-	17.3	7.9	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	1.8	0	-

Intersection	
Int Delay, s/veh	4.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	31	10	234	62	11	103
Future Vol, veh/h	139	13	380	181	17	233
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	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	1	0	2	0	0	1
Mvmt Flow	156	15	427	203	19	262

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	829	529	0	0	630	0
Stage 1	529	-	-	-	-	-
Stage 2	300	-	-	-	-	-
Critical Hdwy	6.41	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	342	554	-	-	962	-
Stage 1	593	-	-	-	-	-
Stage 2	754	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	334	554	-	-	962	-
Mov Cap-2 Maneuver	334	-	-	-	-	-
Stage 1	593	-	-	-	-	-
Stage 2	737	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	25.1	0	0.6
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	346	962	-
HCM Lane V/C Ratio	-	-	0.494	0.02	-
HCM Control Delay (s)	-	-	25.1	8.8	0
HCM Lane LOS	-	-	D	A	A
HCM 95th %tile Q(veh)	-	-	2.6	0.1	-

TOWNE ROAD & 156TH STREET

TRAFFIC VOLUME COUNTS
CAPACITY ANALYSIS

A & F ENGINEERING CO., LLC
TRAFFIC VOLUME SUMMARY

CLIENT :	Pulte Homes
INTERSECTION :	156st St & Towne Rd
DATE :	9/15/2016
COUNTED BY :	Miovision

	TOTAL VEHICLES (PASSENGER CARS + TRUCKS)											
	AM PEAK HOUR VOLUMES BEGINS 7:15 AM				OFF PEAK HOUR VOLUMES BEGINS				PM PEAK HOUR VOLUMES BEGINS 4:45 PM			
	L	T	R	TOTAL	L	T	R	TOTAL	L	T	R	TOTAL
NORTHBOUND		45	47	**92**						92	140	**232**
SOUTHBOUND	8	75		**83**					2	30		**32**
WESTBOUND	94		1	**95**					66		10	**76**

	PEAK HOUR FACTOR					
	AM PEAK HOUR FACTOR		OFF PEAK HOUR FACTOR		PM PEAK HOUR FACTOR	
	APPROACH	INTERSECTION	APPROACH	INTERSECTION	APPROACH	INTERSECTION
NORTHBOUND	0.77				0.85	
SOUTHBOUND	0.72	0.91			0.73	0.86
WESTBOUND	0.95				0.86	

	TRUCK PERCENTAGE											
	AM PEAK HOUR PERCENTAGE				OFF PEAK HOUR PERCENTAGE				PM PEAK HOUR PERCENTAGE			
	L	T	R	TOTAL	L	T	R	TOTAL	L	T	R	TOTAL
NORTHBOUND		6.7%	8.5%	7.6%						0.0%	0.7%	0.4%
SOUTHBOUND	0.0%	1.3%		1.2%					0.0%	6.7%		6.3%
WESTBOUND	1.1%		0.0%	1.1%					3.0%		0.0%	2.6%

HOURLY SUMMARY								
HOUR	NB	SB	NB+SB	EB	WB	EB+WB	TOTAL
6:00 AM TO 7:00 AM	33	32	65		46	46	111
7:00 AM TO 8:00 AM	85	79	164		93	93	257
8:00 AM TO 9:00 AM	63	49	112		75	75	187
4:00 PM TO 5:00 PM	156	28	184		63	63	247
5:00 PM TO 6:00 PM	232	33	265		72	72	337
6:00 PM TO 7:00 PM	113	53	166		69	69	235
TOTAL VOLUME	682	274	956		418	418	1374
PERCENTAGE	49.6%	19.9%	69.6%		30.4%	30.4%	100.0%

A & F ENGINEERING CO., LLC
TRAFFIC VOLUME SUMMARY

CLIENT : Pulte Homes
INTERSECTION : 156st St & Towne Rd
DATE : 9/15/2016

DIRECTION OF TRAVEL : NORTHBOUND

HOUR	LEFT			THROUGH			RIGHT			TOTAL		
AM TIME PERIOD	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH
6:00 AM - 7:00 AM				13	2	15	17	1	18	30	3	33
7:00 AM - 8:00 AM				40	4	44	37	4	41	77	8	85
8:00 AM - 9:00 AM				26	1	27	36	0	36	62	1	63
PM TIME PERIOD	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH
4:00 PM - 5:00 PM				62	0	62	94	0	94	156	0	156
5:00 PM - 6:00 PM				95	0	95	136	1	137	231	1	232
6:00 PM - 7:00 PM				44	1	45	67	1	68	111	2	113
PASSENGER				280 97.2%			387 98.2%			667 97.8%		
TRUCK				8 2.8%			7 1.8%			15 2.2%		
BOTH				288 42.2%			394 57.8%			682 100.0%		

DIRECTION OF TRAVEL : SOUTHBOUND

HOUR	LEFT			THROUGH			RIGHT			TOTAL		
AM TIME PERIOD	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH
6:00 AM - 7:00 AM	2	0	2	30	0	30				32	0	32
7:00 AM - 8:00 AM	8	0	8	71	0	71				79	0	79
8:00 AM - 9:00 AM	4	0	4	44	1	45				48	1	49
PM TIME PERIOD	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH
4:00 PM - 5:00 PM	2	0	2	25	1	26				27	1	28
5:00 PM - 6:00 PM	2	0	2	29	2	31				31	2	33
6:00 PM - 7:00 PM	4	1	5	46	2	48				50	3	53
PASSENGER	22 95.7%			245 97.6%						267 97.4%		
TRUCK	1 4.3%			6 2.4%						7 2.6%		
BOTH	23 8.4%			251 91.6%						274 100.0%		

DIRECTION OF TRAVEL : WESTBOUND

HOUR	LEFT			THROUGH			RIGHT			TOTAL		
AM TIME PERIOD	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH
6:00 AM - 7:00 AM	42	1	43				1	2	3	43	3	46
7:00 AM - 8:00 AM	91	1	92				1	0	1	92	1	93
8:00 AM - 9:00 AM	71	1	72				3	0	3	74	1	75
PM TIME PERIOD	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH
4:00 PM - 5:00 PM	57	0	57				6	0	6	63	0	63
5:00 PM - 6:00 PM	60	2	62				10	0	10	70	2	72
6:00 PM - 7:00 PM	59	3	62				7	0	7	66	3	69
PASSENGER	380 97.9%						28 93.3%			408 97.6%		
TRUCK	8 2.1%						2 6.7%			10 2.4%		
BOTH	388 92.8%						30 7.2%			418 100.0%		

Intersection	
Int Delay, s/veh	3.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	94	1	45	47	8	75
Future Vol, veh/h	94	1	45	47	8	75
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	-	-	0
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	1	0	7	9	0	1
Mvmt Flow	103	1	49	52	9	82

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	175	75	0	0	101	0
Stage 1	75	-	-	-	-	-
Stage 2	100	-	-	-	-	-
Critical Hdwy	6.41	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	817	992	-	-	1504	-
Stage 1	950	-	-	-	-	-
Stage 2	927	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	812	992	-	-	1504	-
Mov Cap-2 Maneuver	812	-	-	-	-	-
Stage 1	950	-	-	-	-	-
Stage 2	921	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.1	0	0.7
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	814	1504	-
HCM Lane V/C Ratio	-	-	0.128	0.006	-
HCM Control Delay (s)	-	-	10.1	7.4	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.4	0	-

Intersection	
Int Delay, s/veh	2.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	66	10	92	140	2	30
Future Vol, veh/h	66	10	92	140	2	30
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	-	-	0
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	3	0	0	1	0	7
Mvmt Flow	77	12	107	163	2	35

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	228	188	0	0	270	0
Stage 1	188	-	-	-	-	-
Stage 2	40	-	-	-	-	-
Critical Hdwy	6.43	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	758	859	-	-	1305	-
Stage 1	842	-	-	-	-	-
Stage 2	980	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	756	859	-	-	1305	-
Mov Cap-2 Maneuver	756	-	-	-	-	-
Stage 1	842	-	-	-	-	-
Stage 2	978	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.3	0	0.5
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	768	1305	-
HCM Lane V/C Ratio	-	-	0.115	0.002	-
HCM Control Delay (s)	-	-	10.3	7.8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.4	0	-

Intersection	
Int Delay, s/veh	4.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	94	1	40	47	8	64
Future Vol, veh/h	210	10	176	190	10	244
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	100	-	100	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	1	0	2	3	0	1
Mvmt Flow	231	11	193	209	11	268

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	483	193	0	0	193	0
Stage 1	193	-	-	-	-	-
Stage 2	290	-	-	-	-	-
Critical Hdwy	7.11	6.2	-	-	4.1	-
Critical Hdwy Stg 1	6.11	-	-	-	-	-
Critical Hdwy Stg 2	6.11	-	-	-	-	-
Follow-up Hdwy	3.509	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	496	854	-	-	1392	-
Stage 1	811	-	-	-	-	-
Stage 2	720	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	493	854	-	-	1392	-
Mov Cap-2 Maneuver	493	-	-	-	-	-
Stage 1	811	-	-	-	-	-
Stage 2	714	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18.2	0	0.3
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	493	854	1392	-
HCM Lane V/C Ratio	-	-	0.468	0.013	0.008	-
HCM Control Delay (s)	-	-	18.6	9.3	7.6	0
HCM Lane LOS	-	-	C	A	A	A
HCM 95th %tile Q(veh)	-	-	2.5	0	0	-

Intersection	
Int Delay, s/veh	7.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	66	10	92	140	2	30
Future Vol, veh/h	239	16	351	304	12	258
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	100	-	100	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	1	0	0	1	0	2
Mvmt Flow	278	19	408	353	14	300

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	736	408	0	0	408	0
Stage 1	408	-	-	-	-	-
Stage 2	328	-	-	-	-	-
Critical Hdwy	6.41	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	388	648	-	-	1162	-
Stage 1	673	-	-	-	-	-
Stage 2	732	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	383	648	-	-	1162	-
Mov Cap-2 Maneuver	383	-	-	-	-	-
Stage 1	673	-	-	-	-	-
Stage 2	722	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	34	0	0.4
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	383	648	1162	-
HCM Lane V/C Ratio	-	-	0.726	0.029	0.012	-
HCM Control Delay (s)	-	-	35.6	10.7	8.1	0
HCM Lane LOS	-	-	E	B	A	A
HCM 95th %tile Q(veh)	-	-	5.6	0.1	0	-

Intersection	
Int Delay, s/veh	3.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	94	1	45	47	8	75
Future Vol, veh/h	94	1	45	47	8	75
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	-	-	0
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	1	0	7	9	0	1
Mvmt Flow	124	1	59	62	11	99

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	210	90	0	0	121	0
Stage 1	90	-	-	-	-	-
Stage 2	120	-	-	-	-	-
Critical Hdwy	6.41	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	781	973	-	-	1479	-
Stage 1	936	-	-	-	-	-
Stage 2	908	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	775	973	-	-	1479	-
Mov Cap-2 Maneuver	775	-	-	-	-	-
Stage 1	936	-	-	-	-	-
Stage 2	901	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.5	0	0.7
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	777	1479	-
HCM Lane V/C Ratio	-	-	0.161	0.007	-
HCM Control Delay (s)	-	-	10.5	7.5	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.6	0	-

Intersection	
Int Delay, s/veh	2.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	66	10	92	140	2	30
Future Vol, veh/h	66	10	92	140	2	30
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	-	-	0
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	3	0	0	1	0	7
Mvmt Flow	92	14	128	195	3	42

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	273	226	0	0	324	0
Stage 1	226	-	-	-	-	-
Stage 2	47	-	-	-	-	-
Critical Hdwy	6.43	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	714	818	-	-	1247	-
Stage 1	809	-	-	-	-	-
Stage 2	973	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	713	818	-	-	1247	-
Mov Cap-2 Maneuver	713	-	-	-	-	-
Stage 1	809	-	-	-	-	-
Stage 2	971	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.8	0	0.5
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	725	1247	-
HCM Lane V/C Ratio	-	-	0.146	0.002	-
HCM Control Delay (s)	-	-	10.8	7.9	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.5	0	-

Intersection	
Int Delay, s/veh	4.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	113	1	49	56	10	79
Future Vol, veh/h	229	10	185	199	12	259
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	100	-	100	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	1	0	2	3	0	1
Mvmt Flow	252	11	203	219	13	285

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	514	203	0	0	203	0
Stage 1	203	-	-	-	-	-
Stage 2	311	-	-	-	-	-
Critical Hdwy	6.41	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	522	843	-	-	1381	-
Stage 1	833	-	-	-	-	-
Stage 2	745	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	516	843	-	-	1381	-
Mov Cap-2 Maneuver	516	-	-	-	-	-
Stage 1	833	-	-	-	-	-
Stage 2	737	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18	0	0.3
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	516	843	1381	-
HCM Lane V/C Ratio	-	-	0.488	0.013	0.01	-
HCM Control Delay (s)	-	-	18.4	9.3	7.6	0
HCM Lane LOS	-	-	C	A	A	A
HCM 95th %tile Q(veh)	-	-	2.6	0	0	-

Intersection	
Int Delay, s/veh	9.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	79	12	110	168	2	36
Future Vol, veh/h	252	18	369	332	12	264
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	100	-	100	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	1	0	0	1	0	2
Mvmt Flow	293	21	429	386	14	307

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	764	429	0	0	429	0
Stage 1	429	-	-	-	-	-
Stage 2	335	-	-	-	-	-
Critical Hdwy	6.41	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	373	630	-	-	1141	-
Stage 1	659	-	-	-	-	-
Stage 2	727	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	367	630	-	-	1141	-
Mov Cap-2 Maneuver	367	-	-	-	-	-
Stage 1	659	-	-	-	-	-
Stage 2	716	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	42	0	0.4
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	367	630	1141	-
HCM Lane V/C Ratio	-	-	0.798	0.033	0.012	-
HCM Control Delay (s)	-	-	44.2	10.9	8.2	0
HCM Lane LOS	-	-	E	B	A	A
HCM 95th %tile Q(veh)	-	-	6.8	0.1	0	-

TOWNE ROAD & 151ST STREET

TRAFFIC VOLUME COUNTS
CAPACITY ANALYSIS

A & F ENGINEERING CO., LLC
TRAFFIC VOLUME SUMMARY

CLIENT :	Pulte Homes
INTERSECTION :	151st St & Towne Rd
DATE :	9/14/2016
COUNTED BY :	Miovision

	TOTAL VEHICLES (PASSENGER CARS + TRUCKS)											
	AM PEAK HOUR VOLUMES BEGINS 7:15 AM				OFF PEAK HOUR VOLUMES BEGINS				PM PEAK HOUR VOLUMES BEGINS 5:00 PM			
	L	T	R	TOTAL	L	T	R	TOTAL	L	T	R	TOTAL
NORTHBOUND	0	90	4	**94**					2	240	5	**247**
SOUTHBOUND	0	231	4	**235**					1	106	1	**108**
EASTBOUND	2	3	1	**6**					5	1	1	**7**
WESTBOUND	4	1	0	**5**					0	1	1	**2**

	PEAK HOUR FACTOR					
	AM PEAK HOUR FACTOR		OFF PEAK HOUR FACTOR		PM PEAK HOUR FACTOR	
	APPROACH	INTERSECTION	APPROACH	INTERSECTION	APPROACH	INTERSECTION
NORTHBOUND	0.84	0.89			0.89	0.88
SOUTHBOUND	0.89				0.77	
EASTBOUND	0.50				0.58	
WESTBOUND	0.42				0.50	

	TRUCK PERCENTAGE											
	AM PEAK HOUR PERCENTAGE				OFF PEAK HOUR PERCENTAGE				PM PEAK HOUR PERCENTAGE			
	L	T	R	TOTAL	L	T	R	TOTAL	L	T	R	TOTAL
NORTHBOUND	0.0%	1.1%	0.0%	1.1%					0.0%	0.8%	0.0%	0.8%
SOUTHBOUND	0.0%	3.0%	0.0%	3.0%					0.0%	2.8%	0.0%	2.8%
EASTBOUND	0.0%	33.3%	0.0%	16.7%					0.0%	0.0%	0.0%	0.0%
WESTBOUND	0.0%	0.0%	0.0%	0.0%					0.0%	0.0%	0.0%	0.0%

HOURLY SUMMARY									
HOUR			NB	SB	NB+SB	EB	WB	EB+WB	TOTAL
6:00 AM	TO	7:00 AM	33	89	122	1	2	3	125
7:00 AM	TO	8:00 AM	84	236	320	7	6	13	333
8:00 AM	TO	9:00 AM	108	151	259	1	3	4	263
4:00 PM	TO	5:00 PM	202	76	278	5	2	7	285
5:00 PM	TO	6:00 PM	247	108	355	7	2	9	364
6:00 PM	TO	7:00 PM	151	105	256	5	10	15	271
TOTAL VOLUME			825	765	1590	26	25	51	1641
PERCENTAGE			50.3%	46.6%	96.9%	1.6%	1.5%	3.1%	100.0%

A & F ENGINEERING CO., LLC
TRAFFIC VOLUME SUMMARY

CLIENT : Pulte Homes
INTERSECTION : 151st St & Towne Rd
DATE : 9/14/2016

DIRECTION OF TRAVEL : NORTHBOUND

HOUR	LEFT			THROUGH			RIGHT			TOTAL		
AM TIME PERIOD	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH
6:00 AM - 7:00 AM	0	0	0	31	0	31	2	0	2	33	0	33
7:00 AM - 8:00 AM	0	0	0	80	0	80	3	1	4	83	1	84
8:00 AM - 9:00 AM	0	0	0	95	6	101	6	1	7	101	7	108
PM TIME PERIOD	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH
4:00 PM - 5:00 PM	0	0	0	197	1	198	4	0	4	201	1	202
5:00 PM - 6:00 PM	2	0	2	238	2	240	5	0	5	245	2	247
6:00 PM - 7:00 PM	2	0	2	143	2	145	4	0	4	149	2	151
PASSENGER	4 100.0%			784 98.6%			24 92.3%			812 98.4%		
TRUCK	0 0.0%			11 1.4%			2 7.7%			13 1.6%		
BOTH	4 0.5%			795 96.4%			26 3.2%			825 100.0%		

DIRECTION OF TRAVEL : SOUTHBOUND

HOUR	LEFT			THROUGH			RIGHT			TOTAL		
AM TIME PERIOD	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH
6:00 AM - 7:00 AM	1	0	1	85	0	85	3	0	3	89	0	89
7:00 AM - 8:00 AM	0	0	0	226	6	232	4	0	4	230	6	236
8:00 AM - 9:00 AM	1	0	1	141	6	147	3	0	3	145	6	151
PM TIME PERIOD	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH
4:00 PM - 5:00 PM	1	0	1	72	1	73	2	0	2	75	1	76
5:00 PM - 6:00 PM	1	0	1	103	3	106	1	0	1	105	3	108
6:00 PM - 7:00 PM	0	0	0	101	2	103	2	0	2	103	2	105
PASSENGER	4 100.0%			728 97.6%			15 100.0%			747 97.6%		
TRUCK	0 0.0%			18 2.4%			0 0.0%			18 2.4%		
BOTH	4 0.5%			746 97.5%			15 2.0%			765 100.0%		

DIRECTION OF TRAVEL : EASTBOUND

HOUR	LEFT			THROUGH			RIGHT			TOTAL		
AM TIME PERIOD	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH
6:00 AM - 7:00 AM	1	0	1	0	0	0	0	0	0	1	0	1
7:00 AM - 8:00 AM	2	0	2	1	1	2	3	0	3	6	1	7
8:00 AM - 9:00 AM	0	0	0	1	0	1	0	0	0	1	0	1
PM TIME PERIOD	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH
4:00 PM - 5:00 PM	0	0	0	4	0	4	1	0	1	5	0	5
5:00 PM - 6:00 PM	5	0	5	1	0	1	1	0	1	7	0	7
6:00 PM - 7:00 PM	4	0	4	1	0	1	0	0	0	5	0	5
PASSENGER	12 100.0%			8 88.9%			5 100.0%			25 96.2%		
TRUCK	0 0.0%			1 11.1%			0 0.0%			1 3.8%		
BOTH	12 46.2%			9 34.6%			5 19.2%			26 100.0%		

DIRECTION OF TRAVEL : WESTBOUND

HOUR	LEFT			THROUGH			RIGHT			TOTAL		
AM TIME PERIOD	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH
6:00 AM - 7:00 AM	2	0	2	0	0	0	0	0	0	2	0	2
7:00 AM - 8:00 AM	5	0	5	1	0	1	0	0	0	6	0	6
8:00 AM - 9:00 AM	0	0	0	1	1	2	1	0	1	2	1	3
PM TIME PERIOD	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH	PASS	TRUCK	BOTH
4:00 PM - 5:00 PM	1	0	1	1	0	1	0	0	0	2	0	2
5:00 PM - 6:00 PM	0	0	0	1	0	1	1	0	1	2	0	2
6:00 PM - 7:00 PM	8	1	9	0	0	0	1	0	1	9	1	10
PASSENGER	16 94.1%			4 80.0%			3 100.0%			23 92.0%		
TRUCK	1 5.9%			1 20.0%			0 0.0%			2 8.0%		
BOTH	17 68.0%			5 20.0%			3 12.0%			25 100.0%		

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	3	1	4	1	0	0	90	4	0	231	4
Future Vol, veh/h	2	3	1	4	1	0	0	90	4	0	231	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	0	33	0	0	0	0	0	1	0	0	3	0
Mvmt Flow	2	3	1	4	1	0	0	101	4	0	260	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	366	368	262	367	367	103	264	0	0	106	0	0
Stage 1	262	262	-	103	103	-	-	-	-	-	-	-
Stage 2	104	106	-	264	264	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.83	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.83	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.83	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4.297	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	594	515	782	593	565	957	1312	-	-	1498	-	-
Stage 1	747	638	-	908	814	-	-	-	-	-	-	-
Stage 2	907	751	-	746	694	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	593	515	782	589	565	957	1312	-	-	1498	-	-
Mov Cap-2 Maneuver	593	515	-	589	565	-	-	-	-	-	-	-
Stage 1	747	638	-	908	814	-	-	-	-	-	-	-
Stage 2	906	751	-	741	694	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.4	11.2	0	0
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1312	-	-	573	584	1498	-	-
HCM Lane V/C Ratio	-	-	-	0.012	0.01	-	-	-
HCM Control Delay (s)	0	-	-	11.4	11.2	0	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	1	1	0	1	1	2	240	5	1	106	1
Future Vol, veh/h	5	1	1	0	1	1	2	240	5	1	106	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	0	0	0	0	0	0	0	1	0	0	3	0
Mvmt Flow	6	1	1	0	1	1	2	273	6	1	120	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	404	406	121	404	404	276	122	0	0	278	0	0
Stage 1	123	123	-	280	280	-	-	-	-	-	-	-
Stage 2	281	283	-	124	124	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	561	537	936	561	539	768	1478	-	-	1296	-	-
Stage 1	886	798	-	731	683	-	-	-	-	-	-	-
Stage 2	730	681	-	885	797	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	558	535	936	558	537	768	1478	-	-	1296	-	-
Mov Cap-2 Maneuver	558	535	-	558	537	-	-	-	-	-	-	-
Stage 1	884	797	-	730	682	-	-	-	-	-	-	-
Stage 2	726	680	-	882	796	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.2	10.7	0.1	0.1
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1478	-	-	588	632	1296	-	-
HCM Lane V/C Ratio	0.002	-	-	0.014	0.004	0.001	-	-
HCM Control Delay (s)	7.4	0	-	11.2	10.7	7.8	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-

Intersection	
Intersection Delay, s/veh	10.8
Intersection LOS	B

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	234	60	342	638
Demand Flow Rate, veh/h	235	60	345	650
Vehicles Circulating, veh/h	654	423	113	96
Vehicles Exiting, veh/h	92	35	776	387
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	12.2	5.7	7.2	12.7
Approach LOS	B	A	A	B

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193	5.193
Entry Flow, veh/h	235	60	345	650
Cap Entry Lane, veh/h	588	740	1009	1027
Entry HV Adj Factor	0.995	1.000	0.992	0.982
Flow Entry, veh/h	234	60	342	638
Cap Entry, veh/h	585	740	1001	1008
V/C Ratio	0.400	0.081	0.342	0.633
Control Delay, s/veh	12.2	5.7	7.2	12.7
LOS	B	A	A	B
95th %tile Queue, veh	2	0	2	5

Intersection	
Intersection Delay, s/veh	21.1
Intersection LOS	C

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	163	51	919	565
Demand Flow Rate, veh/h	163	51	926	569
Vehicles Circulating, veh/h	492	942	92	183
Vehicles Exiting, veh/h	260	76	563	810
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	8.0	9.8	29.3	12.6
Approach LOS	A	A	D	B

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193	5.193
Entry Flow, veh/h	163	51	926	569
Cap Entry Lane, veh/h	691	441	1031	941
Entry HV Adj Factor	1.000	1.000	0.992	0.992
Flow Entry, veh/h	163	51	919	565
Cap Entry, veh/h	691	441	1023	934
V/C Ratio	0.236	0.116	0.898	0.605
Control Delay, s/veh	8.0	9.8	29.3	12.6
LOS	A	A	D	B
95th %tile Queue, veh	1	0	13	4

Intersection	
Intersection Delay, s/veh	5.5
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	8	6	126	316
Demand Flow Rate, veh/h	9	6	127	325
Vehicles Circulating, veh/h	325	125	8	6
Vehicles Exiting, veh/h	6	10	326	125
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	5.2	3.7	4.2	6.1
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193	5.193
Entry Flow, veh/h	9	6	127	325
Cap Entry Lane, veh/h	816	997	1121	1123
Entry HV Adj Factor	0.862	1.000	0.990	0.971
Flow Entry, veh/h	8	6	126	316
Cap Entry, veh/h	704	997	1110	1091
V/C Ratio	0.011	0.006	0.113	0.289
Control Delay, s/veh	5.2	3.7	4.2	6.1
LOS	A	A	A	A
95th %tile Queue, veh	0	0	0	1

Intersection	
Intersection Delay, s/veh	5.6
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	9	2	337	147
Demand Flow Rate, veh/h	9	2	340	151
Vehicles Circulating, veh/h	150	340	9	4
Vehicles Exiting, veh/h	5	9	150	338
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	3.8	4.5	6.2	4.5
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193	5.193
Entry Flow, veh/h	9	2	340	151
Cap Entry Lane, veh/h	973	804	1120	1125
Entry HV Adj Factor	1.000	1.000	0.990	0.971
Flow Entry, veh/h	9	2	337	147
Cap Entry, veh/h	973	804	1109	1093
V/C Ratio	0.009	0.002	0.304	0.134
Control Delay, s/veh	3.8	4.5	6.2	4.5
LOS	A	A	A	A
95th %tile Queue, veh	0	0	1	0

Intersection	
Intersection Delay, s/veh	12.0
Intersection LOS	B

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	235	61	363	692
Demand Flow Rate, veh/h	236	61	366	705
Vehicles Circulating, veh/h	708	443	114	97
Vehicles Exiting, veh/h	94	37	830	407
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	13.3	5.8	7.5	14.5
Approach LOS	B	A	A	B

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193	5.193
Entry Flow, veh/h	236	61	366	705
Cap Entry Lane, veh/h	557	726	1008	1025
Entry HV Adj Factor	0.994	1.000	0.992	0.982
Flow Entry, veh/h	235	61	363	692
Cap Entry, veh/h	553	726	1000	1007
V/C Ratio	0.424	0.084	0.363	0.687
Control Delay, s/veh	13.3	5.8	7.5	14.5
LOS	B	A	A	B
95th %tile Queue, veh	2	0	2	6

Intersection	
Intersection Delay, s/veh	26.5
Intersection LOS	D

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	164	51	975	589
Demand Flow Rate, veh/h	164	51	983	594
Vehicles Circulating, veh/h	517	999	93	183
Vehicles Exiting, veh/h	260	77	588	867
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	8.3	10.5	38.3	13.4
Approach LOS	A	B	E	B

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193	5.193
Entry Flow, veh/h	164	51	983	594
Cap Entry Lane, veh/h	674	416	1030	941
Entry HV Adj Factor	1.000	1.000	0.992	0.992
Flow Entry, veh/h	164	51	975	589
Cap Entry, veh/h	674	416	1021	934
V/C Ratio	0.243	0.123	0.955	0.631
Control Delay, s/veh	8.3	10.5	38.3	13.4
LOS	A	B	E	B
95th %tile Queue, veh	1	0	16	5

166TH STREET & DRIVE 1A

CAPACITY ANALYSIS

Intersection	
Int Delay, s/veh	3.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	31	10	4	31	28	12
Future Vol, veh/h	31	10	4	31	28	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	10	0	0	3	0	0
Mvmt Flow	34	11	4	34	30	13

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	34	0	76	34
Stage 1	-	-	-	-	34	-
Stage 2	-	-	-	-	42	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1591	-	932	1045
Stage 1	-	-	-	-	994	-
Stage 2	-	-	-	-	986	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1591	-	929	1045
Mov Cap-2 Maneuver	-	-	-	-	929	-
Stage 1	-	-	-	-	994	-
Stage 2	-	-	-	-	983	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.8	8.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	929	1045	-	-	1591	-
HCM Lane V/C Ratio	0.033	0.012	-	-	0.003	-
HCM Control Delay (s)	9	8.5	-	-	7.3	0
HCM Lane LOS	A	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-

Intersection	
Int Delay, s/veh	2.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	56	32	14	28	18	8
Future Vol, veh/h	56	32	14	28	18	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	61	35	15	30	20	9

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	61	0	122	61
Stage 1	-	-	-	-	61	-
Stage 2	-	-	-	-	61	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1555	-	878	1010
Stage 1	-	-	-	-	967	-
Stage 2	-	-	-	-	967	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1555	-	869	1010
Mov Cap-2 Maneuver	-	-	-	-	869	-
Stage 1	-	-	-	-	967	-
Stage 2	-	-	-	-	957	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.4	9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	869	1010	-	-	1555	-
HCM Lane V/C Ratio	0.023	0.009	-	-	0.01	-
HCM Control Delay (s)	9.2	8.6	-	-	7.3	0
HCM Lane LOS	A	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-

Intersection	
Int Delay, s/veh	3.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	36	10	4	35	28	12
Future Vol, veh/h	36	10	4	35	28	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	8	0	0	3	0	0
Mvmt Flow	39	11	4	38	30	13

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	39	0	86	39
Stage 1	-	-	-	-	39	-
Stage 2	-	-	-	-	47	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1584	-	920	1038
Stage 1	-	-	-	-	989	-
Stage 2	-	-	-	-	981	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1584	-	917	1038
Mov Cap-2 Maneuver	-	-	-	-	917	-
Stage 1	-	-	-	-	989	-
Stage 2	-	-	-	-	978	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.7	8.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	917	1038	-	-	1584	-
HCM Lane V/C Ratio	0.033	0.013	-	-	0.003	-
HCM Control Delay (s)	9.1	8.5	-	-	7.3	0
HCM Lane LOS	A	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-

Intersection	
Int Delay, s/veh	2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	65	32	14	31	18	8
Future Vol, veh/h	65	32	14	31	18	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	71	35	15	34	20	9

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	71	0	135	71
Stage 1	-	-	-	-	71	-
Stage 2	-	-	-	-	64	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1542	-	863	997
Stage 1	-	-	-	-	957	-
Stage 2	-	-	-	-	964	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1542	-	854	997
Mov Cap-2 Maneuver	-	-	-	-	854	-
Stage 1	-	-	-	-	957	-
Stage 2	-	-	-	-	954	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.3	9.1
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	854	997	-	-	1542	-
HCM Lane V/C Ratio	0.023	0.009	-	-	0.01	-
HCM Control Delay (s)	9.3	8.6	-	-	7.4	0
HCM Lane LOS	A	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-

161ST STREET & DRIVE 1B

CAPACITY ANALYSIS

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	23	69	0	0	0
Future Vol, veh/h	10	80	123	4	12	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	100	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	87	134	4	13	33

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	134	0	-	0	243	134
Stage 1	-	-	-	-	134	-
Stage 2	-	-	-	-	109	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1451	-	-	-	745	915
Stage 1	-	-	-	-	892	-
Stage 2	-	-	-	-	916	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1451	-	-	-	739	915
Mov Cap-2 Maneuver	-	-	-	-	739	-
Stage 1	-	-	-	-	892	-
Stage 2	-	-	-	-	909	-

Approach	EB	WB	SB
HCM Control Delay, s	0.8	0	9.4
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1451	-	-	-	739	915
HCM Lane V/C Ratio	0.007	-	-	-	0.018	0.036
HCM Control Delay (s)	7.5	-	-	-	10	9.1
HCM Lane LOS	A	-	-	-	B	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1	0.1

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	61	34	0	0	0
Future Vol, veh/h	34	152	125	14	8	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	100	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	37	165	136	15	9	22

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	136	0	-	0	375	136
Stage 1	-	-	-	-	136	-
Stage 2	-	-	-	-	239	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1448	-	-	-	626	913
Stage 1	-	-	-	-	890	-
Stage 2	-	-	-	-	801	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1448	-	-	-	610	913
Mov Cap-2 Maneuver	-	-	-	-	610	-
Stage 1	-	-	-	-	890	-
Stage 2	-	-	-	-	781	-

Approach	EB	WB	SB
HCM Control Delay, s	1.4	0	9.6
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1448	-	-	-	610	913
HCM Lane V/C Ratio	0.026	-	-	-	0.014	0.024
HCM Control Delay (s)	7.6	-	-	-	11	9
HCM Lane LOS	A	-	-	-	B	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0	0.1

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	27	83	0	0	0
Future Vol, veh/h	10	84	137	4	12	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	100	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	91	149	4	13	33

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	149	0	-	0	262	149
Stage 1	-	-	-	-	149	-
Stage 2	-	-	-	-	113	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1432	-	-	-	727	898
Stage 1	-	-	-	-	879	-
Stage 2	-	-	-	-	912	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1432	-	-	-	721	898
Mov Cap-2 Maneuver	-	-	-	-	721	-
Stage 1	-	-	-	-	879	-
Stage 2	-	-	-	-	905	-

Approach	EB	WB	SB
HCM Control Delay, s	0.8	0	9.5
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1432	-	-	-	721	898
HCM Lane V/C Ratio	0.008	-	-	-	0.018	0.036
HCM Control Delay (s)	7.5	-	-	-	10.1	9.2
HCM Lane LOS	A	-	-	-	B	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1	0.1

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	73	41	0	0	0
Future Vol, veh/h	34	164	132	14	8	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	100	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	37	178	143	15	9	22

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	143	0	-	0	395	143
Stage 1	-	-	-	-	143	-
Stage 2	-	-	-	-	252	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1440	-	-	-	610	905
Stage 1	-	-	-	-	884	-
Stage 2	-	-	-	-	790	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1440	-	-	-	594	905
Mov Cap-2 Maneuver	-	-	-	-	594	-
Stage 1	-	-	-	-	884	-
Stage 2	-	-	-	-	770	-

Approach	EB	WB	SB
HCM Control Delay, s	1.3	0	9.7
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1440	-	-	-	594	905
HCM Lane V/C Ratio	0.026	-	-	-	0.015	0.024
HCM Control Delay (s)	7.6	-	-	-	11.2	9.1
HCM Lane LOS	A	-	-	-	B	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0	0.1

156TH STREET & DRIVE 2A

CAPACITY ANALYSIS

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	55	95	0	0	0
Future Vol, veh/h	10	188	159	5	14	33
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	100	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	204	173	5	15	36

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	173	0	-	0	399	173
Stage 1	-	-	-	-	173	-
Stage 2	-	-	-	-	226	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1404	-	-	-	607	871
Stage 1	-	-	-	-	857	-
Stage 2	-	-	-	-	812	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1404	-	-	-	602	871
Mov Cap-2 Maneuver	-	-	-	-	602	-
Stage 1	-	-	-	-	857	-
Stage 2	-	-	-	-	806	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	9.8
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1404	-	-	-	602	871
HCM Lane V/C Ratio	0.008	-	-	-	0.025	0.041
HCM Control Delay (s)	7.6	-	-	-	11.1	9.3
HCM Lane LOS	A	-	-	-	B	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1	0.1

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	142	76	0	0	0
Future Vol, veh/h	37	250	222	16	9	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	100	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	40	272	241	17	10	24

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	241	0	-	0	593	241
Stage 1	-	-	-	-	241	-
Stage 2	-	-	-	-	352	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1326	-	-	-	468	798
Stage 1	-	-	-	-	799	-
Stage 2	-	-	-	-	712	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1326	-	-	-	454	798
Mov Cap-2 Maneuver	-	-	-	-	454	-
Stage 1	-	-	-	-	799	-
Stage 2	-	-	-	-	691	-

Approach	EB	WB	SB
HCM Control Delay, s	1	0	10.7
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1326	-	-	-	454	798
HCM Lane V/C Ratio	0.03	-	-	-	0.022	0.03
HCM Control Delay (s)	7.8	-	-	-	13.1	9.7
HCM Lane LOS	A	-	-	-	B	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1	0.1

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	66	114	0	0	0
Future Vol, veh/h	10	199	178	5	14	33
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	100	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	216	193	5	15	36

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	193	0	-	0	431	193
Stage 1	-	-	-	-	193	-
Stage 2	-	-	-	-	238	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1380	-	-	-	581	849
Stage 1	-	-	-	-	840	-
Stage 2	-	-	-	-	802	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1380	-	-	-	576	849
Mov Cap-2 Maneuver	-	-	-	-	576	-
Stage 1	-	-	-	-	840	-
Stage 2	-	-	-	-	796	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	10
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1380	-	-	-	576	849
HCM Lane V/C Ratio	0.008	-	-	-	0.026	0.042
HCM Control Delay (s)	7.6	-	-	-	11.4	9.4
HCM Lane LOS	A	-	-	-	B	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1	0.1

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	170	91	0	0	0
Future Vol, veh/h	37	278	237	16	9	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	100	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	40	302	258	17	10	24

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	258	0	-	0	641	258
Stage 1	-	-	-	-	258	-
Stage 2	-	-	-	-	383	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1307	-	-	-	439	781
Stage 1	-	-	-	-	785	-
Stage 2	-	-	-	-	689	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1307	-	-	-	426	781
Mov Cap-2 Maneuver	-	-	-	-	426	-
Stage 1	-	-	-	-	785	-
Stage 2	-	-	-	-	668	-

Approach	EB	WB	SB
HCM Control Delay, s	0.9	0	10.9
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1307	-	-	-	426	781
HCM Lane V/C Ratio	0.031	-	-	-	0.023	0.031
HCM Control Delay (s)	7.8	-	-	-	13.6	9.8
HCM Lane LOS	A	-	-	-	B	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1	0.1

156TH STREET & DRIVE 3A

CAPACITY ANALYSIS

Intersection	
Int Delay, s/veh	1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↱	↰	↑	↰	↱
Traffic Vol, veh/h	55	0	0	95	0	0
Future Vol, veh/h	190	10	3	189	31	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	100	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	207	11	3	205	34	9

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	207	0	419	207
Stage 1	-	-	-	-	207	-
Stage 2	-	-	-	-	212	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1364	-	591	833
Stage 1	-	-	-	-	828	-
Stage 2	-	-	-	-	823	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1364	-	590	833
Mov Cap-2 Maneuver	-	-	-	-	590	-
Stage 1	-	-	-	-	828	-
Stage 2	-	-	-	-	821	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	11.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	590	833	-	-	1364	-
HCM Lane V/C Ratio	0.057	0.01	-	-	0.002	-
HCM Control Delay (s)	11.5	9.4	-	-	7.6	-
HCM Lane LOS	B	A	-	-	A	-
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↱	↰	↑	↰	↱
Traffic Vol, veh/h	142	0	0	76	0	0
Future Vol, veh/h	282	34	9	235	20	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	100	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	307	37	10	255	22	5

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	307	0	582	307
Stage 1	-	-	-	-	307	-
Stage 2	-	-	-	-	275	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1254	-	475	733
Stage 1	-	-	-	-	746	-
Stage 2	-	-	-	-	771	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1254	-	471	733
Mov Cap-2 Maneuver	-	-	-	-	471	-
Stage 1	-	-	-	-	746	-
Stage 2	-	-	-	-	765	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	12.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	471	733	-	-	1254	-
HCM Lane V/C Ratio	0.046	0.007	-	-	0.008	-
HCM Control Delay (s)	13	9.9	-	-	7.9	-
HCM Lane LOS	B	A	-	-	A	-
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-

Intersection	
Int Delay, s/veh	1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	66	0	0	114	0	0
Future Vol, veh/h	201	10	3	208	31	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	100	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	218	11	3	226	34	9

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	218	0	451	218
Stage 1	-	-	-	-	218	-
Stage 2	-	-	-	-	233	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1352	-	566	822
Stage 1	-	-	-	-	818	-
Stage 2	-	-	-	-	806	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1352	-	565	822
Mov Cap-2 Maneuver	-	-	-	-	565	-
Stage 1	-	-	-	-	818	-
Stage 2	-	-	-	-	804	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	11.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	565	822	-	-	1352	-
HCM Lane V/C Ratio	0.06	0.011	-	-	0.002	-
HCM Control Delay (s)	11.8	9.4	-	-	7.7	-
HCM Lane LOS	B	A	-	-	A	-
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	170	0	0	91	0	0
Future Vol, veh/h	310	34	9	250	20	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	100	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	337	37	10	272	22	5

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	337	0	628	337
Stage 1	-	-	-	-	337	-
Stage 2	-	-	-	-	291	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1222	-	447	705
Stage 1	-	-	-	-	723	-
Stage 2	-	-	-	-	759	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1222	-	443	705
Mov Cap-2 Maneuver	-	-	-	-	443	-
Stage 1	-	-	-	-	723	-
Stage 2	-	-	-	-	753	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	12.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	443	705	-	-	1222	-
HCM Lane V/C Ratio	0.049	0.008	-	-	0.008	-
HCM Control Delay (s)	13.5	10.1	-	-	8	-
HCM Lane LOS	B	B	-	-	A	-
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-

TOWNE ROAD & DRIVE 3B/DRIVE 5B

CAPACITY ANALYSIS

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	0	0	0	0	87	0	0	191	0
Future Vol, veh/h	39	0	51	14	0	6	17	321	4	3	470	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	150	-	-	-	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	42	0	55	15	0	7	18	349	4	3	511	15

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	908	907	511	933	905	351	511	0	0	353	0	0
Stage 1	517	517	-	388	388	-	-	-	-	-	-	-
Stage 2	391	390	-	545	517	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	256	276	563	246	276	692	1054	-	-	1206	-	-
Stage 1	541	534	-	636	609	-	-	-	-	-	-	-
Stage 2	633	608	-	523	534	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	250	270	563	218	270	692	1054	-	-	1206	-	-
Mov Cap-2 Maneuver	250	270	-	218	270	-	-	-	-	-	-	-
Stage 1	532	532	-	625	599	-	-	-	-	-	-	-
Stage 2	616	598	-	470	532	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16.5	19	0.4	0
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1054	-	-	250	563	218	692	1206	-	-
HCM Lane V/C Ratio	0.018	-	-	0.17	0.098	0.07	0.009	0.003	-	-
HCM Control Delay (s)	8.5	-	-	22.3	12.1	22.7	10.3	8	0	-
HCM Lane LOS	A	-	-	C	B	C	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.6	0.3	0.2	0	0	-	-

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	0	0	0	0	239	0	0	102	0
Future Vol, veh/h	25	0	31	9	0	6	54	631	15	9	451	43
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	150	-	-	-	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	27	0	34	10	0	7	59	686	16	10	490	47

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1325	1330	490	1338	1321	694	490	0	0	702	0	0
Stage 1	510	510	-	811	811	-	-	-	-	-	-	-
Stage 2	815	820	-	527	510	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	133	155	578	130	157	443	1073	-	-	895	-	-
Stage 1	546	538	-	373	393	-	-	-	-	-	-	-
Stage 2	371	389	-	535	538	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	124	144	578	116	146	443	1073	-	-	895	-	-
Mov Cap-2 Maneuver	124	144	-	116	146	-	-	-	-	-	-	-
Stage 1	516	529	-	352	371	-	-	-	-	-	-	-
Stage 2	345	368	-	496	529	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	25.2	28.6	0.7	0.2
HCM LOS	D	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1073	-	-	124	578	116	443	895	-	-
HCM Lane V/C Ratio	0.055	-	-	0.219	0.058	0.084	0.015	0.011	-	-
HCM Control Delay (s)	8.5	-	-	42	11.6	38.9	13.2	9.1	0	-
HCM Lane LOS	A	-	-	E	B	E	B	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.8	0.2	0.3	0	0	-	-

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	0	0	0	0	105	0	0	231	0
Future Vol, veh/h	39	0	51	14	0	6	17	339	4	3	510	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	150	-	-	-	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	42	0	55	15	0	7	18	368	4	3	554	15

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	972	971	554	997	969	371	554	0	0	373	0	0
Stage 1	561	561	-	408	408	-	-	-	-	-	-	-
Stage 2	411	410	-	589	561	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	232	253	532	223	254	675	1016	-	-	1185	-	-
Stage 1	512	510	-	620	597	-	-	-	-	-	-	-
Stage 2	618	595	-	494	510	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	226	248	532	196	249	675	1016	-	-	1185	-	-
Mov Cap-2 Maneuver	226	248	-	196	249	-	-	-	-	-	-	-
Stage 1	503	508	-	609	586	-	-	-	-	-	-	-
Stage 2	601	584	-	441	508	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	17.8	20.6	0.4	0
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1016	-	-	226	532	196	675	1185	-	-
HCM Lane V/C Ratio	0.018	-	-	0.188	0.104	0.078	0.01	0.003	-	-
HCM Control Delay (s)	8.6	-	-	24.6	12.6	24.9	10.4	8	0	-
HCM Lane LOS	A	-	-	C	B	C	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.7	0.3	0.2	0	0	-	-

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	0	0	0	0	286	0	0	122	0
Future Vol, veh/h	25	0	31	9	0	6	54	678	15	9	471	43
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	150	-	-	-	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	27	0	34	10	0	7	59	737	16	10	512	47

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1398	1403	512	1411	1395	745	512	0	0	753	0	0
Stage 1	532	532	-	863	863	-	-	-	-	-	-	-
Stage 2	866	871	-	548	532	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	118	140	562	116	141	414	1053	-	-	857	-	-
Stage 1	531	526	-	349	372	-	-	-	-	-	-	-
Stage 2	348	368	-	521	526	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	110	130	562	103	131	414	1053	-	-	857	-	-
Mov Cap-2 Maneuver	110	130	-	103	131	-	-	-	-	-	-	-
Stage 1	501	517	-	329	351	-	-	-	-	-	-	-
Stage 2	323	347	-	481	517	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	28	31.7	0.6	0.2
HCM LOS	D	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1053	-	-	110	562	103	414	857	-	-
HCM Lane V/C Ratio	0.056	-	-	0.247	0.06	0.095	0.016	0.011	-	-
HCM Control Delay (s)	8.6	-	-	48.1	11.8	43.6	13.8	9.2	0	-
HCM Lane LOS	A	-	-	E	B	E	B	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.9	0.2	0.3	0	0	-	-

151ST STREET & DRIVE 3C

CAPACITY ANALYSIS

Intersection	
Int Delay, s/veh	5.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	7	5	0	0	0
Future Vol, veh/h	14	16	14	5	15	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	15	17	15	5	16	43

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	21	0	-	0	66	18
Stage 1	-	-	-	-	18	-
Stage 2	-	-	-	-	48	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1595	-	-	-	939	1061
Stage 1	-	-	-	-	1005	-
Stage 2	-	-	-	-	974	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1595	-	-	-	930	1061
Mov Cap-2 Maneuver	-	-	-	-	930	-
Stage 1	-	-	-	-	1005	-
Stage 2	-	-	-	-	965	-

Approach	EB	WB	SB
HCM Control Delay, s	3.4	0	8.6
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1595	-	-	-	930	1061
HCM Lane V/C Ratio	0.01	-	-	-	0.018	0.041
HCM Control Delay (s)	7.3	-	-	-	8.9	8.5
HCM Lane LOS	A	-	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1	0.1

Intersection	
Int Delay, s/veh	4.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	7	2	0	0	0
Future Vol, veh/h	45	22	17	17	10	27
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	100	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	49	24	18	18	11	29

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	18	0	-	0	140	18
Stage 1	-	-	-	-	18	-
Stage 2	-	-	-	-	122	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1599	-	-	-	853	1061
Stage 1	-	-	-	-	1005	-
Stage 2	-	-	-	-	903	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1599	-	-	-	827	1061
Mov Cap-2 Maneuver	-	-	-	-	827	-
Stage 1	-	-	-	-	1005	-
Stage 2	-	-	-	-	875	-

Approach	EB	WB	SB
HCM Control Delay, s	4.9	0	8.7
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1599	-	-	-	827	1061
HCM Lane V/C Ratio	0.031	-	-	-	0.013	0.028
HCM Control Delay (s)	7.3	-	-	-	9.4	8.5
HCM Lane LOS	A	-	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0	0.1

Intersection	
Int Delay, s/veh	5.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	9	6	0	0	0
Future Vol, veh/h	14	18	15	5	15	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	100	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	15	20	16	5	16	43

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	16	0	-	0	66	16
Stage 1	-	-	-	-	16	-
Stage 2	-	-	-	-	50	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1602	-	-	-	939	1063
Stage 1	-	-	-	-	1007	-
Stage 2	-	-	-	-	972	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1602	-	-	-	930	1063
Mov Cap-2 Maneuver	-	-	-	-	930	-
Stage 1	-	-	-	-	1007	-
Stage 2	-	-	-	-	963	-

Approach	EB	WB	SB
HCM Control Delay, s	3.2	0	8.6
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1602	-	-	-	930	1063
HCM Lane V/C Ratio	0.009	-	-	-	0.018	0.041
HCM Control Delay (s)	7.3	-	-	-	8.9	8.5
HCM Lane LOS	A	-	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1	0.1

Intersection	
Int Delay, s/veh	4.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	8	2	0	0	0
Future Vol, veh/h	45	23	17	17	10	27
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	100	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	49	25	18	18	11	29

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	18	0	-	0	141	18
Stage 1	-	-	-	-	18	-
Stage 2	-	-	-	-	123	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1599	-	-	-	852	1061
Stage 1	-	-	-	-	1005	-
Stage 2	-	-	-	-	902	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1599	-	-	-	826	1061
Mov Cap-2 Maneuver	-	-	-	-	826	-
Stage 1	-	-	-	-	1005	-
Stage 2	-	-	-	-	874	-

Approach	EB	WB	SB
HCM Control Delay, s	4.8	0	8.7
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1599	-	-	-	826	1061
HCM Lane V/C Ratio	0.031	-	-	-	0.013	0.028
HCM Control Delay (s)	7.3	-	-	-	9.4	8.5
HCM Lane LOS	A	-	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0	0.1

151ST STREET & DRIVE 4A/DRIVE 5A

CAPACITY ANALYSIS

Intersection	
Int Delay, s/veh	5.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	6	0	0	5	0	0	0	0	0	0	0
Future Vol, veh/h	1	62	1	19	34	30	2	0	58	88	0	4
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	-	-	100	-	-	100	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	67	1	21	37	33	2	0	63	96	0	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	37	0	0	67	0	0	150	148	67	179	148	37
Stage 1	-	-	-	-	-	-	70	70	-	78	78	-
Stage 2	-	-	-	-	-	-	80	78	-	101	70	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1574	-	-	1535	-	-	818	743	997	783	743	1035
Stage 1	-	-	-	-	-	-	940	837	-	931	830	-
Stage 2	-	-	-	-	-	-	929	830	-	905	837	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1574	-	-	1535	-	-	805	732	997	725	732	1035
Mov Cap-2 Maneuver	-	-	-	-	-	-	805	732	-	725	732	-
Stage 1	-	-	-	-	-	-	939	836	-	930	818	-
Stage 2	-	-	-	-	-	-	912	818	-	847	836	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	1.7	8.9	10.6
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	805	997	1574	-	-	1535	-	-	725	1035
HCM Lane V/C Ratio	0.003	0.063	0.001	-	-	0.013	-	-	0.132	0.004
HCM Control Delay (s)	9.5	8.9	7.3	0	-	7.4	0	-	10.7	8.5
HCM Lane LOS	A	A	A	A	-	A	A	-	B	A
HCM 95th %tile Q(veh)	0	0.2	0	-	-	0	-	-	0.5	0

Intersection	
Int Delay, s/veh	4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	7	0	0	4	0	0	0	0	0	0	0
Future Vol, veh/h	5	51	3	63	70	95	2	0	37	55	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	100	-	-	100	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	55	3	68	76	103	2	0	40	60	0	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	76	0	0	55	0	0	281	279	55	299	279	76
Stage 1	-	-	-	-	-	-	66	66	-	213	213	-
Stage 2	-	-	-	-	-	-	215	213	-	86	66	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1523	-	-	1550	-	-	671	629	1012	653	629	985
Stage 1	-	-	-	-	-	-	945	840	-	789	726	-
Stage 2	-	-	-	-	-	-	787	726	-	922	840	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1523	-	-	1550	-	-	642	596	1012	602	596	985
Mov Cap-2 Maneuver	-	-	-	-	-	-	642	596	-	602	596	-
Stage 1	-	-	-	-	-	-	942	837	-	787	690	-
Stage 2	-	-	-	-	-	-	746	690	-	883	837	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	2.1	8.8	11.4
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	642	1012	1523	-	-	1550	-	-	602	985
HCM Lane V/C Ratio	0.003	0.04	0.004	-	-	0.044	-	-	0.099	0.003
HCM Control Delay (s)	10.6	8.7	7.4	0	-	7.4	0	-	11.6	8.7
HCM Lane LOS	B	A	A	A	-	A	A	-	B	A
HCM 95th %tile Q(veh)	0	0.1	0	-	-	0.1	-	-	0.3	0

Intersection	
Int Delay, s/veh	5.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	7	0	0	6	0	0	0	0	0	0	0
Future Vol, veh/h	1	63	1	19	35	30	2	0	58	88	0	4
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	-	-	100	-	-	100	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	68	1	21	38	33	2	0	63	96	0	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	38	0	0	68	0	0	153	150	68	181	150	38
Stage 1	-	-	-	-	-	-	71	71	-	79	79	-
Stage 2	-	-	-	-	-	-	82	79	-	102	71	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1572	-	-	1533	-	-	814	742	995	781	742	1034
Stage 1	-	-	-	-	-	-	939	836	-	930	829	-
Stage 2	-	-	-	-	-	-	926	829	-	904	836	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1572	-	-	1533	-	-	801	731	995	723	731	1034
Mov Cap-2 Maneuver	-	-	-	-	-	-	801	731	-	723	731	-
Stage 1	-	-	-	-	-	-	938	835	-	929	817	-
Stage 2	-	-	-	-	-	-	909	817	-	846	835	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	1.7	8.9	10.6
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	801	995	1572	-	-	1533	-	-	723	1034
HCM Lane V/C Ratio	0.003	0.063	0.001	-	-	0.013	-	-	0.132	0.004
HCM Control Delay (s)	9.5	8.9	7.3	0	-	7.4	0	-	10.7	8.5
HCM Lane LOS	A	A	A	A	-	A	A	-	B	A
HCM 95th %tile Q(veh)	0	0.2	0	-	-	0	-	-	0.5	0

Intersection	
Int Delay, s/veh	4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	8	0	0	4	0	0	0	0	0	0	0
Future Vol, veh/h	5	52	3	63	70	95	2	0	37	55	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	100	-	-	100	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	57	3	68	76	103	2	0	40	60	0	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	76	0	0	57	0	0	282	280	57	301	280	76
Stage 1	-	-	-	-	-	-	67	67	-	213	213	-
Stage 2	-	-	-	-	-	-	215	213	-	88	67	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1523	-	-	1547	-	-	670	628	1009	651	628	985
Stage 1	-	-	-	-	-	-	943	839	-	789	726	-
Stage 2	-	-	-	-	-	-	787	726	-	920	839	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1523	-	-	1547	-	-	641	595	1009	600	595	985
Mov Cap-2 Maneuver	-	-	-	-	-	-	641	595	-	600	595	-
Stage 1	-	-	-	-	-	-	940	836	-	787	690	-
Stage 2	-	-	-	-	-	-	746	690	-	881	836	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	2.1	8.8	11.5
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	641	1009	1523	-	-	1547	-	-	600	985
HCM Lane V/C Ratio	0.003	0.04	0.004	-	-	0.044	-	-	0.1	0.003
HCM Control Delay (s)	10.6	8.7	7.4	0	-	7.4	0	-	11.7	8.7
HCM Lane LOS	B	A	A	A	-	A	A	-	B	A
HCM 95th %tile Q(veh)	0	0.1	0	-	-	0.1	-	-	0.3	0

151ST STREET & DRIVE 4B

CAPACITY ANALYSIS

Intersection	
Int Delay, s/veh	5.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↱	↰	↑	↰	↱
Traffic Vol, veh/h	6	0	0	5	0	0
Future Vol, veh/h	16	4	16	24	11	48
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	0	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	17	4	17	26	12	52

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	17	0	78	17
Stage 1	-	-	-	-	17	-
Stage 2	-	-	-	-	61	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1600	-	925	1062
Stage 1	-	-	-	-	1006	-
Stage 2	-	-	-	-	962	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1600	-	915	1062
Mov Cap-2 Maneuver	-	-	-	-	915	-
Stage 1	-	-	-	-	1006	-
Stage 2	-	-	-	-	952	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.9	8.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	915	1062	-	-	1600	-
HCM Lane V/C Ratio	0.013	0.049	-	-	0.011	-
HCM Control Delay (s)	9	8.6	-	-	7.3	-
HCM Lane LOS	A	A	-	-	A	-
HCM 95th %tile Q(veh)	0	0.2	-	-	0	-

Intersection	
Int Delay, s/veh	4.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↱	↰	↑	↰	↱
Traffic Vol, veh/h	7	0	0	4	0	0
Future Vol, veh/h	29	12	52	23	7	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	100	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	32	13	57	25	8	33

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	32	0	170	32
Stage 1	-	-	-	-	32	-
Stage 2	-	-	-	-	138	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1580	-	820	1042
Stage 1	-	-	-	-	991	-
Stage 2	-	-	-	-	889	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1580	-	790	1042
Mov Cap-2 Maneuver	-	-	-	-	790	-
Stage 1	-	-	-	-	991	-
Stage 2	-	-	-	-	857	-

Approach	EB	WB	NB
HCM Control Delay, s	0	5.1	8.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	790	1042	-	-	1580	-
HCM Lane V/C Ratio	0.01	0.031	-	-	0.036	-
HCM Control Delay (s)	9.6	8.6	-	-	7.4	-
HCM Lane LOS	A	A	-	-	A	-
HCM 95th %tile Q(veh)	0	0.1	-	-	0.1	-

Intersection	
Int Delay, s/veh	5.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	7	0	0	6	0	0
Future Vol, veh/h	17	4	16	25	11	48
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	100	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	18	4	17	27	12	52

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	18	0	80	18
Stage 1	-	-	-	-	18	-
Stage 2	-	-	-	-	62	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1599	-	922	1061
Stage 1	-	-	-	-	1005	-
Stage 2	-	-	-	-	961	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1599	-	912	1061
Mov Cap-2 Maneuver	-	-	-	-	912	-
Stage 1	-	-	-	-	1005	-
Stage 2	-	-	-	-	951	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.8	8.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	912	1061	-	-	1599	-
HCM Lane V/C Ratio	0.013	0.049	-	-	0.011	-
HCM Control Delay (s)	9	8.6	-	-	7.3	-
HCM Lane LOS	A	A	-	-	A	-
HCM 95th %tile Q(veh)	0	0.2	-	-	0	-

Intersection	
Int Delay, s/veh	4.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	8	0	0	4	0	0
Future Vol, veh/h	30	12	52	23	7	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	100	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	33	13	57	25	8	33

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	33	0	171	33
Stage 1	-	-	-	-	33	-
Stage 2	-	-	-	-	138	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1579	-	819	1041
Stage 1	-	-	-	-	989	-
Stage 2	-	-	-	-	889	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1579	-	789	1041
Mov Cap-2 Maneuver	-	-	-	-	789	-
Stage 1	-	-	-	-	989	-
Stage 2	-	-	-	-	857	-

Approach	EB	WB	NB
HCM Control Delay, s	0	5.1	8.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	789	1041	-	-	1579	-
HCM Lane V/C Ratio	0.01	0.031	-	-	0.036	-
HCM Control Delay (s)	9.6	8.6	-	-	7.4	-
HCM Lane LOS	A	A	-	-	A	-
HCM 95th %tile Q(veh)	0	0.1	-	-	0.1	-

SHELBOURNE ROAD & DRIVE 5C

CAPACITY ANALYSIS

Intersection	
Int Delay, s/veh	2.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	18	0	0	31
Future Vol, veh/h	23	4	18	8	1	31
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	-	-	100	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	2	0	0	2
Mvmt Flow	25	4	20	9	1	34

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	56	20	0	0	20	0
Stage 1	20	-	-	-	-	-
Stage 2	36	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	957	1064	-	-	1609	-
Stage 1	1008	-	-	-	-	-
Stage 2	992	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	956	1064	-	-	1609	-
Mov Cap-2 Maneuver	956	-	-	-	-	-
Stage 1	1008	-	-	-	-	-
Stage 2	991	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.8	0	0.2
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	971	1609	-
HCM Lane V/C Ratio	-	-	0.03	0.001	-
HCM Control Delay (s)	-	-	8.8	7.2	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	1.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	52	0	0	14
Future Vol, veh/h	15	3	52	25	5	14
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	-	-	100	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	2	0	0	2
Mvmt Flow	16	3	57	27	5	15

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	83	57	0	0	57	0
Stage 1	57	-	-	-	-	-
Stage 2	26	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	924	1015	-	-	1560	-
Stage 1	971	-	-	-	-	-
Stage 2	1002	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	921	1015	-	-	1560	-
Mov Cap-2 Maneuver	921	-	-	-	-	-
Stage 1	971	-	-	-	-	-
Stage 2	999	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.9	0	1.9
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	935	1560	-
HCM Lane V/C Ratio	-	-	0.021	0.003	-
HCM Control Delay (s)	-	-	8.9	7.3	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	2.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	22	0	0	37
Future Vol, veh/h	23	4	22	8	1	37
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	-	-	100	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	2	0	0	2
Mvmt Flow	25	4	24	9	1	40

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	66	24	0	0	24	0
Stage 1	24	-	-	-	-	-
Stage 2	42	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	944	1058	-	-	1604	-
Stage 1	1004	-	-	-	-	-
Stage 2	986	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	943	1058	-	-	1604	-
Mov Cap-2 Maneuver	943	-	-	-	-	-
Stage 1	1004	-	-	-	-	-
Stage 2	985	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.9	0	0.2
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	958	1604	-
HCM Lane V/C Ratio	-	-	0.031	0.001	-
HCM Control Delay (s)	-	-	8.9	7.2	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	1.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	62	0	0	17
Future Vol, veh/h	15	3	62	25	5	17
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	-	-	100	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	2	0	0	2
Mvmt Flow	16	3	67	27	5	18

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	96	67	0	0	67	0
Stage 1	67	-	-	-	-	-
Stage 2	29	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	908	1002	-	-	1547	-
Stage 1	961	-	-	-	-	-
Stage 2	999	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	905	1002	-	-	1547	-
Mov Cap-2 Maneuver	905	-	-	-	-	-
Stage 1	961	-	-	-	-	-
Stage 2	996	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9	0	1.7
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	920	1547	-
HCM Lane V/C Ratio	-	-	0.021	0.004	-
HCM Control Delay (s)	-	-	9	7.3	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

TOWNE ROAD & DRIVE 6A

CAPACITY ANALYSIS

Intersection	
Int Delay, s/veh	3.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	89	225	0
Future Vol, veh/h	89	99	47	216	581	99
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	0	150	-	-	100
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	97	108	51	235	632	108

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	969	632	632	0	-	0
Stage 1	632	-	-	-	-	-
Stage 2	337	-	-	-	-	-
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	281	480	951	-	-	-
Stage 1	530	-	-	-	-	-
Stage 2	723	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	266	480	951	-	-	-
Mov Cap-2 Maneuver	266	-	-	-	-	-
Stage 1	530	-	-	-	-	-
Stage 2	684	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	20.1	1.6	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	951	-	266	480	-	-
HCM Lane V/C Ratio	0.054	-	0.364	0.224	-	-
HCM Control Delay (s)	9	-	26.1	14.7	-	-
HCM Lane LOS	A	-	D	B	-	-
HCM 95th %tile Q(veh)	0.2	-	1.6	0.9	-	-

Intersection	
Int Delay, s/veh	5.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	247	107	0
Future Vol, veh/h	94	50	57	715	423	68
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	200	200	-	-	100
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	102	54	62	777	460	74

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1361	460	460	0	-	0
Stage 1	460	-	-	-	-	-
Stage 2	901	-	-	-	-	-
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	163	601	1101	-	-	-
Stage 1	636	-	-	-	-	-
Stage 2	396	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	154	601	1101	-	-	-
Mov Cap-2 Maneuver	154	-	-	-	-	-
Stage 1	636	-	-	-	-	-
Stage 2	374	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	46.7	0.6	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1101	-	154	601	-	-
HCM Lane V/C Ratio	0.056	-	0.663	0.09	-	-
HCM Control Delay (s)	8.5	-	65.4	11.6	-	-
HCM Lane LOS	A	-	F	B	-	-
HCM 95th %tile Q(veh)	0.2	-	3.7	0.3	-	-

Intersection	
Int Delay, s/veh	3.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	108	272	0
Future Vol, veh/h	89	99	47	235	628	99
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	0	150	-	-	100
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	97	108	51	255	683	108

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1041	683	683	0	-	0
Stage 1	683	-	-	-	-	-
Stage 2	358	-	-	-	-	-
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	255	449	910	-	-	-
Stage 1	502	-	-	-	-	-
Stage 2	707	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	241	449	910	-	-	-
Mov Cap-2 Maneuver	241	-	-	-	-	-
Stage 1	502	-	-	-	-	-
Stage 2	667	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	22.2	1.5	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	910	-	241	449	-	-
HCM Lane V/C Ratio	0.056	-	0.401	0.24	-	-
HCM Control Delay (s)	9.2	-	29.6	15.5	-	-
HCM Lane LOS	A	-	D	C	-	-
HCM 95th %tile Q(veh)	0.2	-	1.8	0.9	-	-

Intersection	
Int Delay, s/veh	5.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	296	128	0
Future Vol, veh/h	94	50	57	764	444	68
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	0	150	-	-	100
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	102	54	62	830	483	74

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1437	483	483	0	-	0
Stage 1	483	-	-	-	-	-
Stage 2	954	-	-	-	-	-
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	147	584	1080	-	-	-
Stage 1	620	-	-	-	-	-
Stage 2	374	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	139	584	1080	-	-	-
Mov Cap-2 Maneuver	139	-	-	-	-	-
Stage 1	620	-	-	-	-	-
Stage 2	353	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	57.2	0.6	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1080	-	139	584	-	-
HCM Lane V/C Ratio	0.057	-	0.735	0.093	-	-
HCM Control Delay (s)	8.5	-	81.4	11.8	-	-
HCM Lane LOS	A	-	F	B	-	-
HCM 95th %tile Q(veh)	0.2	-	4.3	0.3	-	-