PASEOS AT FOOTHILL RANCH
TRAFFIC IMPACT ANALYSIS

City of Lake Forest

Prepared for

TRUMARK HOMES LLC

Prepared by

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EXECUTIVE SUMMARY

This study analyzes forecast traffic conditions associated with the proposed Paseos at Foothill Ranch Project in the City of Lake Forest planned to open in 2015. The proposed project consists of 75 single-family dwelling units and is surrounded by Auto Center Drive and Towne Centre Drive.

The proposed project is forecast to generate approximately 718 daily trips, which include approximately 56 a.m. peak hour trips and approximately 76 p.m. peak hour trips.

Based on City of Lake Forest thresholds of significance, the addition of project-generated trips is forecast to result in no significant impacts at the study intersections.

Adequate queue storage is provided at the Auto Center Drive/Auto Center Drive access location, which serves as the primary access point for the project site and also serves as the only project site access location for visitors, where potential queuing would occur. The secondary project site access location at Auto Center Drive northerly of Towne Center Drive is for residents only, and hence no queuing associated with visitors is anticipated.

No traffic mitigation measures are required for the proposed project since no significant traffic impacts are forecast to occur as a result of the proposed project.

INTRODUCTION

This study analyzes forecast traffic conditions associated with the proposed Paseos at Foothill Ranch project in the City of Lake Forest planned to open in 2015. The proposed project consists of 75 single-family dwelling units and is surrounded by Auto Center Drive and Towne Centre Drive. Site access for the project site is provided at two driveway locations on Auto Center Drive. The main driveway, which provides access for both residents and visitors, is provided at the south leg of the intersection of Auto Center Drive and Auto Center Drive. The secondary driveway, which provides access to residents only, is located on Auto Center Drive West north of Towne Center Drive.

Exhibit 1 shows the regional location of the project site. Exhibit 2 shows the project site location.

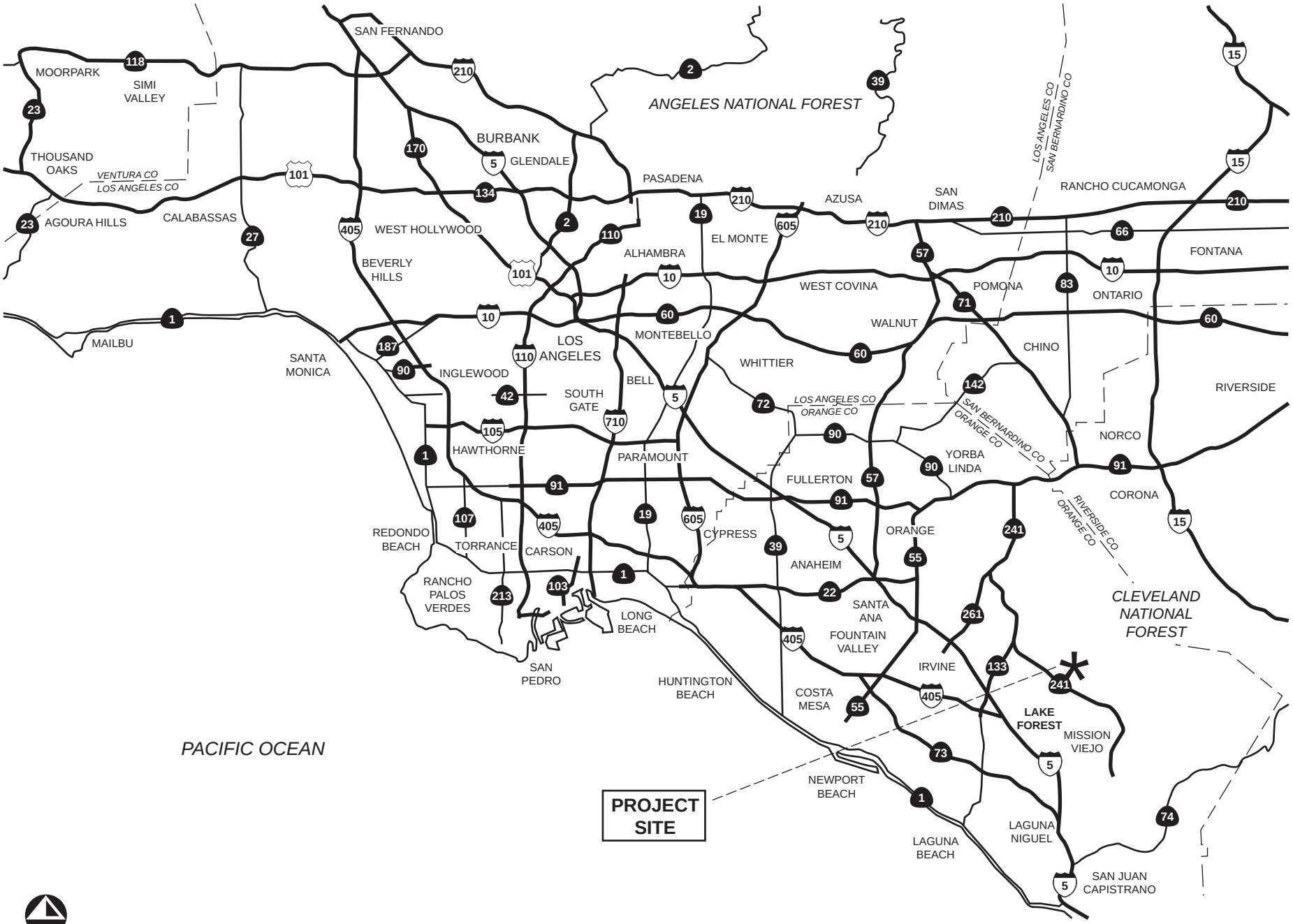
Study Area

This study analyzes the following twelve (12) intersections in the vicinity of the project site identified by City staff:

1. Bake Parkway/Portola Parkway (signalized);
2. Auto Center Drive/Portola Parkway (signalized);
3. Lake Forest Drive/Portola Parkway (signalized);
4. Bake Parkway/Towne Centre Drive (signalized);
5. Auto Center Drive West/Towne Centre Drive (two-way stop-controlled);
6. Auto Center Drive East/Towne Centre Drive (one-way stop-controlled);
7. Lake Forest Drive/Towne Centre Drive (signalized);
8. Lake Forest Drive/SR-241 Northbound On-Ramp (signalized);
9. Lake Forest Drive/SR-241 Southbound Off-Ramp (signalized);
10. Bake Parkway/Rancho Parkway North (signalized);
11. Lake Forest Drive/Rancho Parkway (signalized); and
12. Auto Center Drive/Auto Center Drive (two-way stop-controlled).

Exhibit 3 shows the location of the study intersections, which are analyzed for the following six study scenarios:

- Existing Conditions;
- Forecast Existing Plus Project Conditions;
- Forecast Year 2015 Without Project Conditions;
- Forecast Year 2015 With Project Conditions;
- Forecast Year 2030 Without Project Conditions; and
- Forecast Year 2030 With Project Conditions.



Not to Scale

RBF

Regional Project Location

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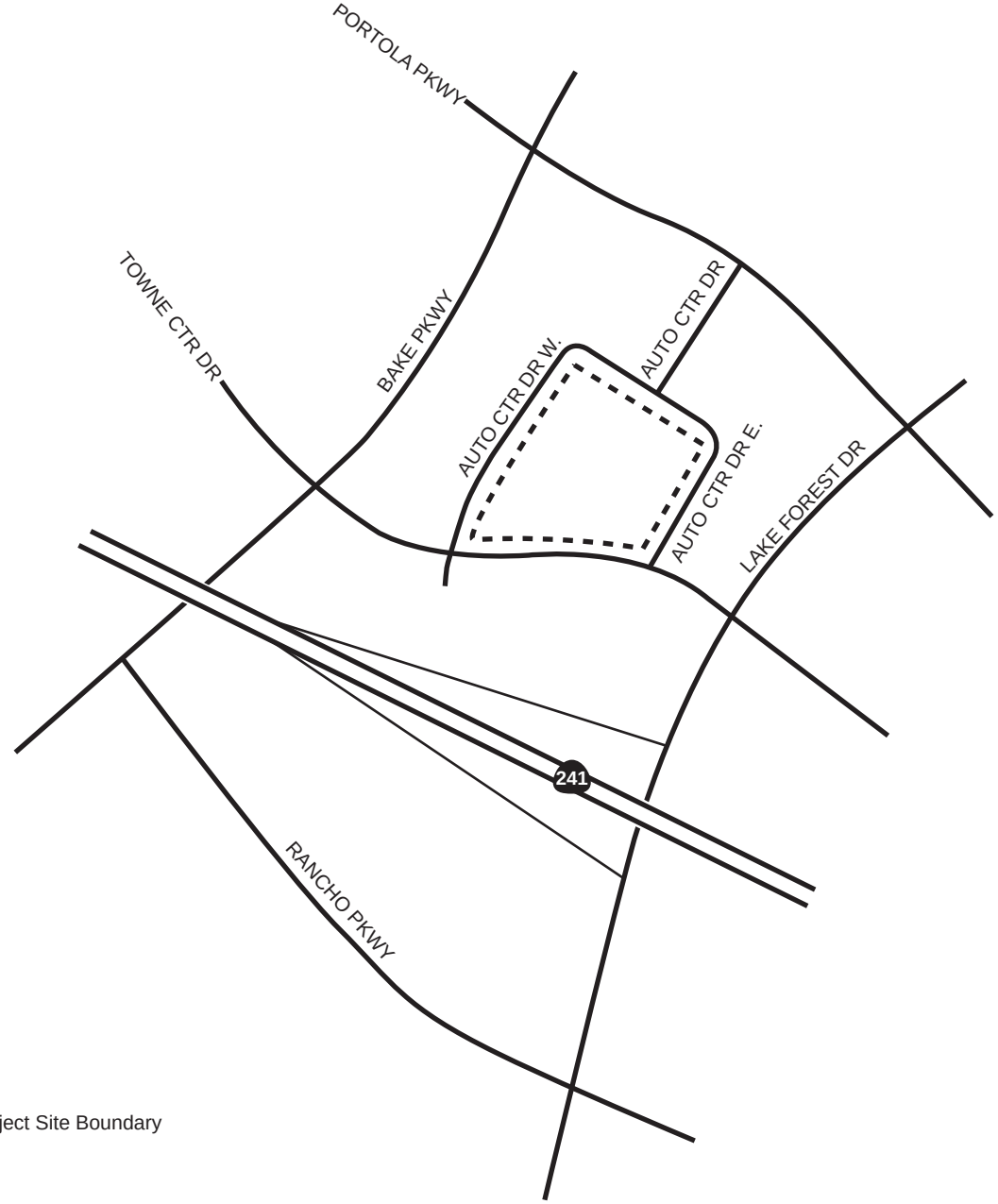
MAY/2012

Exhibit 1



Legend:

- - - Project Site Boundary

Not to Scale

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Proposed Project Site Location

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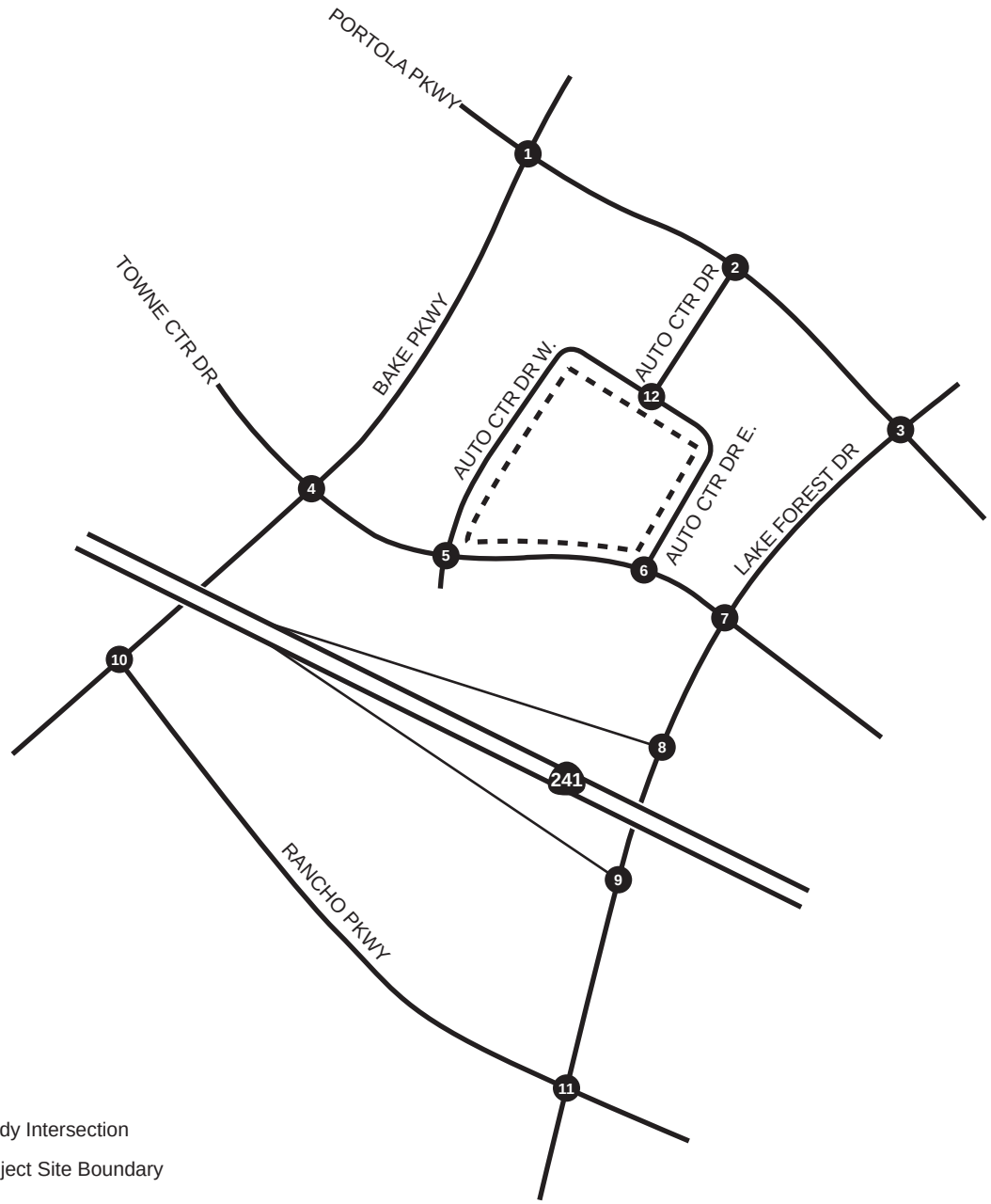
Exhibit 2



Legend:

XX Study Intersection

Project Site Boundary

Not to Scale

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Study Intersection Locations

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Exhibit 3

INTERSECTION ANALYSIS METHODOLOGY

Traffic Model Background

The traffic forecast data utilized in this analysis was provided by *Stantec Consulting Services Inc.* using the Lake Forest Traffic Analysis Model (LFTAM); buildout of the proposed project is assumed for each analysis time frame. The LFTAM traffic forecasting model is a focused sub-area model derived from the Orange County Transportation Analysis Model (OCTAM) and was specially designed to provide detailed forecasting capability within the City of Lake Forest, including the study area. The OCTAM is maintained by the Orange County Transportation Authority (OCTA), and has been developed according to the Orange County sub-area traffic modeling guidelines adopted by the OCTA. The OCTA has certified the LFTAM traffic model as being consistent with the OCTAM regional model.

Level of Service Methodology

Level of service (LOS) is commonly used as a qualitative description of intersection operation and is based on the capacity of the intersection and the volume of traffic using the intersection. The *Intersection Capacity Utilization (ICU)* analysis method is utilized by the City of Lake Forest to determine the operating LOS of signalized intersections. The *ICU* analysis methodology describes the operation of an intersection using a range of LOS from LOS A (free-flow conditions) to LOS F (severely congested conditions), based on the corresponding volume to capacity (V/C) ratios shown in Table 1.

Table 1
Study Intersection V/C Ratio & LOS Ranges

V/C Ratio	LOS
≤ 0.60	A
0.61 to ≤ 0.70	B
0.71 to ≤ 0.80	C
0.81 to ≤ 0.90	D
0.91 to ≤ 1.00	E
> 1.00	F

Note: V/C Ratio = Volume to Capacity Ratio.
Source: *1990 Transportation Research Board.*

The *2000 HCM* analysis methodology describes the operation of an intersection using a range of LOS from LOS A (free-flow conditions) to LOS F (severely congested conditions). The *HCM* analysis in this report is provided for informational purposes only and is based on the corresponding ranges of stopped delay experienced per vehicle for signalized and unsignalized intersections shown in Table 2.

Table 2
LOS & Delay Ranges

LOS	Delay (seconds/vehicle)	
	Signalized Intersections	**Unsignalized Intersections**
A	≤ 10.0	≤ 10.0
B	> 10.0 to ≤ 20.0	> 10.0 to ≤ 15.0
C	> 20.0 to ≤ 35.0	> 15.0 to ≤ 25.0
D	> 35.0 to ≤ 55.0	> 25.0 to ≤ 35.0
E	> 55.0 to ≤ 80.0	> 35.0 to ≤ 50.0
F	> 80.0	> 50.0

Source: *2000 Highway Capacity Manual*

Level of service is based on the average stopped delay per vehicle for all movements of signalized intersections and all-way stop-controlled intersections; for one-way or two-way stop-controlled intersections, LOS is based on the worst stop-controlled approach.

Performance Criteria

As stated in the City of Lake Forest General Plan Circulation Element, the City goal for peak hour intersection operation is LOS D or better.

City of Lake Forest Thresholds of Significance

The City of Lake Forest requires the *ICU* analysis methodology be utilized to determine potential significant traffic impacts of proposed projects; the *HCM* analysis is provided for informational purposes only at State Highway intersections and unsignalized intersections.

To determine whether the addition of project-generated trips results in a significant impact at a study intersection, and thus requires mitigation, the City of Lake Forest utilizes the following thresholds of significance:

- A significant project impact occurs at a study intersection when the addition of project-generated trips causes the peak hour level of service of the study intersection to change from acceptable operation (LOS A, B, C, or D) to deficient operation (LOS E or F); or
- A significant project impact occurs at a study intersection when the addition of project-generated trips causes an ICU increase of 0.02 or more at an intersection operating deficiently (LOS E or F).

Existing Conditions Traffic Volumes

This analysis utilizes existing traffic count data collected in March 2012 provided by *Stantec Consulting Services Inc.,* contained in Appendix A.

Exhibit 4 shows existing conditions average daily traffic (ADT) volumes on the roadways in the vicinity of the project site. Exhibit 5 shows a.m. and p.m. peak hour volumes at the study intersections. Exhibit 6 shows existing study intersection geometry and control.

Existing Conditions Intersection Peak Hour Level of Service

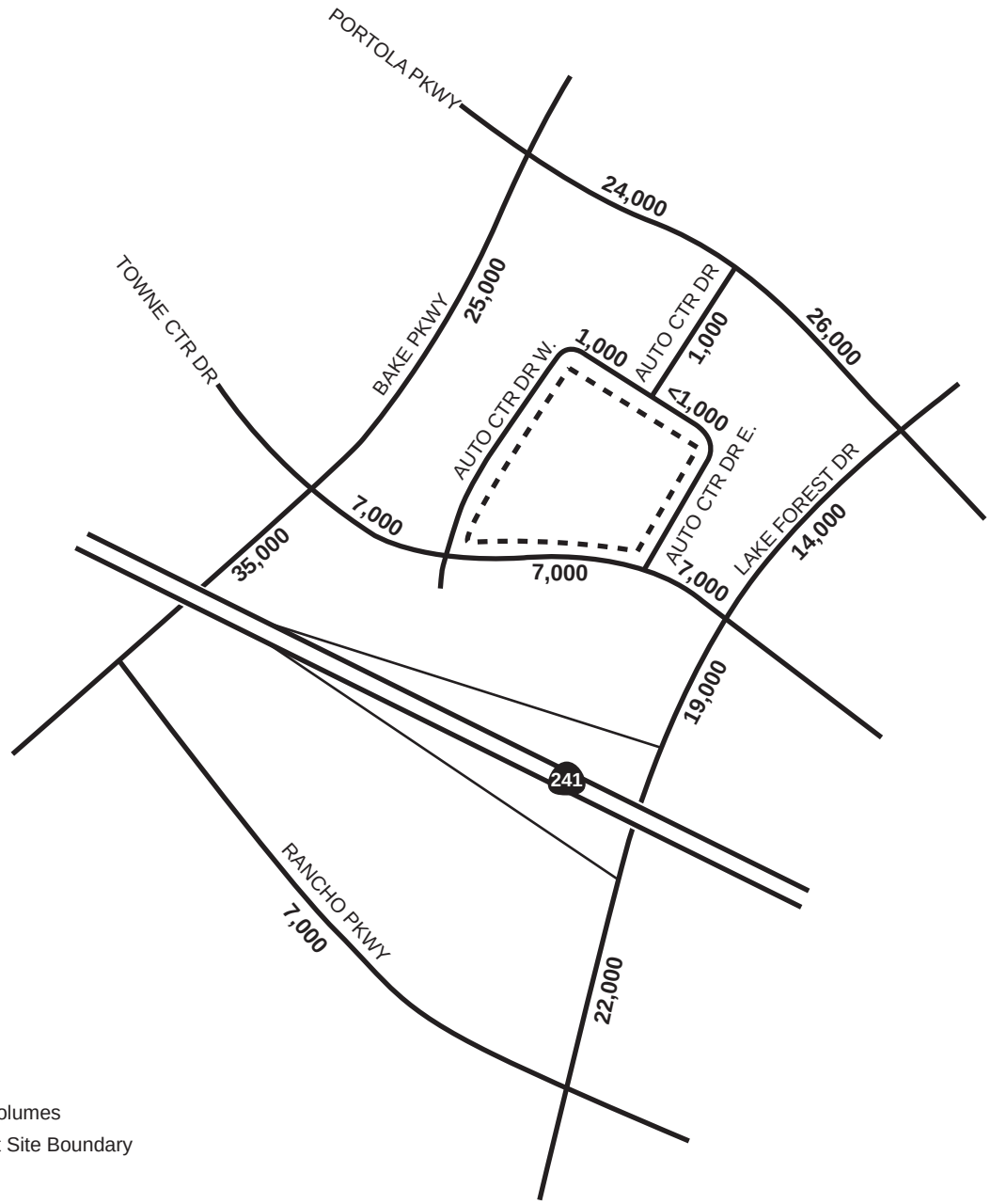
Table 3 summarizes existing conditions a.m. peak hour and p.m. peak hour LOS of the study intersections; detailed LOS analysis sheets prepared by *Stantec Consulting Services Inc.* are contained in Appendix A.

Table 3
Existing Conditions AM & PM Peak Hour Intersection LOS

Study Intersection	Existing Conditions	
	AM Peak Hour	PM Peak Hour
	V/C (Delay) – LOS	V/C (Delay) – LOS
1 – Bake Pkwy/Portola Pkwy	0.53 – A	0.56 – A
2 – Auto Center Dr/Portola Pkwy	0.38 – A	0.35 – A
3 – Lake Forest Dr/Portola Pkwy	0.46 – A	0.72 – C
4 – Bake Pkwy/Towne Center Dr	0.69 – B	0.60 - A
5 – Auto Center Dr W/Towne Centre Dr*	0.12 – A (10.30 – B)	0.20 – A (11.90 – B)
6 – Auto Center Dr E/Towne Centre Dr*	0.10 – A (9.90 – A)	0.17 – A (11.90 – B)
7 – Lake Forest Dr/Towne Centre Dr	0.39 – A	0.50 – A
8 – Lake Forest Dr/SR-241 NB On-Ramp*	0.30 – A (3.50 – A)	0.37 – A (3.70 – A)
9 – Lake Forest Dr/SR-241 SB Off-Ramp*	0.43 – A (10.80 – B)	0.43 – A (6.0 – A)
10 – Bake Pkwy/Rancho Pkwy N	0.59 – A	0.71 – C
11 – Lake Forest Dr/Rancho Pkwy	0.39 – A	0.49 – A
12 – Auto Center Dr/Auto Center Dr*	0.09 – A (8.70 – A)	0.10 – A (8.70 – A)

Note: V/C = volume to capacity ratio; SB = Southbound; NB = Northbound. *Delay shown for informational purposes only at State Highway intersections and unsignalized intersections only.

As shown in Table 3, the study intersections are currently operating at an acceptable LOS (LOS D or better) according to City of Lake Forest performance criteria.



Legend:

X,XXX ADT Volumes

- - - Project Site Boundary

Not to Scale

RBF

Existing Conditions Roadway Segment ADT Volumes

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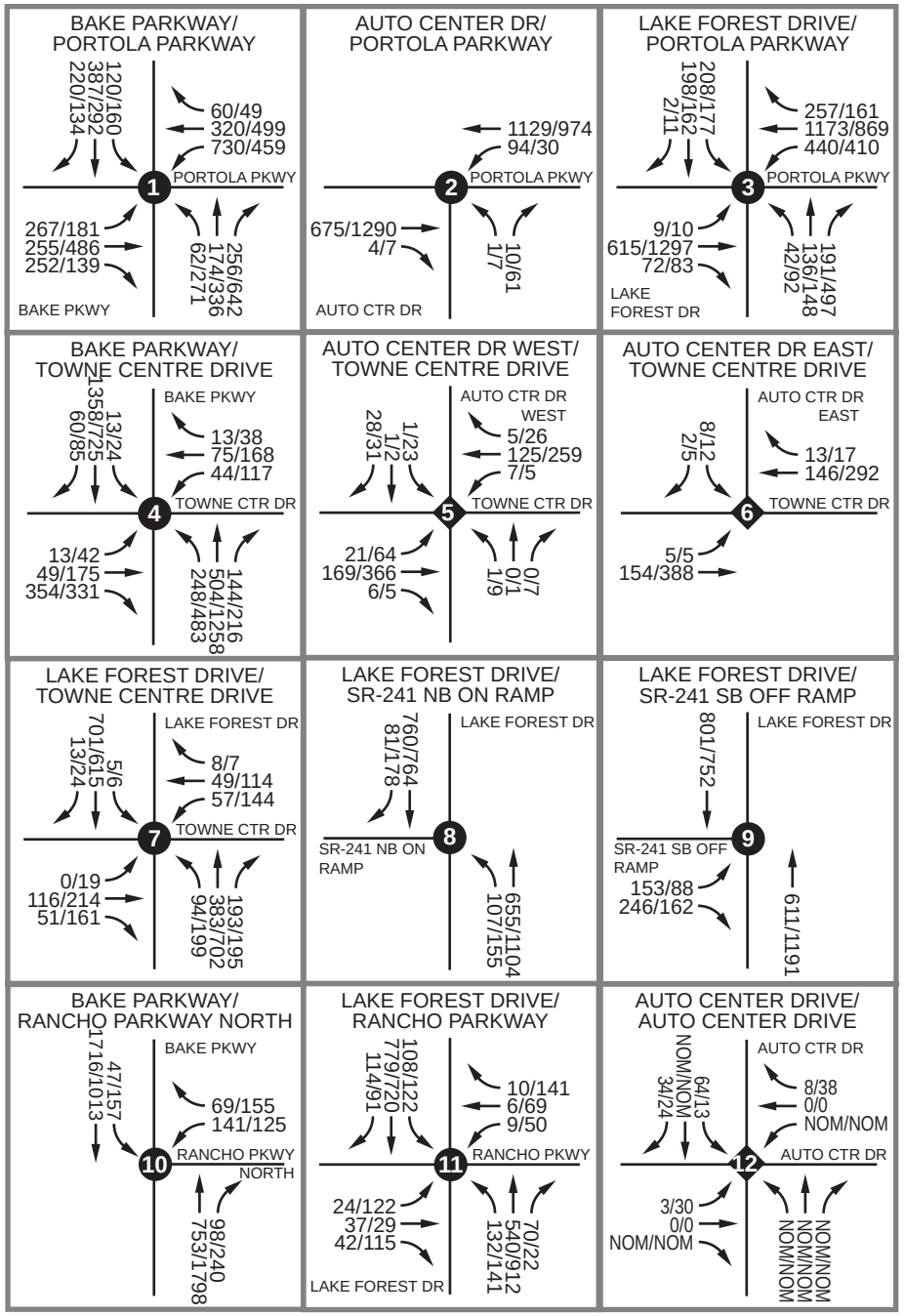
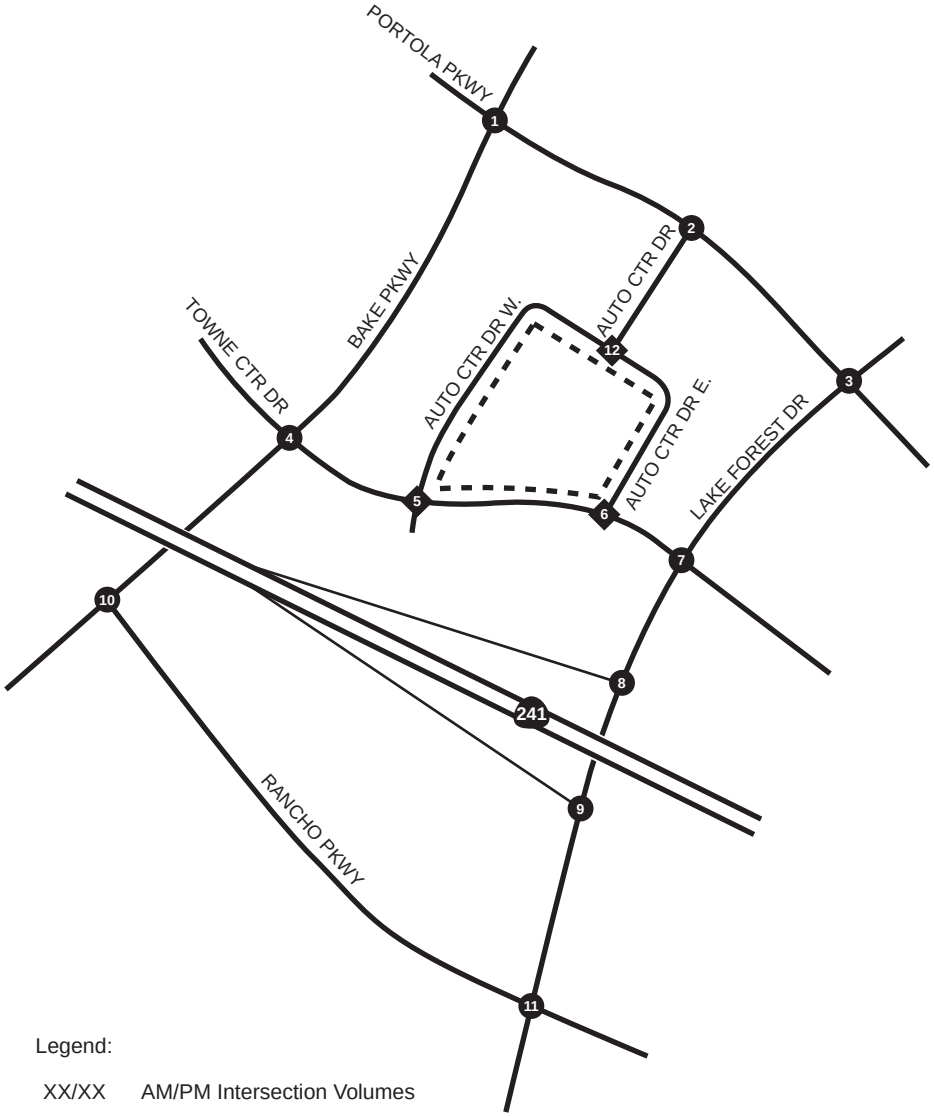
Exhibit 4





Legend:

XX/XX	AM/PM Intersection Volumes
XX	Stop-Controlled Intersection
XX	Signal-Controlled Intersection
- - -	Project Site Boundary
NOM	Nominal Value

RBF

Existing Conditions AM & PM Peak Hour Intersection Volumes

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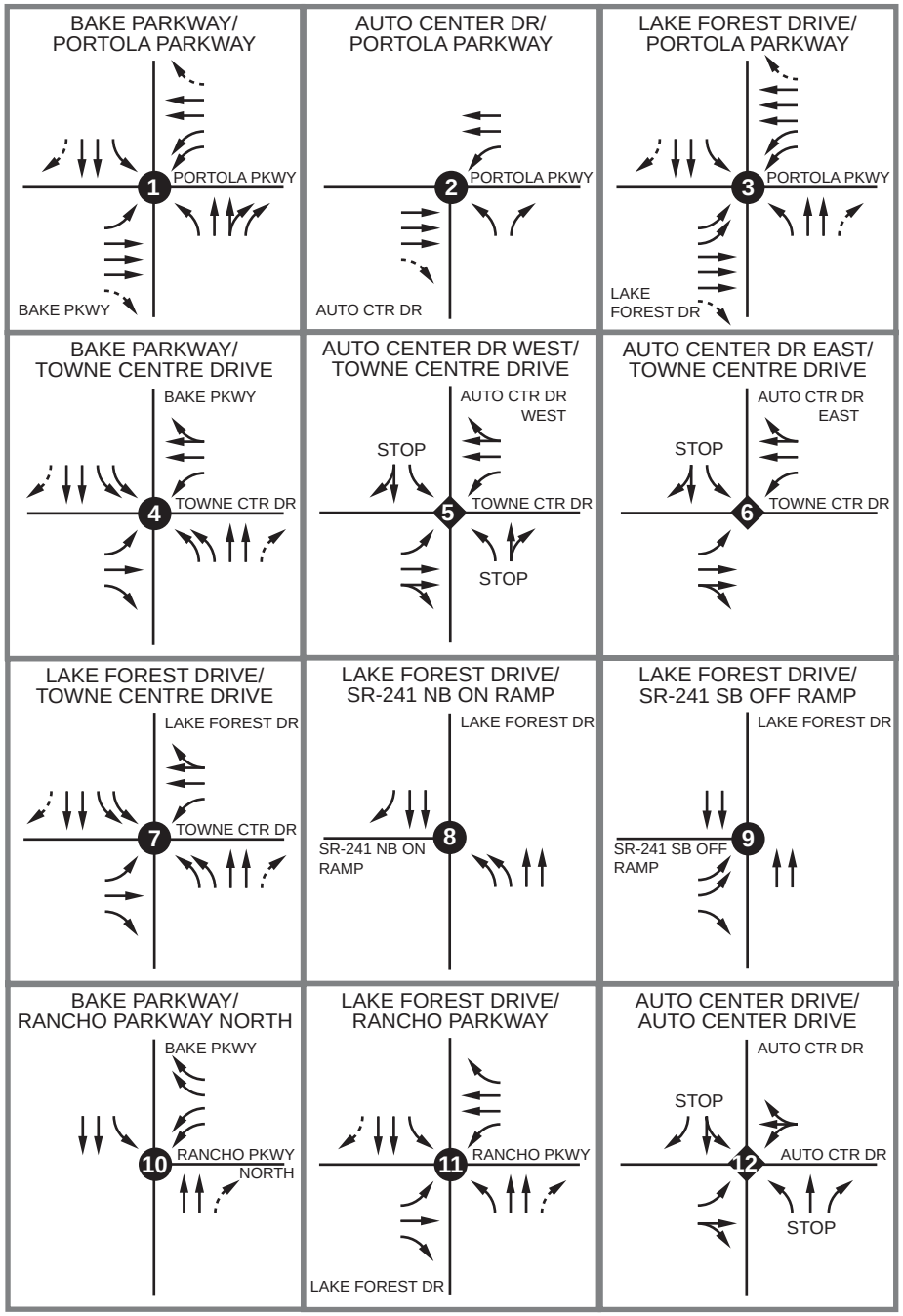
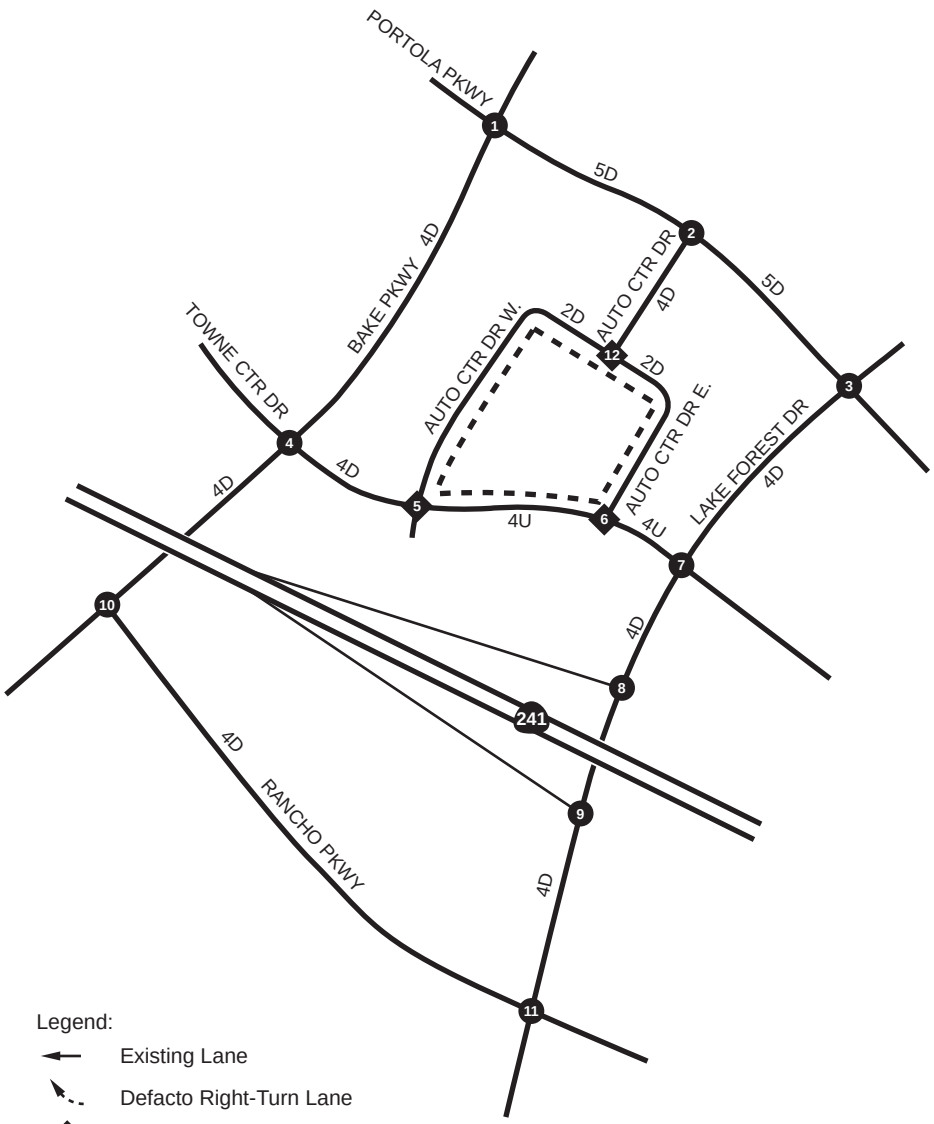
MAY/2012

Exhibit 5





Legend:

←	Existing Lane		
	Defacto Right-Turn Lane		
XX	Stop-Controlled Intersection	2D	2-lane Divided Roadway
XX	Signal-Controlled Intersection	4U	4-lane Undivided Roadway
STOP	Stop-Controlled Approach	4D	4-lane Divided Roadway
- - -	Project Site Boundary	5D	5-lane Divided Roadway

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Existing Study Intersection Geometry and Control

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MAY/2012

Exhibit 6

PROPOSED PROJECT

The proposed Paseos at Foothill Ranch project in the City of Lake Forest is planned to open in 2015. The proposed project consists of 75 single-family dwelling units and is surrounded by Auto Center Drive and Towne Centre Drive. Site access for the project site is provided at two driveway locations on Auto Center Drive. The main driveway, which provides access for both residents and visitors, is provided at the south leg of the intersection of Auto Center Drive and Auto Center Drive. The secondary driveway, which provides access to residents only, is located on Auto Center Drive West north of Towne Center Drive.

Exhibit 7 shows the proposed project site plan, which shows 72 single-family dwelling units; this analysis conservatively assumes 75 single-family dwelling units which is the maximum number of units that could be built onsite pursuant to project entitlement.

Forecast Project Trip Generation

Trip generation rates contained in the certified *Opportunities Study Area (OSA)* Program EIR traffic study were utilized to calculate trips forecast to be generated by the proposed project for existing, 2015 and 2030 conditions. As shown in Table 4, the proposed project at buildout is forecast to generate approximately 718 daily trips which include approximately 56 a.m. peak hour trips and approximately 76 p.m. peak hour trips; note the no-project condition assumes the existing auto dealer which generates substantially more trips than the proposed project.

Table 4
Project Trip Generation Summary

Land Use	Quantity	Units	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
No-Project									
Auto Dealer	52.105	tsf	78	28	106	53	82	135	1,737
With-Project									
Auto Dealer	0	tsf	0	0	0	0	0	0	0
Single-Family Dwelling Units	75	du	14	42	56	48	28	76	718
		TOTAL	**14**	**42**	**56**	**48**	**28**	**76**	**718**
		DIFFERENCE	-64	14	-50	-5	-54	-59	-1019
Trip Rates									
Auto Dealer [1]	52.105	tsf	1.50	0.53	2.03	1.01	1.58	2.59	33.34
Single-Family Dwelling Units [2]	75	du	0.19	0.56	0.75	0.64	0.37	1.01	9.57

Source: [1] *2008 ITE Trip Generation Manual, 8th Edition.*
[2] *Opportunities Study Area Traffic Study*
Note: tsf = thousand square feet; du = dwelling units.

Forecast Project Trip Distribution

Exhibit 8 shows the forecast trip percent distribution of project-generated trips.

Not to Scale

Proposed Project Site Plan

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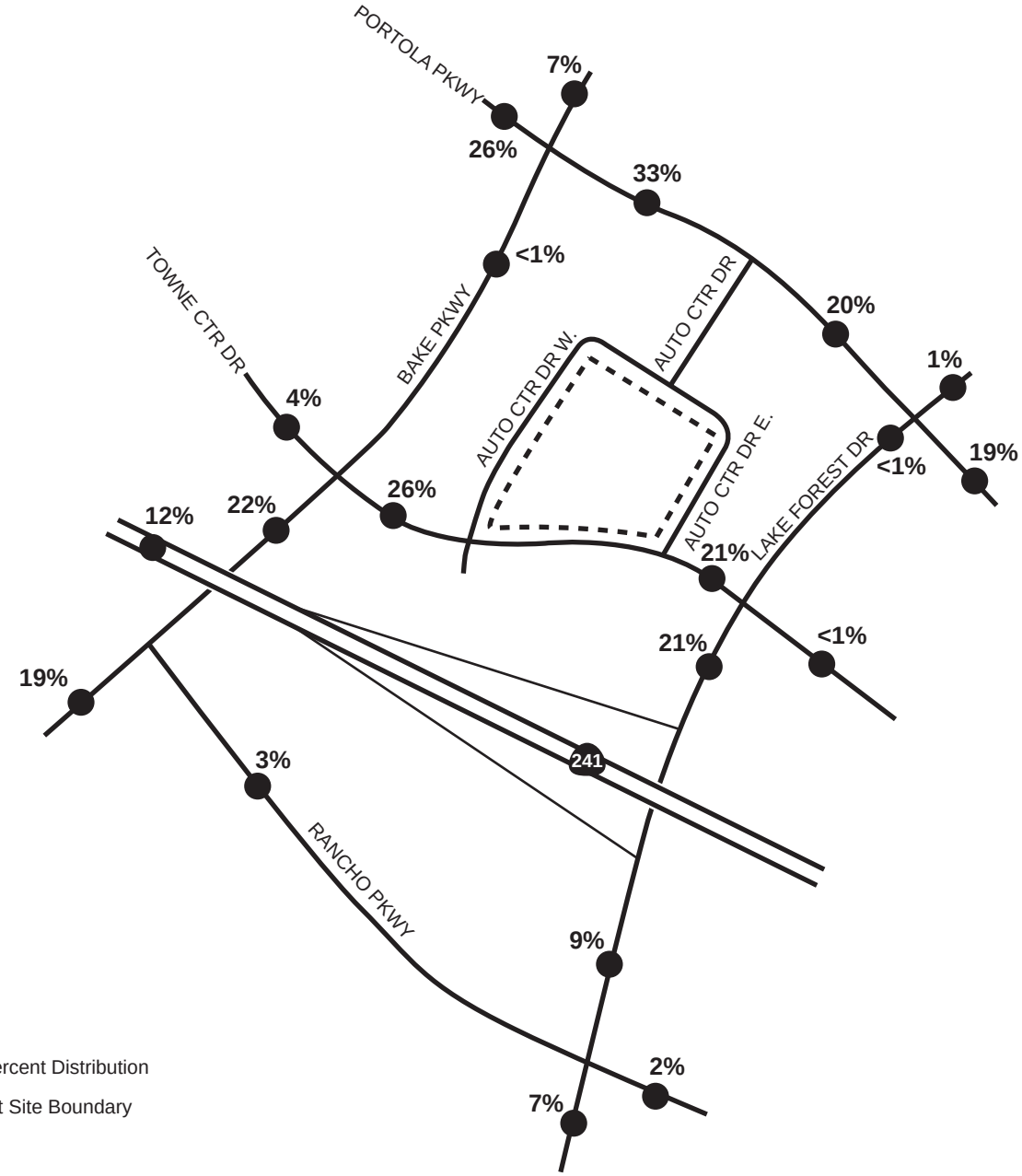
MAY/2012

Exhibit 7



Legend:

XX% ● Trip Percent Distribution

- - - Project Site Boundary

Not to Scale

RBF

Forecast Percent Trip Distribution of Proposed Project Generated Trips

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Exhibit 8

FORECAST EXISTING PLUS PROJECT CONDITIONS

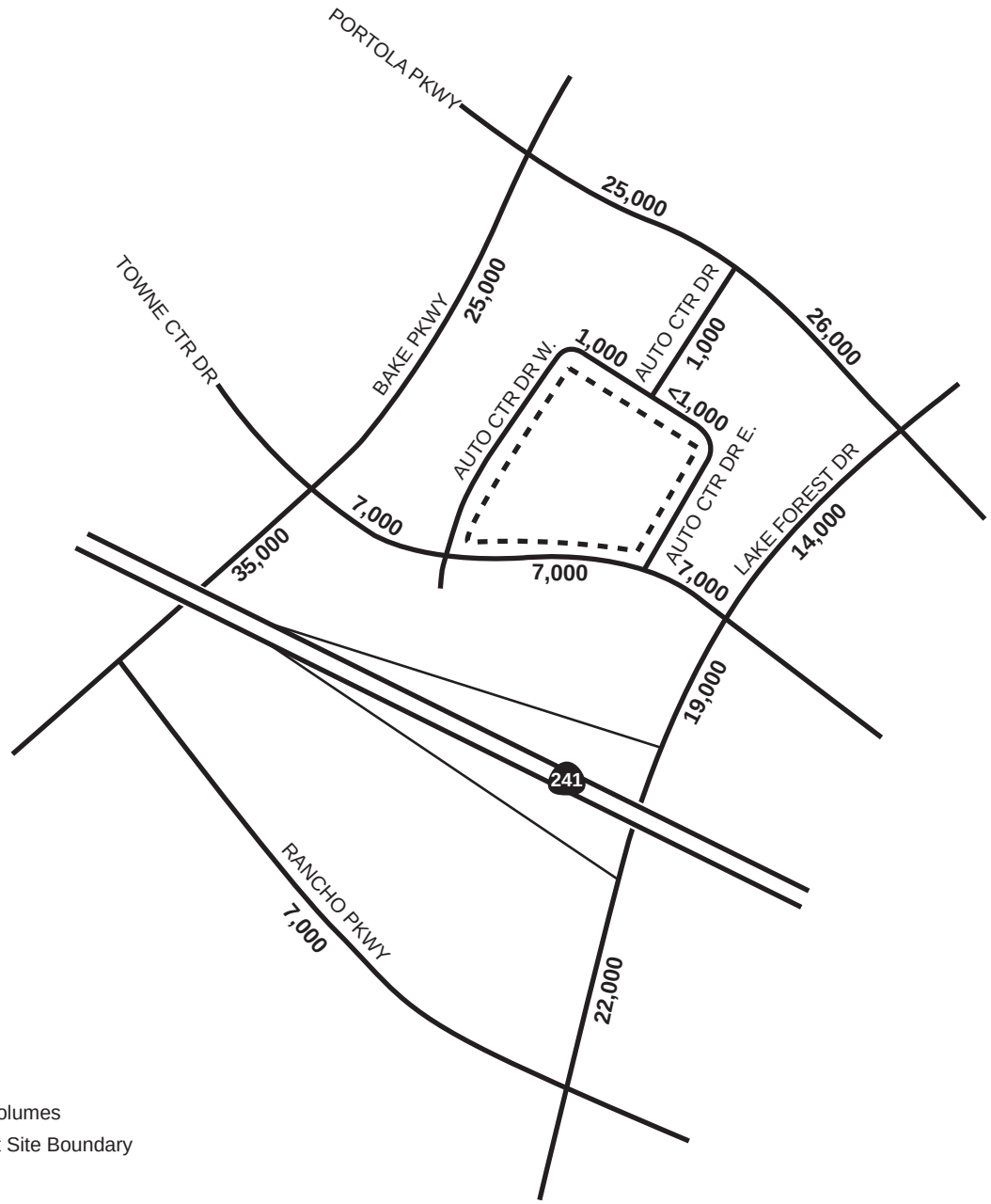
This section analyzes the potential impact of the addition of trips forecast to be generated by the proposed project to existing conditions. Trip generation for buildout of the proposed project was added to existing traffic volumes according to the City traffic model. Any redistribution of existing traffic that occurs when residential land use is added to the roadway circulation system is reflected in the City traffic model. Existing traffic volume data was collected in March 2012, so the Alton Parkway connection, which was not open at the the time, is not assumed the existing plus project analysis scenario. Additionally, no adjustment was made to existing traffic count data to account for any current and temporary uses on the project site, so this analysis may slightly overestimate traffic conditions under the existing plus project analysis scenario. However, as seen in the existing intersection LOS summary in Table 2, there is still adequate capacity to accommodate the trips generated by the propsed project with all study intersections operating at LOS D or better.

Forecast Existing Plus Project Traffic Volumes

Exhibits 9 and 10 show forecast existing plus project conditions ADT and a.m. and p.m. peak hour volumes at the study intersections provided by *Stantec Consulting Services Inc*.

Forecast Existing Plus Project Conditions Intersection Peak Hour Level of Service

Table 5 summarizes forecast existing plus project conditions a.m. peak hour and p.m. peak hour LOS of the study intersections; detailed LOS analysis sheets prepared by *Stantec Consulting Services Inc.* are contained in Appendix A.



Legend:

X,XXX ADT Volumes

- - - Project Site Boundary

Not to Scale

Forecast Existing With Project Conditions Roadway Segment ADT Volumes

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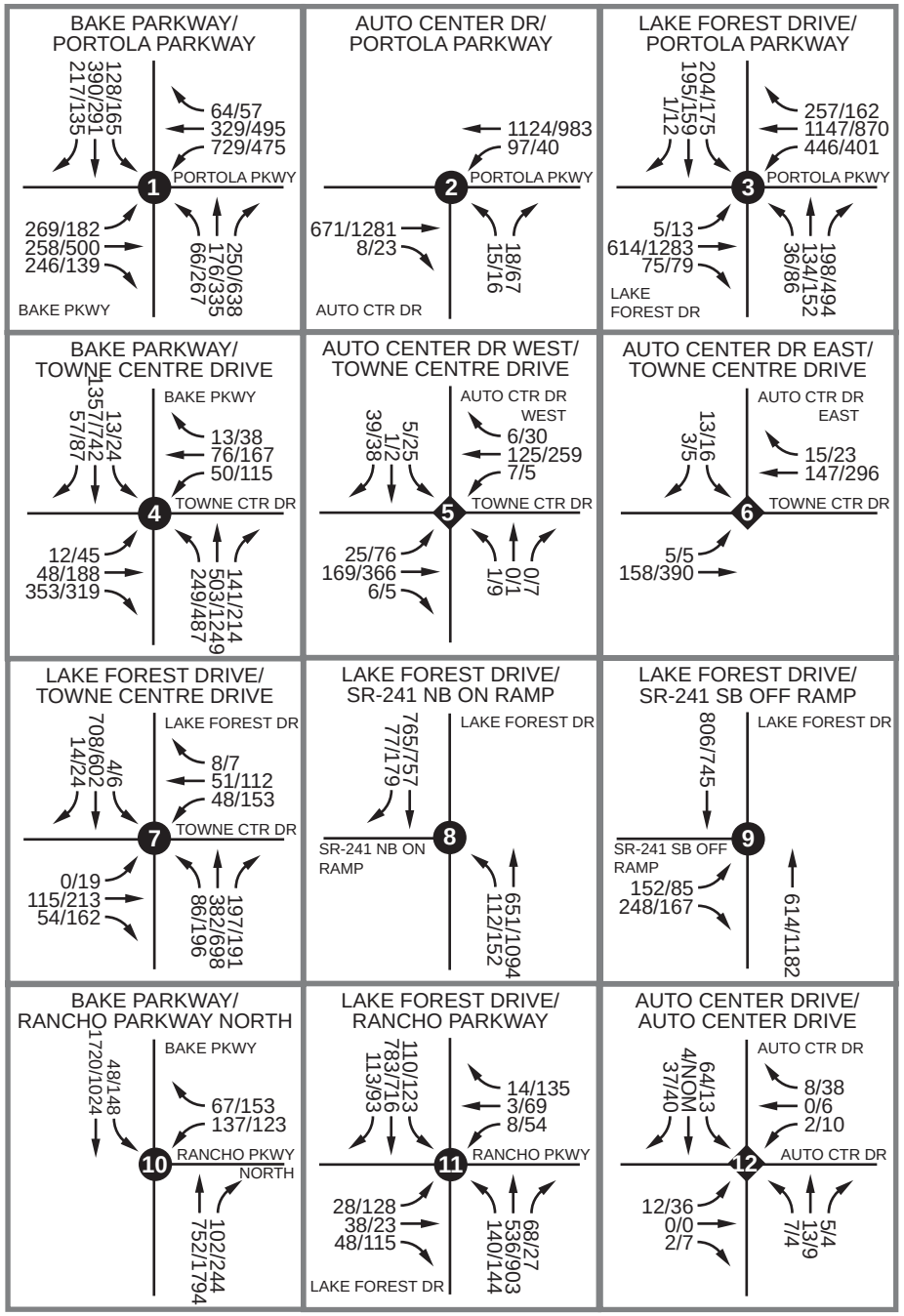
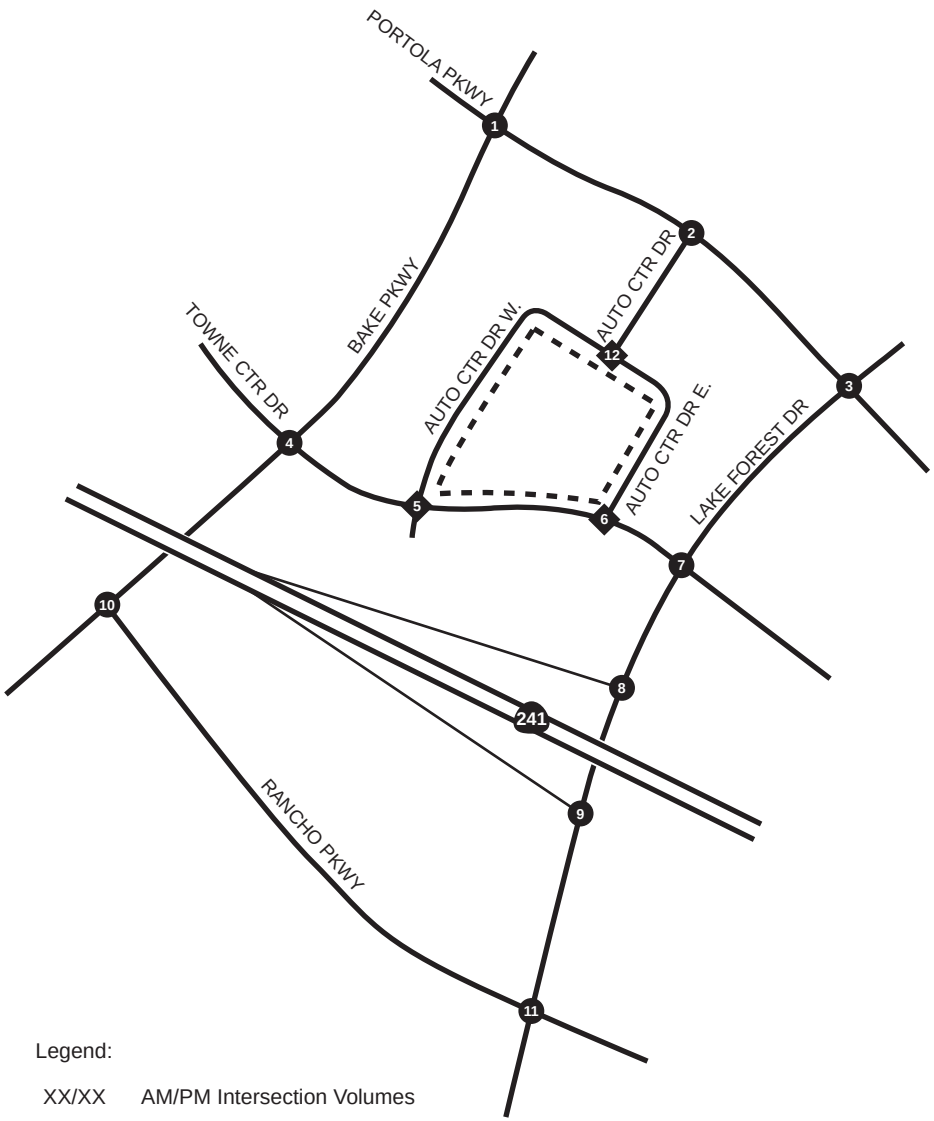
Exhibit 9





Legend:

XX/XX	AM/PM Intersection Volumes
XX	Stop-Controlled Intersection
XX	Signal-Controlled Intersection
- - -	Project Site Boundary
NOM	Nominal Value

RBF

Forecast Existing Plus Project AM & PM Peak Hour Intersection Volumes

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MAY/2012

Exhibit 10

Table 5
Forecast Existing Plus Project Conditions AM & PM Peak Hour Intersection LOS

Study Intersection	Existing Conditions		Forecast Existing Plus Project Conditions		Significant Impact?
	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	
	V/C (Delay) – LOS	V/C (Delay) – LOS	V/C (Delay) – LOS	V/C (Delay) – LOS	
1 – Bake Pkwy/Portola Pkwy	0.53 – A	0.56 – A	0.52 – A	0.56 - A	No
2 – Auto Center Dr/Portola Pkwy	0.38 – A	0.35 – A	0.39 – A	0.35 – A	No
3 – Lake Forest Dr/Portola Pkwy	0.46 – A	0.72 – C	0.46 – A	0.72 – C	No
4 – Bake Pkwy/Towne Center Dr	0.69 - B	0.60 - A	0.69 – B	0.61 – B	No
5 – Auto Center Dr W/Towne Centre Dr*	0.12 – A (10.30 – B)	0.20 – A (11.90 – B)	0.12 – A (10.40 – B)	0.21 – A (12.10 – B)	No
6 – Auto Center Dr E/Towne Centre Dr*	0.10 – A (9.90 – A)	0.17 – A (11.90 – B)	0.11 – A (10.00 – A)	0.17 – A (12.20 – B)	No
7 – Lake Forest Dr/Towne Centre Dr	0.39 – A	0.50 – A	0.39 – A	0.51 – A	No
8 – Lake Forest Dr/SR-241 NB On-Ramp*	0.30 – A (3.50 – A)	0.37 – A (3.70 – A)	0.31 – A (3.60 – A)	0.37 – A (3.70 – A)	No
9 – Lake Forest Dr/SR-241 SB Off-Ramp*	0.43 – A (10.80 – B)	0.43 – A (6.0 – A)	0.44 – A (10.80 – B)	0.43 – A (6.10 – A)	No
10 – Bake Pkwy/Rancho Pkwy N	0.59 – A	0.71 – C	0.60 – A	0.71 – A	No
11 – Lake Forest Dr/Rancho Pkwy	0.39 – A	0.49 – A	0.38 – A	0.50 – A	No
12 – Auto Center Dr/Auto Center Dr*	0.09 – A (8.70 – A)	0.10 – A (8.70 – A)	0.12 – A (9.20 – A)	0.12 – A (9.70 – A)	No

Note: V/C = volume to capacity ratio; SB = Southbound; NB = Northbound.
*Delay shown for informational purposes only at State Highway intersections and unsignalized intersections only.

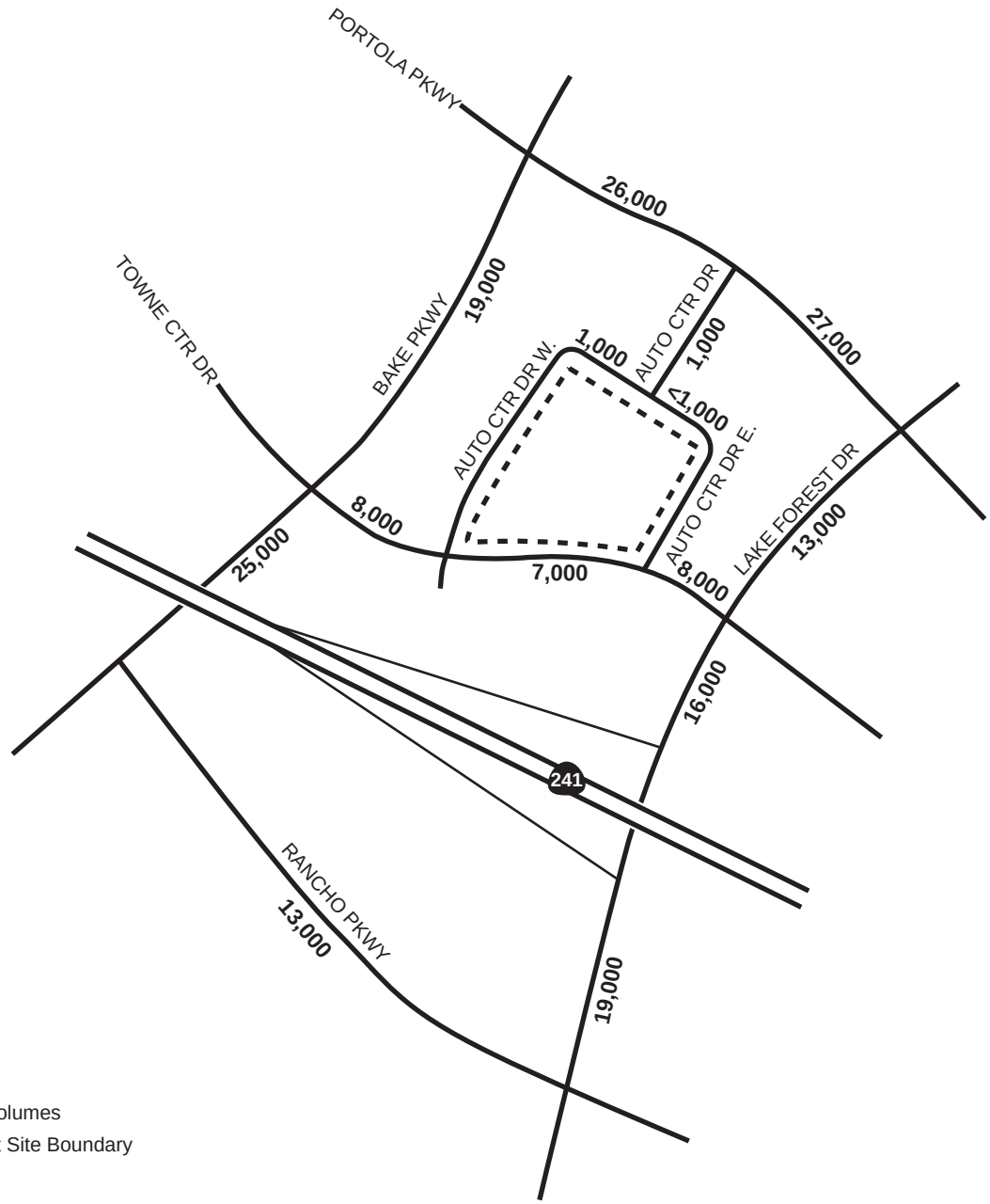
As shown in Table 5, with the addition of project generated trips, the study intersections are forecast to continue to operate at an acceptable LOS (LOS D or better) according to City of Lake Forest performance criteria for forecast existing plus project conditions.

As also shown in Table 5, based on City of Lake Forest established thresholds of significance, the addition of project-generated trips is forecast to result in no significant impacts at the study intersections for forecast existing plus project conditions.

FORECAST YEAR 2015 WITHOUT PROJECT CONDITIONS

To determine potential traffic impacts of the proposed project at the planned 2015 opening year, forecast year 2015 without project conditions are examined prior to forecast year 2015 with project conditions. The City traffic model assumes the Brookfield Town Centre residential project and the Kaiser medical building, along with most of the OSA projects are assumed in forecast year 2015 conditions.

Exhibits 11 and 12 show forecast year 2015 without project conditions ADT and a.m. and p.m. peak hour volumes at the study intersections provided by *Stantec Consulting Services Inc.*



Legend:

X,XXX ADT Volumes

- - - Project Site Boundary

Not to Scale

Forecast Year 2015 Without Project Conditions Roadway Segment ADT Volumes

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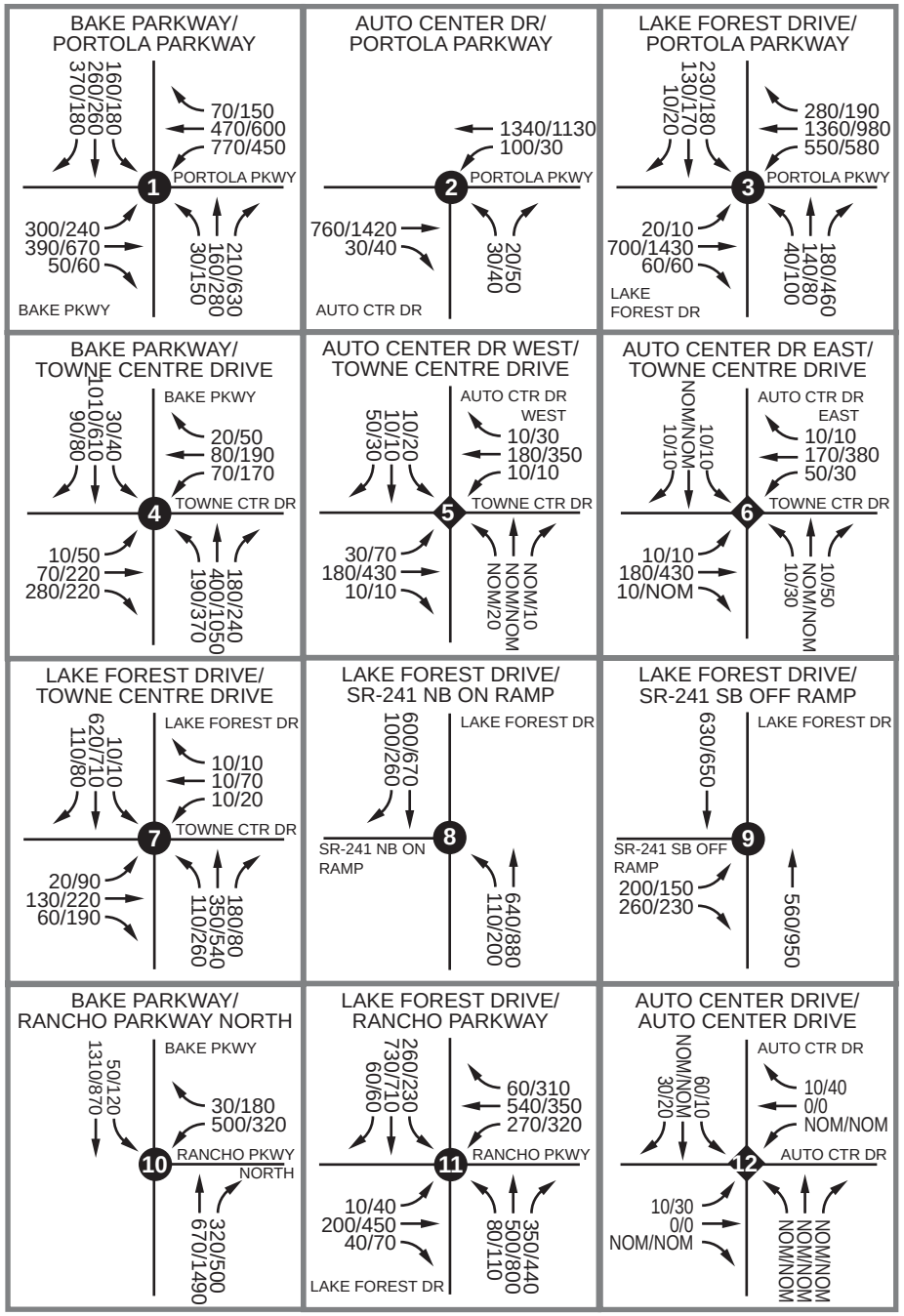
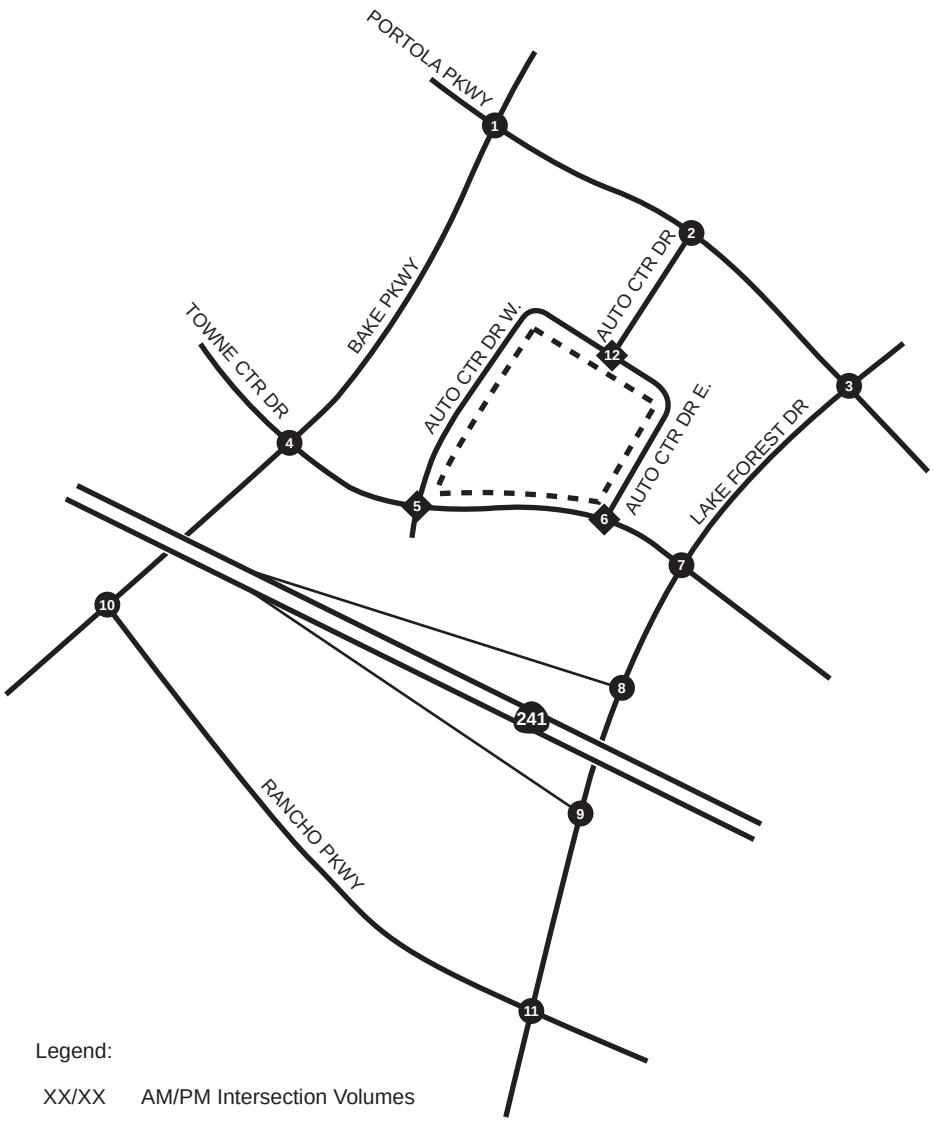
Exhibit 11





Legend:

XX/XX	AM/PM Intersection Volumes
XX	Stop-Controlled Intersection
XX	Signal-Controlled Intersection
- - -	Project Site Boundary
NOM	Nominal Value

RBF

Forecast Year 2015 Without Project AM & PM Peak Hour Intersection Volumes

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MAY/2012

Exhibit 12

Exhibit 13 shows forecast year 2015 study intersection geometry and control utilized in the LFTAM.

Forecast Year 2015 Without Project Conditions Intersection Peak Hour Level of Service

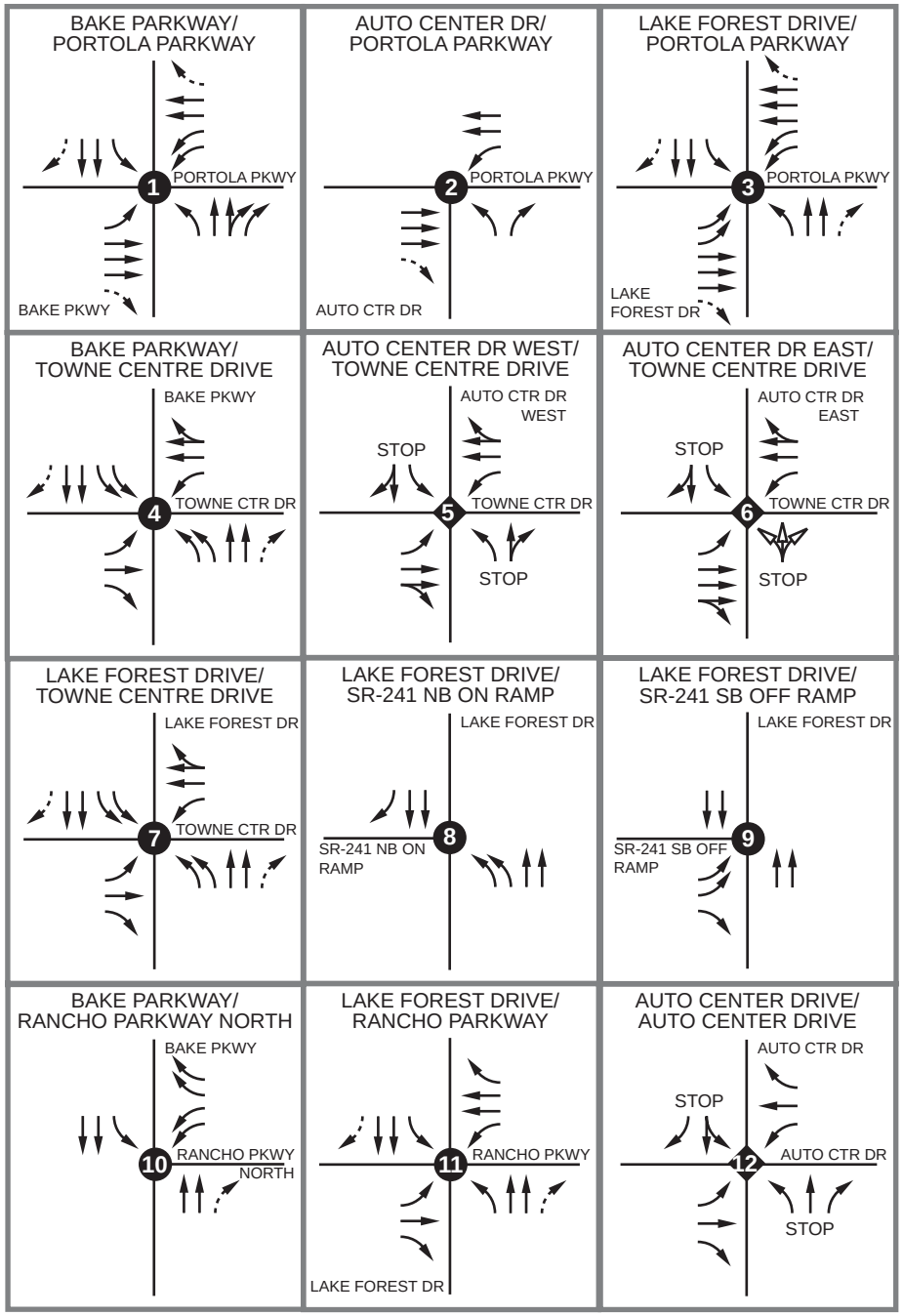
Table 6 summarizes forecast year 2015 without project conditions a.m. peak hour and p.m. peak hour LOS of the study intersections; detailed LOS analysis sheets prepared by *Stantec Consulting Services Inc.* are contained in Appendix A.

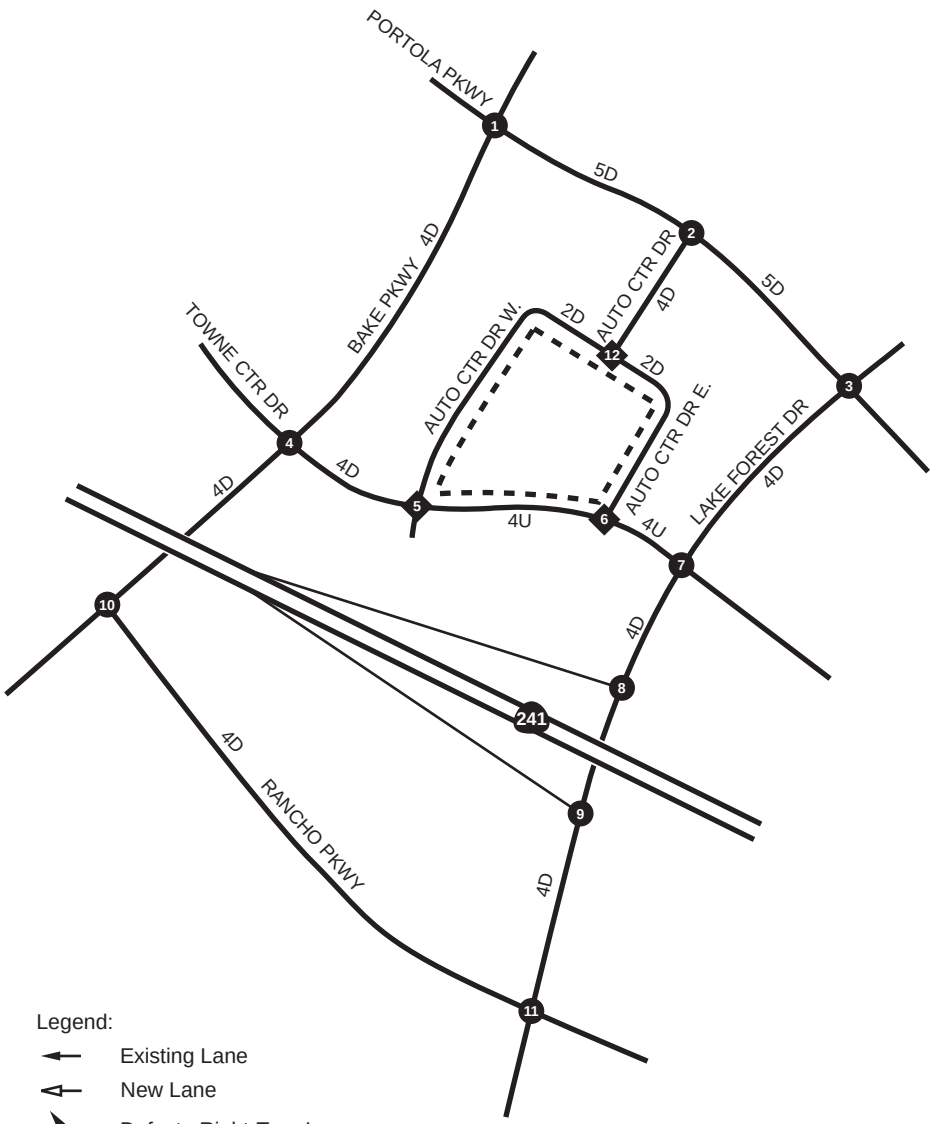
Table 6
Forecast Year 2015 Without Project Conditions
AM & PM Peak Hour Intersection LOS

Study Intersection	Forecast Year 2015 Without Project Conditions	
	AM Peak Hour	PM Peak Hour
	V/C (Delay) – LOS	V/C (Delay) – LOS
1 – Bake Pkwy/Portola Pkwy	0.51 – A	0.61 – B
2 – Auto Center Dr/Portola Pkwy	0.46 – A	0.40 – A
3 – Lake Forest Dr/Portola Pkwy	0.53 – A	0.75 – C
4 – Bake Pkwy/Towne Center Dr	0.55 – A	0.60 – A
5 – Auto Center Dr W/Towne Centre Dr*	0.17 – A (9.70 – A)	0.23 – A (13.40 – B)
6 – Auto Center Dr E/Towne Centre Dr*	0.16 – A (10.90 – B)	0.26 – A (14.80 – B)
7 – Lake Forest Dr/Towne Centre Dr	0.35 – A	0.48 – A
8 – Lake Forest Dr/SR-241 NB On-Ramp*	0.26 – A (3.80 – A)	0.31 – A (4.80 – A)
9 – Lake Forest Dr/SR-241 SB Off-Ramp*	0.39 – A (11.80 – B)	0.40 – A (9.30 – A)
10 – Bake Pkwy/Rancho Pkwy N	0.59 – A	0.65 – B
11 – Lake Forest Dr/Rancho Pkwy	0.63 – B	0.88 – D
12 – Auto Center Dr/Auto Center Dr*	0.11 – A (8.80 – A)	0.10 – A (8.70 – A)

Note: V/C = volume to capacity ratio; SB = Southbound; NB = Northbound. *Delay shown for informational purposes only at State Highway intersections and unsignalized intersections only.

As shown in Table 6, the study intersections are forecast to continue to operate at an acceptable LOS (LOS D or better) according to City of Lake Forest performance criteria for forecast year 2015 without project conditions.





Legend:

- Existing Lane
- New Lane
- Defacto Right-Turn Lane
- XX Stop-Controlled Intersection
- XX Signal-Controlled Intersection
- STOP Stop-Controlled Approach
- Project Site Boundary

2D	2-lane Divided Roadway
4U	4-lane Undivided Roadway
4D	4-lane Divided Roadway
5D	5-lane Divided Roadway

RBF

Forecast Year 2015 Study Intersection Geometry and Control

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MAY/2012

Exhibit 13

FORECAST YEAR 2015 WITH PROJECT CONDITIONS

This section analyzes the potential impact of the addition of trips forecast to be generated by the proposed project to forecast year 2015 without project conditions.

Forecast Year 2015 With Project Conditions Traffic Volumes

Forecast year 2015 with project conditions ADT and a.m. and p.m. peak hour volumes were derived by adding forecast project-generated trips to forecast year 2015 without project conditions traffic volumes.

Exhibits 14 and 15 show forecast year 2015 with project conditions ADT and a.m. and p.m. peak hour volumes at the study intersections provided by *Stantec Consulting Services Inc*.

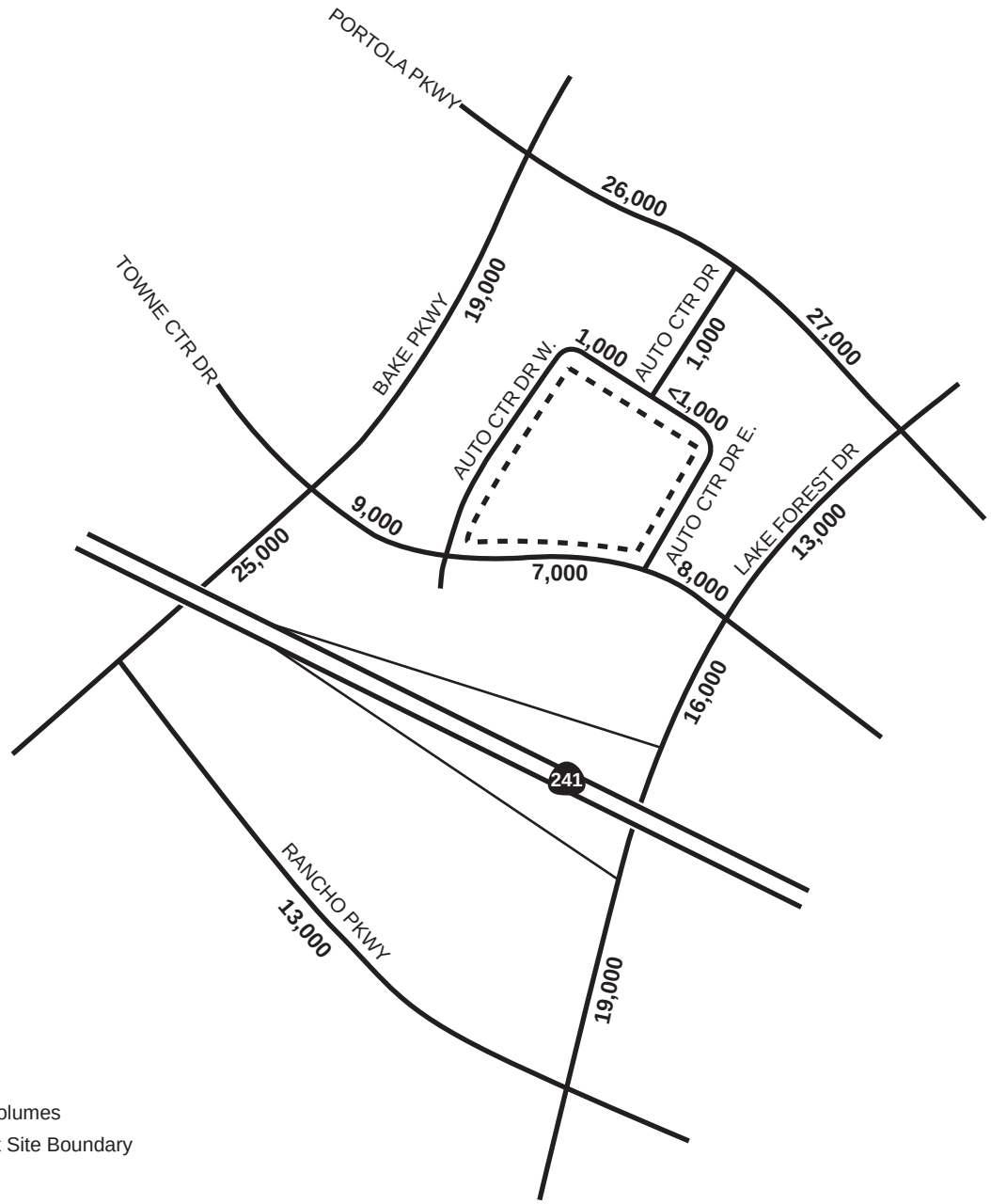
Forecast Year 2015 With Project Conditions Intersection Peak Hour Level of Service

Table 7 summarizes forecast year 2015 with project conditions a.m. peak hour and p.m. peak hour LOS of the study intersections; detailed LOS analysis sheets prepared by *Stantec Consulting Services Inc.* are contained in Appendix A.

Table 7
Forecast Year 2015 With Project Conditions
AM & PM Peak Hour Intersection LOS

Study Intersection	Forecast Year 2015 Without Project Conditions		Forecast Year 2015 With Project Conditions		Significant Impact?
	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	
	V/C (Delay) – LOS	V/C (Delay) – LOS	V/C (Delay) – LOS	V/C (Delay) – LOS	
1 – Bake Pkwy/Portola Pkwy	0.51 – A	0.61 – B	0.51 – C	0.62 – B	No
2 – Auto Center Dr/Portola Pkwy	0.46 – A	0.40 – A	0.47 – A	0.40 – A	No
3 – Lake Forest Dr/Portola Pkwy	0.53 – A	0.75 – C	0.52 – A	0.76 – C	No
4 – Bake Pkwy/Towne Center Dr	0.55 – A	0.60 – A	0.54 – A	0.59 – A	No
5 – Auto Center Dr W/Towne Centre Dr*	0.17 – A (9.70 – A)	0.23 – A (13.40 – B)	0.17 – A (9.70 – A)	0.26 – A (13.60 – B)	No
6 – Auto Center Dr E/Towne Centre Dr*	0.16 – A (10.90 – B)	0.26 – A (14.80 – B)	0.16 – A (11.60 – B)	0.26 – A (17.30 – C)	No
7 – Lake Forest Dr/Towne Centre Dr	0.35 – A	0.48 – A	0.35 – A	0.55 – A	No
8 – Lake Forest Dr/SR-241 NB On-Ramp*	0.26 – A (3.80 – A)	0.31 – A (4.80 – A)	0.27 – A (3.90 – A)	0.31 – A (4.80 – A)	No
9 – Lake Forest Dr/SR-241 SB Off-Ramp*	0.39 – A (11.80 – B)	0.40 – A (9.30 – A)	0.40 – A (12.10 – B)	0.40 – A (9.30 – A)	No
10 – Bake Pkwy/Rancho Pkwy N	0.59 – A	0.65 – B	0.59 – A	0.67 – B	No
11 – Lake Forest Dr/Rancho Pkwy	0.63 – B	0.88 – D	0.62 – B	0.87 – D	No
12 – Auto Center Dr/Auto Center Dr*	0.11 – A (8.80 – A)	0.10 – A (8.70 – A)	0.12 – A (9.10 – A)	0.13 – A (9.50 – A)	No

Note: V/C = volume to capacity ratio; SB = Southbound; NB = Northbound.
*Delay shown for informational purposes only at State Highway intersections and unsignalized intersections only.



Legend:

X,XXX ADT Volumes

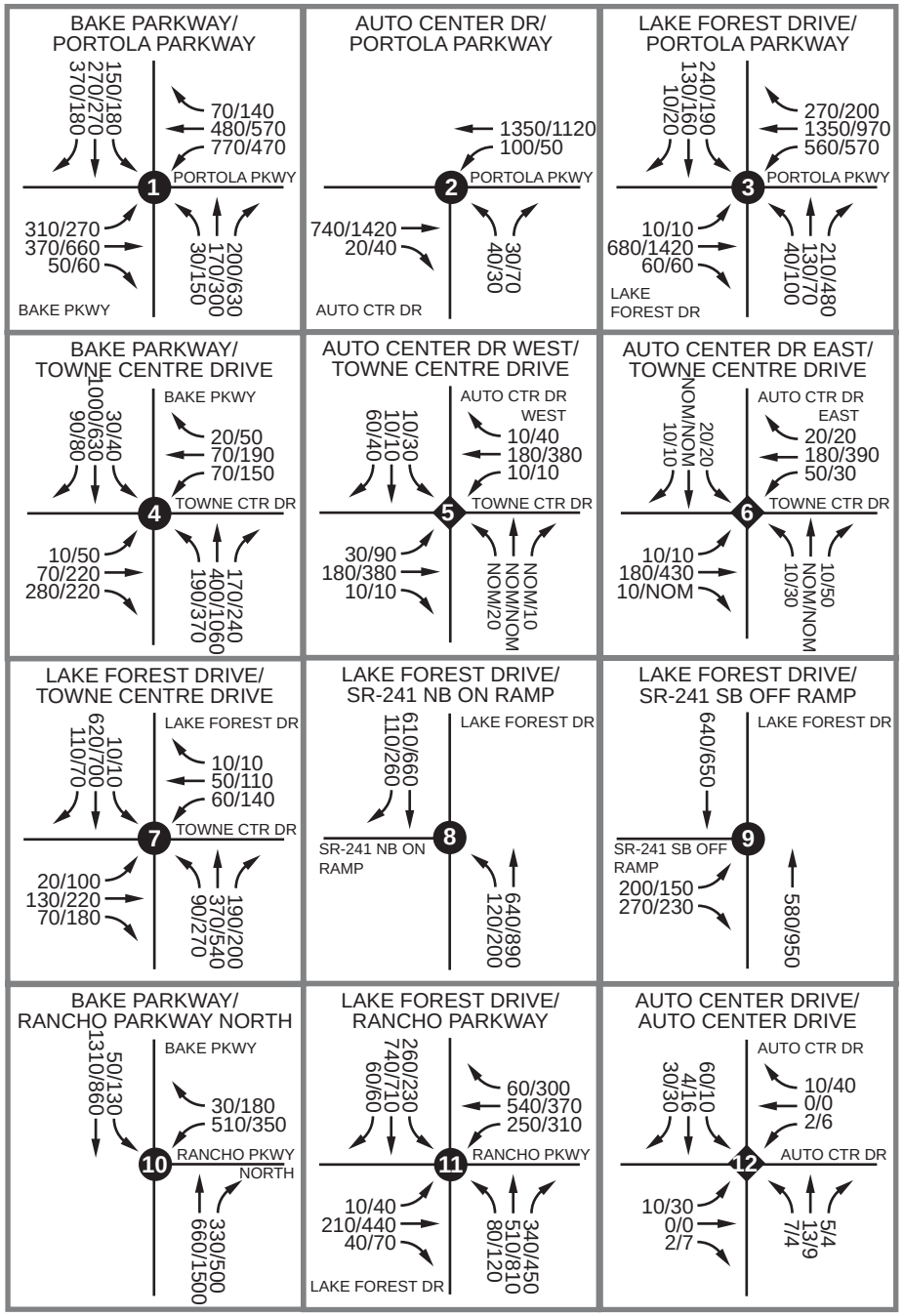
- - - Project Site Boundary

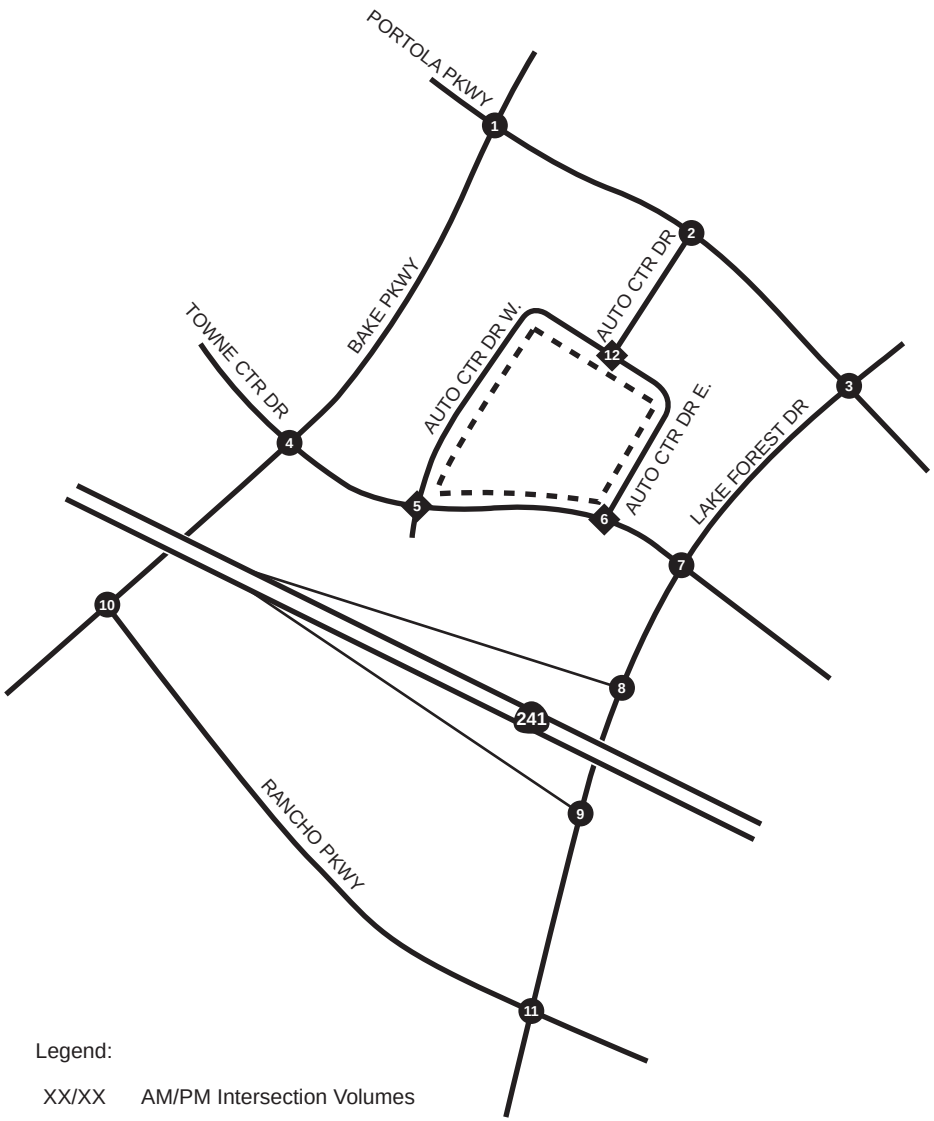
Not to Scale

Forecast Year 2015 With Project Conditions Roadway Segment ADT Volumes

H:\pdata\10108690\Traffic\Exhibits\Exh14.ai MAY/2012

Exhibit 14





Legend:

XX/XX	AM/PM Intersection Volumes
XX	Stop-Controlled Intersection
XX	Signal-Controlled Intersection
- - -	Project Site Boundary
NOM	Nominal Value

RBF

Forecast Year 2015 With Project AM & PM Peak Hour Intersection Volumes

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MAY/2012

Exhibit 15

As shown in Table 7, with the addition of project-generated trips, the study intersections are forecast to continue to operate at an acceptable LOS (LOS D or better) according to City of Lake Forest performance criteria for forecast year 2015 with project conditions.

As also shown in Table 7, based on City of Lake Forest established thresholds of significance, the addition of project-generated trips is forecast to result in no significant impacts at the study intersections for forecast year 2015 with project conditions.

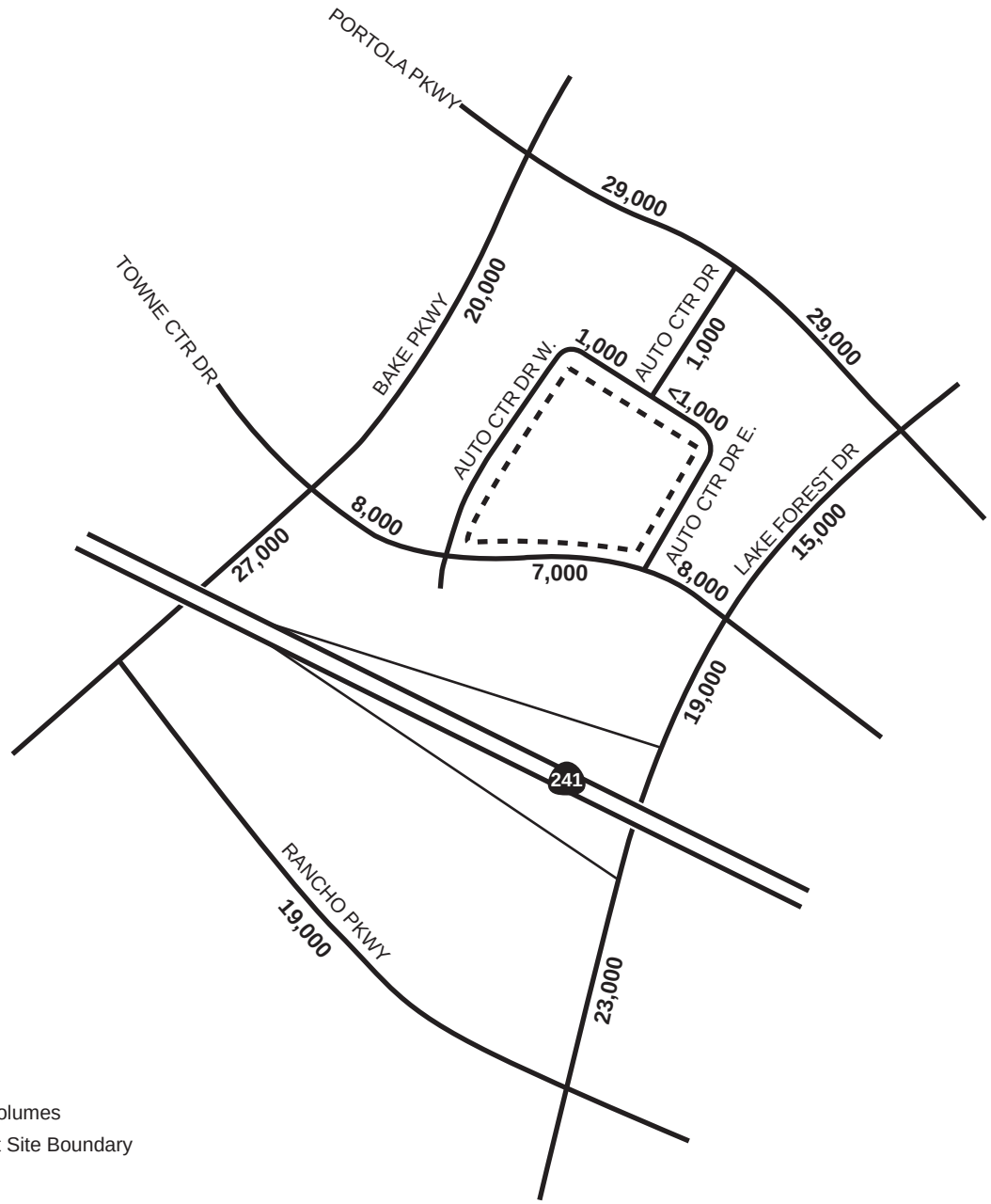
FORECAST YEAR 2030 WITHOUT PROJECT CONDITIONS

To determine potential traffic impacts of the proposed project at forecast year 2030 conditions, forecast year 2030 without project conditions are examined prior to forecast year 2030 with project conditions.

Exhibits 16 and 17 show forecast year 2030 without project conditions ADT and a.m. and p.m. peak hour volumes at the study intersections provided by *Stantec Consulting Services Inc*. Exhibit 18 shows forecast year 2030 study intersection geometry and control utilized in the LFTAM.

Forecast Year 2030 Without Project Conditions Intersection Peak Hour Level of Service

Table 8 summarizes forecast year 2030 without project conditions a.m. peak hour and p.m. peak hour LOS of the study intersections; detailed LOS analysis sheets prepared by *Stantec Consulting Services Inc.* are contained in Appendix A.



Legend:

X,XXX ADT Volumes

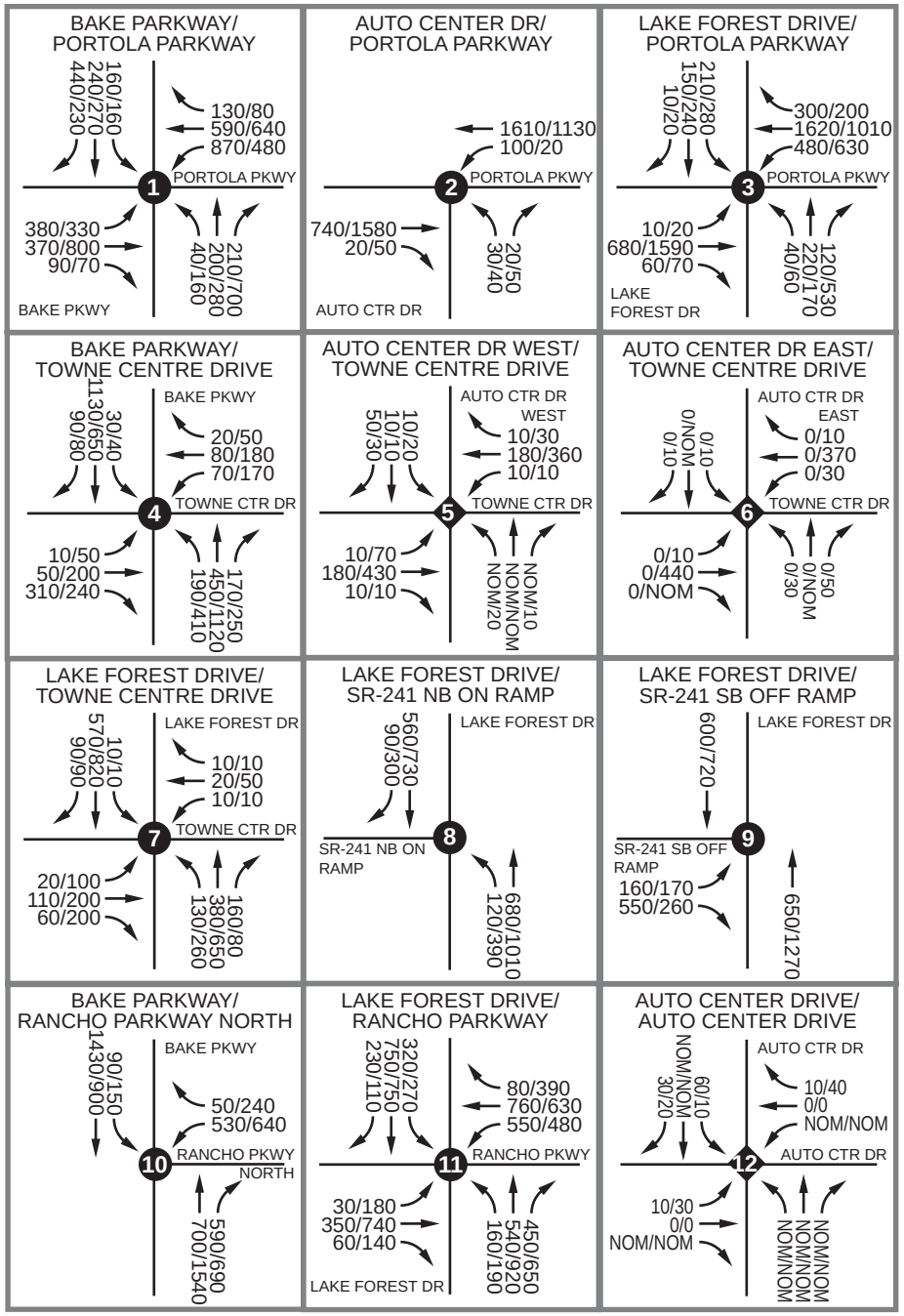
- - - Project Site Boundary

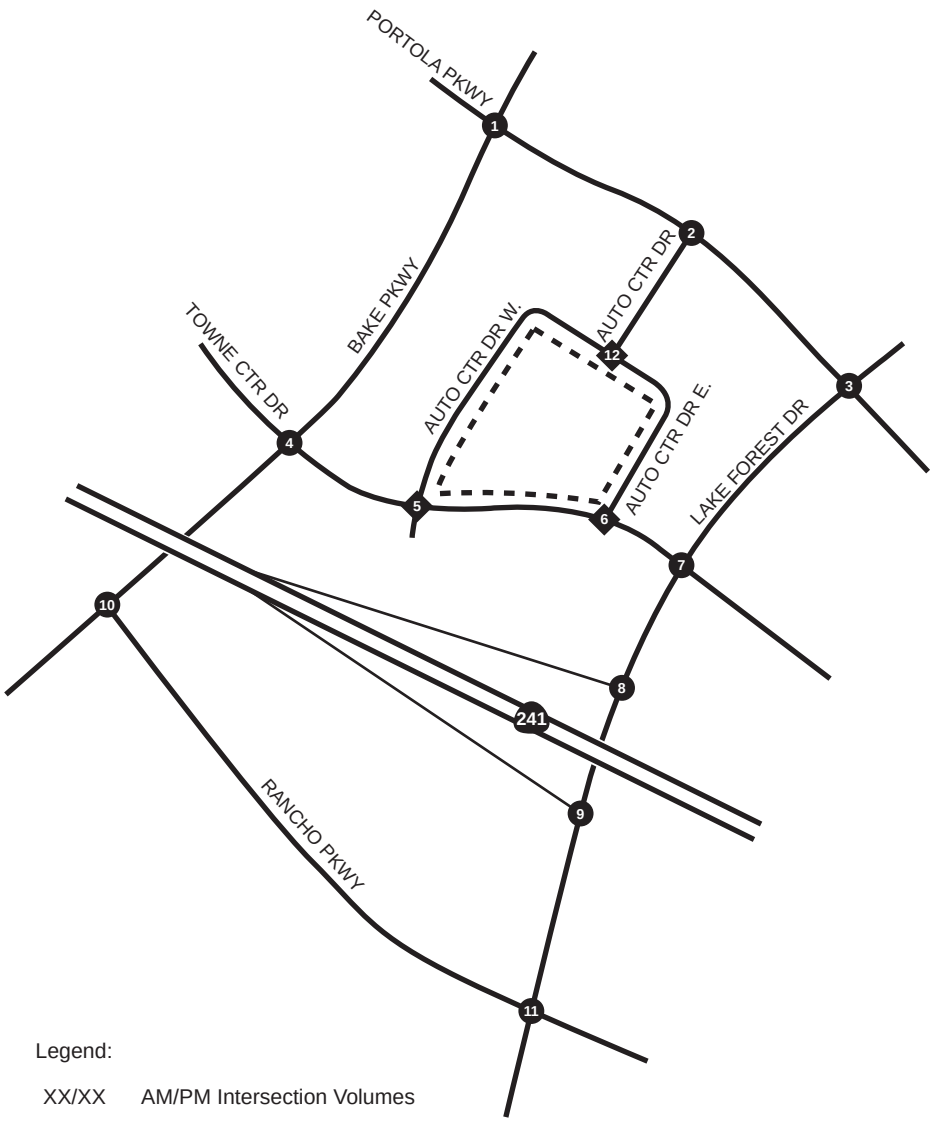
Not to Scale

Forecast Year 2030 Without Project Conditions Roadway Segment ADT Volumes

H:\pdata\10108690\Traffic\Exhibits\Exh16.ai MAY/2012

Exhibit 16





Legend:

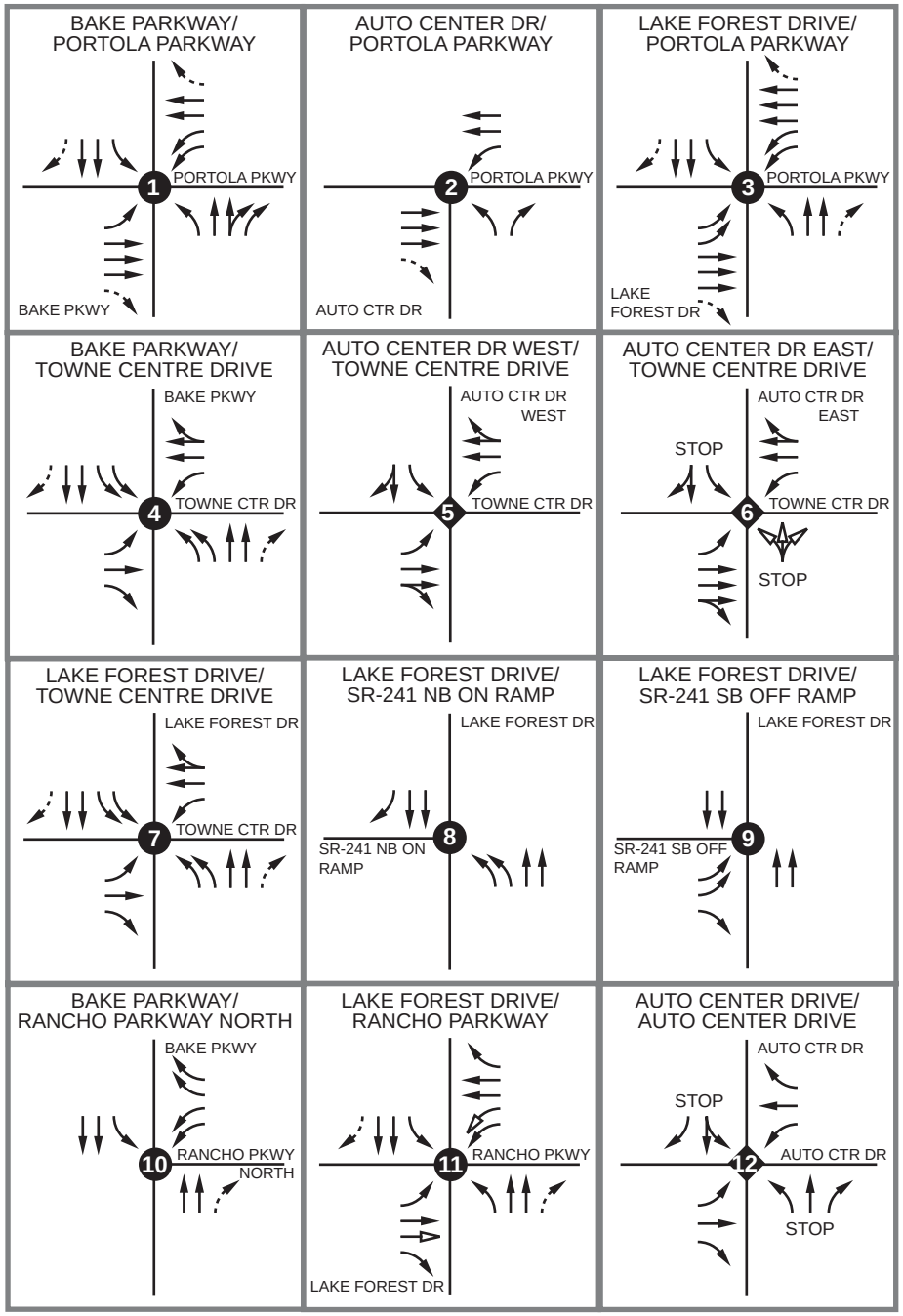
XX/XX	AM/PM Intersection Volumes
XX	Stop-Controlled Intersection
XX	Signal-Controlled Intersection
- - -	Project Site Boundary
NOM	Nominal Value

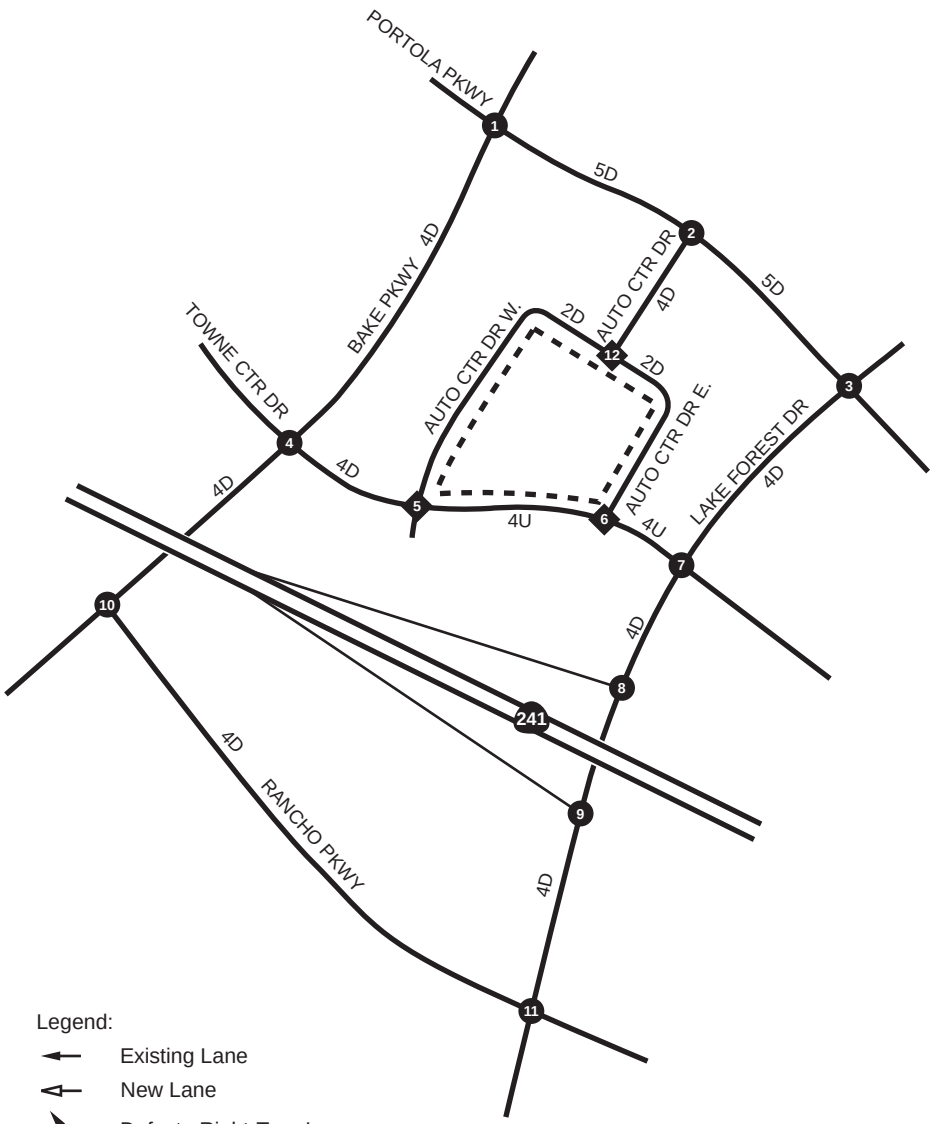
RBF

Forecast Year 2030 Without Project AM & PM Peak Hour Intersection Volumes

H:\pdata\10108690\Traffic\Exhibits\Exh17.ai MAY/2012

Exhibit 17





Legend:

←	Existing Lane		
⇦	New Lane		
	Defacto Right-Turn Lane		
XX	Stop-Controlled Intersection	2D	2-lane Divided Roadway
XX	Signal-Controlled Intersection	4U	4-lane Undivided Roadway
STOP	Stop-Controlled Approach	4D	4-lane Divided Roadway
- - -	Project Site Boundary	5D	5-lane Divided Roadway

RBF

Forecast Year 2030 Study Intersection Geometry and Control

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MAY/2012

Exhibit 18

Table 8
Forecast Year 2030 Without Project Conditions
AM & PM Peak Hour Intersection LOS

Study Intersection	Forecast Year 2030 Without Project Conditions	
	AM Peak Hour	PM Peak Hour
	V/C (Delay) – LOS	V/C (Delay) – LOS
1 – Bake Pkwy/Portola Pkwy	0.59 – A	0.66 – B
2 – Auto Center Dr/Portola Pkwy	0.54 – A	0.40 – A
3 – Lake Forest Dr/Portola Pkwy	0.55 – A	0.88 – D
4 – Bake Pkwy/Towne Center Dr	0.60 – A	0.61 – B
5 – Auto Center Dr W/Towne Centre Dr*	0.17 – A (9.60 – A)	0.23 – A (13.50 – B)
6 – Auto Center Dr E/Towne Centre Dr*	0.16 – A (10.90 – B)	0.26 – A (14.70 – B)
7 – Lake Forest Dr/Towne Centre Dr	0.33 – A	0.50 – A
8 – Lake Forest Dr/SR-241 NB On-Ramp*	0.25 – A (3.70 – A)	0.37 – A (7.20 – A)
9 – Lake Forest Dr/SR-241 SB Off-Ramp*	0.55 – A (18.90 – B)	0.47 – A (10.40 – B)
10 – Bake Pkwy/Rancho Pkwy N	0.63 – B	0.78 – C
11 – Lake Forest Dr/Rancho Pkwy	0.66 – B	0.84 – D
12 – Auto Center Dr/Auto Center Dr*	0.11 – A (8.80 – A)	0.10 – A (8.70 – A)

Note: V/C = volume to capacity ratio; SB = Southbound; NB = Northbound. *Delay shown for informational purposes only at State Highway intersections and unsignalized intersections only.

As shown in Table 8, the study intersections are forecast to continue to operate at an acceptable LOS (LOS D or better) according to City of Lake Forest performance criteria for forecast year 2030 without project conditions.

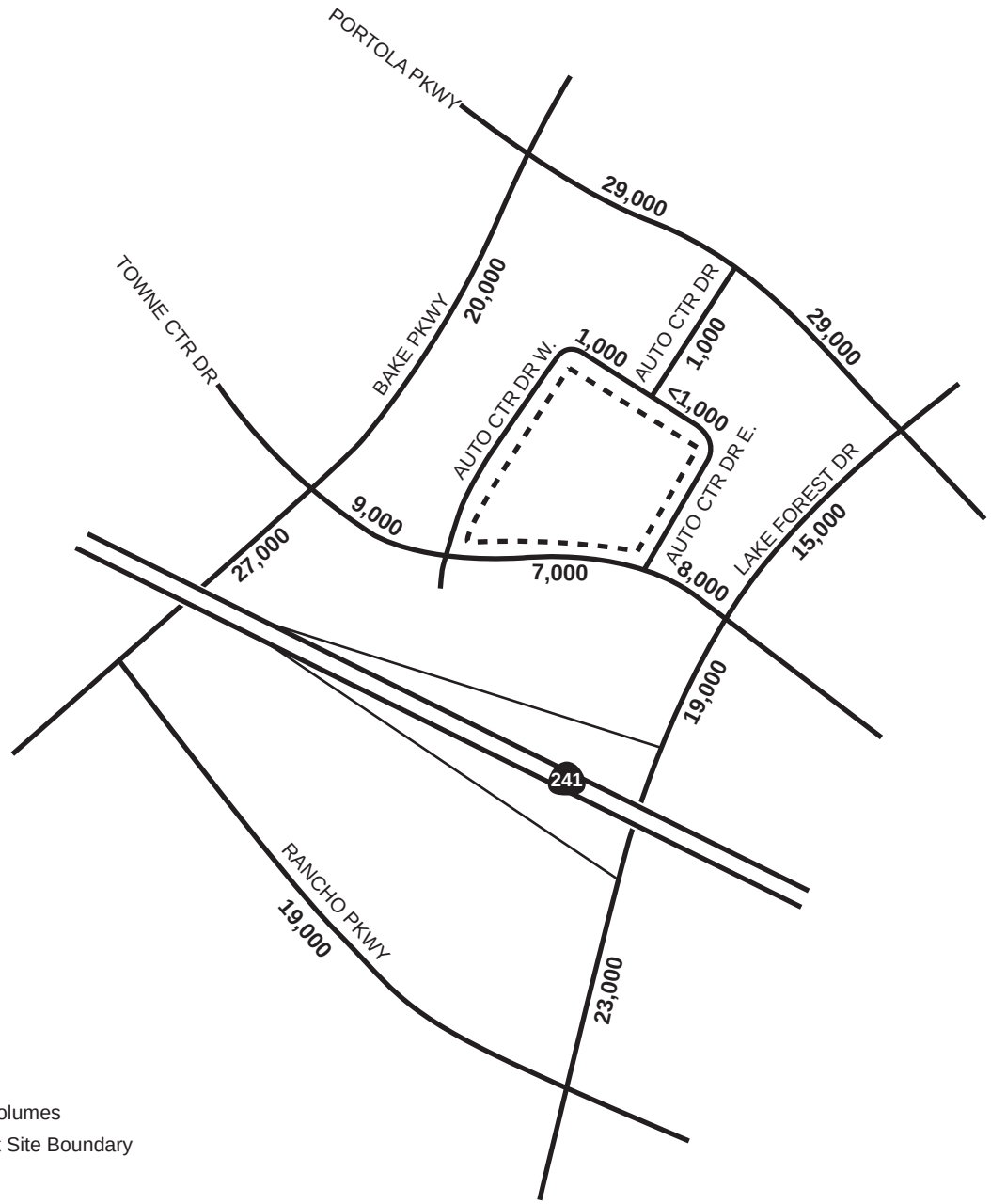
FORECAST YEAR 2030 WITH PROJECT CONDITIONS

This section analyzes the potential impact of the addition of trips forecast to be generated by the proposed project to forecast year 2030 without project conditions.

Forecast Year 2030 With Project Conditions Traffic Volumes

Forecast year 2030 with project conditions ADT and a.m. and p.m. peak hour volumes were derived by adding forecast project-generated trips to forecast year 2030 without project conditions traffic volumes.

Exhibits 19 and 20 show forecast year 2030 with project conditions ADT and a.m. and p.m. peak hour volumes at the study intersections provided by *Stantec Consulting Services Inc*.



Legend:

X,XXX ADT Volumes

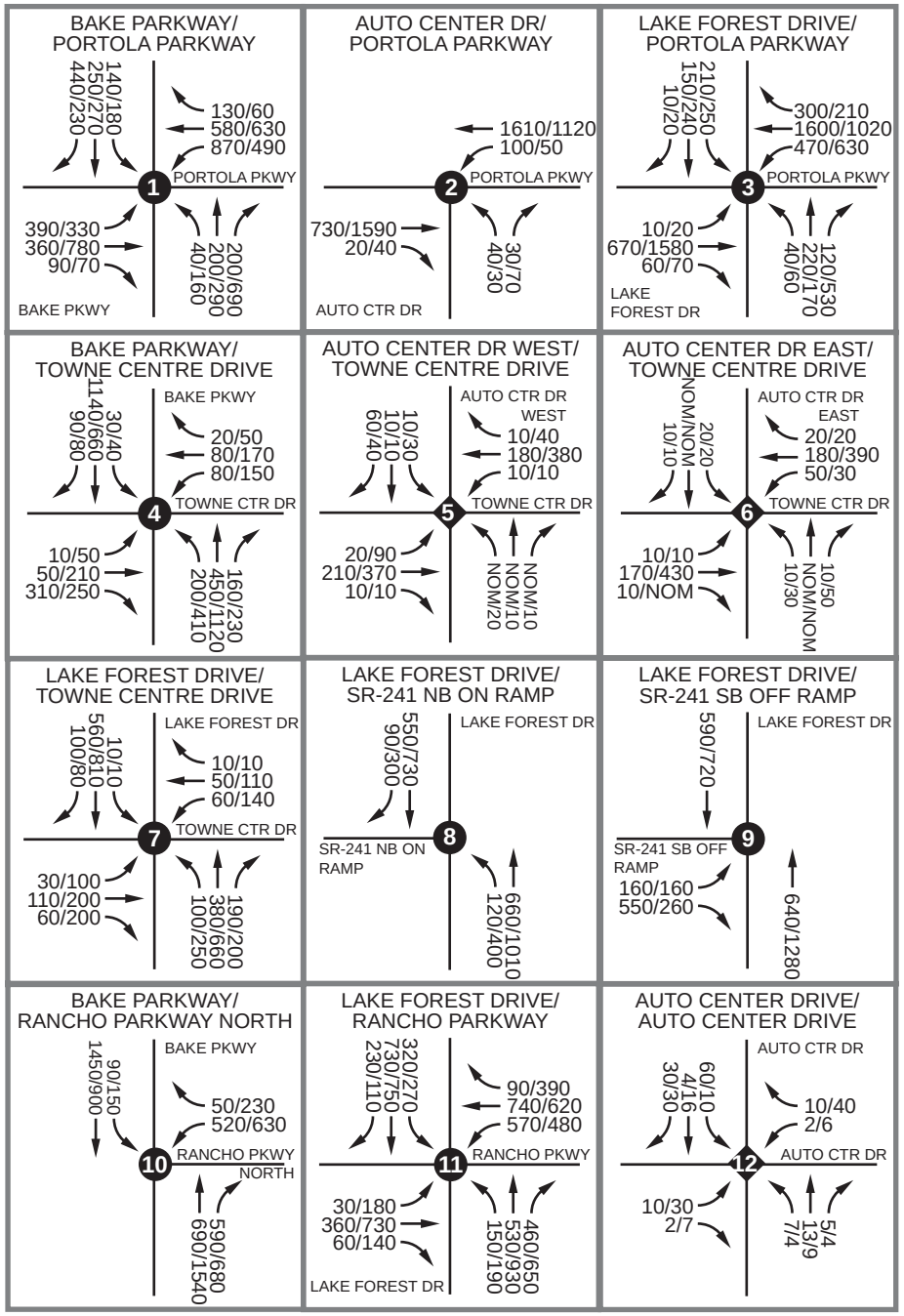
- - - Project Site Boundary

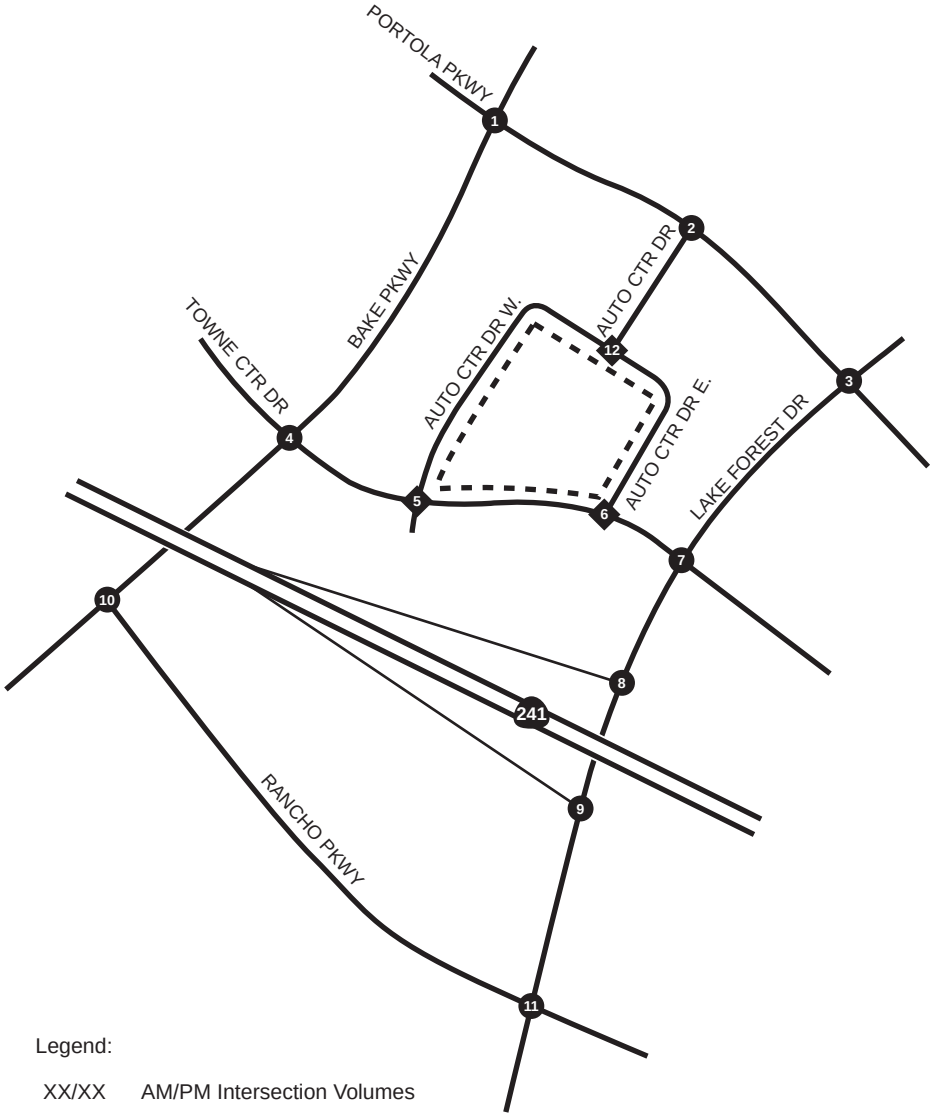
Not to Scale

Forecast Year 2030 With Project Conditions Roadway Segment ADT Volumes

H:\pdata\10108690\Traffic\Exhibits\Exh19.ai MAY/2012

Exhibit 19





Legend:

XX/XX	AM/PM Intersection Volumes
XX	Stop-Controlled Intersection
XX	Signal-Controlled Intersection
- - -	Project Site Boundary
NOM	Nominal Value

RBF

Forecast Year 2030 With Project AM & PM Peak Hour Intersection Volumes

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Exhibit 20

Forecast Year 2030 With Project Conditions Intersection Peak Hour Level of Service

Table 9 summarizes forecast year 2030 with project conditions a.m. peak hour and p.m. peak hour LOS of the study intersections; detailed LOS analysis sheets prepared by *Stantec Consulting Services Inc.* are contained in Appendix A.

Table 9
Forecast Year 2030 With Project Conditions
AM & PM Peak Hour Intersection LOS

Study Intersection	Forecast Year 2030 Without Project Conditions		Forecast Year 2030 With Project Conditions		Significant Impact?
	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	
	V/C (Delay) – LOS	V/C (Delay) – LOS	V/C (Delay) – LOS	V/C (Delay) – LOS	
1 – Bake Pkwy/Portola Pkwy	0.59 – A	0.66 – B	0.59 – A	0.67 – B	No
2 – Auto Center Dr/Portola Pkwy	0.54 – A	0.40 – A	0.54 – A	0.41 – A	No
3 – Lake Forest Dr/Portola Pkwy	0.55 – A	0.88 – D	0.54 – A	0.87 – D	No
4 – Bake Pkwy/Towne Center Dr	0.60 – A	0.61 – B	0.62 – B	0.60 – A	No
5 – Auto Center Dr W/Towne Centre Dr*	0.17 – A (9.60 – A)	0.23 – A (13.50 – B)	0.16 – A (9.70 – A)	0.26 – A (14.10 – B)	No
6 – Auto Center Dr E/Towne Centre Dr*	0.16 – A (10.90 – B)	0.26 – A (14.70 – B)	0.15 – A (11.60 – B)	0.26 – A (17.30 – C)	No
7 – Lake Forest Dr/Towne Centre Dr	0.33 – A	0.50 – A	0.34 – A	0.56 – A	No
8 – Lake Forest Dr/SR-241 NB On-Ramp*	0.25 – A (3.70 – A)	0.37 – A (7.20 – A)	0.25 – A (4.10 – A)	0.38 – A (7.40 – A)	No
9 – Lake Forest Dr/SR-241 SB Off-Ramp*	0.55 – A (18.90 – B)	0.47 – A (10.40 – B)	0.54 – A (18.90 – B)	0.48 – A (10.40 – B)	No
10 – Bake Pkwy/Rancho Pkwy N	0.63 – B	0.78 – C	0.63 – B	0.78 – C	No
11 – Lake Forest Dr/Rancho Pkwy	0.66 – B	0.84 – D	0.68 – B	0.83 – D	No
12 – Auto Center Dr/Auto Center Dr*	0.11 – A (8.80 – A)	0.10 – A (8.70 – A)	0.12 – A (9.10 – A)	0.13 – A (9.50 – A)	No

Note: V/C = volume to capacity ratio; SB = Southbound; NB = Northbound.
*Delay shown for informational purposes only at State Highway intersections and unsignalized intersections only.

As shown in Table 9, with the addition of project-generated trips, the study intersections are forecast to continue to operate at an acceptable LOS (LOS D or better) according to City of Lake Forest performance criteria for forecast year 2030 with project conditions.

As also shown in Table 9, based on City of Lake Forest established thresholds of significance, the addition of project-generated trips is forecast to result in no significant impacts at the study intersections for forecast year 2030 with project conditions.

INGRESS QUEUE ANALYSIS

To determine the required queue storage requirements for the gated access location of the proposed project, an ingress queue analysis has been prepared. At a gated ingress location, the critical vehicular queue length requirement is based on the queue generated by visitors who have to wait at a call box to be let into the community. Residents have immediate access and therefore do not queue outside of the gates. This queue analysis has been prepared for the Auto Center Drive/Auto Center Drive access location, which serves as the primary access point for the project site and also serves as the only project site access location for visitors, where potential queuing would occur. The secondary project site access location at Auto Center Drive northerly of Towne Center Drive is for residents only, and hence no queuing associated with visitors is anticipated.

Analysis Methodology

The Crommelin Methodology is a queuing analysis methodology used to determine the required storage reservoir required for visitors and visitors at entryways to gated communities, based on *Entrance-Exit Design and Control for Major Parking Facilities (Robert W. Crommelin, October 5, 1972)*. The Crommelin Methodology determines the minimum storage length required to provide adequate access and control at gated entry points to ensure the design of an efficient access system with minimal impacts on the surrounding street network. The methodology is based on worst case peak hour volumes, gate control strategies, the processing rate at the control point and the number of travel lanes. The determination of the reservoir length required to serve peak hour volumes is based on a Poisson distribution.

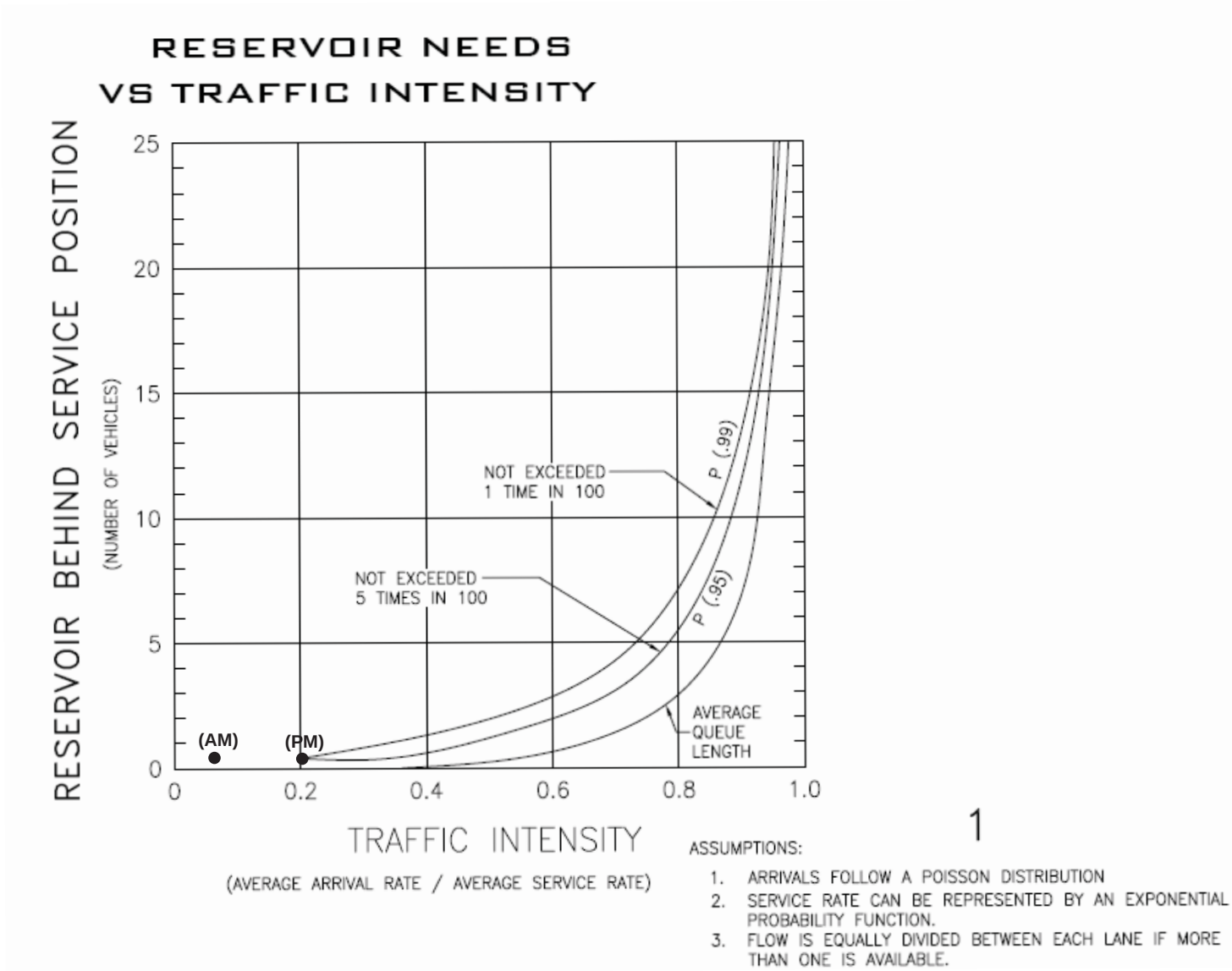
A traffic intensity factor is calculated by dividing peak hour traffic volumes by the control point processing rate. The intensity factor is plotted on a Crommelin Reservoir Needs nomograph to determine the number of vehicles queuing behind the control point service position based on a selected confidence interval. The forecast queue of vehicles is increased by one vehicle to account for the service position vehicle and multiplied by 25 feet per vehicle to determine the total required storage capacity.

Project Ingress Crommelin Queue Analysis

The following conservative assumptions were made in determining data input for the queuing analysis:

- 25% of all inbound project trip generation during both the a.m. and p.m. peak hours is assumed to be visitor trips (percentage is considered higher than industry standards).
- The processing rate at the control point is assumed to be 60 vehicles per hour (i.e., one visitor vehicle every 60 seconds can be processed and continue through the gate).
- The analysis is based on a 99% confidence interval (i.e., 99% of the time, the queue will be equal to or less than the maximum vehicle queue).

Table 10 summarizes the results of the Crommelin visitor ingress queuing analysis for the project driveway located at the south leg of the intersection at Auto Center Drive and Auto Center Drive; Exhibit 21 contains the Crommelin Resevoir Needs nomograph for the project driveway.



Project Visitor Gate Queuing Analysis - AM & PM Peak Hour

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Exhibit 21

Table 10
Project Visitor Driveway Ingress Crommelin Queuing Analysis Summary

Location	Time Period	Entering Vehicle Volume	Service Rate (veh/hr)	Traffic Intensity Factor	Maximum Vehicle Queue	Required Queue Storage Capacity (feet)	Queue Storage Capacity Provided (feet)	Adequate Queue Storage Provided?
Project Visitor Driveway	AM	4	60	0.0667	1	25	42	Yes
	PM	12	60	0.2	1	25	42	Yes

As shown in Table 10, the project visitor ingress driveway is forecast to have a maximum queue of four visitor vehicles during the a.m. peak hour and twelve visitor vehicles during the p.m. peak hour that require minimum storage length of 25 feet to accommodate the visitor vehicular queue during both the a.m. peak hour and p.m. peak hour.

As also shown in Table 10, the proposed project site plan is forecast to provide adequate queue storage to accommodate the forecast 25-foot visitor vehicle queue.

Exhibit 22 shows the 42 feet provided to adequately accommodate the required 25-feet for visitor vehicle queuing.

It should be noted that while the Crommelin Methodology conservatively assumes 25 feet per queue vehicle as shown in Exhibit 22, two 17-feet long vehicles can be accommodated in the 42 feet provided, thus providing queuing storage area for twice as many queuing vehicles required per the analysis.

MITIGATION MEASURES

Since no significant traffic impacts are forecast to occur as a result of the proposed project, no traffic mitigation measures are required for the proposed project.

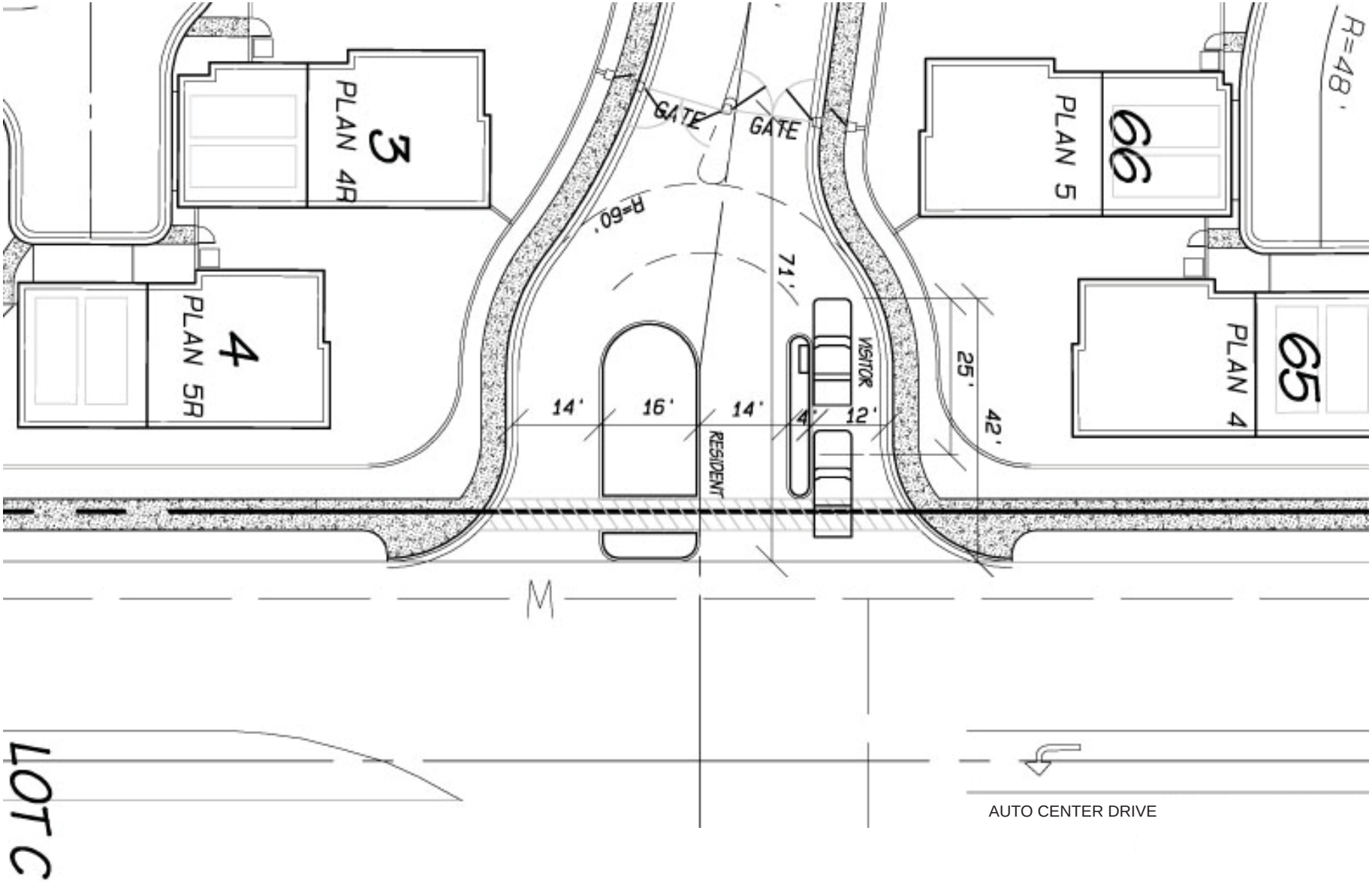
CONCLUSIONS

The proposed project is forecast to generate approximately 718 daily trips, which include approximately 56 a.m. peak hour trips and approximately 76 p.m. peak hour trips.

Based on City of Lake Forest thresholds of significance, the addition of project-generated trips is forecast to result in no significant impacts at the study intersections for all analysis scenarios.

Adequate queue storage is provided at the Auto Center Drive/Auto Center Drive access location, which serves as the primary access point for the project site and also serves as the only project site access location for visitors, where potential queuing would occur. The secondary project site access location at Auto Center Drive northerly of Towne Center Drive is for residents only, and hence no queuing associated with visitors is anticipated.

No traffic mitigation measures are required for the proposed project since no significant traffic impacts are forecast to occur as a result of the proposed project. Table 11 summarizes the intersection LOS results for all analysis scenarios.



Not to Scale

RBF

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MAY/2012

Visitor Vehicular Queuing

Exhibit 22

Table 11
Summary of AM & PM Peak Hour Study Intersection LOS

Study Intersection	Existing Conditions		Forecast Existing Plus Project Conditions		Forecast Year 2013 Without Project Conditions		Forecast Year 2013 With Project Conditions		Forecast Year 2030 Without Project Conditions		Forecast Year 2030 With Project Conditions		Significant Impact?
	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	
	V/C (Delay)– LOS	V/C (Delay)– LOS	V/C (Delay)– LOS	V/C (Delay)– LOS	V/C (Delay)– LOS	V/C (Delay)– LOS	V/C (Delay)– LOS	V/C (Delay)– LOS	V/C (Delay)– LOS	V/C (Delay)– LOS	V/C (Delay)– LOS	V/C (Delay)– LOS	
1 – Bake Pkwy/Portola Pkwy	0.53 – A	0.56 – A	0.52 – A	0.56 - A	0.51 – A	0.61 – B	0.51 – C	0.62 – B	0.59 – A	0.66 – B	0.59 – A	0.67 – B	No
2 – Auto Center Dr/Portola Pkwy	0.38 – A	0.35 – A	0.39 – A	0.35 – A	0.46 – A	0.40 – A	0.47 – A	0.40 – A	0.54 – A	0.40 – A	0.54 – A	0.41 – A	No
3 – Lake Forest Dr/Portola Pkwy	0.46 – A	0.72 – C	0.46 – A	0.72 – C	0.53 – A	0.75 – C	0.52 – A	0.76 – C	0.55 – A	0.88 – D	0.54 – A	0.87 – D	No
4 – Bake Pkwy/Towne Center Dr	0.69 - B	0.60 - A	0.69 – B	0.61 – B	0.55 – A	0.60 – A	0.54 – A	0.59 – A	0.60 – A	0.61 – B	0.62 – B	0.60 – A	No
5 – Auto Center Dr W/Towne Centre Dr*	0.12 – A (10.30 – B)	0.20 – A (11.90 – B)	0.12 – A (10.40 – B)	0.21 – A (12.10 – B)	0.17 – A (9.70 – A)	0.23 – A (13.40 – B)	0.17 – A (9.70 – A)	0.26 – A (13.60 – B)	0.17 – A (9.60 – A)	0.23 – A (13.50 – B)	0.16 – A (9.70 – A)	0.26 – A (14.10 – B)	No
6 – Auto Center Dr E/Towne Centre Dr*	0.10 – A (9.90 – A)	0.17 – A (11.90 – B)	0.11 – A (10.00 – A)	0.17 – A (12.20 – B)	0.16 – A (10.90 – B)	0.26 – A (14.80 – B)	0.16 – A (11.60 – B)	0.26 – A (17.30 – C)	0.16 – A (10.90 – B)	0.26 – A (14.70 – B)	0.15 – A (11.60 – B)	0.26 – A (17.30 – C)	No
7 – Lake Forest Dr/Towne Centre Dr	0.39 – A	0.50 – A	0.39 – A	0.51 – A	0.35 – A	0.48 – A	0.35 – A	0.55 – A	0.33 – A	0.50 – A	0.34 – A	0.56 – A	No
8 – Lake Forest Dr/SR-241 NB On-Ramp*	0.30 – A (3.50 – A)	0.37 – A (3.70 – A)	0.31 – A (3.60 – A)	0.37 – A (3.70 – A)	0.26 – A (3.80 – A)	0.31 – A (4.80 – A)	0.27 – A (3.90 – A)	0.31 – A (4.80 – A)	0.25 – A (3.70 – A)	0.37 – A (7.20 – A)	0.25 – A (4.10 – A)	0.38 – A (7.40 – A)	No
9 – Lake Forest Dr/SR-241 SB Off-Ramp*	0.43 – A (10.80 – B)	0.43 – A (6.0 – A)	0.44 – A (10.80 – B)	0.43 – A (6.10 – A)	0.39 – A (11.80 – B)	0.40 – A (9.30 – A)	0.40 – A (12.10 – B)	0.40 – A (9.30 – A)	0.55 – A (18.90 – B)	0.47 – A (10.40 – B)	0.54 – A (18.90 – B)	0.48 – A (10.40 – B)	No
10 – Bake Pkwy/Rancho Pkwy N	0.59 – A	0.71 – C	0.60 – A	0.71 – A	0.59 – A	0.65 – B	0.59 – A	0.67 – B	0.63 – B	0.78 – C	0.63 – B	0.78 – C	No
11 – Lake Forest Dr/Rancho Pkwy	0.39 – A	0.49 – A	0.38 – A	0.50 – A	0.63 – B	0.88 – D	0.62 – B	0.87 – D	0.66 – B	0.84 – D	0.68 – B	0.83 – D	No
12 – Auto Center Dr/Auto Center Dr*	0.09 – A (8.70 – A)	0.10 – A (8.70 – A)	0.12 – A (9.20 – A)	0.12 – A (9.70 – A)	0.11 – A (8.80 – A)	0.10 – A (8.70 – A)	0.12 – A (9.10 – A)	0.13 – A (9.50 – A)	0.11 – A (8.80 – A)	0.10 – A (8.70 – A)	0.12 – A (9.10 – A)	0.13 – A (9.50 – A)	No

Note: V/C = volume to capacity ratio; SB = Southbound; NB = Northbound.

*Delay shown for informational purposes only at State Highway intersections and unsignalized intersections only.

H:\pdata\10108690\Traffic\Admin\8690_Trf.docx

APPENDIX A
Paseos at Foothill Village Residential Project Traffic Forecast Data (*Stantec Consulting Services Inc.*)

Paseos at Foothill Village Residential Project

Traffic Forecast Data

Submitted by:

Stantec Consulting Services Inc.

19 Technology Drive, Suite 200

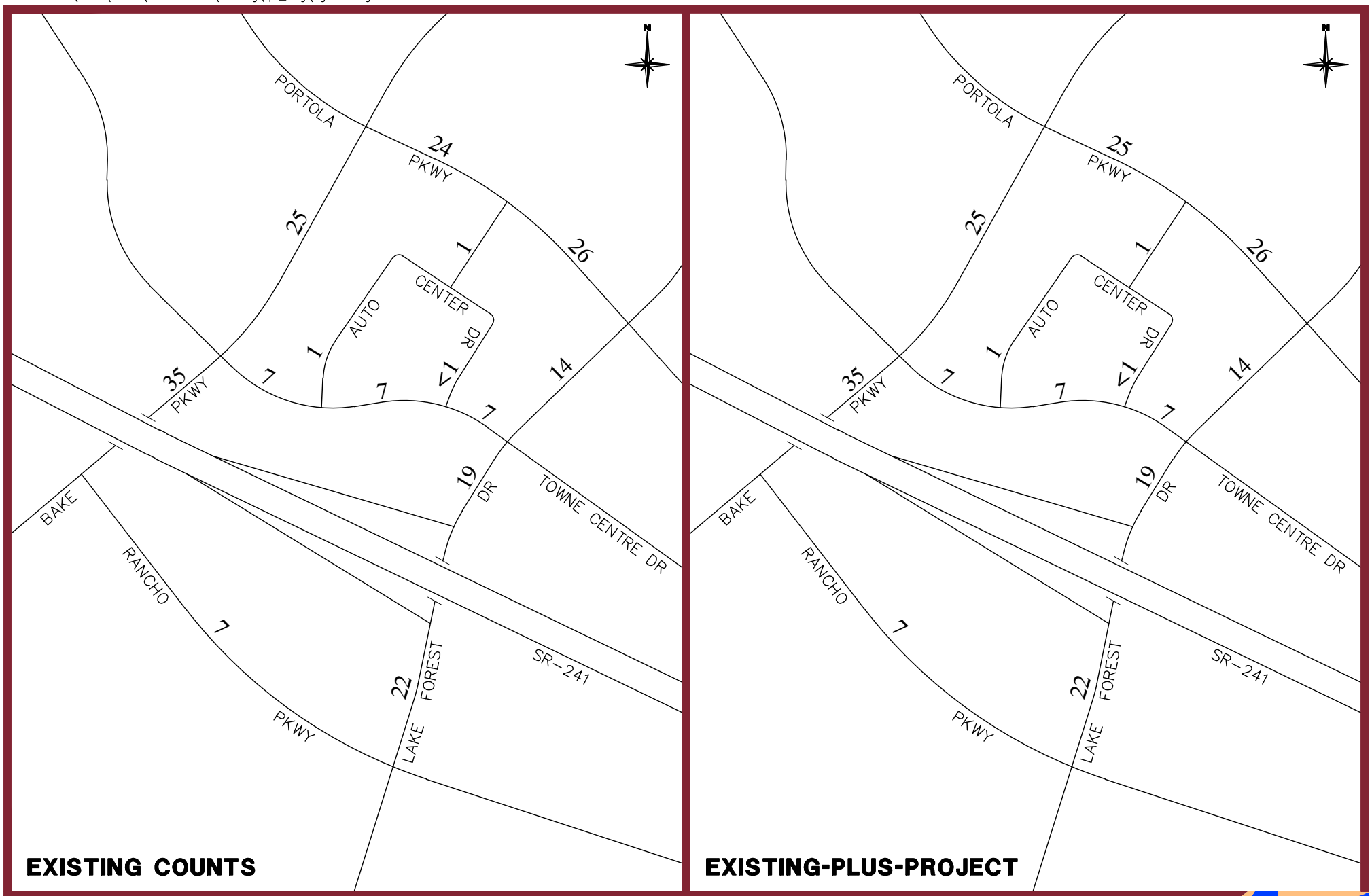
Irvine, CA 92618

(949) 923-6062

May 2012

2073007100

DRAWING: v:\2073\active\2073007100\drawing\rpt_dwg\figure1.dwg



Stantec

Existing ADT Volumes (000s)
- Counts and Existing-Plus-Project

Figure 1

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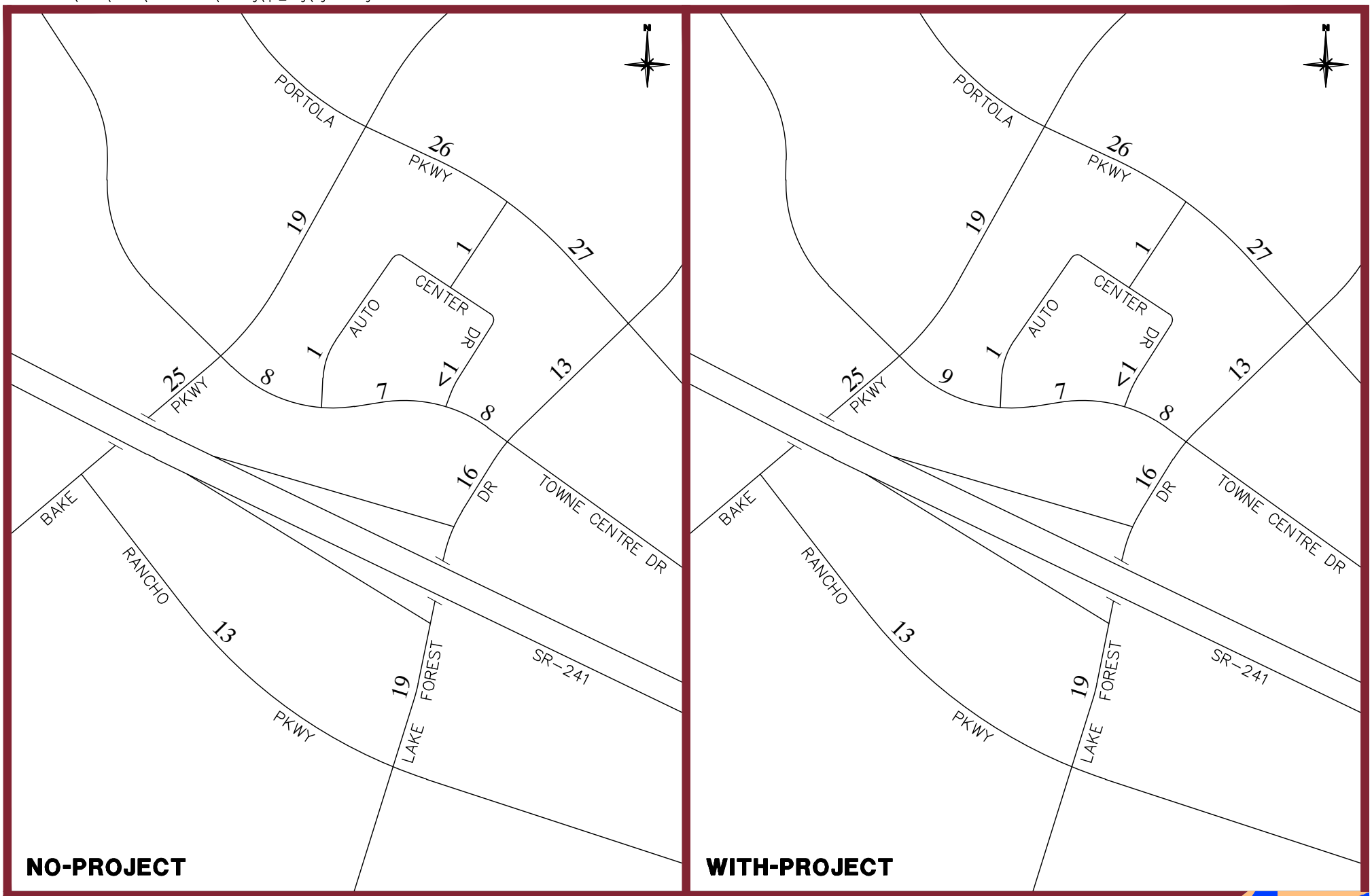

Stantec

2015 ADT Volumes (000s)
- No-Project and With-Project

Figure 2

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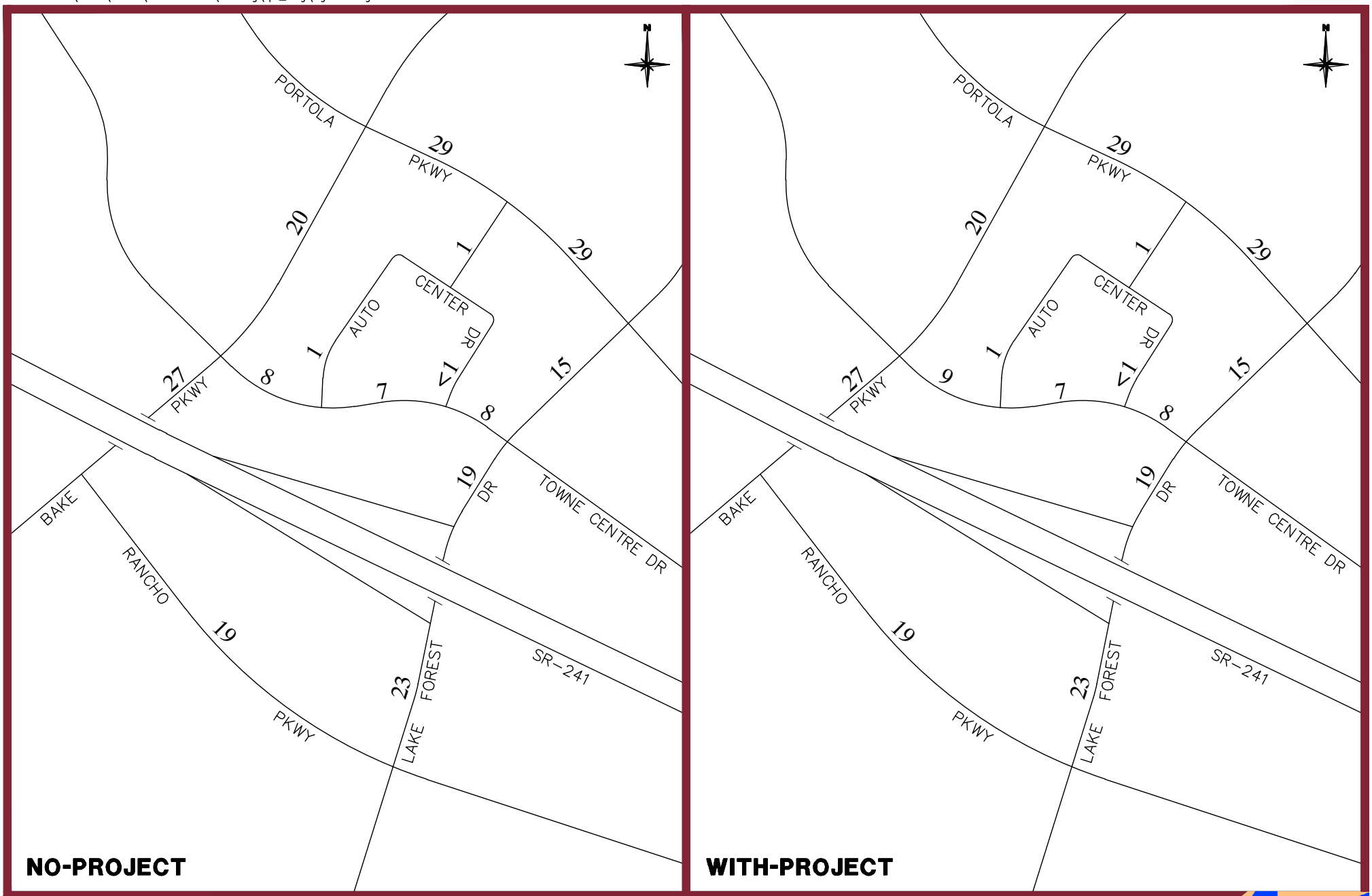

Stantec

2030 ADT Volumes (000s)
- No-Project and With-Project

Figure 3

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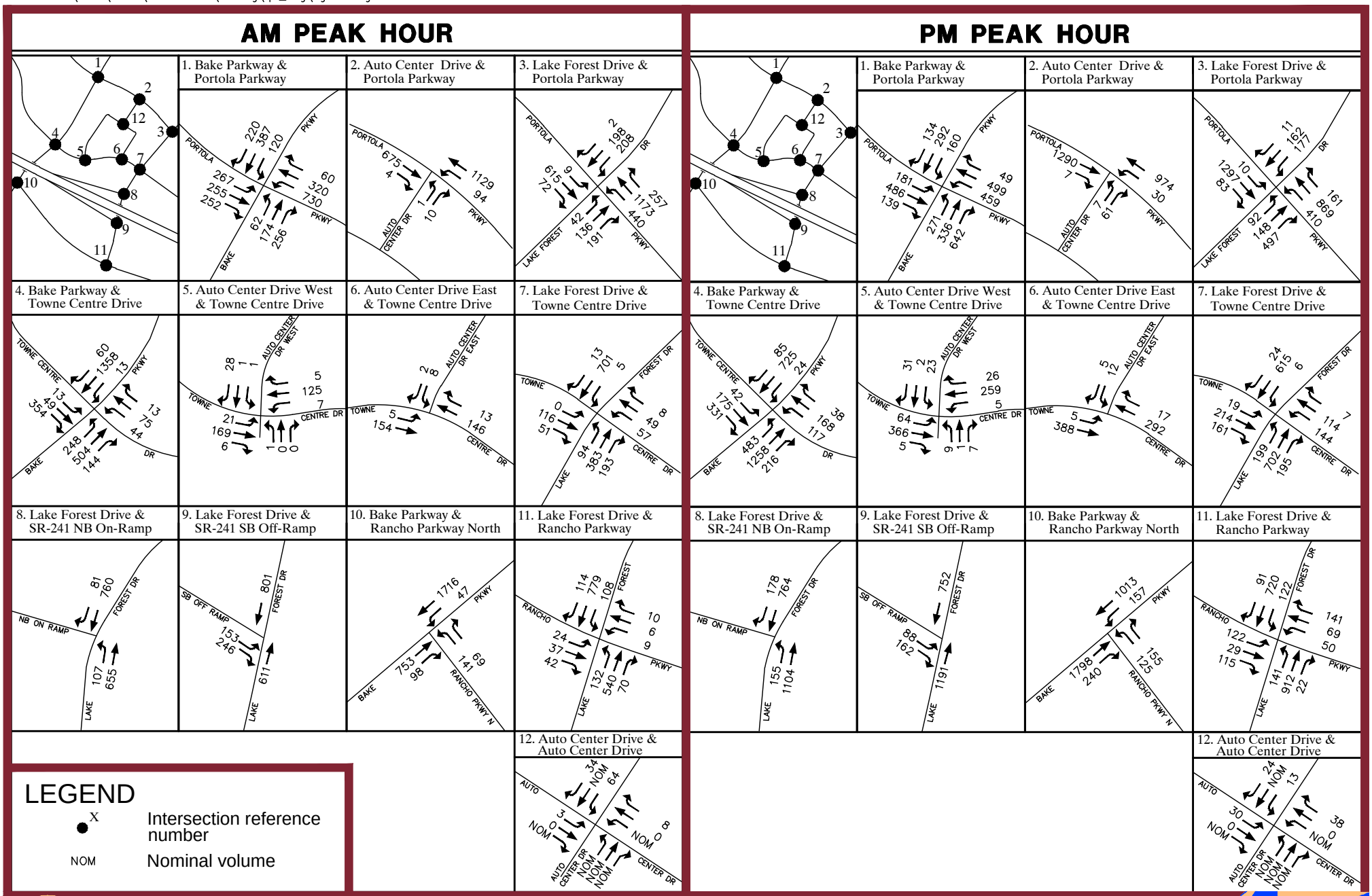
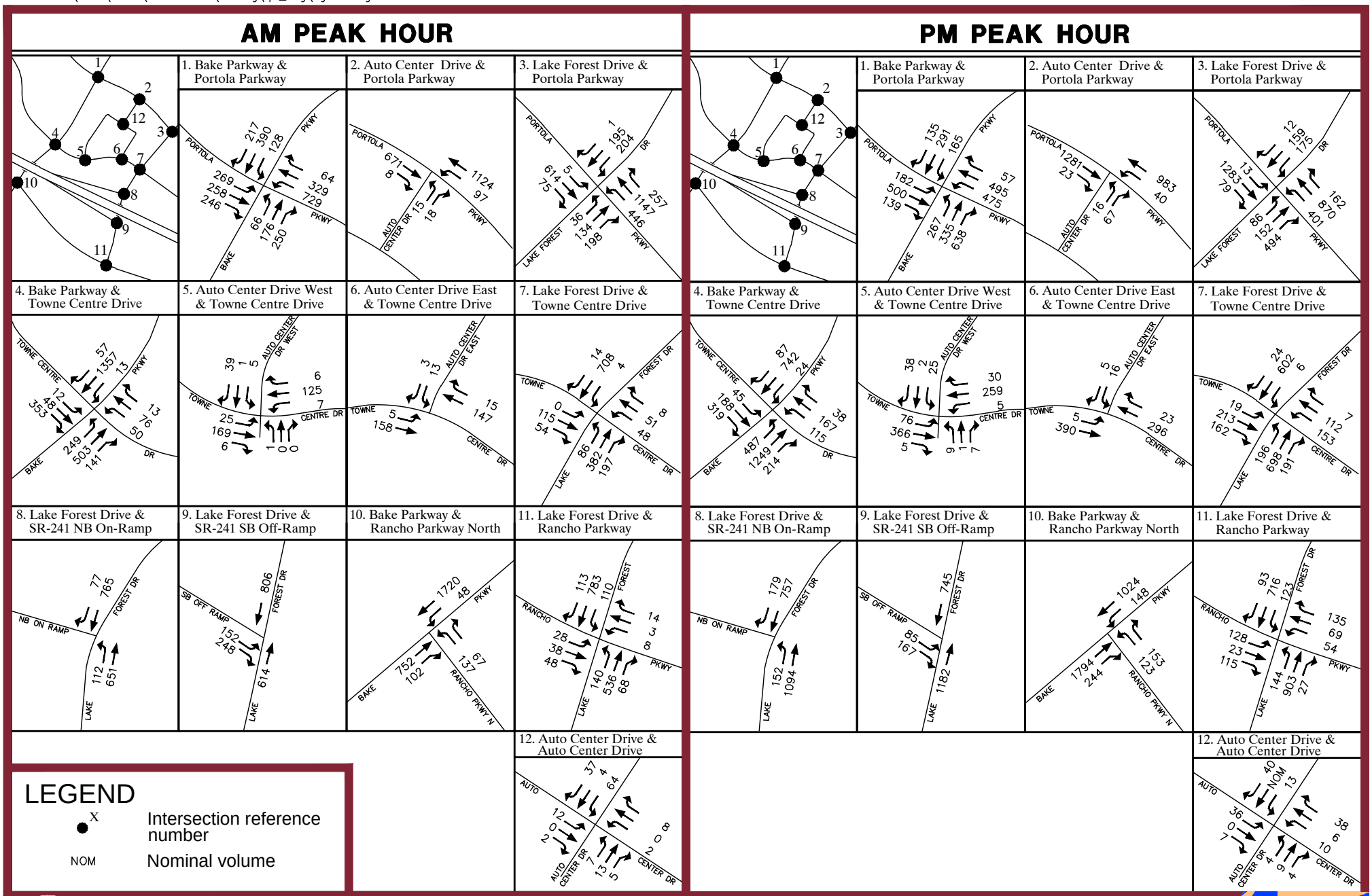


Existing Peak Hour Volumes

Figure 4

Stantec

DRAWING: v:\2073\active\2073007100\drawing\rpt_dwg\figure5.dwg

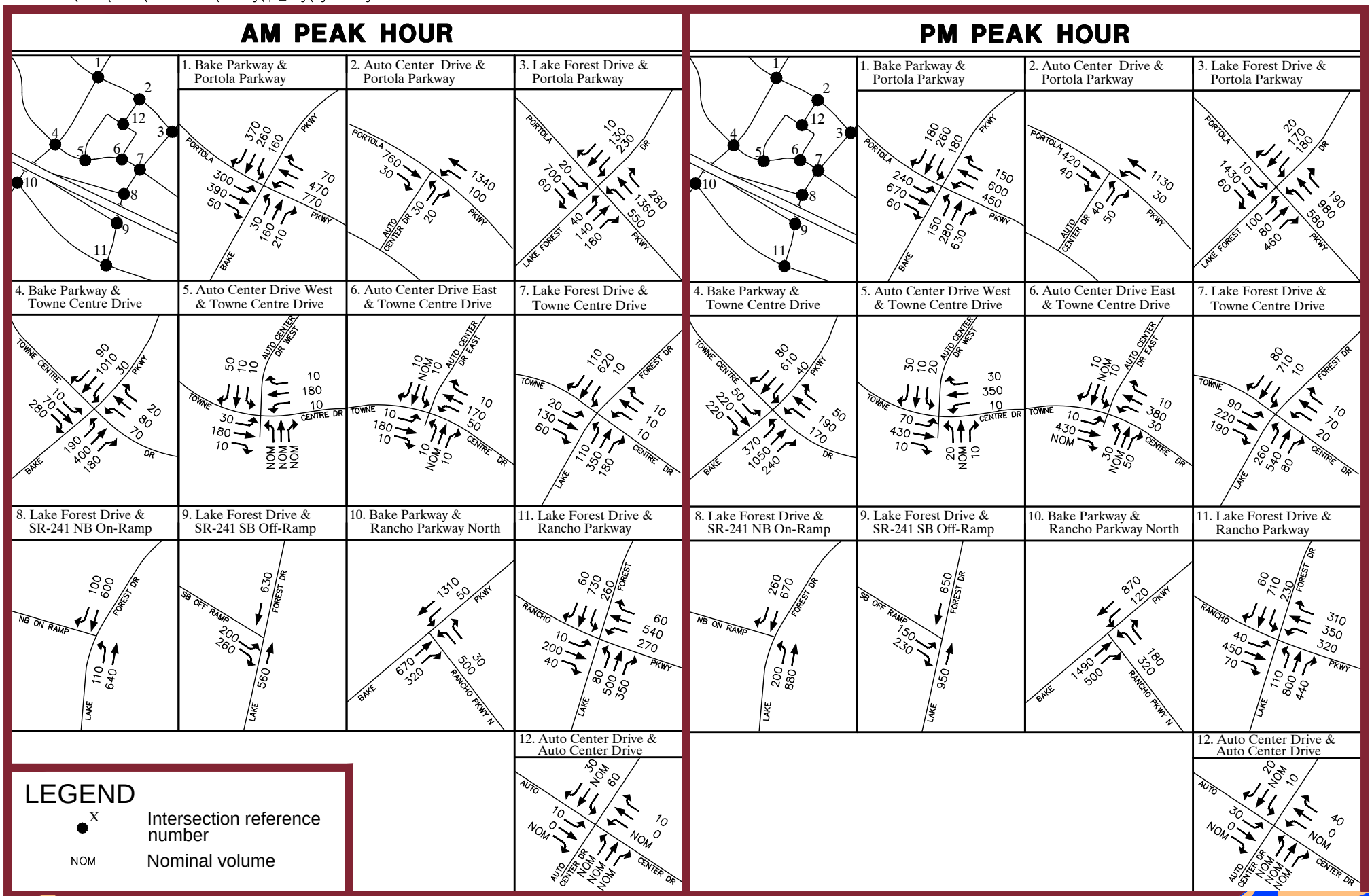


Existing-Plus-Project Peak Hour Volumes

Figure 5

Stantec

DRAWING: v:\2073\active\2073007100\drawing\rpt_dwg\figure6.dwg

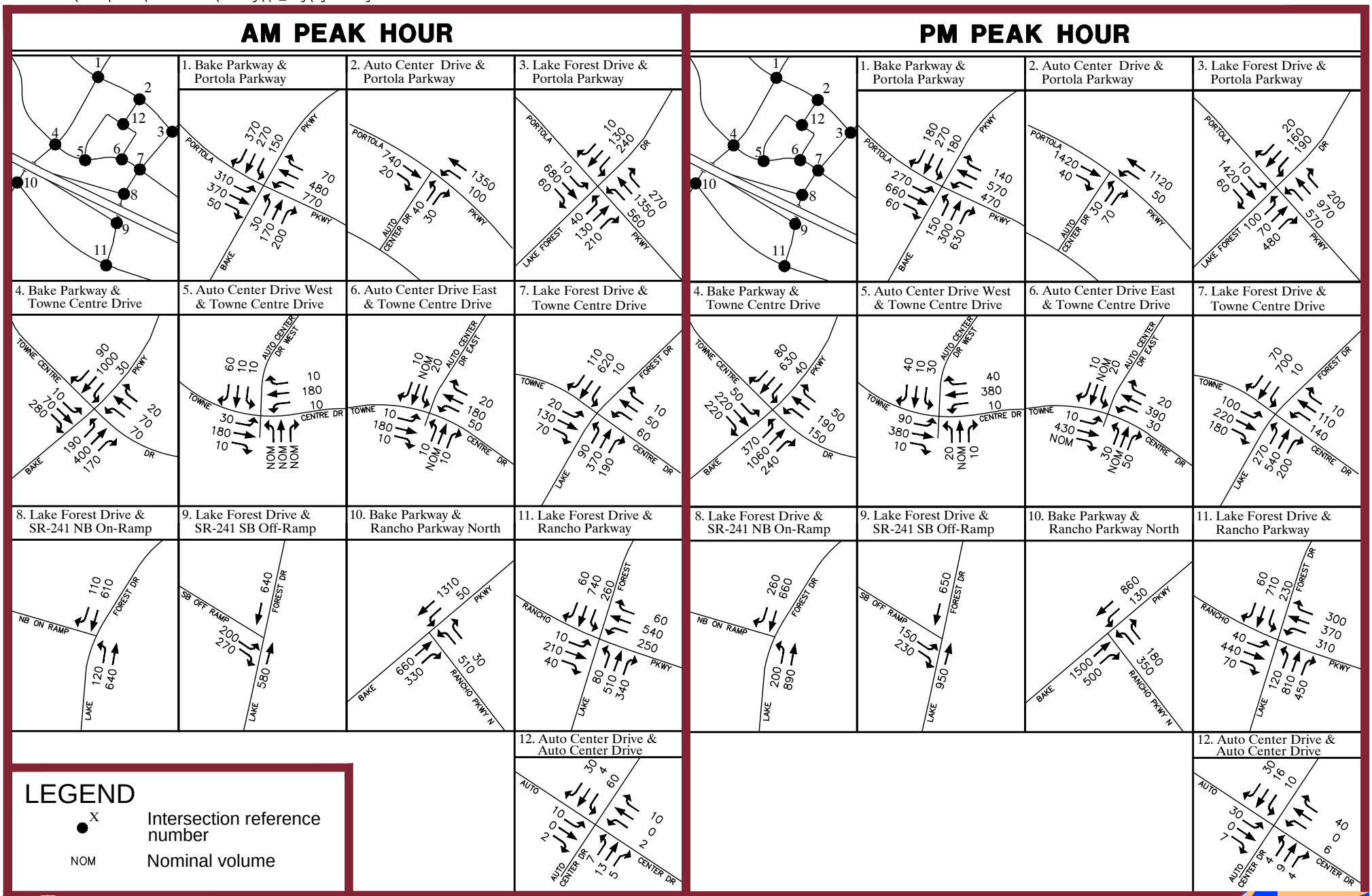


Stantec

2015 Peak Hour Volumes - No-Project

Figure 6

DRAWING: v:\2073\active\2073007100\drawing\rpt_dwg\figure7.dwg

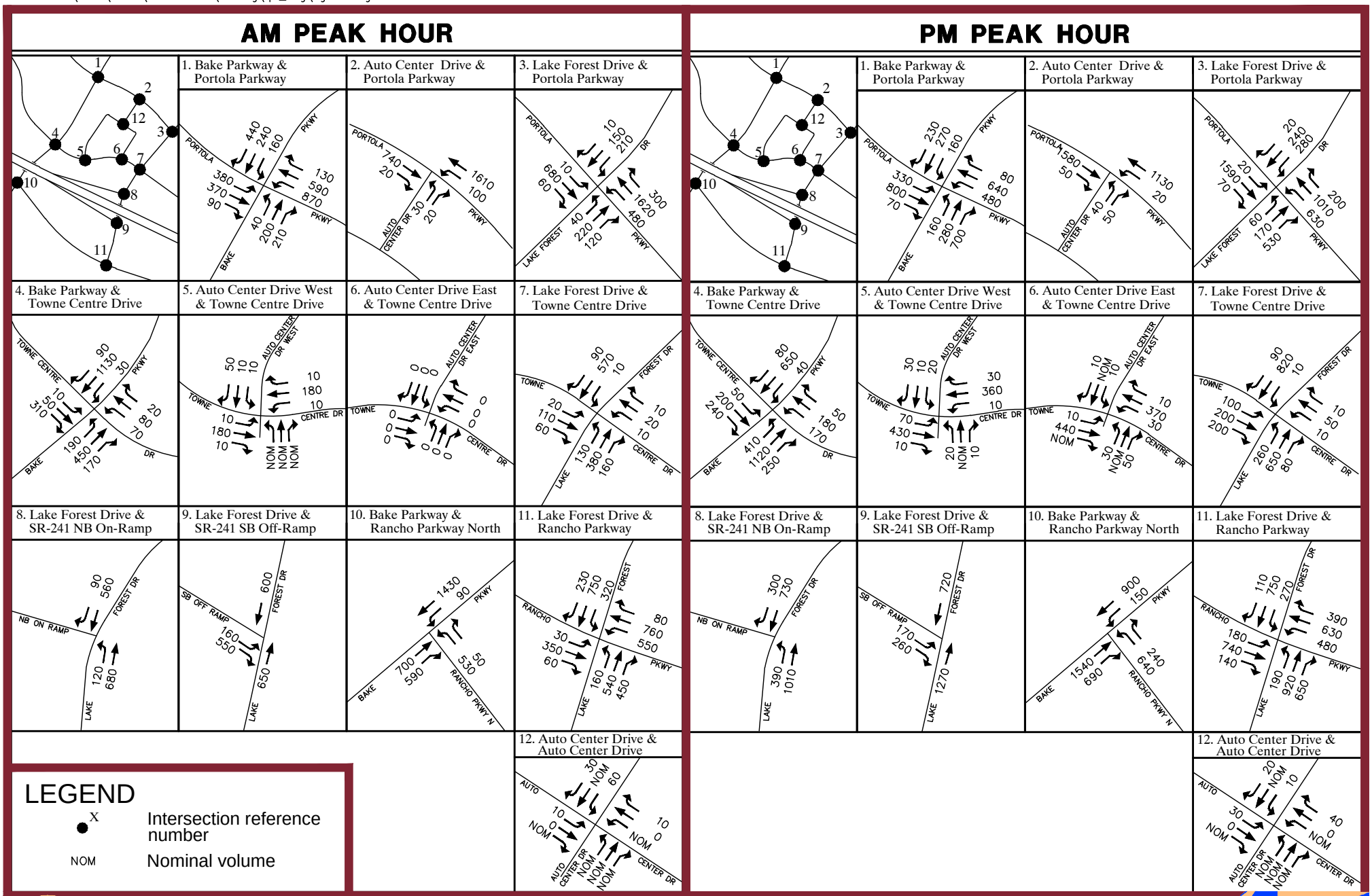


Stantec

2015 Peak Hour Volumes - With-Project

Figure 7

DRAWING: v:\2073\active\2073007100\drawing\rpt_dwg\figure8.dwg

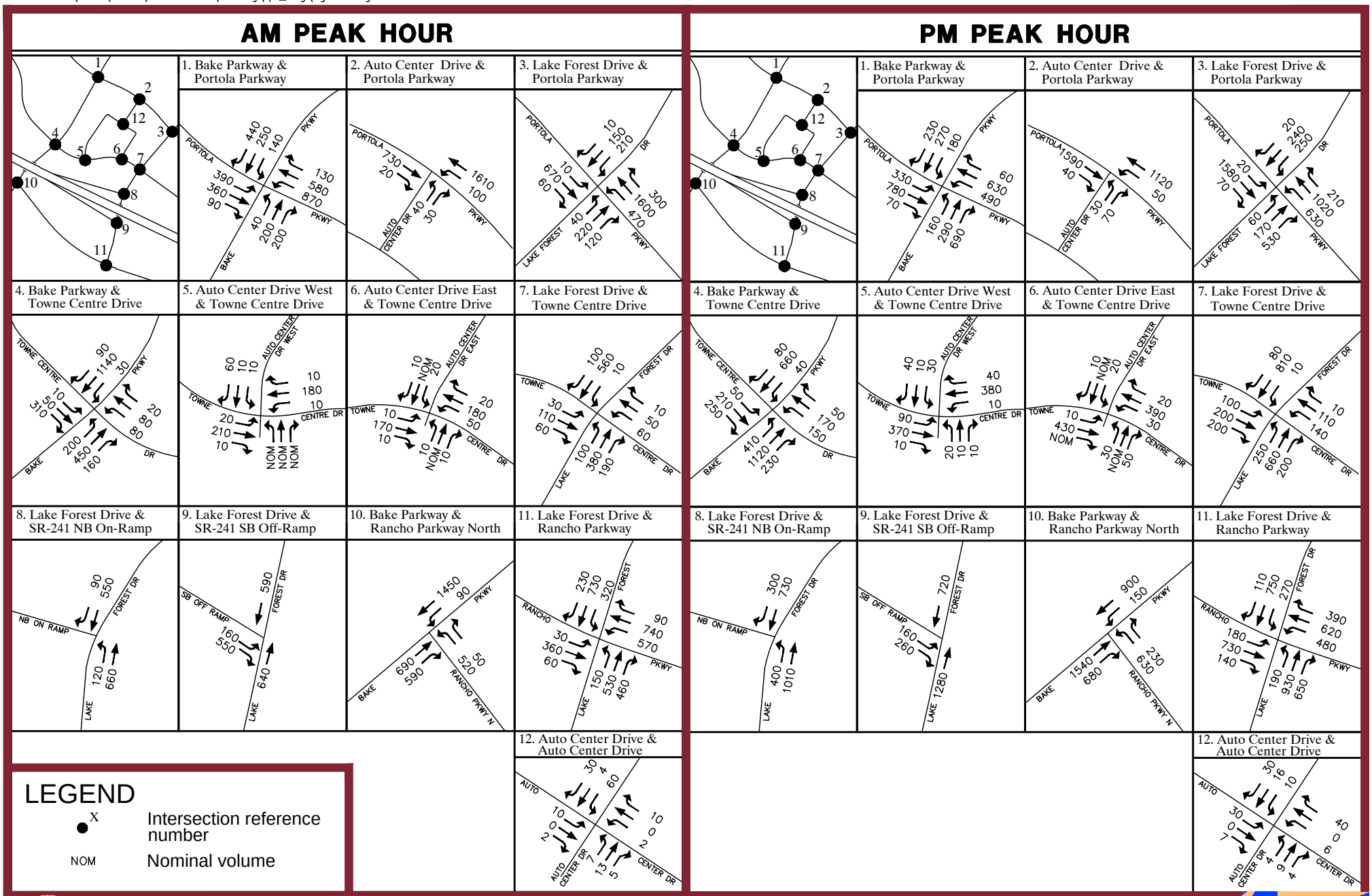


Stantec

2030 Peak Hour Volumes
- No-Project

Figure 8

DRAWING: v:\2073\active\2073007100\drawing\rpt_dwg\figure9.dwg



Stantec

2030 Peak Hour Volumes - With-Project

Figure 9

1. Bake & Portola

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	62	.04*	271	.16*
NBT	1.5	5100	174	{.05}	336	{.15}
NBR	1.5		256		642	
SBL	1	1700	120	.07	160	.09
SBT	2	3400	387	.11*	292	.09*
SBR	d	1700	220	.13	134	.08
EBL	1	1700	267	.16	181	.11*
EBT	3	5100	255	.05*	486	.10
EBR	d	1700	252	.15	139	.08
WBL	2	3400	730	.21*	459	.14
WBT	2	3400	320	.09	499	.15*
WBR	d	1700	60	.04	49	.03
Right Turn Adjustment			EBR	.07*		
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .53 .56

Existing-Plus-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	66	.04*	267	.16
NBT	1.5	5100	176	{.05}	335	{.15}*
NBR	1.5		250		638	
SBL	1	1700	128	.08	165	.10*
SBT	2	3400	390	.11*	291	.09
SBR	d	1700	217	.13	135	.08
EBL	1	1700	269	.16*	182	.11*
EBT	3	5100	258	.05	500	.10
EBR	d	1700	246	.14	139	.08
WBL	2	3400	729	.21	475	.14
WBT	2	3400	329	.10*	495	.15*
WBR	d	1700	64	.04	57	.03
Right Turn Adjustment			EBR	.06*		
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .52 .56

2015 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	30	.02	150	.09
NBT	1.5	5100	160	{.05}*	280	{.13}*
NBR	1.5		210		630	
SBL	1	1700	160	.09*	180	.11*
SBT	2	3400	260	.08	260	.08
SBR	d	1700	370	.22	180	.11
EBL	1	1700	300	.18*	240	.14*
EBT	3	5100	390	.08	670	.13
EBR	d	1700	50	.03	60	.04
WBL	2	3400	770	.23	450	.13
WBT	2	3400	470	.14*	600	.18*
WBR	d	1700	70	.04	150	.09
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .51 .61

2015 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	30	.02	150	.09
NBT	1.5	5100	170	{.05}*	300	{.13}*
NBR	1.5		200		630	
SBL	1	1700	150	.09*	180	.11*
SBT	2	3400	270	.08	270	.08
SBR	d	1700	370	.22	180	.11
EBL	1	1700	310	.18*	270	.16*
EBT	3	5100	370	.07	660	.13
EBR	d	1700	50	.03	60	.04
WBL	2	3400	770	.23	470	.14
WBT	2	3400	480	.14*	570	.17*
WBR	d	1700	70	.04	140	.08
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .51 .62

1. Bake & Portola

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	40	.02	160	.09
NBT	1.5	5100	200	{.06}*	280	{.14}*
NBR	1.5		210		700	
SBL	1	1700	160	.09*	160	.09*
SBT	2	3400	240	.07	270	.08
SBR	d	1700	440	.26	230	.14
EBL	1	1700	380	.22*	330	.19*
EBT	3	5100	370	.07	800	.16
EBR	d	1700	90	.05	70	.04
WBL	2	3400	870	.26	480	.14
WBT	2	3400	590	.17*	640	.19*
WBR	d	1700	130	.08	80	.05
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.59**		**.66**

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	40	.02	160	.09
NBT	1.5	5100	200	{.06}*	290	{.13}*
NBR	1.5		200		690	
SBL	1	1700	140	.08*	180	.11*
SBT	2	3400	250	.07	270	.08
SBR	d	1700	440	.26	230	.14
EBL	1	1700	390	.23*	330	.19*
EBT	3	5100	360	.07	780	.15
EBR	d	1700	90	.05	70	.04
WBL	2	3400	870	.26	490	.14
WBT	2	3400	580	.17*	630	.19*
WBR	d	1700	130	.08	60	.04
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.59**		**.67**

2. Auto Center & Portola

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	1	.00	7	.00
NBT	0	0	0		0	
NBR	1	1700	10	.01	61	.04
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	3	5100	675	.13	1290	.25
EBR	d	1700	4	.00	7	.00
WBL	1	1700	94	.06	30	.02
WBT	2	3400	1129	.33*	974	.29*
WBR	0	0	0		0	
Right Turn Adjustment					NBR	.01*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.38**		**.35**

Existing-Plus-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	15	.01*	16	.01*
NBT	0	0	0		0	
NBR	1	1700	18	.01	67	.04
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	3	5100	671	.13	1281	.25
EBR	d	1700	8	.00	23	.01
WBL	1	1700	97	.06	40	.02
WBT	2	3400	1124	.33*	983	.29*
WBR	0	0	0		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.39**		**.35**

2015 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	30	.02*	40	.02*
NBT	0	0	0		0	
NBR	1	1700	20	.01	50	.03
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	3	5100	760	.15	1420	.28
EBR	d	1700	30	.02	40	.02
WBL	1	1700	100	.06	30	.02
WBT	2	3400	1340	.39*	1130	.33*
WBR	0	0	0		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.46**		**.40**

2015 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	40	.02*	30	.02*
NBT	0	0	0		0	
NBR	1	1700	30	.02	70	.04
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	3	5100	740	.15	1420	.28
EBR	d	1700	20	.01	40	.02
WBL	1	1700	100	.06	50	.03
WBT	2	3400	1350	.40*	1120	.33*
WBR	0	0	0		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.47**		**.40**

2. Auto Center & Portola

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	30	.02*	40	.02*
NBT	0	0	0		0	
NBR	1	1700	20	.01	50	.03
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	3	5100	740	.15	1580	.31
EBR	d	1700	20	.01	50	.03
WBL	1	1700	100	.06	20	.01
WBT	2	3400	1610	.47*	1130	.33*
WBR	0	0	0		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.54**		**.40**

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	40	.02*	30	.02*
NBT	0	0	0		0	
NBR	1	1700	30	.02	70	.04
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	3	5100	730	.14	1590	.31*
EBR	d	1700	20	.01	40	.02
WBL	1	1700	100	.06	50	.03*
WBT	2	3400	1610	.47*	1120	.33
WBR	0	0	0		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.54**		**.41**

3. Lake Forest & Portola

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	42	.02	92	.05
NBT	2	3400	136	.04*	148	.04*
NBR	d	1700	191	.11	497	.29
SBL	1	1700	208	.12*	177	.10*
SBT	2	3400	198	.06	162	.05
SBR	d	1700	2	.00	11	.01
EBL	2	3400	9	.00	10	.00
EBT	3	5100	615	.12*	1297	.25*
EBR	d	1700	72	.04	83	.05
WBL	2	3400	440	.13*	410	.12*
WBT	3	5100	1173	.23	869	.17
WBR	d	1700	257	.15	161	.09
Right Turn Adjustment					NBR	.16*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.46**		**.72**

Existing-Plus-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	36	.02	86	.05
NBT	2	3400	134	.04*	152	.04*
NBR	d	1700	198	.12	494	.29
SBL	1	1700	204	.12*	175	.10*
SBT	2	3400	195	.06	159	.05
SBR	d	1700	1	.00	12	.01
EBL	2	3400	5	.00	13	.00
EBT	3	5100	614	.12*	1283	.25*
EBR	d	1700	75	.04	79	.05
WBL	2	3400	446	.13*	401	.12*
WBT	3	5100	1147	.22	870	.17
WBR	d	1700	257	.15	162	.10
Right Turn Adjustment					NBR	.16*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.46**		**.72**

2015 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	40	.02	100	.06
NBT	2	3400	140	.04*	80	.02*
NBR	d	1700	180	.11	460	.27
SBL	1	1700	230	.14*	180	.11*
SBT	2	3400	130	.04	170	.05
SBR	d	1700	10	.01	20	.01
EBL	2	3400	20	.01	10	.00
EBT	3	5100	700	.14*	1430	.28*
EBR	d	1700	60	.04	60	.04
WBL	2	3400	550	.16*	580	.17*
WBT	3	5100	1360	.27	980	.19
WBR	d	1700	280	.16	190	.11
Right Turn Adjustment					NBR	.12*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.53**		**.75**

2015 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	40	.02	100	.06
NBT	2	3400	130	.04*	70	.02*
NBR	d	1700	210	.12	480	.28
SBL	1	1700	240	.14*	190	.11*
SBT	2	3400	130	.04	160	.05
SBR	d	1700	10	.01	20	.01
EBL	2	3400	10	.00	10	.00
EBT	3	5100	680	.13*	1420	.28*
EBR	d	1700	60	.04	60	.04
WBL	2	3400	560	.16*	570	.17*
WBT	3	5100	1350	.26	970	.19
WBR	d	1700	270	.16	200	.12
Right Turn Adjustment					NBR	.13*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.52**		**.76**

3. Lake Forest & Portola

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	40	.02	60	.04
NBT	2	3400	220	.06*	170	.05*
NBR	d	1700	120	.07	530	.31
SBL	1	1700	210	.12*	280	.16*
SBT	2	3400	150	.04	240	.07
SBR	d	1700	10	.01	20	.01
EBL	2	3400	10	.00	20	.01
EBT	3	5100	680	.13	1590	.31*
EBR	d	1700	60	.04	70	.04
WBL	2	3400	480	.14	630	.19*
WBT	3	5100	1620	.32*	1010	.20
WBR	d	1700	300	.18	200	.12
Right Turn Adjustment					NBR	.12*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.55**		**.88**

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	40	.02	60	.04
NBT	2	3400	220	.06*	170	.05*
NBR	d	1700	120	.07	530	.31
SBL	1	1700	210	.12*	250	.15*
SBT	2	3400	150	.04	240	.07
SBR	d	1700	10	.01	20	.01
EBL	2	3400	10	.00	20	.01
EBT	3	5100	670	.13	1580	.31*
EBR	d	1700	60	.04	70	.04
WBL	2	3400	470	.14	630	.19*
WBT	3	5100	1600	.31*	1020	.20
WBR	d	1700	300	.18	210	.12
Right Turn Adjustment					NBR	.12*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.54**		**.87**

4. Bake & Towne Centre

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	248	.07*	483	.14
NBT	2	3400	504	.15	1258	.37*
NBR	d	1700	144	.08	216	.13
SBL	2	3400	13	.00	24	.01*
SBT	2	3400	1358	.40*	725	.21
SBR	d	1700	60	.04	85	.05
EBL	1	1700	13	.01	42	.02
EBT	1	1700	49	.03*	175	.10*
EBR	1	1700	354	.21	331	.19
WBL	1	1700	44	.03*	117	.07*
WBT	2	3400	75	.03	168	.06
WBR	0	0	13		38	
Right Turn Adjustment			EBR	.11*		
Clearance Interval				.05*		.05*

Note: Assumes Right-Turn Overlap for EBR

TOTAL CAPACITY UTILIZATION .69 .60

Existing-Plus-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	249	.07*	487	.14
NBT	2	3400	503	.15	1249	.37*
NBR	d	1700	141	.08	214	.13
SBL	2	3400	13	.00	24	.01*
SBT	2	3400	1357	.40*	742	.22
SBR	d	1700	57	.03	87	.05
EBL	1	1700	12	.01	45	.03
EBT	1	1700	48	.03*	188	.11*
EBR	1	1700	353	.21	319	.19
WBL	1	1700	50	.03*	115	.07*
WBT	2	3400	76	.03	167	.06
WBR	0	0	13		38	
Right Turn Adjustment			EBR	.11*		
Clearance Interval				.05*		.05*

Note: Assumes Right-Turn Overlap for EBR

TOTAL CAPACITY UTILIZATION .69 .61

2015 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	190	.06*	370	.11
NBT	2	3400	400	.12	1050	.31*
NBR	d	1700	180	.11	240	.14
SBL	2	3400	30	.01	40	.01*
SBT	2	3400	1010	.30*	610	.18
SBR	d	1700	90	.05	80	.05
EBL	1	1700	10	.01	50	.03
EBT	1	1700	70	.04*	220	.13*
EBR	1	1700	280	.16	220	.13
WBL	1	1700	70	.04*	170	.10*
WBT	2	3400	80	.03	190	.07
WBR	0	0	20		50	
Right Turn Adjustment			EBR	.06*		
Clearance Interval				.05*		.05*

Note: Assumes Right-Turn Overlap for EBR

TOTAL CAPACITY UTILIZATION .55 .60

2015 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	190	.06*	370	.11
NBT	2	3400	400	.12	1060	.31*
NBR	d	1700	170	.10	240	.14
SBL	2	3400	30	.01	40	.01*
SBT	2	3400	1000	.29*	630	.19
SBR	d	1700	90	.05	80	.05
EBL	1	1700	10	.01	50	.03
EBT	1	1700	70	.04*	220	.13*
EBR	1	1700	280	.16	220	.13
WBL	1	1700	70	.04*	150	.09*
WBT	2	3400	70	.03	190	.07
WBR	0	0	20		50	
Right Turn Adjustment			EBR	.06*		
Clearance Interval				.05*		.05*

Note: Assumes Right-Turn Overlap for EBR

TOTAL CAPACITY UTILIZATION .54 .59

4. Bake & Towne Centre

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	190	.06*	410	.12
NBT	2	3400	450	.13	1120	.33*
NBR	d	1700	170	.10	250	.15
SBL	2	3400	30	.01	40	.01*
SBT	2	3400	1130	.33*	650	.19
SBR	d	1700	90	.05	80	.05
EBL	1	1700	10	.01	50	.03
EBT	1	1700	50	.03*	200	.12*
EBR	1	1700	310	.18	240	.14
WBL	1	1700	70	.04*	170	.10*
WBT	2	3400	80	.03	180	.07
WBR	0	0	20		50	
Right Turn Adjustment			EBR	.09*		
Clearance Interval				.05*		.05*

Note: Assumes Right-Turn Overlap for EBR

TOTAL CAPACITY UTILIZATION **.60** **.61**

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	200	.06*	410	.12
NBT	2	3400	450	.13	1120	.33*
NBR	d	1700	160	.09	230	.14
SBL	2	3400	30	.01	40	.01*
SBT	2	3400	1140	.34*	660	.19
SBR	d	1700	90	.05	80	.05
EBL	1	1700	10	.01	50	.03
EBT	1	1700	50	.03*	210	.12*
EBR	1	1700	310	.18	250	.15
WBL	1	1700	80	.05*	150	.09*
WBT	2	3400	80	.03	170	.06
WBR	0	0	20		50	
Right Turn Adjustment			EBR	.09*		
Clearance Interval				.05*		.05*

Note: Assumes Right-Turn Overlap for EBR

TOTAL CAPACITY UTILIZATION **.62** **.60**

5. Auto Center W & Towne Centre

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	1	.00	9	.01*
NBT	1	1700	0	.00	1	.00
NBR	0	0	0		7	
SBL	1	1700	1	.00	23	.01
SBT	1	1700	1	.02*	2	.02*
SBR	0	0	28		31	
EBL	1	1700	21	.01	64	.04*
EBT	2	3400	169	.05*	366	.11
EBR	0	0	6		5	
WBL	1	1700	7	.00	5	.00
WBT	2	3400	125	.04	259	.08*
WBR	0	0	5		26	
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .12 .20

Existing-Plus-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	1	.00	9	.01*
NBT	1	1700	0	.00	1	.00
NBR	0	0	0		7	
SBL	1	1700	5	.00	25	.01
SBT	1	1700	1	.02*	2	.02*
SBR	0	0	39		38	
EBL	1	1700	25	.01	76	.04*
EBT	2	3400	169	.05*	366	.11
EBR	0	0	6		5	
WBL	1	1700	7	.00	5	.00
WBT	2	3400	125	.04	259	.09*
WBR	0	0	6		30	
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .12 .21

2015 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	0	.00	20	.01*
NBT	1	1700	0	.00	0	.01
NBR	0	0	0		10	
SBL	1	1700	10	.01	20	.01
SBT	1	1700	10	.04*	10	.02*
SBR	0	0	50		30	
EBL	1	1700	30	.02*	70	.04*
EBT	2	3400	180	.06	430	.13
EBR	0	0	10		10	
WBL	1	1700	10	.01	10	.01
WBT	2	3400	180	.06*	350	.11*
WBR	0	0	10		30	
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .17 .23

2015 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	0	.00	20	.01*
NBT	1	1700	0	.00	10	.01
NBR	0	0	0		10	
SBL	1	1700	10	.01	30	.02
SBT	1	1700	10	.04*	10	.03*
SBR	0	0	60		40	
EBL	1	1700	30	.02*	90	.05*
EBT	2	3400	180	.06	380	.11
EBR	0	0	10		10	
WBL	1	1700	10	.01	10	.01
WBT	2	3400	180	.06*	380	.12*
WBR	0	0	10		40	
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .17 .26

5. Auto Center W & Towne Centre

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	0	.00	20	.01*
NBT	1	1700	0	.00	0	.01
NBR	0	0	0		10	
SBL	1	1700	10	.01	20	.01
SBT	1	1700	10	.04*	10	.02*
SBR	0	0	50		30	
EBL	1	1700	30	.02*	70	.04*
EBT	2	3400	180	.06	430	.13
EBR	0	0	10		10	
WBL	1	1700	10	.01	10	.01
WBT	2	3400	180	.06*	360	.11*
WBR	0	0	10		30	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.17**		**.23**

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	0	.00	20	.01*
NBT	1	1700	0	.00	10	.01
NBR	0	0	0		10	
SBL	1	1700	10	.01	30	.02
SBT	1	1700	10	.04*	10	.03*
SBR	0	0	60		40	
EBL	1	1700	20	.01*	90	.05*
EBT	2	3400	210	.06	370	.11
EBR	0	0	10		10	
WBL	1	1700	10	.01	10	.01
WBT	2	3400	180	.06*	380	.12*
WBR	0	0	10		40	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.16**		**.26**

6. Auto Center E & Towne Centre

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1	1700	8	.00	12	.01*
SBT	0	0	0		0	
SBR	1	1700	2	.00	5	.00
EBL	1	1700	5	.00	5	.00
EBT	2	3400	154	.05	388	.11*
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3400	146	.05*	292	.09
WBR	0	0	13		17	
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .10 .17

Existing-Plus-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1	1700	13	.01*	16	.01*
SBT	0	0	0		0	
SBR	1	1700	3	.00	5	.00
EBL	1	1700	5	.00	5	.00
EBT	2	3400	158	.05	390	.11*
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3400	147	.05*	296	.09
WBR	0	0	15		23	
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .11 .17

2015 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	10	{.01}*	30	
NBT	1	1700	0	.01	0	.05*
NBR	0	0	10		50	
SBL	1	1700	10	.01	10	.01*
SBT	1	1700	0	.01*	0	.01
SBR	0	0	10		10	
EBL	1	1700	10	.01	10	.01
EBT	2	3400	180	.06*	430	.13*
EBR	0	0	10		0	
WBL	1	1700	50	.03*	30	.02*
WBT	2	3400	170	.05	380	.11
WBR	0	0	10		10	
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .16 .26

2015 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	10	{.01}*	30	
NBT	1	1700	0	.01	0	.05*
NBR	0	0	10		50	
SBL	1	1700	20	.01	20	.01*
SBT	1	1700	0	.01*	0	.01
SBR	0	0	10		10	
EBL	1	1700	10	.01	10	.01
EBT	2	3400	180	.06*	430	.13*
EBR	0	0	10		0	
WBL	1	1700	50	.03*	30	.02*
WBT	2	3400	180	.06	390	.12
WBR	0	0	20		20	
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .16 .26

6. Auto Center E & Towne Centre

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	10	{.01}*	30	
NBT	1	1700	0	.01	0	.05*
NBR	0	0	10		50	
SBL	1	1700	10	.01	10	.01*
SBT	1	1700	0	.01*	0	.01
SBR	0	0	10		10	
EBL	1	1700	10	.01	10	.01
EBT	2	3400	180	.06*	440	.13*
EBR	0	0	10		0	
WBL	1	1700	50	.03*	30	.02*
WBT	2	3400	180	.06	370	.11
WBR	0	0	10		10	
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .16 .26

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	10	{.01}*	30	
NBT	1	1700	0	.01	0	.05*
NBR	0	0	10		50	
SBL	1	1700	20	.01	20	.01*
SBT	1	1700	0	.01*	0	.01
SBR	0	0	10		10	
EBL	1	1700	10	.01	10	.01
EBT	2	3400	170	.05*	430	.13*
EBR	0	0	10		0	
WBL	1	1700	50	.03*	30	.02*
WBT	2	3400	180	.06	390	.12
WBR	0	0	20		20	
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .15 .26

7. Lake Forest & Towne Centre

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	94	.03*	199	.06*
NBT	2	3400	383	.11	702	.21
NBR	d	1700	193	.11	195	.11
SBL	2	3400	5	.00	6	.00
SBT	2	3400	701	.21*	615	.18*
SBR	d	1700	13	.01	24	.01
EBL	1	1700	0	.00	19	.01
EBT	1	1700	116	.07*	214	.13*
EBR	1	1700	51	.03	161	.09
WBL	1	1700	57	.03*	144	.08*
WBT	2	3400	49	.02	114	.04
WBR	0	0	8		7	
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .39 .50

Existing-Plus-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	86	.03*	196	.06*
NBT	2	3400	382	.11	698	.21
NBR	d	1700	197	.12	191	.11
SBL	2	3400	4	.00	6	.00
SBT	2	3400	708	.21*	602	.18*
SBR	d	1700	14	.01	24	.01
EBL	1	1700	0	.00	19	.01
EBT	1	1700	115	.07*	213	.13*
EBR	1	1700	54	.03	162	.10
WBL	1	1700	48	.03*	153	.09*
WBT	2	3400	51	.02	112	.04
WBR	0	0	8		7	
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .39 .51

2015 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	110	.03*	260	.08*
NBT	2	3400	350	.10	540	.16
NBR	d	1700	180	.11	80	.05
SBL	2	3400	10	.00	10	.00
SBT	2	3400	620	.18*	710	.21*
SBR	d	1700	110	.06	80	.05
EBL	1	1700	20	.01	90	.05
EBT	1	1700	130	.08*	220	.13*
EBR	1	1700	60	.04	190	.11
WBL	1	1700	10	.01*	20	.01*
WBT	2	3400	10	.01	70	.02
WBR	0	0	10		10	
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .35 .48

2015 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	90	.03*	270	.08*
NBT	2	3400	370	.11	540	.16
NBR	d	1700	190	.11	200	.12
SBL	2	3400	10	.00	10	.00
SBT	2	3400	620	.18*	700	.21*
SBR	d	1700	110	.06	70	.04
EBL	1	1700	20	.01	100	.06
EBT	1	1700	130	.08*	220	.13*
EBR	1	1700	70	.04	180	.11
WBL	1	1700	10	.01*	140	.08*
WBT	2	3400	50	.03	110	.04
WBR	0	0	60	.04	10	
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .35 .55

7. Lake Forest & Towne Centre

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	130	.04*	260	.08*
NBT	2	3400	380	.11	650	.19
NBR	d	1700	160	.09	80	.05
SBL	2	3400	10	.00	10	.00
SBT	2	3400	570	.17*	820	.24*
SBR	d	1700	90	.05	90	.05
EBL	1	1700	20	.01	100	.06
EBT	1	1700	110	.06*	200	.12*
EBR	1	1700	60	.04	200	.12
WBL	1	1700	10	.01*	10	.01*
WBT	2	3400	20	.01	50	.02
WBR	0	0	10		10	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.33**		**.50**

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	100	.03*	250	.07*
NBT	2	3400	380	.11	660	.19
NBR	d	1700	190	.11	200	.12
SBL	2	3400	10	.00	10	.00
SBT	2	3400	560	.16*	810	.24*
SBR	d	1700	100	.06	80	.05
EBL	1	1700	30	.02	100	.06
EBT	1	1700	110	.06*	200	.12*
EBR	1	1700	60	.04	200	.12
WBL	1	1700	60	.04*	140	.08*
WBT	2	3400	50	.02	110	.04
WBR	0	0	10		10	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.34**		**.56**

8. Lake Forest & SR-241 NB

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	107	.03*	155	.05
NBT	2	3400	655	.19	1104	.32*
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	2	3400	760	.22*	764	.22
SBR	1	1700	81	.05	178	.10
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .30 .37

Existing-Plus-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	112	.03*	152	.04
NBT	2	3400	651	.19	1094	.32*
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	2	3400	765	.23*	757	.22
SBR	1	1700	77	.05	179	.11
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .31 .37

2015 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	110	.03*	200	.06*
NBT	2	3400	640	.19	880	.26
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	2	3400	600	.18*	670	.20*
SBR	1	1700	100	.06	260	.15
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .26 .31

2015 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	120	.04*	200	.06
NBT	2	3400	640	.19	890	.26*
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	2	3400	610	.18*	660	.19
SBR	1	1700	110	.06	260	.15
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .27 .31

8. Lake Forest & SR-241 NB

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	120	.04	390	.11*
NBT	2	3400	680	.20*	1010	.30
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	2	3400	560	.16	730	.21*
SBR	1	1700	90	.05	300	.18
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.25**		**.37**

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	120	.04*	400	.12*
NBT	2	3400	660	.19	1010	.30
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	2	3400	550	.16*	730	.21*
SBR	1	1700	90	.05	300	.18
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.25**		**.38**

9. Lake Forest & SR-241 SB

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3400	611	.18	1191	.35*
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	2	3400	801	.24*	752	.22
SBR	0	0	0		0	
EBL	2	3400	153	.05*	88	.03*
EBT	0	0	0		0	
EBR	1	1700	246	.14	162	.10
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Right Turn Adjustment			EBR	.09*		
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .43 .43

Existing-Plus-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3400	614	.18	1182	.35*
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	2	3400	806	.24*	745	.22
SBR	0	0	0		0	
EBL	2	3400	152	.04*	85	.03*
EBT	0	0	0		0	
EBR	1	1700	248	.15	167	.10
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Right Turn Adjustment			EBR	.11*		
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .44 .43

2015 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3400	560	.16	950	.28*
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	2	3400	630	.19*	650	.19
SBR	0	0	0		0	
EBL	2	3400	200	.06*	150	.04*
EBT	0	0	0		0	
EBR	1	1700	260	.15	230	.14
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Right Turn Adjustment			EBR	.09*	EBR	.03*
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .39 .40

2015 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3400	580	.17	950	.28*
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	2	3400	640	.19*	650	.19
SBR	0	0	0		0	
EBL	2	3400	200	.06*	150	.04*
EBT	0	0	0		0	
EBR	1	1700	270	.16	230	.14
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Right Turn Adjustment			EBR	.10*	EBR	.03*
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .40 .40

9. Lake Forest & SR-241 SB

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3400	650	.19*	1270	.37*
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	2	3400	600	.18	720	.21
SBR	0	0	0		0	
EBL	2	3400	160	.05*	170	.05*
EBT	0	0	0		0	
EBR	1	1700	550	.32	260	.15
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Right Turn Adjustment			EBR	.26*		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.55**		**.47**

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3400	640	.19*	1280	.38*
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	2	3400	590	.17	720	.21
SBR	0	0	0		0	
EBL	2	3400	160	.05*	160	.05*
EBT	0	0	0		0	
EBR	1	1700	550	.32	260	.15
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Right Turn Adjustment			EBR	.25*		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.54**		**.48**

10. Bake & Rancho N

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3400	753	.22	1798	.53*
NBR	d	1700	98	.06	240	.14
SBL	1	1700	47	.03	157	.09*
SBT	2	3400	1716	.50*	1013	.30
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	2	3400	141	.04*	125	.04*
WBT	0	0	0		0	
WBR	2	3400	69	.02	155	.05
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .59 .71

Existing-Plus-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3400	752	.22	1794	.53*
NBR	d	1700	102	.06	244	.14
SBL	1	1700	48	.03	148	.09*
SBT	2	3400	1720	.51*	1024	.30
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	2	3400	137	.04*	123	.04*
WBT	0	0	0		0	
WBR	2	3400	67	.02	153	.05
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .60 .71

2015 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3400	670	.20	1490	.44*
NBR	d	1700	320	.19	500	.29
SBL	1	1700	50	.03	120	.07*
SBT	2	3400	1310	.39*	870	.26
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	2	3400	500	.15*	320	.09*
WBT	0	0	0		0	
WBR	2	3400	30	.01	180	.05
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .59 .65

2015 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3400	660	.19	1500	.44*
NBR	d	1700	330	.19	500	.29
SBL	1	1700	50	.03	130	.08*
SBT	2	3400	1310	.39*	860	.25
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	2	3400	510	.15*	350	.10*
WBT	0	0	0		0	
WBR	2	3400	30	.01	180	.05
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .59 .67

10. Bake & Rancho N

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3400	700	.21	1540	.45*
NBR	d	1700	590	.35	690	.41
SBL	1	1700	90	.05	150	.09*
SBT	2	3400	1430	.42*	900	.26
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	2	3400	530	.16*	640	.19*
WBT	0	0	0		0	
WBR	2	3400	50	.01	240	.07
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.63**		**.78**

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3400	690	.20	1540	.45*
NBR	d	1700	590	.35	680	.40
SBL	1	1700	90	.05	150	.09*
SBT	2	3400	1450	.43*	900	.26
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	2	3400	520	.15*	630	.19*
WBT	0	0	0		0	
WBR	2	3400	50	.01	230	.07
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.63**		**.78**

11. Lake Forest & Rancho

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	132	.08*	141	.08
NBT	2	3400	540	.16	912	.27*
NBR	d	1700	70	.04	22	.01
SBL	1	1700	108	.06	122	.07*
SBT	2	3400	779	.23*	720	.21
SBR	d	1700	114	.07	91	.05
EBL	1	1700	24	.01	122	.07*
EBT	1	1700	37	.02*	29	.02
EBR	1	1700	42	.02	115	.07
WBL	1	1700	9	.01*	50	.03
WBT	2	3400	6	.00	69	.02*
WBR	1	1700	10	.01	141	.08
Right Turn Adjustment					WBR	.01*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.39**		**.49**

Existing-Plus-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	140	.08*	144	.08
NBT	2	3400	536	.16	903	.27*
NBR	d	1700	68	.04	27	.02
SBL	1	1700	110	.06	123	.07*
SBT	2	3400	783	.23*	716	.21
SBR	d	1700	113	.07	93	.05
EBL	1	1700	28	.02*	128	.08*
EBT	1	1700	38	.02	23	.01
EBR	1	1700	48	.03	115	.07
WBL	1	1700	8	.00	54	.03
WBT	2	3400	3	.00*	69	.02*
WBR	1	1700	14	.01	135	.08
Right Turn Adjustment					WBR	.01*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.38**		**.50**

2015 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	80	.05	110	.06
NBT	2	3400	500	.15*	800	.24*
NBR	d	1700	350	.21	440	.26
SBL	1	1700	260	.15*	230	.14*
SBT	2	3400	730	.21	710	.21
SBR	d	1700	60	.04	60	.04
EBL	1	1700	10	.01	40	.02
EBT	1	1700	200	.12*	450	.26*
EBR	1	1700	40	.02	70	.04
WBL	1	1700	270	.16*	320	.19*
WBT	2	3400	540	.16	350	.10
WBR	1	1700	60	.04	310	.18
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.63**		**.88**

2015 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	80	.05	120	.07
NBT	2	3400	510	.15*	810	.24*
NBR	d	1700	340	.20	450	.26
SBL	1	1700	260	.15*	230	.14*
SBT	2	3400	740	.22	710	.21
SBR	d	1700	60	.04	60	.04
EBL	1	1700	10	.01	40	.02
EBT	1	1700	210	.12*	440	.26*
EBR	1	1700	40	.02	70	.04
WBL	1	1700	250	.15*	310	.18*
WBT	2	3400	540	.16	370	.11
WBR	1	1700	60	.04	300	.18
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.62**		**.87**

11. Lake Forest & Rancho

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	160	.09	190	.11
NBT	2	3400	540	.16*	920	.27*
NBR	d	1700	450	.26	650	.38
SBL	1	1700	320	.19*	270	.16*
SBT	2	3400	750	.22	750	.22
SBR	d	1700	230	.14	110	.06
EBL	1	1700	30	.02	180	.11
EBT	2	3400	350	.10*	740	.22*
EBR	1	1700	60	.04	140	.08
WBL	2	3400	550	.16*	480	.14*
WBT	2	3400	760	.22	630	.19
WBR	d	1700	80	.05	390	.23
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .66 .84

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	150	.09	190	.11
NBT	2	3400	530	.16*	930	.27*
NBR	d	1700	460	.27	650	.38
SBL	1	1700	320	.19*	270	.16*
SBT	2	3400	730	.21	750	.22
SBR	d	1700	230	.14	110	.06
EBL	1	1700	30	.02	180	.11
EBT	2	3400	360	.11*	730	.21*
EBR	1	1700	60	.04	140	.08
WBL	2	3400	570	.17*	480	.14*
WBT	2	3400	740	.22	620	.18
WBR	d	1700	90	.05	390	.23
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .68 .83

12. Auto Center Dr & Auto Center Dr

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	1	1700	0	.00	0	.00
NBR	0	0	0		0	
SBL	0	0	64		13	
SBT	1	1700	0	.04*	0	.01*
SBR	1	1700	34	.02	24	.01
EBL	1	1700	3	.00	30	.02*
EBT	1	1700	0	.00	0	.00
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	1	1700	0	.00*	0	.02*
WBR	0	0	8		38	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.09**		**.10**

Existing-Plus-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	7		4	
NBT	1	1700	13	.01*	9	.01
NBR	0	0	5		4	
SBL	1	1700	64	.04*	13	.01
SBT	1	1700	4	.02	0	.02*
SBR	0	0	37		40	
EBL	1	1700	12	.01*	36	.02*
EBT	1	1700	0	.00	0	.00
EBR	0	0	2		7	
WBL	0	0	2		10	
WBT	1	1700	0	.01*	6	.03*
WBR	0	0	8		38	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.12**		**.12**

2015 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	1	1700	0	.00	0	.00
NBR	0	0	0		0	
SBL	0	0	60		10	
SBT	1	1700	0	.04*	0	.01*
SBR	1	1700	30	.02	20	.01
EBL	1	1700	10	.01*	30	.02*
EBT	1	1700	0	.00	0	.00
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	1	1700	0	.01*	0	.02*
WBR	0	0	10		40	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.11**		**.10**

2015 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	7		4	
NBT	1	1700	13	.01*	9	.01
NBR	0	0	5		4	
SBL	1	1700	60	.04*	10	.01
SBT	1	1700	4	.02	16	.03*
SBR	0	0	30		30	
EBL	1	1700	10	.01*	30	.02*
EBT	1	1700	0	.00	0	.00
EBR	0	0	2		7	
WBL	0	0	2		6	
WBT	1	1700	0	.01*	0	.03*
WBR	0	0	10		40	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.12**		**.13**

12. Auto Center Dr & Auto Center Dr

2030 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	1	1700	0	.00	0	.00
NBR	0	0	0		0	
SBL	0	0	60		10	
SBT	1	1700	0	.04*	0	.01*
SBR	1	1700	30	.02	20	.01
EBL	1	1700	10	.01*	30	.02*
EBT	1	1700	0	.00	0	.00
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	1	1700	0	.01*	0	.02*
WBR	0	0	10		40	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.11**		**.10**

2030 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	7		4	
NBT	1	1700	13	.01*	9	.01
NBR	0	0	5		4	
SBL	1	1700	60	.04*	10	.01
SBT	1	1700	4	.02	16	.03*
SBR	0	0	30		30	
EBL	1	1700	10	.01*	30	.02*
EBT	1	1700	0	.00	0	.00
EBR	0	0	2		7	
WBL	0	0	2		6	
WBT	1	1700	0	.01*	0	.03*
WBR	0	0	10		40	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.12**		**.13**

Highway Capacity Manual (HCM) Intersection Analysis

PASEOS AT FOOTHILL RANCH VILLAGE
TRAFFIC FORECAST DATA

Table 1 Existing Intersection LOS Summary (HCM Delay Methodology)

Intersection	Existing				Existing-Plus-Project				Difference	
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour			
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	AM	PM
5. Auto Center W & Towne Centre	10.30	B	11.90	B	10.40	B	12.10	B	.10	.20
6. Auto Center E & Towne Centre	9.90	A	11.90	B	10.00	A	12.20	B	.10	.30
8. Lake Forest & SR-241 NB On-Ramp	3.50	A	3.70	A	3.60	A	3.70	A	.10	.00
9. Lake Forest & SR-241 SB Off-Ramp	10.80	B	6.00	A	10.80	B	6.10	A	.00	.10
12. Auto Center & Auto Center	8.70	A	8.70	A	9.20	A	9.70	A	.50	1.0

Table 2 2015 Intersection LOS Summary (HCM Delay Methodology)

Intersection	2015 No-Project				2015 With-Project				Difference	
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour			
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	AM	PM
5. Auto Center W & Towne Centre	9.70	A	13.40	B	9.70	A	13.60	B	.00	.20
6. Auto Center E & Towne Centre	10.90	B	14.80	B	11.60	B	17.30	C	.70	2.50
8. Lake Forest & SR-241 NB On-Ramp	3.80	A	4.80	A	3.90	A	4.80	A	.10	.00
9. Lake Forest & SR-241 SB Off-Ramp	11.80	B	9.30	A	12.10	B	9.30	A	.30	.00
12. Auto Center & Auto Center	8.80	A	8.70	A	9.10	A	9.50	A	.30	.80

Table 3 2030 Intersection LOS Summary (HCM Delay Methodology)

Intersection	2030 No-Project				2030 With-Project				Difference	
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour			
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	AM	PM
5. Auto Center W & Towne Centre	9.60	A	13.50	B	9.70	A	14.10	B	.10	.60
6. Auto Center E & Towne Centre	10.90	B	14.70	B	11.60	B	17.30	C	.70	2.60
8. Lake Forest & SR-241 NB On-Ramp	3.70	A	7.20	A	4.10	A	7.40	A	.40	.20
9. Lake Forest & SR-241 SB Off-Ramp	18.90	B	10.40	B	18.90	B	10.40	B	.00	.00
12. Auto Center & Auto Center	8.80	A	8.70	A	9.10	A	9.50	A	.30	.80

HCM Intersection Analysis Data Set 1
Existing and Existing-Plus-Project

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	21	169	6	7	125	5	1	0	0	1	1	28
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	23	184	7	8	136	5	1	0	0	1	1	30
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		TWLTL			None							
Median storage veh)		2										
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	141			190			347	389	95	291	390	71
vC1, stage 1 conf vol							233	233		154	154	
vC2, stage 2 conf vol							114	157		138	236	
vCu, unblocked vol	141			190			347	389	95	291	390	71
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			99			100	100	100	100	100	97
cM capacity (veh/h)	1439			1381			681	640	943	744	640	977

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1	SB 2
Volume Total	23	122	68	8	91	51	1	0	1	32
Volume Left	23	0	0	8	0	0	1	0	1	0
Volume Right	0	0	7	0	0	5	0	0	0	30
cSH	1439	1700	1700	1381	1700	1700	681	1700	744	960
Volume to Capacity	0.02	0.07	0.04	0.01	0.05	0.03	0.00	0.00	0.00	0.03
Queue Length 95th (ft)	1	0	0	0	0	0	0	0	0	3
Control Delay (s)	7.5	0.0	0.0	7.6	0.0	0.0	10.3	0.0	9.8	8.9
Lane LOS	A			A			B	A	A	A
Approach Delay (s)	0.8			0.4			10.3		8.9	
Approach LOS							B		A	

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	21.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	64	366	5	5	259	26	9	1	7	23	3	31
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	70	398	5	5	282	28	10	1	8	25	3	34
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		TWLTL			None							
Median storage veh)		2										
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	310			403			727	860	202	653	849	155
vC1, stage 1 conf vol							540	540		307	307	
vC2, stage 2 conf vol							187	321		346	542	
vCu, unblocked vol	310			403			727	860	202	653	849	155
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	94			100			98	100	99	95	99	96
cM capacity (veh/h)	1248			1152			433	431	806	517	440	863

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1	SB 2
Volume Total	70	265	138	5	188	122	10	9	25	37
Volume Left	70	0	0	5	0	0	10	0	25	0
Volume Right	0	0	5	0	0	28	0	8	0	34
cSH	1248	1700	1700	1152	1700	1700	433	727	517	796
Volume to Capacity	0.06	0.16	0.08	0.00	0.11	0.07	0.02	0.01	0.05	0.05
Queue Length 95th (ft)	4	0	0	0	0	0	2	1	4	4
Control Delay (s)	8.1	0.0	0.0	8.1	0.0	0.0	13.5	10.0	12.3	9.7
Lane LOS	A			A			B	B	B	A
Approach Delay (s)	1.2			0.1			11.9		10.8	
Approach LOS							B		B	

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	31.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	5	154	146	13	8	2
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	167	159	14	9	2
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	173				260	86
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	173				260	86
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	100
cM capacity (veh/h)	1401				704	955

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1	SB 2
Volume Total	5	84	84	106	67	9	2
Volume Left	5	0	0	0	0	9	0
Volume Right	0	0	0	0	14	0	2
cSH	1401	1700	1700	1700	1700	704	955
Volume to Capacity	0.00	0.05	0.05	0.06	0.04	0.01	0.00
Queue Length 95th (ft)	0	0	0	0	0	1	0
Control Delay (s)	7.6	0.0	0.0	0.0	0.0	10.2	8.8
Lane LOS	A					B	A
Approach Delay (s)	0.2			0.0		9.9	
Approach LOS						A	

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	14.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	5	388	292	17	12	5
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	422	317	18	13	5
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	336				548	168
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	336				548	168
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				97	99
cM capacity (veh/h)	1220				464	847

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1	SB 2
Volume Total	5	211	211	212	124	13	5
Volume Left	5	0	0	0	0	13	0
Volume Right	0	0	0	0	18	0	5
cSH	1220	1700	1700	1700	1700	464	847
Volume to Capacity	0.00	0.12	0.12	0.12	0.07	0.03	0.01
Queue Length 95th (ft)	0	0	0	0	0	2	0
Control Delay (s)	8.0	0.0	0.0	0.0	0.0	13.0	9.3
Lane LOS	A					B	A
Approach Delay (s)	0.1			0.0		11.9	
Approach LOS						B	

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	20.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	0	0	107	655	760	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)			4.0	4.0	4.0	4.0
Lane Util. Factor			0.97	0.95	0.95	1.00
Frt			1.00	1.00	1.00	0.85
Flt Protected			0.95	1.00	1.00	1.00
Satd. Flow (prot)			3433	3539	3539	1583
Flt Permitted			0.95	1.00	1.00	1.00
Satd. Flow (perm)			3433	3539	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	116	712	826	88
RTOR Reduction (vph)	0	0	0	0	0	15
Lane Group Flow (vph)	0	0	116	712	826	73
Turn Type			Prot	NA	NA	Perm
Protected Phases			5	2	6	
Permitted Phases						6
Actuated Green, G (s)			7.2	90.0	74.8	74.8
Effective Green, g (s)			7.2	90.0	74.8	74.8
Actuated g/C Ratio			0.08	1.00	0.83	0.83
Clearance Time (s)			4.0	4.0	4.0	4.0
Vehicle Extension (s)			3.0	3.0	3.0	3.0
Lane Grp Cap (vph)			275	3539	2941	1316
v/s Ratio Prot			c0.03	0.20	c0.23	
v/s Ratio Perm						0.05
v/c Ratio			0.42	0.20	0.28	0.06
Uniform Delay, d1			39.4	0.0	1.7	1.3
Progression Factor			0.90	1.00	1.00	1.00
Incremental Delay, d2			1.0	0.1	0.2	0.1
Delay (s)			36.5	0.1	1.9	1.4
Level of Service			D	A	A	A
Approach Delay (s)	0.0			5.2	1.9	
Approach LOS	A			A	A	

Intersection Summary			
HCM Average Control Delay	3.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	44.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	0	0	155	1104	764	178
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)			4.0	4.0	4.0	4.0
Lane Util. Factor			0.97	0.95	0.95	1.00
Frt			1.00	1.00	1.00	0.85
Flt Protected			0.95	1.00	1.00	1.00
Satd. Flow (prot)			3433	3539	3539	1583
Flt Permitted			0.95	1.00	1.00	1.00
Satd. Flow (perm)			3433	3539	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	168	1200	830	193
RTOR Reduction (vph)	0	0	0	0	0	38
Lane Group Flow (vph)	0	0	168	1200	830	155
Turn Type			Prot	NA	NA	Perm
Protected Phases			5	2	6	
Permitted Phases						6
Actuated Green, G (s)			9.7	90.0	72.3	72.3
Effective Green, g (s)			9.7	90.0	72.3	72.3
Actuated g/C Ratio			0.11	1.00	0.80	0.80
Clearance Time (s)			4.0	4.0	4.0	4.0
Vehicle Extension (s)			3.0	3.0	3.0	3.0
Lane Grp Cap (vph)			370	3539	2843	1272
v/s Ratio Prot			0.05	c0.34	0.23	
v/s Ratio Perm						0.10
v/c Ratio			0.45	0.34	0.29	0.12
Uniform Delay, d1			37.7	0.0	2.3	1.9
Progression Factor			0.94	1.00	1.00	1.00
Incremental Delay, d2			0.8	0.2	0.3	0.2
Delay (s)			36.3	0.2	2.5	2.1
Level of Service			D	A	A	A
Approach Delay (s)	0.0			4.7	2.5	
Approach LOS	A			A	A	

Intersection Summary			
HCM Average Control Delay	3.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	0.0
Intersection Capacity Utilization	42.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	153	246	0	611	801	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	1.00		0.95	0.95	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3433	1583		3539	3539	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3433	1583		3539	3539	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	166	267	0	664	871	0
RTOR Reduction (vph)	0	150	0	0	0	0
Lane Group Flow (vph)	166	117	0	664	871	0
Turn Type	NA	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	12.2	12.2		69.8	69.8	
Effective Green, g (s)	12.2	12.2		69.8	69.8	
Actuated g/C Ratio	0.14	0.14		0.78	0.78	
Clearance Time (s)	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	465	215		2745	2745	
v/s Ratio Prot	0.05			0.19	c0.25	
v/s Ratio Perm		c0.07				
v/c Ratio	0.36	0.54		0.24	0.32	
Uniform Delay, d1	35.3	36.3		2.8	3.0	
Progression Factor	1.00	1.00		1.00	0.98	
Incremental Delay, d2	0.5	2.8		0.2	0.3	
Delay (s)	35.8	39.1		3.0	3.2	
Level of Service	D	D		A	A	
Approach Delay (s)	37.8			3.0	3.2	
Approach LOS	D			A	A	

Intersection Summary			
HCM Average Control Delay	10.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	44.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	88	162	0	1191	752	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	1.00		0.95	0.95	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3433	1583		3539	3539	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3433	1583		3539	3539	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	96	176	0	1295	817	0
RTOR Reduction (vph)	0	160	0	0	0	0
Lane Group Flow (vph)	96	16	0	1295	817	0
Turn Type	NA	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	8.4	8.4		73.6	73.6	
Effective Green, g (s)	8.4	8.4		73.6	73.6	
Actuated g/C Ratio	0.09	0.09		0.82	0.82	
Clearance Time (s)	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	320	148		2894	2894	
v/s Ratio Prot	c0.03			c0.37	0.23	
v/s Ratio Perm		0.01				
v/c Ratio	0.30	0.11		0.45	0.28	
Uniform Delay, d1	38.1	37.4		2.4	1.9	
Progression Factor	1.00	1.00		1.00	0.06	
Incremental Delay, d2	0.5	0.3		0.5	0.2	
Delay (s)	38.6	37.7		2.9	0.4	
Level of Service	D	D		A	A	
Approach Delay (s)	38.0			2.9	0.4	
Approach LOS	D			A	A	

Intersection Summary			
HCM Average Control Delay	6.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	42.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	3	0	0	0	0	8	0	0	0	64	0	34
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	0	0	0	0	9	0	0	0	70	0	37
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	9			0			43	15	0	11	11	4
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	9			0			43	15	0	11	11	4
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	93	100	97
cM capacity (veh/h)	1611			1623			925	877	1085	1005	882	1079

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	3	0	0	9	0	70	37
Volume Left	3	0	0	0	0	70	0
Volume Right	0	0	0	9	0	0	37
cSH	1611	1700	1700	1700	1700	1005	1079
Volume to Capacity	0.00	0.00	0.00	0.01	0.00	0.07	0.03
Queue Length 95th (ft)	0	0	0	0	0	6	3
Control Delay (s)	7.2	0.0	0.0	0.0	0.0	8.8	8.5
Lane LOS	A				A	A	A
Approach Delay (s)	7.2		0.0		0.0	8.7	
Approach LOS					A	A	

Intersection Summary			
Average Delay	8.0		
Intersection Capacity Utilization	13.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	30	0	0	0	0	38	0	0	0	13	0	24
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	33	0	0	0	0	41	0	0	0	14	0	26
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	41			0			91	107	0	86	86	21
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	41			0			91	107	0	86	86	21
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			100			100	100	100	98	100	98
cM capacity (veh/h)	1568			1623			857	767	1085	886	788	1057

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	33	0	0	41	0	14	26
Volume Left	33	0	0	0	0	14	0
Volume Right	0	0	0	41	0	0	26
cSH	1568	1700	1700	1700	1700	886	1057
Volume to Capacity	0.02	0.00	0.00	0.02	0.00	0.02	0.02
Queue Length 95th (ft)	2	0	0	0	0	1	2
Control Delay (s)	7.3	0.0	0.0	0.0	0.0	9.1	8.5
Lane LOS	A				A	A	A
Approach Delay (s)	7.3		0.0		0.0	8.7	
Approach LOS					A	A	

Intersection Summary			
Average Delay	5.2		
Intersection Capacity Utilization	18.3%	ICU Level of Service	A
Analysis Period (min)	15		

5: Auto Center Drive West & Towne Centre Drive

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	25	169	6	7	125	6	1	0	0	5	1	39
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	27	184	7	8	136	7	1	0	0	5	1	42
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		TWLTL			None							
Median storage veh)		2										
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	142			190			367	399	95	301	399	71
vC1, stage 1 conf vol							241	241		154	154	
vC2, stage 2 conf vol							126	158		146	245	
vCu, unblocked vol	142			190			367	399	95	301	399	71
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			99			100	100	100	99	100	96
cM capacity (veh/h)	1438			1381			663	633	943	736	634	977

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1	SB 2
Volume Total	27	122	68	8	91	52	1	0	5	43
Volume Left	27	0	0	8	0	0	1	0	5	0
Volume Right	0	0	7	0	0	7	0	0	0	42
cSH	1438	1700	1700	1381	1700	1700	663	1700	736	964
Volume to Capacity	0.02	0.07	0.04	0.01	0.05	0.03	0.00	0.00	0.01	0.05
Queue Length 95th (ft)	1	0	0	0	0	0	0	0	1	4
Control Delay (s)	7.6	0.0	0.0	7.6	0.0	0.0	10.4	0.0	9.9	8.9
Lane LOS	A			A			B	A	A	A
Approach Delay (s)	0.9			0.4			10.4		9.0	
Approach LOS							B		A	

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	22.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	76	366	5	5	259	30	9	1	7	25	2	38
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	83	398	5	5	282	33	10	1	8	27	2	41
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		TWLTL			None							
Median storage veh)		2										
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	314			403			760	891	202	681	877	157
vC1, stage 1 conf vol							566	566		309	309	
vC2, stage 2 conf vol							194	325		372	568	
vCu, unblocked vol	314			403			760	891	202	681	877	157
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	93			100			98	100	99	95	99	95
cM capacity (veh/h)	1243			1152			412	414	806	498	425	860

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1	SB 2
Volume Total	83	265	138	5	188	126	10	9	27	43
Volume Left	83	0	0	5	0	0	10	0	27	0
Volume Right	0	0	5	0	0	33	0	8	0	41
cSH	1243	1700	1700	1152	1700	1700	412	721	498	819
Volume to Capacity	0.07	0.16	0.08	0.00	0.11	0.07	0.02	0.01	0.05	0.05
Queue Length 95th (ft)	5	0	0	0	0	0	2	1	4	4
Control Delay (s)	8.1	0.0	0.0	8.1	0.0	0.0	13.9	10.1	12.6	9.6
Lane LOS	A			A			B	B	B	A
Approach Delay (s)	1.4			0.1			12.1		10.8	
Approach LOS							B		B	

Intersection Summary			
Average Delay	1.9		
Intersection Capacity Utilization	31.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	5	158	147	15	13	3
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	172	160	16	14	3
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	176				265	88
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	176				265	88
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				98	100
cM capacity (veh/h)	1398				699	953

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1	SB 2
Volume Total	5	86	86	107	70	14	3
Volume Left	5	0	0	0	0	14	0
Volume Right	0	0	0	0	16	0	3
cSH	1398	1700	1700	1700	1700	699	953
Volume to Capacity	0.00	0.05	0.05	0.06	0.04	0.02	0.00
Queue Length 95th (ft)	0	0	0	0	0	2	0
Control Delay (s)	7.6	0.0	0.0	0.0	0.0	10.3	8.8
Lane LOS	A					B	A
Approach Delay (s)	0.2			0.0		10.0	
Approach LOS						A	

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	14.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	5	390	296	23	16	5
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	424	322	25	17	5
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	347				557	173
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	347				557	173
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				96	99
cM capacity (veh/h)	1209				458	840

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1	SB 2
Volume Total	5	212	212	214	132	17	5
Volume Left	5	0	0	0	0	17	0
Volume Right	0	0	0	0	25	0	5
cSH	1209	1700	1700	1700	1700	458	840
Volume to Capacity	0.00	0.12	0.12	0.13	0.08	0.04	0.01
Queue Length 95th (ft)	0	0	0	0	0	3	0
Control Delay (s)	8.0	0.0	0.0	0.0	0.0	13.2	9.3
Lane LOS	A					B	A
Approach Delay (s)	0.1			0.0		12.2	
Approach LOS						B	

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	20.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	0	0	112	651	765	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)			4.0	4.0	4.0	4.0
Lane Util. Factor			0.97	0.95	0.95	1.00
Frt			1.00	1.00	1.00	0.85
Flt Protected			0.95	1.00	1.00	1.00
Satd. Flow (prot)			3433	3539	3539	1583
Flt Permitted			0.95	1.00	1.00	1.00
Satd. Flow (perm)			3433	3539	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	122	708	832	84
RTOR Reduction (vph)	0	0	0	0	0	15
Lane Group Flow (vph)	0	0	122	708	832	69
Turn Type			Prot	NA	NA	Perm
Protected Phases			5	2	6	
Permitted Phases						6
Actuated Green, G (s)			8.6	90.0	73.4	73.4
Effective Green, g (s)			8.6	90.0	73.4	73.4
Actuated g/C Ratio			0.10	1.00	0.82	0.82
Clearance Time (s)			4.0	4.0	4.0	4.0
Vehicle Extension (s)			3.0	3.0	3.0	3.0
Lane Grp Cap (vph)			328	3539	2886	1291
v/s Ratio Prot			c0.04	0.20	c0.24	
v/s Ratio Perm						0.04
v/c Ratio			0.37	0.20	0.29	0.05
Uniform Delay, d1			38.2	0.0	2.0	1.6
Progression Factor			0.90	1.00	1.00	1.00
Incremental Delay, d2			0.7	0.1	0.3	0.1
Delay (s)			34.9	0.1	2.3	1.7
Level of Service			C	A	A	A
Approach Delay (s)	0.0			5.2	2.2	
Approach LOS	A			A	A	

Intersection Summary			
HCM Average Control Delay	3.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	44.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	0	0	152	1094	757	179
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)			4.0	4.0	4.0	4.0
Lane Util. Factor			0.97	0.95	0.95	1.00
Frt			1.00	1.00	1.00	0.85
Flt Protected			0.95	1.00	1.00	1.00
Satd. Flow (prot)			3433	3539	3539	1583
Flt Permitted			0.95	1.00	1.00	1.00
Satd. Flow (perm)			3433	3539	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	165	1189	823	195
RTOR Reduction (vph)	0	0	0	0	0	38
Lane Group Flow (vph)	0	0	165	1189	823	157
Turn Type			Prot	NA	NA	Perm
Protected Phases			5	2	6	
Permitted Phases						6
Actuated Green, G (s)			9.7	90.0	72.3	72.3
Effective Green, g (s)			9.7	90.0	72.3	72.3
Actuated g/C Ratio			0.11	1.00	0.80	0.80
Clearance Time (s)			4.0	4.0	4.0	4.0
Vehicle Extension (s)			3.0	3.0	3.0	3.0
Lane Grp Cap (vph)			370	3539	2843	1272
v/s Ratio Prot			0.05	c0.34	0.23	
v/s Ratio Perm						0.10
v/c Ratio			0.45	0.34	0.29	0.12
Uniform Delay, d1			37.6	0.0	2.3	1.9
Progression Factor			0.94	1.00	1.00	1.00
Incremental Delay, d2			0.8	0.2	0.3	0.2
Delay (s)			36.2	0.2	2.5	2.1
Level of Service			D	A	A	A
Approach Delay (s)	0.0			4.6	2.4	
Approach LOS	A			A	A	

Intersection Summary			
HCM Average Control Delay	3.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	0.0
Intersection Capacity Utilization	42.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	152	248	0	614	806	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	1.00		0.95	0.95	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3433	1583		3539	3539	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3433	1583		3539	3539	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	165	270	0	667	876	0
RTOR Reduction (vph)	0	148	0	0	0	0
Lane Group Flow (vph)	165	122	0	667	876	0
Turn Type	NA	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	12.4	12.4		69.6	69.6	
Effective Green, g (s)	12.4	12.4		69.6	69.6	
Actuated g/C Ratio	0.14	0.14		0.77	0.77	
Clearance Time (s)	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	473	218		2737	2737	
v/s Ratio Prot	0.05			0.19	c0.25	
v/s Ratio Perm		c0.08				
v/c Ratio	0.35	0.56		0.24	0.32	
Uniform Delay, d1	35.1	36.2		2.8	3.1	
Progression Factor	1.00	1.00		1.00	0.97	
Incremental Delay, d2	0.4	3.1		0.2	0.3	
Delay (s)	35.6	39.3		3.1	3.3	
Level of Service	D	D		A	A	
Approach Delay (s)	37.9			3.1	3.3	
Approach LOS	D			A	A	

Intersection Summary			
HCM Average Control Delay	10.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	44.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	85	167	0	1182	745	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	1.00		0.95	0.95	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3433	1583		3539	3539	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3433	1583		3539	3539	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	92	182	0	1285	810	0
RTOR Reduction (vph)	0	165	0	0	0	0
Lane Group Flow (vph)	92	17	0	1285	810	0
Turn Type	NA	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	8.3	8.3		73.7	73.7	
Effective Green, g (s)	8.3	8.3		73.7	73.7	
Actuated g/C Ratio	0.09	0.09		0.82	0.82	
Clearance Time (s)	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	317	146		2898	2898	
v/s Ratio Prot	c0.03			c0.36	0.23	
v/s Ratio Perm		0.01				
v/c Ratio	0.29	0.11		0.44	0.28	
Uniform Delay, d1	38.1	37.5		2.3	1.9	
Progression Factor	1.00	1.00		1.00	0.07	
Incremental Delay, d2	0.5	0.4		0.5	0.2	
Delay (s)	38.6	37.8		2.8	0.4	
Level of Service	D	D		A	A	
Approach Delay (s)	38.1			2.8	0.4	
Approach LOS	D			A	A	

Intersection Summary			
HCM Average Control Delay	6.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	42.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

12: Auto Center Drive & Auto Center Drive

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	12	0	2	2	0	8	7	13	5	64	4	37
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	13	0	2	2	0	9	8	14	5	70	4	40
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	9			2			74	40	1	47	37	4
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	9			2			74	40	1	47	37	4
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			99	98	99	93	99	96
cM capacity (veh/h)	1611			1620			873	844	1083	930	847	1079

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	13	2	2	9	27	74	40
Volume Left	13	0	2	0	8	70	0
Volume Right	0	2	0	9	5	0	40
cSH	1611	1700	1620	1700	891	925	1079
Volume to Capacity	0.01	0.00	0.00	0.01	0.03	0.08	0.04
Queue Length 95th (ft)	1	0	0	0	2	6	3
Control Delay (s)	7.3	0.0	7.2	0.0	9.2	9.2	8.5
Lane LOS	A		A		A	A	A
Approach Delay (s)	6.2		1.4		9.2	9.0	
Approach LOS					A	A	

Intersection Summary			
Average Delay	8.3		
Intersection Capacity Utilization	24.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	36	0	7	10	6	38	4	9	4	13	0	40
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	39	0	8	11	7	41	4	10	4	14	0	43
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	48			8			154	152	4	136	135	27
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	48			8			154	152	4	136	135	27
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			99			99	99	100	98	100	96
cM capacity (veh/h)	1559			1613			761	717	1080	803	732	1048

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	39	8	11	48	18	14	43
Volume Left	39	0	11	0	4	14	0
Volume Right	0	8	0	41	4	0	43
cSH	1559	1700	1613	1700	790	803	1048
Volume to Capacity	0.03	0.00	0.01	0.03	0.02	0.02	0.04
Queue Length 95th (ft)	2	0	1	0	2	1	3
Control Delay (s)	7.4	0.0	7.2	0.0	9.7	9.6	8.6
Lane LOS	A		A		A	A	A
Approach Delay (s)	6.2		1.3		9.7	8.8	
Approach LOS					A	A	

Intersection Summary			
Average Delay	5.8		
Intersection Capacity Utilization	20.0%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Intersection Analysis Data Set 2

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	30	180	10	10	180	10	0	0	0	10	10	50
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	33	196	11	11	196	11	0	0	0	11	11	54
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		TWLTL			None							
Median storage veh)		2										
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	207			207			446	495	103	386	495	103
vC1, stage 1 conf vol							266	266		223	223	
vC2, stage 2 conf vol							179	228		163	272	
vCu, unblocked vol	207			207			446	495	103	386	495	103
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			99			100	100	100	98	98	94
cM capacity (veh/h)	1362			1362			604	588	932	675	592	932

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1	SB 2
Volume Total	33	130	76	11	130	76	0	0	11	65
Volume Left	33	0	0	11	0	0	0	0	11	0
Volume Right	0	0	11	0	0	11	0	0	0	54
cSH	1362	1700	1700	1362	1700	1700	1700	1700	675	850
Volume to Capacity	0.02	0.08	0.04	0.01	0.08	0.04	0.00	0.00	0.02	0.08
Queue Length 95th (ft)	2	0	0	1	0	0	0	0	1	6
Control Delay (s)	7.7	0.0	0.0	7.7	0.0	0.0	0.0	0.0	10.4	9.6
Lane LOS	A			A			A	A	B	A
Approach Delay (s)	1.1			0.4			0.0		9.7	
Approach LOS							A		A	

Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	22.2%	ICU Level of Service	A
Analysis Period (min)	15		

5: Auto Center Drive West & Towne Centre Drive

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	70	430	10	10	350	30	20	0	10	20	10	30
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	76	467	11	11	380	33	22	0	11	22	11	33
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		TWLTL			None							
Median storage veh)		2										
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	413			478			875	1060	239	815	1049	207
vC1, stage 1 conf vol							625	625		418	418	
vC2, stage 2 conf vol							250	435		397	630	
vCu, unblocked vol	413			478			875	1060	239	815	1049	207
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	93			99			94	100	99	95	97	96
cM capacity (veh/h)	1142			1080			373	371	762	444	381	800

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1	SB 2
Volume Total	76	312	167	11	254	159	22	11	22	43
Volume Left	76	0	0	11	0	0	22	0	22	0
Volume Right	0	0	11	0	0	33	0	11	0	33
cSH	1142	1700	1700	1080	1700	1700	373	762	444	627
Volume to Capacity	0.07	0.18	0.10	0.01	0.15	0.09	0.06	0.01	0.05	0.07
Queue Length 95th (ft)	5	0	0	1	0	0	5	1	4	6
Control Delay (s)	8.4	0.0	0.0	8.4	0.0	0.0	15.2	9.8	13.5	11.2
Lane LOS	A			A			C	A	B	B
Approach Delay (s)	1.1			0.2			13.4		11.9	
Approach LOS							B		B	

Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	33.3%	ICU Level of Service	A
Analysis Period (min)	15		

6: Auto Center Drive East & Towne Centre Drive

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	10	180	10	50	170	10	10	0	10	10	0	10
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	196	11	54	185	11	11	0	11	11	0	11
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	196			207			435	527	103	429	527	98
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	196			207			435	527	103	429	527	98
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			96			98	100	99	98	100	99
cM capacity (veh/h)	1375			1362			481	433	932	485	433	939

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1	SB 2
Volume Total	11	130	76	54	123	72	22	11	11
Volume Left	11	0	0	54	0	0	11	11	0
Volume Right	0	0	11	0	0	11	11	0	11
cSH	1375	1700	1700	1362	1700	1700	635	485	939
Volume to Capacity	0.01	0.08	0.04	0.04	0.07	0.04	0.03	0.02	0.01
Queue Length 95th (ft)	1	0	0	3	0	0	3	2	1
Control Delay (s)	7.6	0.0	0.0	7.8	0.0	0.0	10.9	12.6	8.9
Lane LOS	A			A			B	B	A
Approach Delay (s)	0.4			1.7			10.9	10.7	
Approach LOS							B	B	

Intersection Summary			
Average Delay	1.9		
Intersection Capacity Utilization	26.5%	ICU Level of Service	A
Analysis Period (min)	15		

6: Auto Center Drive East & Towne Centre Drive

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	10	430	0	30	380	10	30	0	50	10	0	10
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	467	0	33	413	11	33	0	54	11	0	11
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	424			467			772	978	234	793	973	212
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	424			467			772	978	234	793	973	212
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			97			88	100	93	96	100	99
cM capacity (veh/h)	1132			1090			277	239	768	252	241	793

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1	SB 2
Volume Total	11	312	156	33	275	149	87	11	11
Volume Left	11	0	0	33	0	0	33	11	0
Volume Right	0	0	0	0	0	11	54	0	11
cSH	1132	1700	1700	1090	1700	1700	461	252	793
Volume to Capacity	0.01	0.18	0.09	0.03	0.16	0.09	0.19	0.04	0.01
Queue Length 95th (ft)	1	0	0	2	0	0	17	3	1
Control Delay (s)	8.2	0.0	0.0	8.4	0.0	0.0	14.6	20.0	9.6
Lane LOS	A			A			B	C	A
Approach Delay (s)	0.2			0.6			14.6	14.8	
Approach LOS							B	B	

Intersection Summary			
Average Delay	1.9		
Intersection Capacity Utilization	36.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	0	0	110	640	600	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)			4.0	4.0	4.0	4.0
Lane Util. Factor			0.97	0.95	0.95	1.00
Frt			1.00	1.00	1.00	0.85
Flt Protected			0.95	1.00	1.00	1.00
Satd. Flow (prot)			3433	3539	3539	1583
Flt Permitted			0.95	1.00	1.00	1.00
Satd. Flow (perm)			3433	3539	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	120	696	652	109
RTOR Reduction (vph)	0	0	0	0	0	20
Lane Group Flow (vph)	0	0	120	696	652	89
Turn Type			Prot	NA	NA	Perm
Protected Phases			5	2	6	
Permitted Phases						6
Actuated Green, G (s)			8.5	90.0	73.5	73.5
Effective Green, g (s)			8.5	90.0	73.5	73.5
Actuated g/C Ratio			0.09	1.00	0.82	0.82
Clearance Time (s)			4.0	4.0	4.0	4.0
Vehicle Extension (s)			3.0	3.0	3.0	3.0
Lane Grp Cap (vph)			324	3539	2890	1293
v/s Ratio Prot			c0.03	0.20	c0.18	
v/s Ratio Perm						0.06
v/c Ratio			0.37	0.20	0.23	0.07
Uniform Delay, d1			38.2	0.0	1.9	1.6
Progression Factor			0.93	1.00	1.00	1.00
Incremental Delay, d2			0.7	0.1	0.2	0.1
Delay (s)			36.4	0.1	2.0	1.7
Level of Service			D	A	A	A
Approach Delay (s)	0.0			5.5	2.0	
Approach LOS	A			A	A	

Intersection Summary			
HCM Average Control Delay	3.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.24		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	40.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

8: Lake Forest Drive & SR-241 NB On-Ramp

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	0	0	200	880	670	260
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)			4.0	4.0	4.0	4.0
Lane Util. Factor			0.97	0.95	0.95	1.00
Frt			1.00	1.00	1.00	0.85
Flt Protected			0.95	1.00	1.00	1.00
Satd. Flow (prot)			3433	3539	3539	1583
Flt Permitted			0.95	1.00	1.00	1.00
Satd. Flow (perm)			3433	3539	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	217	957	728	283
RTOR Reduction (vph)	0	0	0	0	0	60
Lane Group Flow (vph)	0	0	217	957	728	223
Turn Type			Prot	NA	NA	Perm
Protected Phases			5	2	6	
Permitted Phases						6
Actuated Green, G (s)			11.0	90.0	71.0	71.0
Effective Green, g (s)			11.0	90.0	71.0	71.0
Actuated g/C Ratio			0.12	1.00	0.79	0.79
Clearance Time (s)			4.0	4.0	4.0	4.0
Vehicle Extension (s)			3.0	3.0	3.0	3.0
Lane Grp Cap (vph)			420	3539	2792	1249
v/s Ratio Prot			c0.06	c0.27	0.21	
v/s Ratio Perm						0.14
v/c Ratio			0.52	0.27	0.26	0.18
Uniform Delay, d1			37.0	0.0	2.5	2.3
Progression Factor			0.91	1.00	1.00	1.00
Incremental Delay, d2			1.0	0.2	0.2	0.3
Delay (s)			34.9	0.2	2.8	2.6
Level of Service			C	A	A	A
Approach Delay (s)	0.0			6.6	2.7	
Approach LOS	A			A	A	

Intersection Summary			
HCM Average Control Delay	4.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	4.0
Intersection Capacity Utilization	38.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

9: Lake Forest Drive & SR-241 SB Off-Ramp

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	200	260	0	560	630	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	1.00		0.95	0.95	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3433	1583		3539	3539	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3433	1583		3539	3539	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	217	283	0	609	685	0
RTOR Reduction (vph)	0	195	0	0	0	0
Lane Group Flow (vph)	217	89	0	609	685	0
Turn Type	NA	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	12.2	12.2		69.8	69.8	
Effective Green, g (s)	12.2	12.2		69.8	69.8	
Actuated g/C Ratio	0.14	0.14		0.78	0.78	
Clearance Time (s)	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	465	215		2745	2745	
v/s Ratio Prot	c0.06			0.17	c0.19	
v/s Ratio Perm		0.06				
v/c Ratio	0.47	0.41		0.22	0.25	
Uniform Delay, d1	35.9	35.6		2.7	2.8	
Progression Factor	1.00	1.00		1.00	0.41	
Incremental Delay, d2	0.7	1.3		0.2	0.2	
Delay (s)	36.6	36.9		2.9	1.4	
Level of Service	D	D		A	A	
Approach Delay (s)	36.8			2.9	1.4	
Approach LOS	D			A	A	

Intersection Summary			
HCM Average Control Delay	11.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	40.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

9: Lake Forest Drive & SR-241 SB Off-Ramp

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	150	230	0	950	650	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	1.00		0.95	0.95	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3433	1583		3539	3539	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3433	1583		3539	3539	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	163	250	0	1033	707	0
RTOR Reduction (vph)	0	208	0	0	0	0
Lane Group Flow (vph)	163	42	0	1033	707	0
Turn Type	NA	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	10.1	10.1		71.9	71.9	
Effective Green, g (s)	10.1	10.1		71.9	71.9	
Actuated g/C Ratio	0.11	0.11		0.80	0.80	
Clearance Time (s)	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	385	178		2827	2827	
v/s Ratio Prot	c0.05			c0.29	0.20	
v/s Ratio Perm		0.03				
v/c Ratio	0.42	0.24		0.37	0.25	
Uniform Delay, d1	37.2	36.4		2.6	2.3	
Progression Factor	1.00	1.00		1.00	0.87	
Incremental Delay, d2	0.8	0.7		0.4	0.2	
Delay (s)	38.0	37.1		2.9	2.2	
Level of Service	D	D		A	A	
Approach Delay (s)	37.5			2.9	2.2	
Approach LOS	D			A	A	

Intersection Summary			
HCM Average Control Delay	9.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	38.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

12: Auto Center Drive & Auto Center Drive

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	10	0	0	0	0	10	0	0	0	60	0	30
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	0	0	0	0	11	0	0	0	65	0	33
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	11			0			54	33	0	27	27	5
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	11			0			54	33	0	27	27	5
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			100	100	100	93	100	97
cM capacity (veh/h)	1608			1623			910	854	1085	978	860	1078

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	11	0	0	11	0	65	33
Volume Left	11	0	0	0	0	65	0
Volume Right	0	0	0	11	0	0	33
cSH	1608	1700	1700	1700	1700	978	1078
Volume to Capacity	0.01	0.00	0.00	0.01	0.00	0.07	0.03
Queue Length 95th (ft)	1	0	0	0	0	5	2
Control Delay (s)	7.3	0.0	0.0	0.0	0.0	8.9	8.4
Lane LOS	A				A	A	A
Approach Delay (s)	7.3		0.0		0.0	8.8	
Approach LOS					A	A	

Intersection Summary			
Average Delay	7.8		
Intersection Capacity Utilization	17.2%	ICU Level of Service	A
Analysis Period (min)	15		

12: Auto Center Drive & Auto Center Drive

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	30	0	0	0	0	40	0	0	0	10	0	20
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	33	0	0	0	0	43	0	0	0	11	0	22
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	43			0			87	109	0	87	87	22
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	43			0			87	109	0	87	87	22
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			100			100	100	100	99	100	98
cM capacity (veh/h)	1565			1623			866	765	1085	884	786	1055

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	33	0	0	43	0	11	22
Volume Left	33	0	0	0	0	11	0
Volume Right	0	0	0	43	0	0	22
cSH	1565	1700	1700	1700	1700	884	1055
Volume to Capacity	0.02	0.00	0.00	0.03	0.00	0.01	0.02
Queue Length 95th (ft)	2	0	0	0	0	1	2
Control Delay (s)	7.3	0.0	0.0	0.0	0.0	9.1	8.5
Lane LOS	A				A	A	A
Approach Delay (s)	7.3		0.0		0.0	8.7	
Approach LOS					A	A	

Intersection Summary			
Average Delay	4.8		
Intersection Capacity Utilization	18.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	30	180	10	10	180	10	0	0	0	10	10	60
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	33	196	11	11	196	11	0	0	0	11	11	65
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		TWLTL			None							
Median storage veh)		2										
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	207			207			457	495	103	386	495	103
vC1, stage 1 conf vol							266	266		223	223	
vC2, stage 2 conf vol							190	228		163	272	
vCu, unblocked vol	207			207			457	495	103	386	495	103
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			99			100	100	100	98	98	93
cM capacity (veh/h)	1362			1362			593	588	932	675	592	932

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1	SB 2
Volume Total	33	130	76	11	130	76	0	0	11	76
Volume Left	33	0	0	11	0	0	0	0	11	0
Volume Right	0	0	11	0	0	11	0	0	0	65
cSH	1362	1700	1700	1362	1700	1700	1700	1700	675	861
Volume to Capacity	0.02	0.08	0.04	0.01	0.08	0.04	0.00	0.00	0.02	0.09
Queue Length 95th (ft)	2	0	0	1	0	0	0	0	1	7
Control Delay (s)	7.7	0.0	0.0	7.7	0.0	0.0	0.0	0.0	10.4	9.6
Lane LOS	A			A			A	A	B	A
Approach Delay (s)	1.1			0.4			0.0		9.7	
Approach LOS							A		A	

Intersection Summary			
Average Delay	2.2		
Intersection Capacity Utilization	22.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	90	380	10	10	380	40	20	0	10	30	10	40
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	98	413	11	11	413	43	22	0	11	33	11	43
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		TWLTL			None							
Median storage veh)		2										
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	457			424			891	1092	212	870	1076	228
vC1, stage 1 conf vol							614	614		457	457	
vC2, stage 2 conf vol							277	478		413	620	
vCu, unblocked vol	457			424			891	1092	212	870	1076	228
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	91			99			94	100	99	92	97	94
cM capacity (veh/h)	1101			1132			361	352	793	419	371	774

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1	SB 2
Volume Total	98	275	149	11	275	181	22	11	33	54
Volume Left	98	0	0	11	0	0	22	0	33	0
Volume Right	0	0	11	0	0	43	0	11	0	43
cSH	1101	1700	1700	1132	1700	1700	361	793	419	636
Volume to Capacity	0.09	0.16	0.09	0.01	0.16	0.11	0.06	0.01	0.08	0.09
Queue Length 95th (ft)	7	0	0	1	0	0	5	1	6	7
Control Delay (s)	8.6	0.0	0.0	8.2	0.0	0.0	15.6	9.6	14.3	11.2
Lane LOS	A			A			C	A	B	B
Approach Delay (s)	1.6			0.2			13.6		12.4	
Approach LOS							B		B	

Intersection Summary			
Average Delay	2.2		
Intersection Capacity Utilization	35.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	10	180	10	50	180	20	10	0	10	20	0	10
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	196	11	54	196	22	11	0	11	22	0	11
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	217			207			440	549	103	446	543	109
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	217			207			440	549	103	446	543	109
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			96			98	100	99	95	100	99
cM capacity (veh/h)	1349			1362			477	421	932	472	424	924

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1	SB 2
Volume Total	11	130	76	54	130	87	22	22	11
Volume Left	11	0	0	54	0	0	11	22	0
Volume Right	0	0	11	0	0	22	11	0	11
cSH	1349	1700	1700	1362	1700	1700	631	472	924
Volume to Capacity	0.01	0.08	0.04	0.04	0.08	0.05	0.03	0.05	0.01
Queue Length 95th (ft)	1	0	0	3	0	0	3	4	1
Control Delay (s)	7.7	0.0	0.0	7.8	0.0	0.0	10.9	13.0	8.9
Lane LOS	A			A			B	B	A
Approach Delay (s)	0.4			1.6			10.9	11.6	
Approach LOS							B	B	

Intersection Summary			
Average Delay	2.1		
Intersection Capacity Utilization	26.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	10	430	0	30	390	20	30	0	50	20	0	10
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	467	0	33	424	22	33	0	54	22	0	11
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	446			467			777	1000	234	810	989	223
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	446			467			777	1000	234	810	989	223
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			97			88	100	93	91	100	99
cM capacity (veh/h)	1111			1090			274	232	768	245	236	781

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1	SB 2
Volume Total	11	312	156	33	283	163	87	22	11
Volume Left	11	0	0	33	0	0	33	22	0
Volume Right	0	0	0	0	0	22	54	0	11
cSH	1111	1700	1700	1090	1700	1700	458	245	781
Volume to Capacity	0.01	0.18	0.09	0.03	0.17	0.10	0.19	0.09	0.01
Queue Length 95th (ft)	1	0	0	2	0	0	17	7	1
Control Delay (s)	8.3	0.0	0.0	8.4	0.0	0.0	14.7	21.1	9.7
Lane LOS	A			A			B	C	A
Approach Delay (s)	0.2			0.6			14.7	17.3	
Approach LOS							B	C	

Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	36.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	0	0	120	640	610	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)			4.0	4.0	4.0	4.0
Lane Util. Factor			0.97	0.95	0.95	1.00
Frt			1.00	1.00	1.00	0.85
Flt Protected			0.95	1.00	1.00	1.00
Satd. Flow (prot)			3433	3539	3539	1583
Flt Permitted			0.95	1.00	1.00	1.00
Satd. Flow (perm)			3433	3539	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	130	696	663	120
RTOR Reduction (vph)	0	0	0	0	0	22
Lane Group Flow (vph)	0	0	130	696	663	98
Turn Type			Prot	NA	NA	Perm
Protected Phases			5	2	6	
Permitted Phases						6
Actuated Green, G (s)			8.8	90.0	73.2	73.2
Effective Green, g (s)			8.8	90.0	73.2	73.2
Actuated g/C Ratio			0.10	1.00	0.81	0.81
Clearance Time (s)			4.0	4.0	4.0	4.0
Vehicle Extension (s)			3.0	3.0	3.0	3.0
Lane Grp Cap (vph)			336	3539	2878	1288
v/s Ratio Prot			c0.04	0.20	c0.19	
v/s Ratio Perm						0.06
v/c Ratio			0.39	0.20	0.23	0.08
Uniform Delay, d1			38.1	0.0	1.9	1.7
Progression Factor			0.92	1.00	1.00	1.00
Incremental Delay, d2			0.7	0.1	0.2	0.1
Delay (s)			35.7	0.1	2.1	1.8
Level of Service			D	A	A	A
Approach Delay (s)	0.0			5.7	2.1	
Approach LOS	A			A	A	

Intersection Summary			
HCM Average Control Delay	3.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.25		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	41.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	0	0	200	890	660	260
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)			4.0	4.0	4.0	4.0
Lane Util. Factor			0.97	0.95	0.95	1.00
Frt			1.00	1.00	1.00	0.85
Flt Protected			0.95	1.00	1.00	1.00
Satd. Flow (prot)			3433	3539	3539	1583
Flt Permitted			0.95	1.00	1.00	1.00
Satd. Flow (perm)			3433	3539	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	217	967	717	283
RTOR Reduction (vph)	0	0	0	0	0	60
Lane Group Flow (vph)	0	0	217	967	717	223
Turn Type			Prot	NA	NA	Perm
Protected Phases			5	2	6	
Permitted Phases						6
Actuated Green, G (s)			11.0	90.0	71.0	71.0
Effective Green, g (s)			11.0	90.0	71.0	71.0
Actuated g/C Ratio			0.12	1.00	0.79	0.79
Clearance Time (s)			4.0	4.0	4.0	4.0
Vehicle Extension (s)			3.0	3.0	3.0	3.0
Lane Grp Cap (vph)			420	3539	2792	1249
v/s Ratio Prot			c0.06	c0.27	0.20	
v/s Ratio Perm						0.14
v/c Ratio			0.52	0.27	0.26	0.18
Uniform Delay, d1			37.0	0.0	2.5	2.3
Progression Factor			0.91	1.00	1.00	1.00
Incremental Delay, d2			1.0	0.2	0.2	0.3
Delay (s)			34.9	0.2	2.7	2.6
Level of Service			C	A	A	A
Approach Delay (s)	0.0			6.5	2.7	
Approach LOS	A			A	A	

Intersection Summary			
HCM Average Control Delay	4.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	4.0
Intersection Capacity Utilization	38.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	200	270	0	580	640	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	1.00		0.95	0.95	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3433	1583		3539	3539	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3433	1583		3539	3539	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	217	293	0	630	696	0
RTOR Reduction (vph)	0	155	0	0	0	0
Lane Group Flow (vph)	217	138	0	630	696	0
Turn Type	NA	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	13.8	13.8		68.2	68.2	
Effective Green, g (s)	13.8	13.8		68.2	68.2	
Actuated g/C Ratio	0.15	0.15		0.76	0.76	
Clearance Time (s)	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	526	243		2682	2682	
v/s Ratio Prot	0.06			0.18	c0.20	
v/s Ratio Perm		c0.09				
v/c Ratio	0.41	0.57		0.23	0.26	
Uniform Delay, d1	34.4	35.3		3.2	3.3	
Progression Factor	1.00	1.00		1.00	0.50	
Incremental Delay, d2	0.5	3.0		0.2	0.2	
Delay (s)	35.0	38.4		3.4	1.9	
Level of Service	C	D		A	A	
Approach Delay (s)	36.9			3.4	1.9	
Approach LOS	D			A	A	

Intersection Summary			
HCM Average Control Delay	12.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	41.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

9: Lake Forest Drive & SR-241 SB Off-Ramp

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	150	230	0	950	650	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	1.00		0.95	0.95	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3433	1583		3539	3539	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3433	1583		3539	3539	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	163	250	0	1033	707	0
RTOR Reduction (vph)	0	208	0	0	0	0
Lane Group Flow (vph)	163	42	0	1033	707	0
Turn Type	NA	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	10.1	10.1		71.9	71.9	
Effective Green, g (s)	10.1	10.1		71.9	71.9	
Actuated g/C Ratio	0.11	0.11		0.80	0.80	
Clearance Time (s)	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	385	178		2827	2827	
v/s Ratio Prot	c0.05			c0.29	0.20	
v/s Ratio Perm		0.03				
v/c Ratio	0.42	0.24		0.37	0.25	
Uniform Delay, d1	37.2	36.4		2.6	2.3	
Progression Factor	1.00	1.00		1.00	0.88	
Incremental Delay, d2	0.8	0.7		0.4	0.2	
Delay (s)	38.0	37.1		2.9	2.2	
Level of Service	D	D		A	A	
Approach Delay (s)	37.5			2.9	2.2	
Approach LOS	D			A	A	

Intersection Summary			
HCM Average Control Delay	9.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	38.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	10	0	2	2	0	10	7	13	5	60	4	30
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	0	2	2	0	11	8	14	5	65	4	33
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	11			2			62	38	1	44	34	5
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	11			2			62	38	1	44	34	5
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			99	98	99	93	99	97
cM capacity (veh/h)	1608			1620			896	847	1083	936	852	1078

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	11	2	2	11	27	70	33
Volume Left	11	0	2	0	8	65	0
Volume Right	0	2	0	11	5	0	33
cSH	1608	1700	1620	1700	900	930	1078
Volume to Capacity	0.01	0.00	0.00	0.01	0.03	0.07	0.03
Queue Length 95th (ft)	1	0	0	0	2	6	2
Control Delay (s)	7.3	0.0	7.2	0.0	9.1	9.2	8.4
Lane LOS	A		A		A	A	A
Approach Delay (s)	6.0		1.2		9.1	8.9	
Approach LOS					A	A	

Intersection Summary			
Average Delay	8.1		
Intersection Capacity Utilization	23.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	30	0	7	6	0	40	4	9	4	10	16	30
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	33	0	8	7	0	43	4	10	4	11	17	33
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	43			8			123	126	4	109	108	22
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	43			8			123	126	4	109	108	22
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			100			99	99	100	99	98	97
cM capacity (veh/h)	1565			1613			795	746	1080	841	763	1055

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	33	8	7	43	18	28	33
Volume Left	33	0	7	0	4	11	0
Volume Right	0	8	0	43	4	0	33
cSH	1565	1700	1613	1700	817	791	1055
Volume to Capacity	0.02	0.00	0.00	0.03	0.02	0.04	0.03
Queue Length 95th (ft)	2	0	0	0	2	3	2
Control Delay (s)	7.3	0.0	7.2	0.0	9.5	9.7	8.5
Lane LOS	A		A		A	A	A
Approach Delay (s)	6.0		0.9		9.5	9.1	
Approach LOS					A	A	

Intersection Summary			
Average Delay	6.0		
Intersection Capacity Utilization	20.0%	ICU Level of Service	A
Analysis Period (min)	15		

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5: Auto Center Drive West & Towne Centre Drive

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	10	180	10	10	180	10	0	0	0	10	10	50
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	196	11	11	196	11	0	0	0	11	11	54
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		TWLTL			None							
Median storage veh)		2										
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	207			207			402	451	103	342	451	103
vC1, stage 1 conf vol							223	223		223	223	
vC2, stage 2 conf vol							179	228		120	228	
vCu, unblocked vol	207			207			402	451	103	342	451	103
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			99			100	100	100	98	98	94
cM capacity (veh/h)	1362			1362			641	619	932	702	619	932

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1	SB 2
Volume Total	11	130	76	11	130	76	0	0	11	65
Volume Left	11	0	0	11	0	0	0	0	11	0
Volume Right	0	0	11	0	0	11	0	0	0	54
cSH	1362	1700	1700	1362	1700	1700	1700	1700	702	859
Volume to Capacity	0.01	0.08	0.04	0.01	0.08	0.04	0.00	0.00	0.02	0.08
Queue Length 95th (ft)	1	0	0	1	0	0	0	0	1	6
Control Delay (s)	7.7	0.0	0.0	7.7	0.0	0.0	0.0	0.0	10.2	9.5
Lane LOS	A			A			A	A	B	A
Approach Delay (s)	0.4			0.4			0.0		9.6	
Approach LOS							A		A	

Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	18.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	70	430	10	10	360	30	20	0	10	20	10	30
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	76	467	11	11	391	33	22	0	11	22	11	33
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		TWLTL			None							
Median storage veh)		2										
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	424			478			880	1071	239	826	1060	212
vC1, stage 1 conf vol							625	625		429	429	
vC2, stage 2 conf vol							255	446		397	630	
vCu, unblocked vol	424			478			880	1071	239	826	1060	212
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	93			99			94	100	99	95	97	96
cM capacity (veh/h)	1132			1080			372	368	762	440	379	793

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1	SB 2
Volume Total	76	312	167	11	261	163	22	11	22	43
Volume Left	76	0	0	11	0	0	22	0	22	0
Volume Right	0	0	11	0	0	33	0	11	0	33
cSH	1132	1700	1700	1080	1700	1700	372	762	440	623
Volume to Capacity	0.07	0.18	0.10	0.01	0.15	0.10	0.06	0.01	0.05	0.07
Queue Length 95th (ft)	5	0	0	1	0	0	5	1	4	6
Control Delay (s)	8.4	0.0	0.0	8.4	0.0	0.0	15.3	9.8	13.6	11.2
Lane LOS	A			A			C	A	B	B
Approach Delay (s)	1.2			0.2			13.5		12.0	
Approach LOS							B		B	

Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	33.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	10	180	10	50	180	10	10	0	10	10	0	10
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	196	11	54	196	11	11	0	11	11	0	11
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	207			207			440	538	103	440	538	103
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	207			207			440	538	103	440	538	103
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			96			98	100	99	98	100	99
cM capacity (veh/h)	1362			1362			477	427	932	477	427	932

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1	SB 2
Volume Total	11	130	76	54	130	76	22	11	11
Volume Left	11	0	0	54	0	0	11	11	0
Volume Right	0	0	11	0	0	11	11	0	11
cSH	1362	1700	1700	1362	1700	1700	631	477	932
Volume to Capacity	0.01	0.08	0.04	0.04	0.08	0.04	0.03	0.02	0.01
Queue Length 95th (ft)	1	0	0	3	0	0	3	2	1
Control Delay (s)	7.7	0.0	0.0	7.8	0.0	0.0	10.9	12.7	8.9
Lane LOS	A			A			B	B	A
Approach Delay (s)	0.4			1.6			10.9	10.8	
Approach LOS							B	B	

Intersection Summary			
Average Delay	1.9		
Intersection Capacity Utilization	26.5%	ICU Level of Service	A
Analysis Period (min)	15		

6: Auto Center Drive East & Towne Centre Drive

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	10	440	0	30	370	10	30	0	50	10	0	10
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	478	0	33	402	11	33	0	54	11	0	11
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	413			478			777	978	239	788	973	207
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	413			478			777	978	239	788	973	207
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			97			88	100	93	96	100	99
cM capacity (veh/h)	1142			1080			274	239	762	254	241	800

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1	SB 2
Volume Total	11	319	159	33	268	145	87	11	11
Volume Left	11	0	0	33	0	0	33	11	0
Volume Right	0	0	0	0	0	11	54	0	11
cSH	1142	1700	1700	1080	1700	1700	457	254	800
Volume to Capacity	0.01	0.19	0.09	0.03	0.16	0.09	0.19	0.04	0.01
Queue Length 95th (ft)	1	0	0	2	0	0	17	3	1
Control Delay (s)	8.2	0.0	0.0	8.4	0.0	0.0	14.7	19.8	9.6
Lane LOS	A			A			B	C	A
Approach Delay (s)	0.2			0.6			14.7	14.7	
Approach LOS							B	B	

Intersection Summary			
Average Delay	1.9		
Intersection Capacity Utilization	36.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	0	0	120	680	560	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)			4.0	4.0	4.0	4.0
Lane Util. Factor			0.97	0.95	0.95	1.00
Frt			1.00	1.00	1.00	0.85
Flt Protected			0.95	1.00	1.00	1.00
Satd. Flow (prot)			3433	3539	3539	1583
Flt Permitted			0.95	1.00	1.00	1.00
Satd. Flow (perm)			3433	3539	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	130	739	609	98
RTOR Reduction (vph)	0	0	0	0	0	18
Lane Group Flow (vph)	0	0	130	739	609	80
Turn Type			Prot	NA	NA	Perm
Protected Phases			5	2	6	
Permitted Phases						6
Actuated Green, G (s)			8.8	90.0	73.2	73.2
Effective Green, g (s)			8.8	90.0	73.2	73.2
Actuated g/C Ratio			0.10	1.00	0.81	0.81
Clearance Time (s)			4.0	4.0	4.0	4.0
Vehicle Extension (s)			3.0	3.0	3.0	3.0
Lane Grp Cap (vph)			336	3539	2878	1288
v/s Ratio Prot			c0.04	c0.21	0.17	
v/s Ratio Perm						0.05
v/c Ratio			0.39	0.21	0.21	0.06
Uniform Delay, d1			38.1	0.0	1.9	1.7
Progression Factor			0.86	1.00	1.00	1.00
Incremental Delay, d2			0.7	0.1	0.2	0.1
Delay (s)			33.5	0.1	2.1	1.7
Level of Service			C	A	A	A
Approach Delay (s)	0.0			5.1	2.0	
Approach LOS	A			A	A	

Intersection Summary			
HCM Average Control Delay	3.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.23		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	4.0
Intersection Capacity Utilization	57.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

8: Lake Forest Drive & SR-241 NB On-Ramp

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	0	0	390	1010	750	300
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)			4.0	4.0	4.0	4.0
Lane Util. Factor			0.97	0.95	0.95	1.00
Frt			1.00	1.00	1.00	0.85
Flt Protected			0.95	1.00	1.00	1.00
Satd. Flow (prot)			3433	3539	3539	1583
Flt Permitted			0.95	1.00	1.00	1.00
Satd. Flow (perm)			3433	3539	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	424	1098	815	326
RTOR Reduction (vph)	0	0	0	0	0	59
Lane Group Flow (vph)	0	0	424	1098	815	267
Turn Type			Prot	NA	NA	Perm
Protected Phases			5	2	6	
Permitted Phases						6
Actuated Green, G (s)			16.5	90.0	65.5	65.5
Effective Green, g (s)			16.5	90.0	65.5	65.5
Actuated g/C Ratio			0.18	1.00	0.73	0.73
Clearance Time (s)			4.0	4.0	4.0	4.0
Vehicle Extension (s)			3.0	3.0	3.0	3.0
Lane Grp Cap (vph)			629	3539	2576	1152
v/s Ratio Prot			c0.12	c0.31	0.23	
v/s Ratio Perm						0.17
v/c Ratio			0.67	0.31	0.32	0.23
Uniform Delay, d1			34.2	0.0	4.3	4.0
Progression Factor			0.86	1.00	1.00	1.00
Incremental Delay, d2			2.5	0.2	0.3	0.5
Delay (s)			32.1	0.2	4.7	4.5
Level of Service			C	A	A	A
Approach Delay (s)	0.0			9.1	4.6	
Approach LOS	A			A	A	

Intersection Summary			
HCM Average Control Delay	7.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	4.0
Intersection Capacity Utilization	46.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

9: Lake Forest Drive & SR-241 SB Off-Ramp

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	160	550	0	650	600	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	1.00		0.95	0.95	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3433	1583		3539	3539	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3433	1583		3539	3539	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	174	598	0	707	652	0
RTOR Reduction (vph)	0	50	0	0	0	0
Lane Group Flow (vph)	174	548	0	707	652	0
Turn Type	NA	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	38.9	38.9		43.1	43.1	
Effective Green, g (s)	38.9	38.9		43.1	43.1	
Actuated g/C Ratio	0.43	0.43		0.48	0.48	
Clearance Time (s)	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	1484	684		1695	1695	
v/s Ratio Prot	0.05			c0.20	0.18	
v/s Ratio Perm		c0.35				
v/c Ratio	0.12	0.80		0.42	0.38	
Uniform Delay, d1	15.3	22.2		15.3	15.0	
Progression Factor	1.00	1.00		1.00	0.89	
Incremental Delay, d2	0.0	6.7		0.8	0.7	
Delay (s)	15.3	28.9		16.0	14.0	
Level of Service	B	C		B	B	
Approach Delay (s)	25.8			16.0	14.0	
Approach LOS	C			B	B	

Intersection Summary			
HCM Average Control Delay	18.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	57.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

9: Lake Forest Drive & SR-241 SB Off-Ramp

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	170	260	0	1270	720	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	1.00		0.95	0.95	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3433	1583		3539	3539	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3433	1583		3539	3539	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	185	283	0	1380	783	0
RTOR Reduction (vph)	0	183	0	0	0	0
Lane Group Flow (vph)	185	100	0	1380	783	0
Turn Type	NA	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	12.0	12.0		70.0	70.0	
Effective Green, g (s)	12.0	12.0		70.0	70.0	
Actuated g/C Ratio	0.13	0.13		0.78	0.78	
Clearance Time (s)	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	458	211		2753	2753	
v/s Ratio Prot	0.05			c0.39	0.22	
v/s Ratio Perm		c0.06				
v/c Ratio	0.40	0.47		0.50	0.28	
Uniform Delay, d1	35.7	36.1		3.6	2.9	
Progression Factor	1.00	1.00		1.00	1.68	
Incremental Delay, d2	0.6	1.7		0.7	0.3	
Delay (s)	36.3	37.8		4.3	5.1	
Level of Service	D	D		A	A	
Approach Delay (s)	37.2			4.3	5.1	
Approach LOS	D			A	A	

Intersection Summary			
HCM Average Control Delay	10.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	46.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

12: Auto Center Drive & Auto Center Drive

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	10	0	0	0	0	10	0	0	0	60	0	30
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	0	0	0	0	11	0	0	0	65	0	33
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	11			0			54	33	0	27	27	5
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	11			0			54	33	0	27	27	5
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			100	100	100	93	100	97
cM capacity (veh/h)	1608			1623			910	854	1085	978	860	1078

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	11	0	0	11	0	65	33
Volume Left	11	0	0	0	0	65	0
Volume Right	0	0	0	11	0	0	33
cSH	1608	1700	1700	1700	1700	978	1078
Volume to Capacity	0.01	0.00	0.00	0.01	0.00	0.07	0.03
Queue Length 95th (ft)	1	0	0	0	0	5	2
Control Delay (s)	7.3	0.0	0.0	0.0	0.0	8.9	8.4
Lane LOS	A				A	A	A
Approach Delay (s)	7.3		0.0		0.0	8.8	
Approach LOS					A	A	

Intersection Summary			
Average Delay	7.8		
Intersection Capacity Utilization	17.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	30	0	0	0	0	40	0	0	0	10	0	20
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	33	0	0	0	0	43	0	0	0	11	0	22
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	43			0			87	109	0	87	87	22
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	43			0			87	109	0	87	87	22
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			100			100	100	100	99	100	98
cM capacity (veh/h)	1565			1623			866	765	1085	884	786	1055

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	33	0	0	43	0	11	22
Volume Left	33	0	0	0	0	11	0
Volume Right	0	0	0	43	0	0	22
cSH	1565	1700	1700	1700	1700	884	1055
Volume to Capacity	0.02	0.00	0.00	0.03	0.00	0.01	0.02
Queue Length 95th (ft)	2	0	0	0	0	1	2
Control Delay (s)	7.3	0.0	0.0	0.0	0.0	9.1	8.5
Lane LOS	A				A	A	A
Approach Delay (s)	7.3		0.0		0.0	8.7	
Approach LOS					A	A	

Intersection Summary			
Average Delay	4.8		
Intersection Capacity Utilization	18.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	20	210	10	10	180	10	0	0	0	10	10	60
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	22	228	11	11	196	11	0	0	0	11	11	65
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		TWLTL			None							
Median storage veh)		2										
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	207			239			467	505	120	380	505	103
vC1, stage 1 conf vol							277	277		223	223	
vC2, stage 2 conf vol							190	228		158	283	
vCu, unblocked vol	207			239			467	505	120	380	505	103
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			99			100	100	100	98	98	93
cM capacity (veh/h)	1362			1325			594	589	909	681	590	932

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1	SB 2
Volume Total	22	152	87	11	130	76	0	0	11	76
Volume Left	22	0	0	11	0	0	0	0	11	0
Volume Right	0	0	11	0	0	11	0	0	0	65
cSH	1362	1700	1700	1325	1700	1700	1700	1700	681	860
Volume to Capacity	0.02	0.09	0.05	0.01	0.08	0.04	0.00	0.00	0.02	0.09
Queue Length 95th (ft)	1	0	0	1	0	0	0	0	1	7
Control Delay (s)	7.7	0.0	0.0	7.7	0.0	0.0	0.0	0.0	10.4	9.6
Lane LOS	A			A			A	A	B	A
Approach Delay (s)	0.6			0.4			0.0		9.7	
Approach LOS							A		A	

Intersection Summary			
Average Delay	1.9		
Intersection Capacity Utilization	23.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	90	370	10	10	380	40	20	10	10	30	10	40
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	98	402	11	11	413	43	22	11	11	33	11	43
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		TWLTL			None							
Median storage veh)		2										
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	457			413			880	1082	207	870	1065	228
vC1, stage 1 conf vol							603	603		457	457	
vC2, stage 2 conf vol							277	478		413	609	
vCu, unblocked vol	457			413			880	1082	207	870	1065	228
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	91			99			94	97	99	92	97	94
cM capacity (veh/h)	1101			1142			365	354	800	412	375	774

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1	SB 2
Volume Total	98	268	145	11	275	181	22	22	33	54
Volume Left	98	0	0	11	0	0	22	0	33	0
Volume Right	0	0	11	0	0	43	0	11	0	43
cSH	1101	1700	1700	1142	1700	1700	365	491	412	638
Volume to Capacity	0.09	0.16	0.09	0.01	0.16	0.11	0.06	0.04	0.08	0.09
Queue Length 95th (ft)	7	0	0	1	0	0	5	3	6	7
Control Delay (s)	8.6	0.0	0.0	8.2	0.0	0.0	15.5	12.7	14.5	11.2
Lane LOS	A			A			C	B	B	B
Approach Delay (s)	1.6			0.2			14.1		12.4	
Approach LOS							B		B	

Intersection Summary			
Average Delay	2.4		
Intersection Capacity Utilization	35.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	10	170	10	50	180	20	10	0	10	20	0	10
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	185	11	54	196	22	11	0	11	22	0	11
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	217			196			429	538	98	440	533	109
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	217			196			429	538	98	440	533	109
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			96			98	100	99	95	100	99
cM capacity (veh/h)	1349			1375			485	427	939	477	430	924

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1	SB 2
Volume Total	11	123	72	54	130	87	22	22	11
Volume Left	11	0	0	54	0	0	11	22	0
Volume Right	0	0	11	0	0	22	11	0	11
cSH	1349	1700	1700	1375	1700	1700	640	477	924
Volume to Capacity	0.01	0.07	0.04	0.04	0.08	0.05	0.03	0.05	0.01
Queue Length 95th (ft)	1	0	0	3	0	0	3	4	1
Control Delay (s)	7.7	0.0	0.0	7.7	0.0	0.0	10.8	12.9	8.9
Lane LOS	A			A			B	B	A
Approach Delay (s)	0.4			1.5			10.8	11.6	
Approach LOS							B	B	

Intersection Summary			
Average Delay	2.1		
Intersection Capacity Utilization	26.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	10	430	0	30	390	20	30	0	50	20	0	10
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	467	0	33	424	22	33	0	54	22	0	11
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	446			467			777	1000	234	810	989	223
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	446			467			777	1000	234	810	989	223
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			97			88	100	93	91	100	99
cM capacity (veh/h)	1111			1090			274	232	768	245	236	781

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1	SB 2
Volume Total	11	312	156	33	283	163	87	22	11
Volume Left	11	0	0	33	0	0	33	22	0
Volume Right	0	0	0	0	0	22	54	0	11
cSH	1111	1700	1700	1090	1700	1700	458	245	781
Volume to Capacity	0.01	0.18	0.09	0.03	0.17	0.10	0.19	0.09	0.01
Queue Length 95th (ft)	1	0	0	2	0	0	17	7	1
Control Delay (s)	8.3	0.0	0.0	8.4	0.0	0.0	14.7	21.1	9.7
Lane LOS	A			A			B	C	A
Approach Delay (s)	0.2			0.6			14.7	17.3	
Approach LOS							B	C	

Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	36.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	0	0	120	660	550	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)			4.0	4.0	4.0	4.0
Lane Util. Factor			0.97	0.95	0.95	1.00
Frt			1.00	1.00	1.00	0.85
Flt Protected			0.95	1.00	1.00	1.00
Satd. Flow (prot)			3433	3539	3539	1583
Flt Permitted			0.95	1.00	1.00	1.00
Satd. Flow (perm)			3433	3539	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	130	717	598	98
RTOR Reduction (vph)	0	0	0	0	0	18
Lane Group Flow (vph)	0	0	130	717	598	80
Turn Type			Prot	NA	NA	Perm
Protected Phases			5	2	6	
Permitted Phases						6
Actuated Green, G (s)			8.8	90.0	73.2	73.2
Effective Green, g (s)			8.8	90.0	73.2	73.2
Actuated g/C Ratio			0.10	1.00	0.81	0.81
Clearance Time (s)			4.0	4.0	4.0	4.0
Vehicle Extension (s)			3.0	3.0	3.0	3.0
Lane Grp Cap (vph)			336	3539	2878	1288
v/s Ratio Prot			c0.04	c0.20	0.17	
v/s Ratio Perm						0.05
v/c Ratio			0.39	0.20	0.21	0.06
Uniform Delay, d1			38.1	0.0	1.9	1.7
Progression Factor			0.97	1.00	1.00	1.00
Incremental Delay, d2			0.7	0.1	0.2	0.1
Delay (s)			37.7	0.1	2.1	1.7
Level of Service			D	A	A	A
Approach Delay (s)	0.0			5.9	2.0	
Approach LOS	A			A	A	

Intersection Summary			
HCM Average Control Delay	4.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.22		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	4.0
Intersection Capacity Utilization	57.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	0	0	400	1010	730	300
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)			4.0	4.0	4.0	4.0
Lane Util. Factor			0.97	0.95	0.95	1.00
Frt			1.00	1.00	1.00	0.85
Flt Protected			0.95	1.00	1.00	1.00
Satd. Flow (prot)			3433	3539	3539	1583
Flt Permitted			0.95	1.00	1.00	1.00
Satd. Flow (perm)			3433	3539	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	435	1098	793	326
RTOR Reduction (vph)	0	0	0	0	0	58
Lane Group Flow (vph)	0	0	435	1098	793	268
Turn Type			Prot	NA	NA	Perm
Protected Phases			5	2	6	
Permitted Phases						6
Actuated Green, G (s)			16.8	90.0	65.2	65.2
Effective Green, g (s)			16.8	90.0	65.2	65.2
Actuated g/C Ratio			0.19	1.00	0.72	0.72
Clearance Time (s)			4.0	4.0	4.0	4.0
Vehicle Extension (s)			3.0	3.0	3.0	3.0
Lane Grp Cap (vph)			641	3539	2564	1147
v/s Ratio Prot			c0.13	c0.31	0.22	
v/s Ratio Perm						0.17
v/c Ratio			0.68	0.31	0.31	0.23
Uniform Delay, d1			34.1	0.0	4.4	4.1
Progression Factor			0.88	1.00	1.00	1.00
Incremental Delay, d2			2.5	0.2	0.3	0.5
Delay (s)			32.4	0.2	4.7	4.6
Level of Service			C	A	A	A
Approach Delay (s)	0.0			9.3	4.7	
Approach LOS	A			A	A	

Intersection Summary			
HCM Average Control Delay	7.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	4.0
Intersection Capacity Utilization	46.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	160	550	0	640	590	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	1.00		0.95	0.95	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3433	1583		3539	3539	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3433	1583		3539	3539	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	174	598	0	696	641	0
RTOR Reduction (vph)	0	52	0	0	0	0
Lane Group Flow (vph)	174	546	0	696	641	0
Turn Type	NA	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	38.7	38.7		43.3	43.3	
Effective Green, g (s)	38.7	38.7		43.3	43.3	
Actuated g/C Ratio	0.43	0.43		0.48	0.48	
Clearance Time (s)	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	1476	681		1703	1703	
v/s Ratio Prot	0.05			c0.20	0.18	
v/s Ratio Perm		c0.34				
v/c Ratio	0.12	0.80		0.41	0.38	
Uniform Delay, d1	15.4	22.3		15.1	14.8	
Progression Factor	1.00	1.00		1.00	0.89	
Incremental Delay, d2	0.0	6.7		0.7	0.6	
Delay (s)	15.4	29.0		15.8	13.8	
Level of Service	B	C		B	B	
Approach Delay (s)	26.0			15.8	13.8	
Approach LOS	C			B	B	

Intersection Summary			
HCM Average Control Delay	18.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	57.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

9: Lake Forest Drive & SR-241 SB Off-Ramp

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	160	260	0	1280	720	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	1.00		0.95	0.95	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3433	1583		3539	3539	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3433	1583		3539	3539	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	174	283	0	1391	783	0
RTOR Reduction (vph)	0	201	0	0	0	0
Lane Group Flow (vph)	174	82	0	1391	783	0
Turn Type	NA	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	11.2	11.2		70.8	70.8	
Effective Green, g (s)	11.2	11.2		70.8	70.8	
Actuated g/C Ratio	0.12	0.12		0.79	0.79	
Clearance Time (s)	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	427	197		2784	2784	
v/s Ratio Prot	0.05			c0.39	0.22	
v/s Ratio Perm		c0.05				
v/c Ratio	0.41	0.41		0.50	0.28	
Uniform Delay, d1	36.3	36.4		3.4	2.6	
Progression Factor	1.00	1.00		1.00	2.21	
Incremental Delay, d2	0.6	1.4		0.6	0.2	
Delay (s)	37.0	37.8		4.0	6.0	
Level of Service	D	D		A	A	
Approach Delay (s)	37.5			4.0	6.0	
Approach LOS	D			A	A	

Intersection Summary			
HCM Average Control Delay	10.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	46.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	10	0	2	2	0	10	7	13	5	60	4	30
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	0	2	2	0	11	8	14	5	65	4	33
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	11			2			62	38	1	44	34	5
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	11			2			62	38	1	44	34	5
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			99	98	99	93	99	97
cM capacity (veh/h)	1608			1620			896	847	1083	936	852	1078

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	11	2	2	11	27	70	33
Volume Left	11	0	2	0	8	65	0
Volume Right	0	2	0	11	5	0	33
cSH	1608	1700	1620	1700	900	930	1078
Volume to Capacity	0.01	0.00	0.00	0.01	0.03	0.07	0.03
Queue Length 95th (ft)	1	0	0	0	2	6	2
Control Delay (s)	7.3	0.0	7.2	0.0	9.1	9.2	8.4
Lane LOS	A		A		A	A	A
Approach Delay (s)	6.0		1.2		9.1	8.9	
Approach LOS					A	A	

Intersection Summary			
Average Delay	8.1		
Intersection Capacity Utilization	23.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	30	0	7	6	0	40	4	9	4	10	16	30
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	33	0	8	7	0	43	4	10	4	11	17	33
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	43			8			123	126	4	109	108	22
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	43			8			123	126	4	109	108	22
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			100			99	99	100	99	98	97
cM capacity (veh/h)	1565			1613			795	746	1080	841	763	1055

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	33	8	7	43	18	28	33
Volume Left	33	0	7	0	4	11	0
Volume Right	0	8	0	43	4	0	33
cSH	1565	1700	1613	1700	817	791	1055
Volume to Capacity	0.02	0.00	0.00	0.03	0.02	0.04	0.03
Queue Length 95th (ft)	2	0	0	0	2	3	2
Control Delay (s)	7.3	0.0	7.2	0.0	9.5	9.7	8.5
Lane LOS	A		A		A	A	A
Approach Delay (s)	6.0		0.9		9.5	9.1	
Approach LOS					A	A	

Intersection Summary			
Average Delay	6.0		
Intersection Capacity Utilization	20.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	41	9	4	29	85	14
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	45	10	4	32	92	15
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)					275	
pX, platoon unblocked						
vC, conflicting volume	124	54	108			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	124	54	108			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	95	99	100			
cM capacity (veh/h)	855	1002	1481			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	54	4	16	16	62	46
Volume Left	45	4	0	0	0	0
Volume Right	10	0	0	0	0	15
cSH	878	1481	1700	1700	1700	1700
Volume to Capacity	0.06	0.00	0.01	0.01	0.04	0.03
Queue Length 95th (ft)	5	0	0	0	0	0
Control Delay (s)	9.4	7.4	0.0	0.0	0.0	0.0
Lane LOS	A	A				
Approach Delay (s)	9.4	0.9			0.0	
Approach LOS	A					

Intersection Summary			
Average Delay	2.7		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	27	6	8	71	50	38
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	29	7	9	77	54	41
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)					275	
pX, platoon unblocked						
vC, conflicting volume	131	48	96			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	131	48	96			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	97	99	99			
cM capacity (veh/h)	845	1011	1496			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	36	9	39	39	36	59
Volume Left	29	9	0	0	0	0
Volume Right	7	0	0	0	0	41
cSH	871	1496	1700	1700	1700	1700
Volume to Capacity	0.04	0.01	0.02	0.02	0.02	0.03
Queue Length 95th (ft)	3	0	0	0	0	0
Control Delay (s)	9.3	7.4	0.0	0.0	0.0	0.0
Lane LOS	A	A				
Approach Delay (s)	9.3	0.8			0.0	
Approach LOS	A					

Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	16.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	2	24	8	10	36	1
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	26	9	11	39	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	68	40	40			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	68	40	40			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	97	99			
cM capacity (veh/h)	932	1032	1569			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	28	9	11	40
Volume Left	2	9	0	0
Volume Right	26	0	0	1
cSH	1023	1569	1700	1700
Volume to Capacity	0.03	0.01	0.01	0.02
Queue Length 95th (ft)	2	0	0	0
Control Delay (s)	8.6	7.3	0.0	0.0
Lane LOS	A	A		
Approach Delay (s)	8.6	3.2		0.0
Approach LOS	A			

Intersection Summary			
Average Delay	3.5		
Intersection Capacity Utilization	16.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	1	16	21	36	33	1
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	17	23	39	36	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	121	36	37			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	121	36	37			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	98	99			
cM capacity (veh/h)	862	1036	1574			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	18	23	39	37
Volume Left	1	23	0	0
Volume Right	17	0	0	1
cSH	1024	1574	1700	1700
Volume to Capacity	0.02	0.01	0.02	0.02
Queue Length 95th (ft)	1	1	0	0
Control Delay (s)	8.6	7.3	0.0	0.0
Lane LOS	A	A		
Approach Delay (s)	8.6	2.7		0.0
Approach LOS	A			

Intersection Summary			
Average Delay	2.8		
Intersection Capacity Utilization	17.8%	ICU Level of Service	A
Analysis Period (min)	15		