February 13, 2020

Amanda Wilson
Infrastructure and Development Services Manager
City of Sandpoint Public Works

Regarding: **Trip Generation/Distribution Letter**
North Boyer Development

Dear Amanda:

The purpose of this letter is to establish the anticipated trip generation and distribution for the proposed North Boyer Development. This letter includes the anticipated trip generation calculations for the typical weekday PM peak hour as well as project trip distribution percentages at study intersections which will be used by the forthcoming traffic impact analysis.

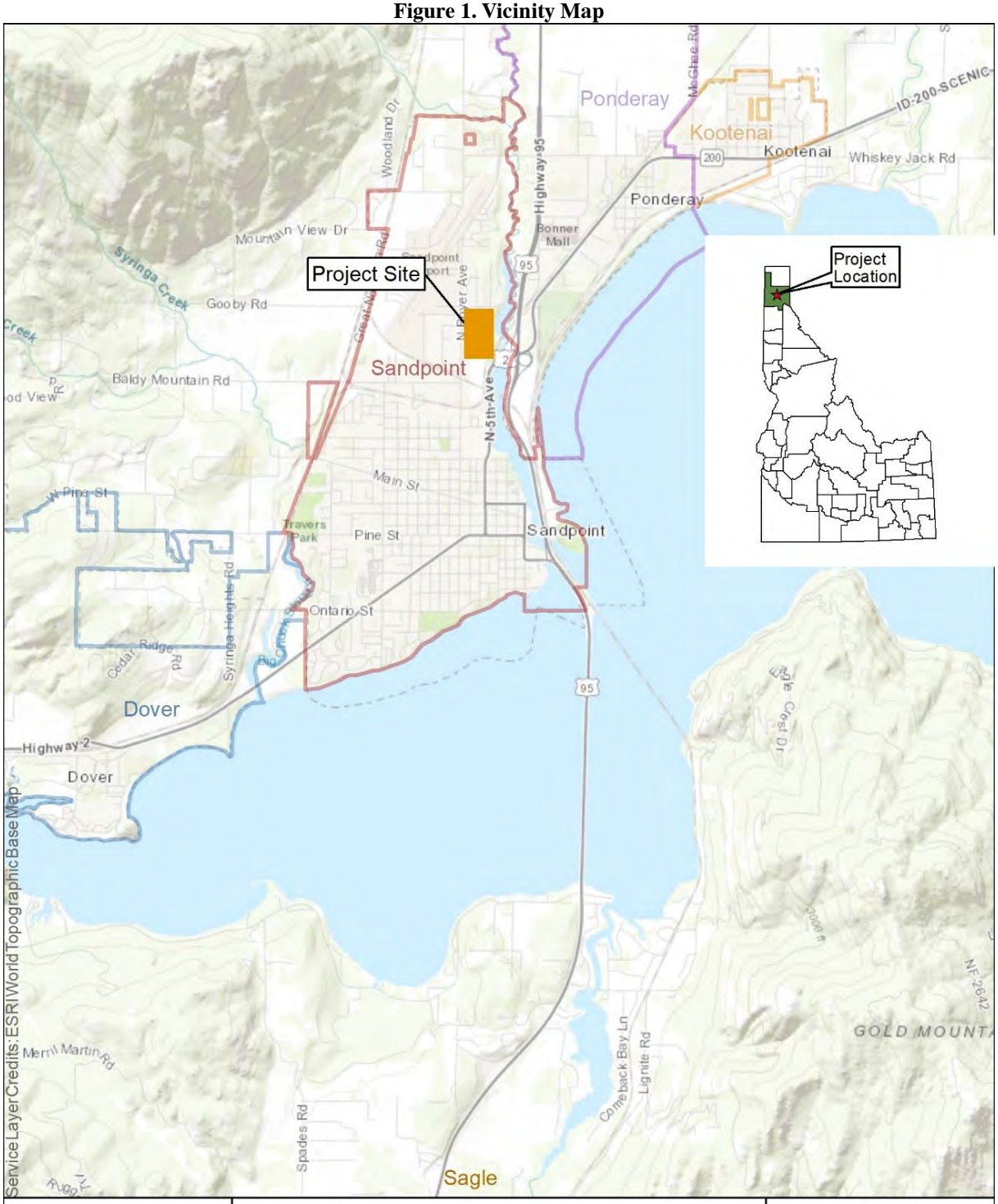
Project Description

The proposed North Boyer Development is located on the former University of Idaho property along Boyer Avenue south of Mountain View Road. A vicinity map is provided as Figure 1. The vision for the site is mixed-use, with the majority being residential. A commercial area on the southern end of the site has been reserved with possible land uses included for evaluation. The estimated traffic volumes generated by the development were determined based on the following land use assumptions:

- 133 Single-Family Dwelling Units (SFDU)
- 150 Multi-Family Dwelling Units (MFDU) (density dependent on lot size)
- 45,000 Square Foot Self-Storage Facility
- 10,000 Square Foot Commercial Shopping Center

A site plan is provided in Figure 2.

Figure 1. Vicinity Map



DAVID EVANS AND ASSOCIATES INC.
908 N. Howard St. Ste 300
Spokane, WA 99201

NORTH BOYER DEVELOPMENT
CITY OF SANDPOINT, ID

TRAFFIC IMPACT ANALYSIS
PROJECT NO. KMEP00000001

FIGURE 1

PROJECT VICINITY

Figure 2. Site Plan

*Note: Site plan provided by KM Enterprises, modified to illustrate two accesses on Boyer

Trip Generation

Trip generation for the proposed project was estimated based on Land Use categories within the 10th Edition of the ITE Trip Generation Manual. Trip generation estimates for buildout of the development are shown in Table 1. The ITE Trip Generation data sheets are provided as an attachment to this letter.

Table 1. North Boyer Development Trip Generation

Land Use	Units	Variable	ITE LU Code	Rate/ Equation	Inbound		Outbound		Total
					%	Value	%	Value	
SFDU	133	Dwelling Units	210	LN(T)=0.96*LN(X) + 0.20	63%	84	37%	50	134
MFDU	150	Dwelling Units	220	LN(T)=0.89*LN(X) - 0.02	63%	54	37%	31	85
Mini-Warehouse	45	Thousand Square Feet	151	T=0.17	47%	4	53%	4	8
Shopping Center	10	Thousand Square Feet	820	LN(T)=0.74*LN(X) + 2.89	48%	48	52%	51	99
				Total Trips Generated	Total	190	Total	136	326
				Shopping Center Pass-By Trip Reduction	34%	16	34%	18	34
				Net New Trips	-	*174*	-	*118*	*292*

X = Land Use Units
Note: ITE 820 Pass By 34%,

As shown in Table 2, the project is anticipated to generate approximately 292 net new peak hour trips during the PM peak hour with 174 entering and 118 exiting trips.

Trip Reductions and Net New Trips

Mixed-use developments experience a number of different trips types: Shared (or internal) trips, Pass-by trips, and New trips. These trip types are further described below.

Shared (Internal) Trips - These are trips which occur on or within the site where a vehicle will stop at more than one place on the site or a patron will visit multiple uses on a site. For purpose of this analysis, there are no shared trips assumed with this development.

Pass-by Trips - These trips represent vehicles which currently use adjacent roadways providing primary access to the new land use / project. These trips, however, have an ultimate destination other than the project in question. They should be viewed as drop-in customers who stop in on their way to/from work or on their way to/from another site. Pass-by trips add turning movements to the site access points but do not represent additional trips to the greater transportation system. For this particular project, pass-by traffic would come primarily from the existing traffic stream on Boyer Avenue.

New (Destination) Trips - These trips occur only to access a specific land use such as Single-Family Residential or Multi-Family Residential. These types of trips will travel to and from the new site and a single other destination such as home. This is the only trip type that will result in a net increase in the total amount of traffic within the study area.

Trip Distribution

The Sandpoint Travel Demand Model and traffic counts at study area intersections were used to identify what percentage of trips to/from the development will travel on surrounding roadways. The majority of trips (60 percent) are estimated to travel to/from the south of the development using Boyer Avenue, while the remaining trips (40 percent) are estimated to travel to/from the north of the development using Boyer Avenue. Traffic from the proposed project is expected to be distributed to the broader roadway network in the following manner as shown in Figure 3:

- 30% will go to/come from areas north and east of the site using Schweitzer Cutoff Road.
- 20% will go to/come from areas west of the site using Baldy Mountain Road or Larch Street (10% each).
- 20% will go to/come from areas east of the site using Larch Street.
- 10% will go to/come from areas north and west of the site using Schweitzer Cutoff Road.
- 10% will go to/come from areas south and west of the site using US-2.
- 10% will go to/come from land uses along Boyer Avenue between Larch Street and Cedar Street

Four driveways were assumed for the development: two providing access to the southern half of the development onto Boyer Avenue and two providing access to the northern half of the development onto Mountain View Road. Although the development may install crossings of the drainage channel, it was assumed no connection within the site is provided between the two halves for trip distribution purposes.

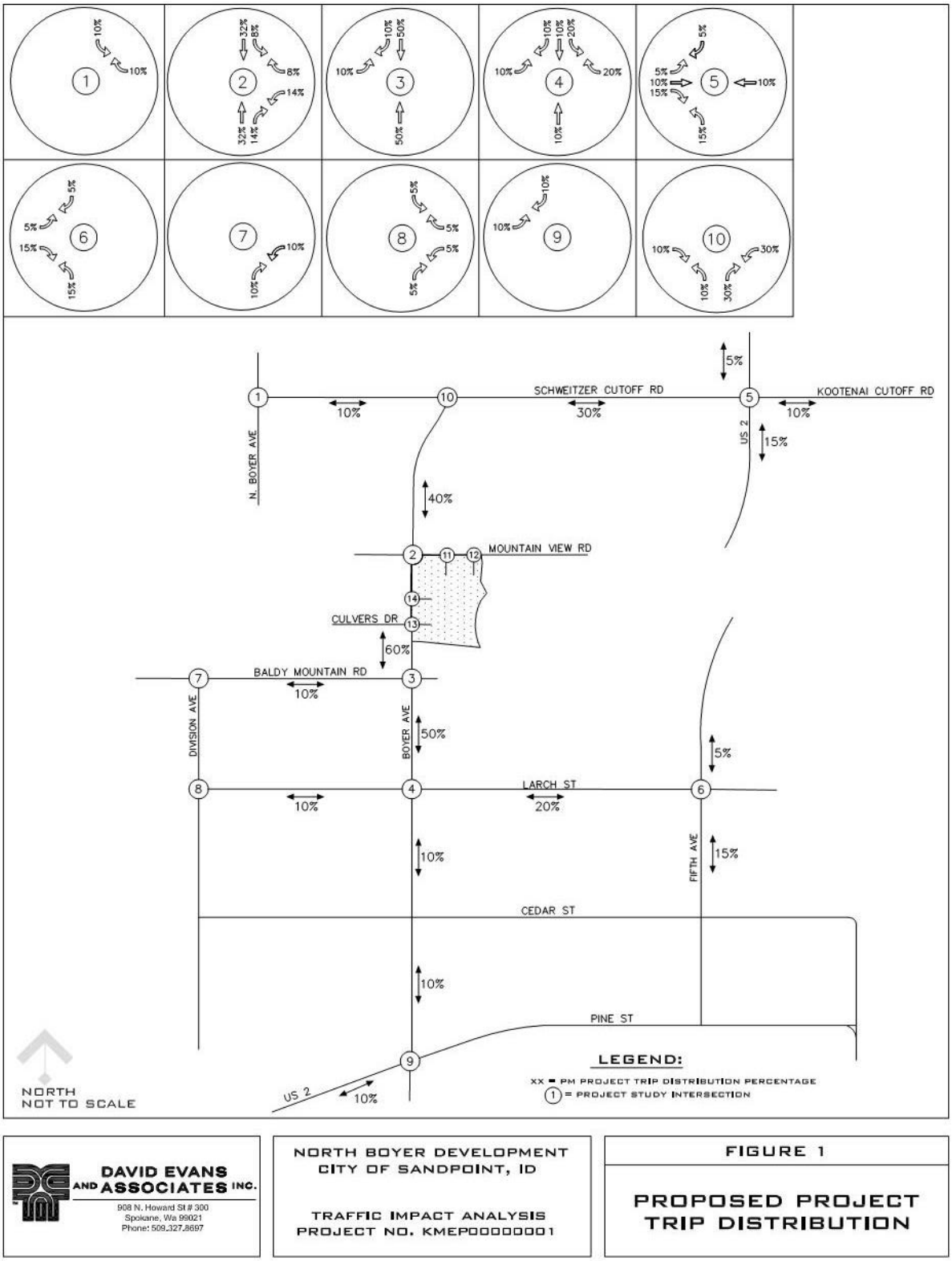
Inbound and outbound trips at each of the driveways were determined by applying the 60/40 distribution described above to the trips generated by each land use type of each half of the development, taking into account the location of each land use type in relation to the driveways and desired direction of travel. Table 2 documents the percent distribution of trips by land use type at each driveway.

Table 2. North Boyer Development Driveways Trip Distribution by Land Use

Intersection		Land Use				Overall
		Single Family	Multi-Family	Self-Storage	Commercial Shopping Center	
11	Driveway West / Mountain View Rd	44%	-	-	-	18%
12	Driveway East / Mountain View Rd	24%	-	-	-	10%
Overall Split Between 11 and 12		*#11: 65% / #12: 35%*				
13	Culvers Dr / Driveway South / Boyer Ave	30%	91%	100%	100%	57%
14	Driveway North / Boyer Ave	2%	9%	0%	0%	15%
Overall Split Between 13 and 14		*#13: 80% / #14: 20%*				

As shown in Table 2, the driveways along Mountain View Road only serve single family uses, accounting for about 28 percent of total trips generated by the development. The driveway at Culvers Drive and Boyer Avenue is expected to facilitate most of the trips (57 percent overall) generated by the development. This is because all of the commercial and most of the multi-family are situated in a manner that lends to the use of the Culvers Drive / Boyer Avenue driveway for both inbound and outbound trips regardless of whether the trips are coming to/from the north or south via Boyer Avenue.

Figure 3. Project Trip Distribution



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NORTH BOYER DEVELOPMENT
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TRAFFIC IMPACT ANALYSIS
PROJECT NO. KMEP00000001

FIGURE 1

PROPOSED PROJECT TRIP DISTRIBUTION

Conclusions and Recommendations

The proposed North Boyer Development is anticipated to generate approximately 292 net new trips during the PM peak hour. Of those, 174 vehicles are expected to be entering the site and 118 vehicles exiting the site. The project study area for the forthcoming traffic impact analysis is provided for discussion with the City of Sandpoint and includes the intersections of:

- Schweitzer Cutoff Rd/N Boyer Rd
- Boyer Ave/Mountain View Rd
- Boyer Ave/Baldy Mountain Rd
- Larch St/Boyer Ave
- Schweitzer Cutoff Rd/US-95/US-2
- Larch St/US-95/US-2
- Division Ave/Baldy Mountain Rd
- Division Ave/Larch St
- US-2/Boyer Ave
- Schweitzer Cutoff Rd/N Boyer Ave
- Site access intersections

It is assumed that the operational analysis for this development will be completed using Highway Capacity Manual (HCM) 6th Edition methodologies. Roundabout controlled intersections will be evaluated using the Sidra 8 software.

We look forward to your response regarding the proposed trip generation/distribution assumptions. Feel free to contact me if you have any questions or need additional information, I appreciate your feedback. Pending your review, we request moving forward with the future conditions analysis.

Sincerely,
David Evans and Associates, Inc.

Jerremy Clark, PE, PTOE
Traffic Engineer

JC/ck

cc: file

Tim McDonnell – KM Enterprises
Ryan Luttman – Century West Engineering

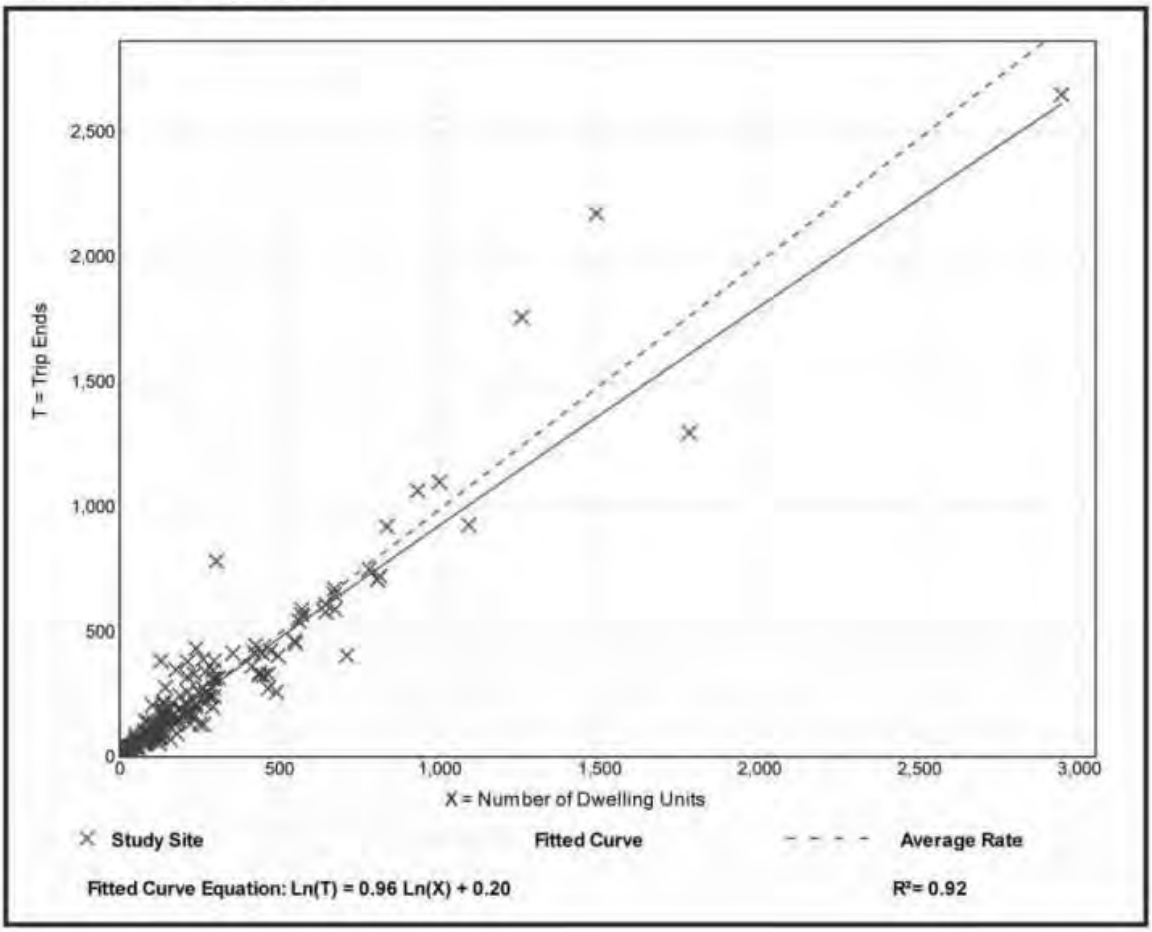
Single-Family Detached Housing
(210)

Vehicle Trip Ends vs:	**Dwelling Units**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	190
Avg. Num. of Dwelling Units:	242
Directional Distribution:	63% entering, 37% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.99	0.44 - 2.98	0.31

Data Plot and Equation



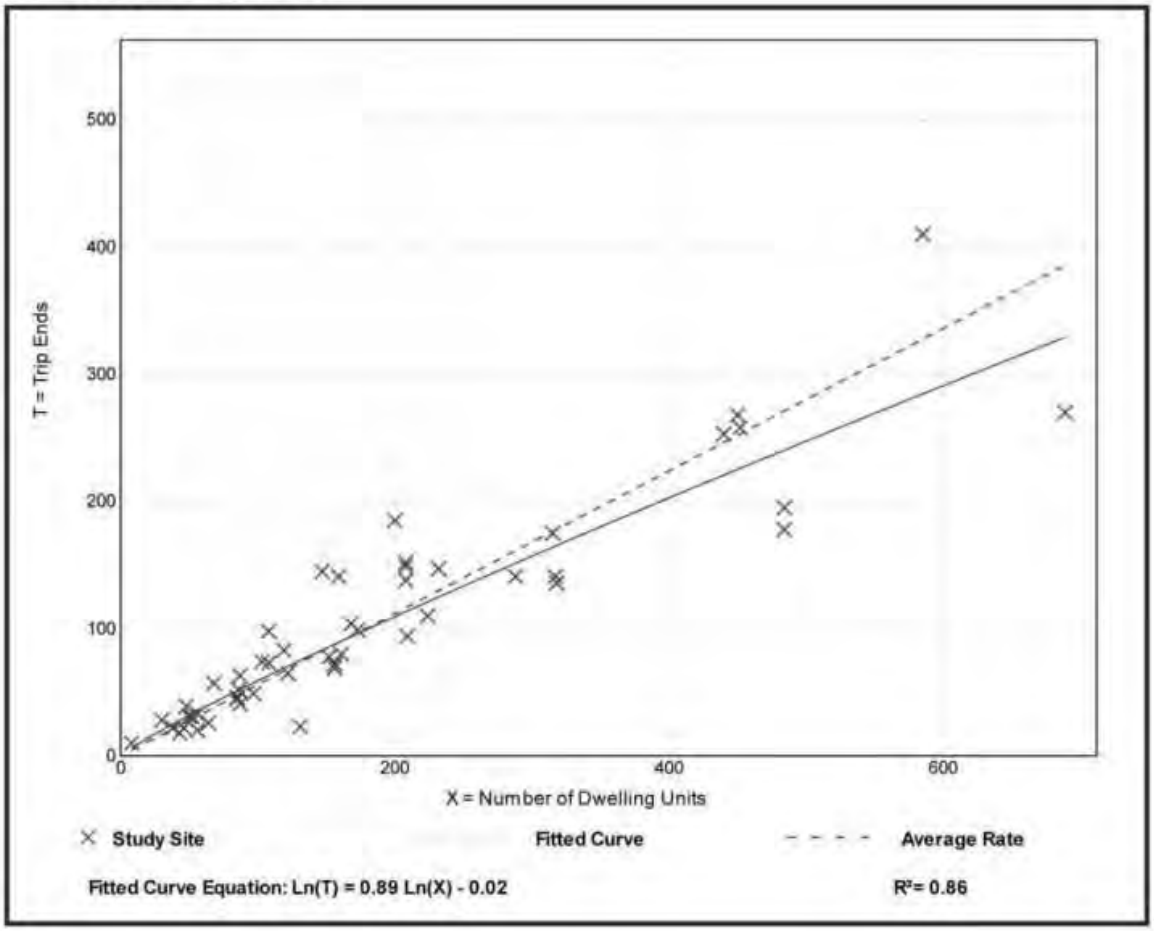
Multifamily Housing (Low-Rise)
(220)

Vehicle Trip Ends vs:	**Dwelling Units**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	50
Avg. Num. of Dwelling Units:	187
Directional Distribution:	63% entering, 37% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.56	0.18 - 1.25	0.16

Data Plot and Equation



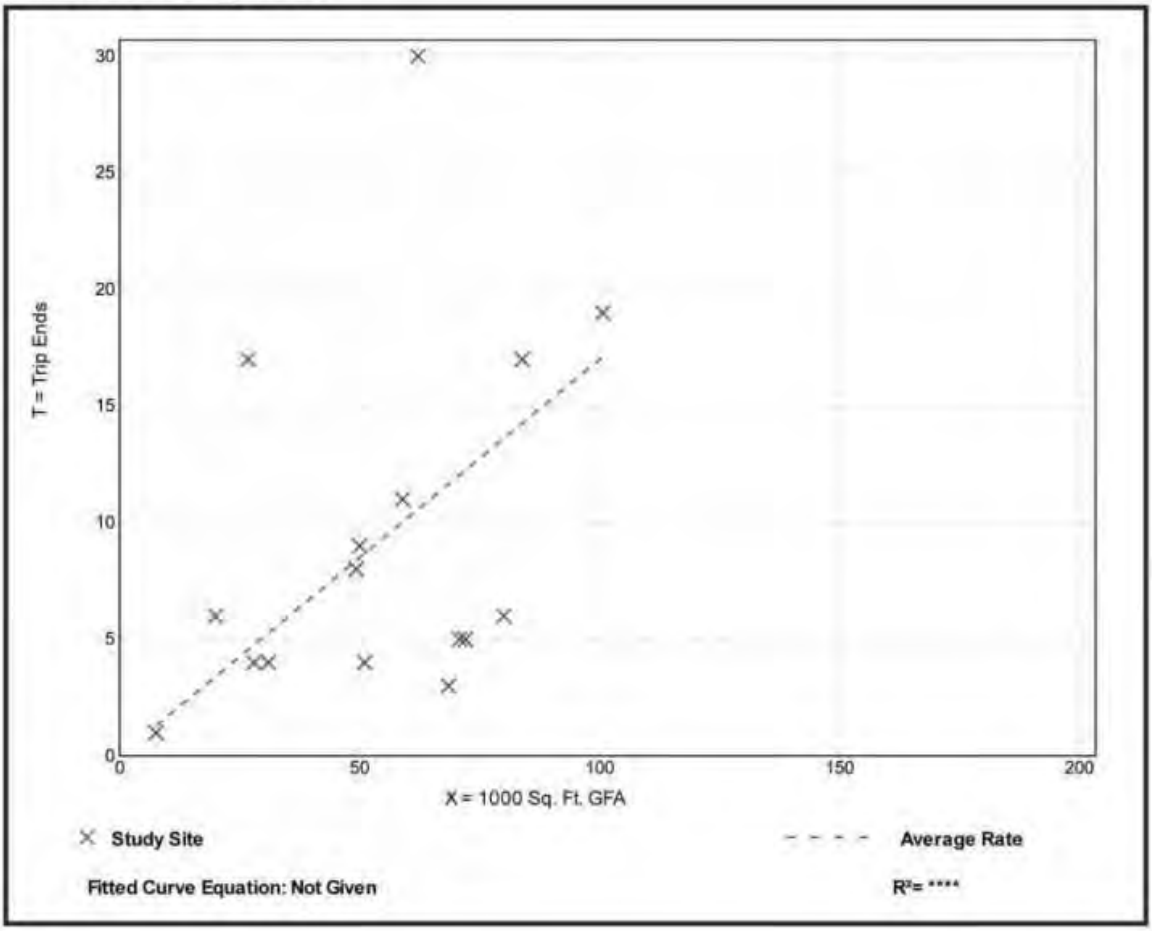
Mini-Warehouse
(151)

Vehicle Trip Ends vs:	**1000 Sq. Ft. GFA**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	16
1000 Sq. Ft. GFA:	54
Directional Distribution:	47% entering, 53% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.17	0.04 - 0.64	0.14

Data Plot and Equation



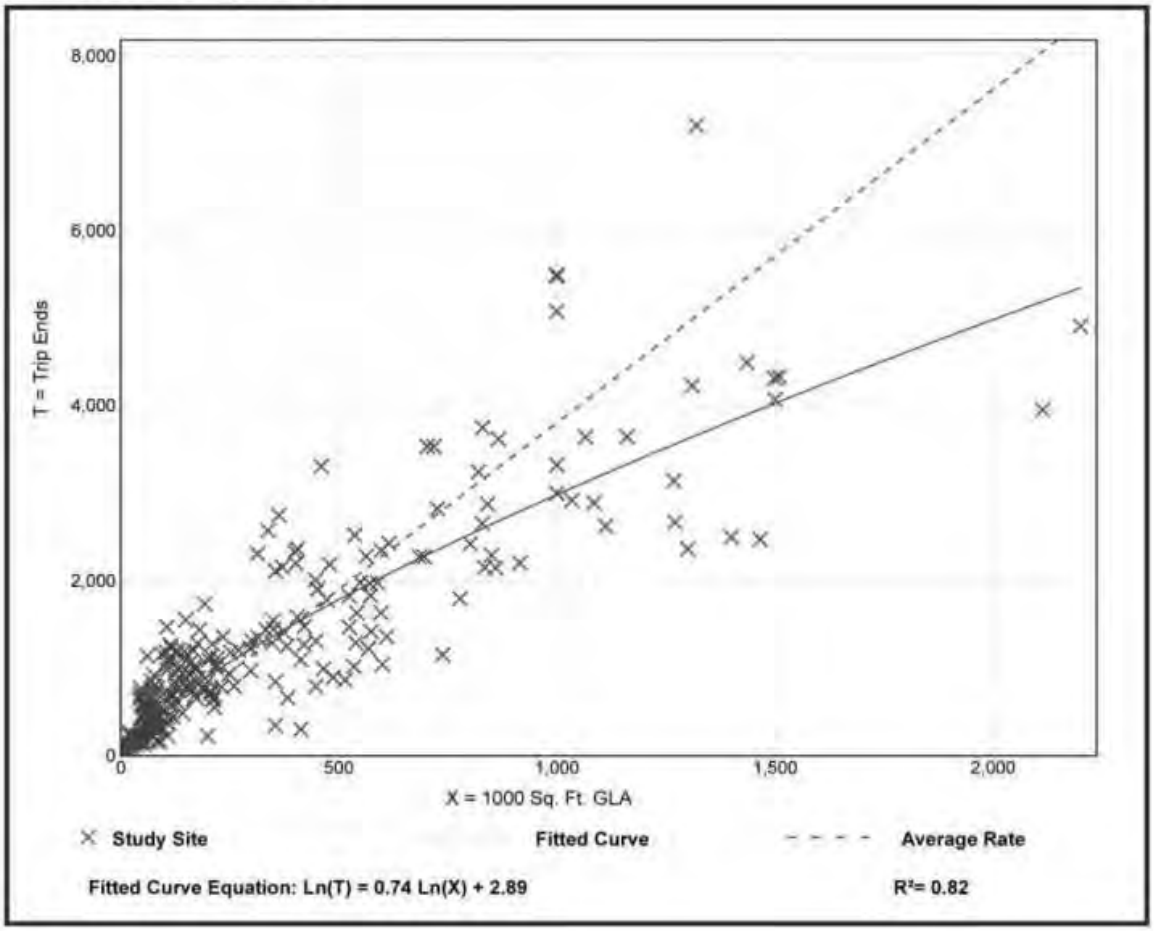
Shopping Center
(820)

Vehicle Trip Ends vs:	**1000 Sq. Ft. GLA**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	261
1000 Sq. Ft. GLA:	327
Directional Distribution:	48% entering, 52% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
3.81	0.74 - 18.69	2.04

Data Plot and Equation



April 21, 2020

Amanda Wilson
Infrastructure and Development Services Manager
City of Sandpoint Public Works

Regarding: **Trip Generation/Distribution Letter**
North Boyer Development

Dear Amanda:

The purpose of this letter is to establish the anticipated trip generation and distribution for the proposed North Boyer Development, including updates requested regarding the original letter dated February 13, 2020. This includes the anticipated trip generation calculations for the typical weekday AM and PM peak hours, overall daily trip generation for both weekday and weekend day, and peak weekend (Saturday) hour trips generated. Also included are project trip distribution percentages at study intersections, which will be used by the forthcoming traffic impact analysis.

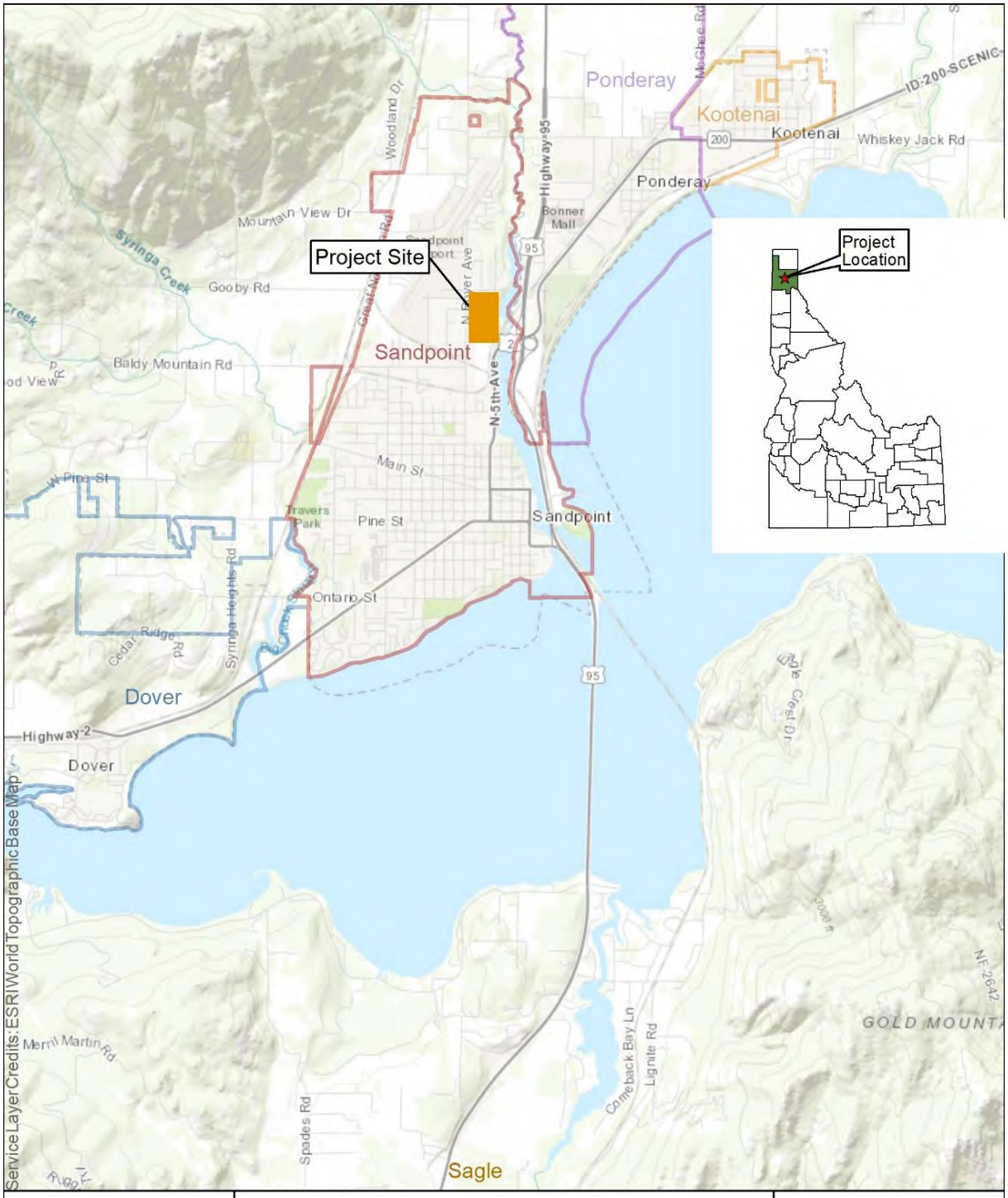
Project Description

The proposed North Boyer Development is located on the former University of Idaho property along North Boyer Avenue south of Mountain View Road. A vicinity map is provided as **Figure 1**. The vision for the site is mixed-use, with the majority being residential. A commercial area on the southern end of the site has been reserved with possible land uses included for evaluation. The estimated traffic volumes generated by the development were determined based on the following land use assumptions:

- 133 Single-Family Dwelling Units (SFDU)
- 150 Multi-Family Dwelling Units (MFDU) (density dependent on lot size)
- 45,000 Square Foot Self-Storage Facility
- 10,000 Square Foot Commercial Shopping Center

A site plan is provided in **Figure 2**.

Figure 1. Vicinity Map



DAVID EVANS AND ASSOCIATES INC. 908 N. Howard St. Ste 300 Spokane, WA 99201	**NORTH BOYER DEVELOPMENT** **CITY OF SANDPOINT, ID** TRAFFIC IMPACT ANALYSIS PROJECT NO. KMEP00000001	FIGURE 1 PROJECT VICINITY

Figure 2. Site Plan

*Note: Site plan provided by KM Enterprises, modified to illustrate two accesses onto North Boyer Avenue

Trip Generation

Trip generation for the proposed project was estimated based on Land Use categories within the 10th Edition of the ITE Trip Generation Manual. Weekday AM peak hour, PM peak hour, and daily trip generation estimates for buildout of the development are shown in **Tables 1-3**, while estimates for weekend day peak hour and overall daily trip generation are shown in **Tables 4** and **5** Saturday was chosen as the weekend day to be conservative in analyzing impacts, as it generates more trips than Sunday calculations. The ITE Trip Generation data sheets and calculations are provided as an attachment to this letter.

Additionally, the ITE Trip Generation Handbook 3rd Edition allows for trip generation reductions for qualifying land uses in specific time periods. Using this guidance, these reductions were calculated for the Shopping Center land use for the weekday PM peak hour and Saturday peak hour and applied to the trip generation totals in **Tables 2** and **4**. Additional information regarding pass-by trip reductions is provided in the following text.

Table 1. North Boyer Development Weekday Trip Generation – AM Peak Hour

Land Use	Units	Variable	ITE LU Code	Rate/ Equation	Inbound		Outbound		Total VPH
					%	VPH	%	VPH	
SFDU	133	Dwelling Units	210	T=0.71(X) + 4.80	25%	25	75%	74	99
MFDU	150	Dwelling Units	220	LN(T)=0.95*LN(X) - 0.51	23%	16	77%	54	70
Mini-Warehouse	45	Thousand Square Feet	151	T=0.10	60%	3	40%	2	5
Shopping Center	10	Thousand Square Feet	820	T=0.50(X) + 151.78	62%	97	38%	60	157
				Total Trips Generated	Total	141	Total	190	331

X = Land Use Units
VPH = Vehicles per Hour

Table 2. North Boyer Development Weekday Trip Generation – PM Peak Hour

Land Use	Units	Variable	ITE LU Code	Rate/ Equation	Inbound		Outbound		Total VPH
					%	VPH	%	VPH	
SFDU	133	Dwelling Units	210	LN(T)=0.96*LN(X) + 0.20	63%	84	37%	50	134
MFDU	150	Dwelling Units	220	LN(T)=0.89*LN(X) - 0.02	63%	54	37%	31	85
Mini-Warehouse	45	Thousand Square Feet	151	T=0.17	47%	4	53%	4	8
Shopping Center	10	Thousand Square Feet	820	LN(T)=0.74*LN(X) + 2.89	48%	48	52%	51	99
				Total Trips Generated	Total	190	Total	136	326
				Shopping Center Pass-By Trip Reduction	34%	16	34%	18	34
				Net New Trips	-	*174*	-	*118*	*292*

X = Land Use Units
VPH = Vehicles per Hour
Note: ITE 820 Pass-By 34% for Weekday PM Peak Hour

Table 3. North Boyer Development Weekday Trip Generation – Daily Total

Land Use	Units	Variable	ITE LU Code	Rate/ Equation	Inbound		Outbound		Total VPD
					%	VPD	%	VPD	
SFDU	133	Dwelling Units	210	LN(T)=0.92*LN(X) + 2.71	50%	676	50%	676	1,352
MFDU	150	Dwelling Units	220	T=7.56(X) – 40.86	50%	546	50%	547	1,093
Mini-Warehouse	45	Thousand Square Feet	151	T=1.51	50%	34	50%	34	68
Shopping Center	10	Thousand Square Feet	820	LN(T)=0.68*LN(X) + 5.57	50%	628	50%	628	1,256
				Total Trips Generated	Total	1,884	Total	1,885	3,769

X = Land Use Units
VPD = Vehicles per Day

Table 4. North Boyer Development Weekend Day (Saturday) Trip Generation – Peak Hour

Land Use	Units	Variable	ITE LU Code	Rate/ Equation	Inbound		Outbound		Total VPH
					%	VPH	%	VPH	
SFDU	133	Dwelling Units	210	T=0.84(X) + 17.99	54%	70	46%	60	130
MFDU	150	Dwelling Units	220	T=1.08(X) – 33.24	54%†	70	46%†	59	129
Mini-Warehouse	45	Thousand Square Feet	151	T=0.31	59%	8	41%	6	14
Shopping Center	10	Thousand Square Feet	820	LN(T)=0.79*LN(X) + 2.79	52%	52	48%	48	100
				Total Trips Generated	Total	200	Total	173	373
				Shopping Center Pass-By Trip Reduction	26%	14	26%	12	26
				Net New Trips	-	*186*	-	*161*	*347*

† ITE does not provide percent split for this time period; percentages are from ITE 210 (SFDU).
X = Land Use Units
VPH = Vehicles per Hour
Note: ITE 820 Pass-By 26% for Saturday Peak Hour

Table 5. North Boyer Development Weekend Day (Saturday) Trip Generation – Daily Total

Land Use	Units	Variable	ITE LU Code	Rate/ Equation	Inbound		Outbound		Total VPD
					%	VPD	%	VPD	
SFDU	133	Dwelling Units	210	LN(T)=0.94*LN(X) + 2.56	50%	641	50%	642	1,283
MFDU	150	Dwelling Units	220	T=14.01(X) – 521.69	50%	790	50%	790	1,580
Mini-Warehouse	45	Thousand Square Feet	151	T=1.95	50%	44	50%	44	88
Shopping Center	10	Thousand Square Feet	820	LN(T)=0.62*LN(X) + 6.24	50%	1,069	50%	1,069	2,138
				Total Trips Generated	Total	2,544	Total	2,545	5,089

X = Land Use Units
VPD = Vehicles per Day

As shown in **Tables 1-5**, the project is anticipated to generate the following approximate net new trips and entering/exiting splits:

- Weekday AM Peak Hour: 331 trips (141 entering, 190 exiting)
- Weekday PM Peak Hour: 292 trips (174 entering, 118 existing)
- Weekday Daily Total: 3,769 trips (1,884 entering, 1,885 exiting)
- Weekend Day (Saturday) Peak Hour: 347 trips (186 entering, 161 exiting)
- Weekend Day (Saturday) Daily Total: 5,089 trips (2,544 entering, 2,545 exiting)

Trip Reductions and Net New Trips

Mixed-use developments experience a number of different trip types: Shared (or Internal) Trips, Pass-by Trips, and New Trips. These trip types are further described below.

Shared (Internal) Trips - These are trips which occur on or within the site where a vehicle will stop at more than one place on the site or a patron will visit multiple uses on a site. For purpose of this analysis, there are no shared trips assumed with this development.

Pass-By Trips - These trips represent vehicles which currently use adjacent roadways providing primary access to the new land use / project. These trips, however, have an ultimate destination other than the project in question. They should be viewed as drop-in customers who stop in on their way to/from work or on their way to/from another site. Pass-by trips add turning movements to the site access points but do not represent additional trips to the greater transportation system. For this particular project, pass-by traffic would come primarily from the existing traffic stream on North Boyer Avenue.

New (Destination) Trips - These trips occur only to access a specific land use. For this project, the specific land uses are Single-Family Residential, Multi-Family Residential, Mini-Warehouse Self-Storage, and Commercial Shopping Center. These types of trips will travel to and from the new site and a single other destination such as a home. This is the only trip type that will result in a net increase in the total amount of traffic within the study area.

Trip Distribution

The Sandpoint Travel Demand Model and traffic counts at study area intersections were used to identify what percentage of trips to/from the development will travel on surrounding roadways. Distribution has been estimated for two scenarios: weekday AM peak hour and weekday PM peak hour. Distribution for the weekend day peak hour is assumed to be the same as the weekday PM peak distribution based on review of existing counts at study area intersections.

Four driveways were assumed for the development: two providing access to the southern half of the development onto North Boyer Avenue and two providing access to the northern half of the development onto Mountain View Road. Land uses have been distributed between the two halves to best compliment the local environment and most efficiently distribute trips to/from the development. Access to/from North Boyer Avenue and the site was provided via two driveways rather than one to avoid minimize driveway queueing at the North Boyer Avenue / Culvers Drive intersection and to separate trips generated by the multi-family residential units and commercial land uses. The driveways onto North Boyer Avenue are expected to serve all commercial and multi-family residential trips as well as a portion of the single-family residential trips. Driveways onto Mountain View Road are expected to serve only single-family residential trips.

For the weekday AM peak hour, the majority of trips (75 percent) are estimated to travel to/from south of the development using North Boyer Avenue, while the remaining trips (25 percent) are estimated to travel to/from north of the development using North Boyer Avenue. Traffic to/from the proposed project is expected to be distributed to the broader roadway network in the following manner as shown in **Figure 3**:

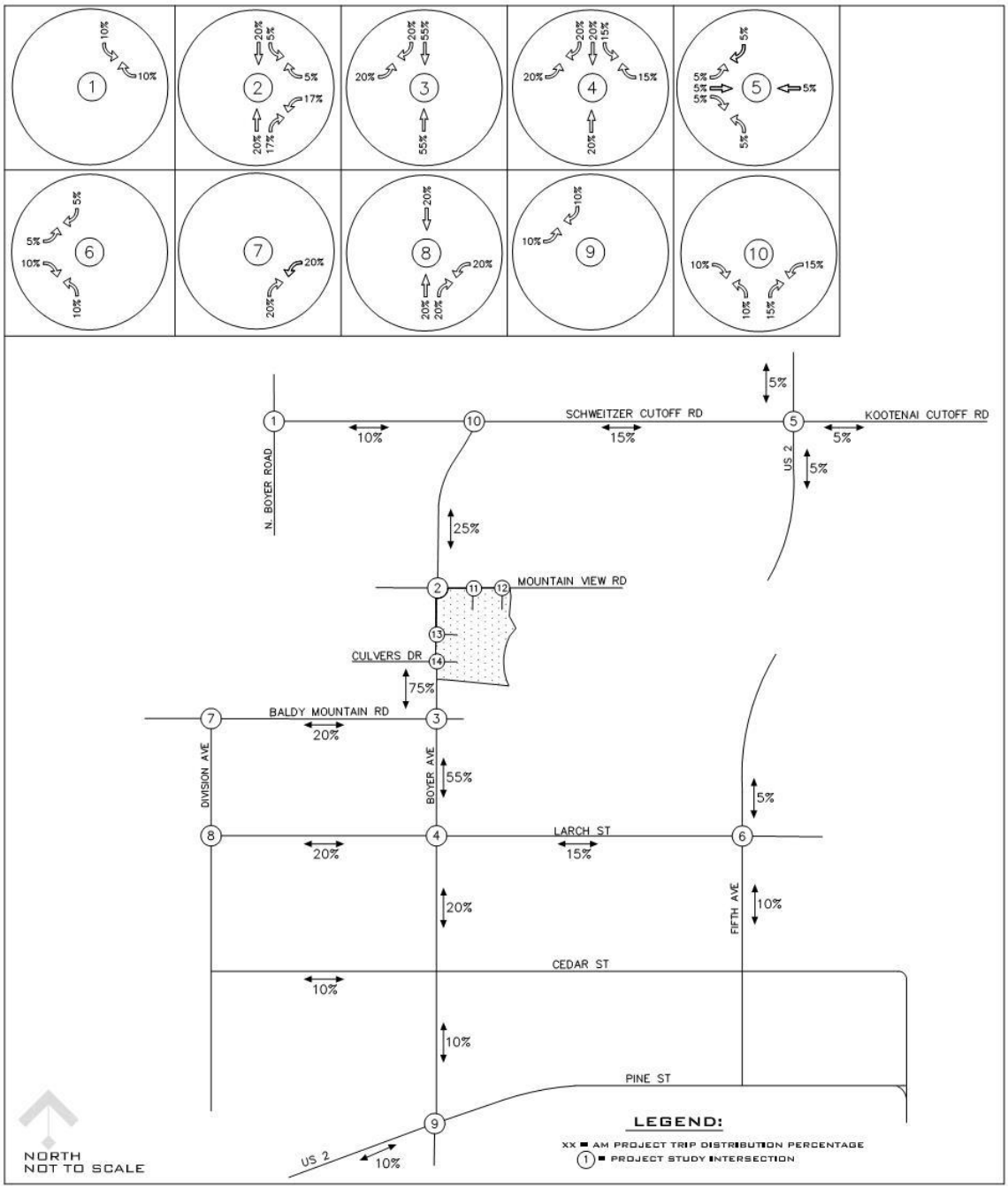
- 15% will go to/come from areas north and east of the site using Schweitzer Cutoff Road.
- 50% will go to/come from areas west of the site using Baldy Mountain Road (20%) Larch Street (20%), or Cedar Street (10%).
- 15% will go to/come from areas east of the site using Larch Street.
- 10% will go to/come from areas north and west of the site using Schweitzer Cutoff Road.
- 10% will go to/come from areas south and west of the site using US-2.

Distribution to/from areas to the west account for traffic between the site and Sandpoint schools.

For the weekday PM peak hour and the weekend day peak hour, the majority of trips (60 percent) are estimated to travel to/from south of the development using North Boyer Avenue, while the remaining trips (40 percent) are estimated to travel to/from north of the development using North Boyer Avenue. Traffic to/from the proposed project is expected to be distributed to the broader roadway network in the following manner as shown in **Figure 4**:

- 30% will go to/come from areas north and east of the site using Schweitzer Cutoff Road.
- 20% will go to/come from areas west of the site using Baldy Mountain Road or Larch Street (10% each).
- 20% will go to/come from areas east of the site using Larch Street.
- 10% will go to/come from areas north and west of the site using Schweitzer Cutoff Road.
- 10% will go to/come from areas south and west of the site using US-2.
- 10% will go to/come from land uses along North Boyer Avenue between Larch Street and Cedar Street.

Figure 3. Project Trip Distribution – Weekday AM Peak Hour



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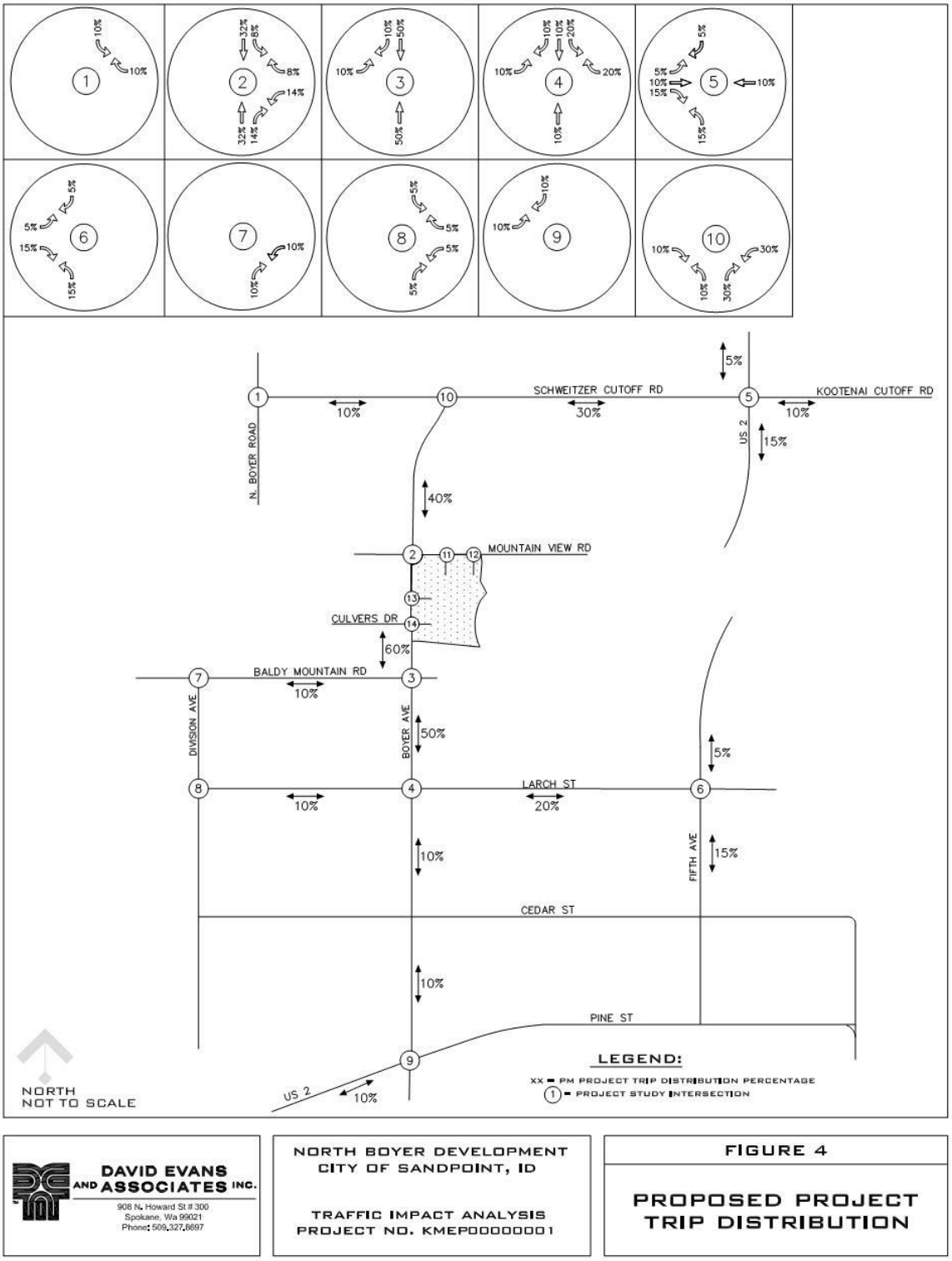
CITY OF SANDPOINT, ID

TRAFFIC IMPACT ANALYSIS
PROJECT NO. KMEP00000001

FIGURE 3

PROPOSED PROJECT TRIP DISTRIBUTION

Figure 4. Project Trip Distribution – Weekday PM Peak Hour



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NORTH BOYER DEVELOPMENT
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TRAFFIC IMPACT ANALYSIS
PROJECT NO. KMEP00000001

FIGURE 4

PROPOSED PROJECT
TRIP DISTRIBUTION

Inbound and outbound trips at each of the driveways were determined by applying the distributions described above to the trips generated by each land use type of each section of the development for each time scenario, taking into account the location of each land use type in relation to the driveways and desired direction of travel. **Tables 6** and **7** document the percent distribution of trips by land use type at each driveway.

Table 6. North Boyer Development Driveways Trip Distribution by Land Use – Weekday AM Peak Hour

Intersection		Land Use				Overall
		Single Family	Multi-Family	Self-Storage	Commercial Shopping Center	
11	Driveway West / Mountain View Rd	44%	-	-	-	13%
12	Driveway East / Mountain View Rd	24%	-	-	-	7%
Overall Split Between 11 and 12		*#11: 65% / #12: 35%*				
13	Driveway North / N Boyer Ave	3%	9%	0%	0%	10%
14	Culvers Dr / Driveway South / N Boyer Ave	29%	91%	100%	100%	70%
Overall Split Between 13 and 14		*#13: 13% / #14: 87%*				

Table 7. North Boyer Development Driveways Trip Distribution by Land Use – Weekday PM Peak Hour

Intersection		Land Use				Overall
		Single Family	Multi-Family	Self-Storage	Commercial Shopping Center	
11	Driveway West / Mountain View Rd	44%	-	-	-	18%
12	Driveway East / Mountain View Rd	24%	-	-	-	10%
Overall Split Between 11 and 12		*#11: 65% / #12: 35%*				
13	Driveway North / N Boyer Ave	2%	9%	0%	0%	15%
14	Culvers Dr / Driveway South / N Boyer Ave	30%	91%	100%	100%	57%
Overall Split Between 13 and 14		*#13: 20% / #14: 80%*				

As shown in **Tables 6** and **7**, the driveways along Mountain View Road only serve single family uses, accounting for between 20 to 30 percent of total trips generated by the development depending on the time period. The driveway at Culvers Drive and North Boyer Avenue is expected to facilitate most of the trips generated by the development. This is because all of the commercial and most of the multi-family are situated in a manner that lends to the use of the Culvers Drive / North Boyer Avenue driveway for both inbound and outbound trips regardless of whether the trips are coming to/from the north or south via North Boyer Avenue.

Conclusions and Recommendations

The proposed North Boyer Development is anticipated to generate the following approximate net new trips for the analyzed periods as summarized below:

- Weekday AM Peak Hour: 331 trips (141 entering, 190 exiting)
- Weekday PM Peak Hour: 292 trips (174 entering, 118 existing)
- Weekday Daily Total: 3,769 trips (1,884 entering, 1,885 exiting)
- Weekend Day (Saturday) Peak Hour: 347 trips (186 entering, 161 exiting)
- Weekend Day (Saturday) Daily Total: 5,089 trips (2,544 entering, 2,545 exiting)

The project study area for the forthcoming traffic impact analysis is anticipated to include the following intersections:

1. Schweitzer Cutoff Rd/N Boyer Rd
2. N Boyer Ave/Mountain View Rd
3. N Boyer Ave/Baldy Mountain Rd
4. N Boyer Ave/Larch St
5. US-95/US-2/Schweitzer Cutoff Rd
6. US-2/Larch St
7. Division Ave/Baldy Mountain Rd
8. Division Ave/Larch St
9. US-2/N Boyer Ave
10. Schweitzer Cutoff Rd/N Boyer Ave
11.-14. Site access intersections

Per direction received from the City of Sandpoint, the forthcoming traffic impact analysis will perform an operational analysis for the weekday AM peak hour and PM peak hour periods. The winter seasonal comparison will be performed for intersections 2, 3, 4, 7, 8, and 10. The winter seasonal analysis will assess the expected impacts of recreational traffic related to the site and the adjacent roadway network. Finally, weekend day peak hour conditions will be reviewed for intersections 3, 4, and 10 to assess Saturday peak hour operations if traffic volumes are higher than weekday peak hour conditions. It is assumed that the operational analysis for this development will be completed using Highway Capacity Manual (HCM) 6th Edition methodologies. Roundabout controlled intersections will be evaluated using the Sidra 8 software.

We look forward to your response regarding the proposed trip generation/distribution assumptions. Feel free to contact me if you have any questions or need additional information, I appreciate your feedback. Pending your review, we request moving forward with the future conditions analysis.

Sincerely,
David Evans and Associates, Inc.

Jerremy Clark, PE, PTOE
Traffic Engineer

JC/ck
cc: file
Tim McDonnell – KM Enterprises
Ryan Luttman – Century West Engineering

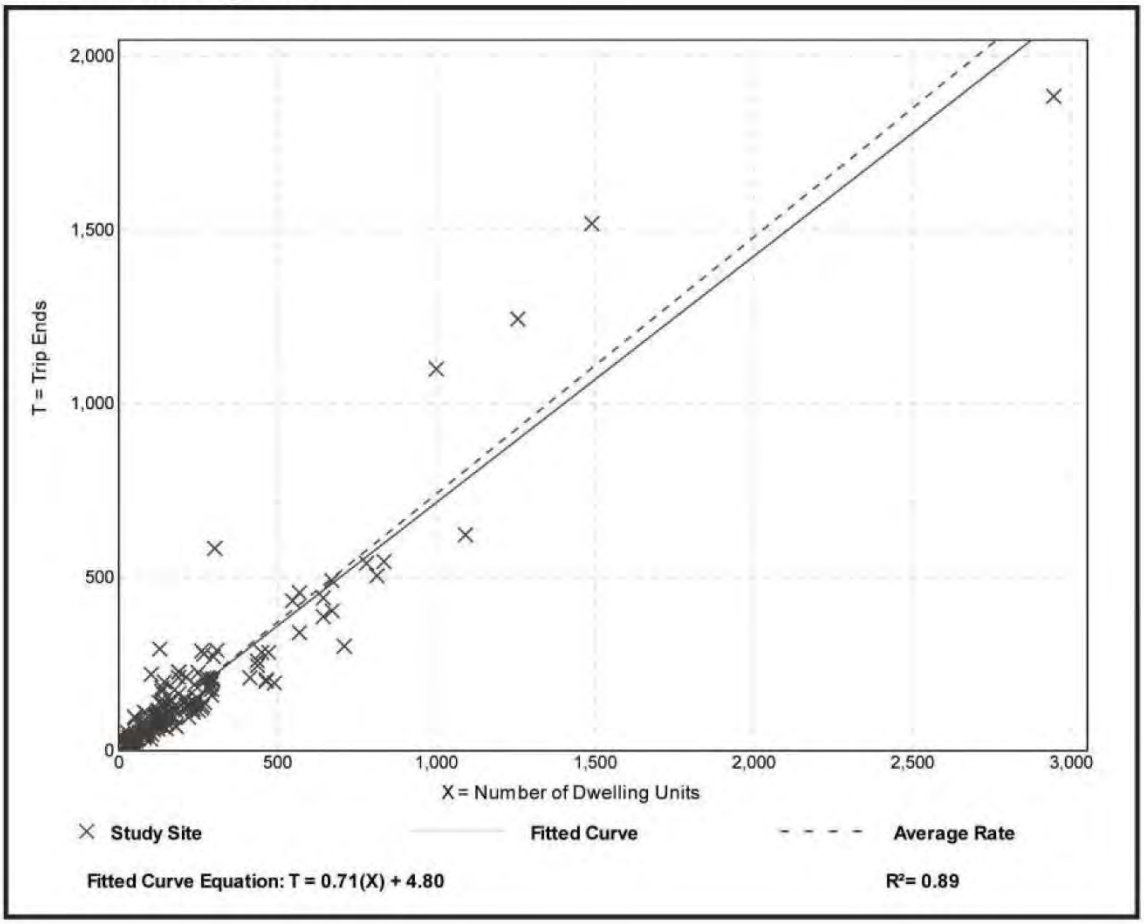
Single-Family Detached Housing
(210)

Vehicle Trip Ends vs:	**Dwelling Units**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	173
Avg. Num. of Dwelling Units:	219
Directional Distribution:	25% entering, 75% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.74	0.33 - 2.27	0.27

Data Plot and Equation



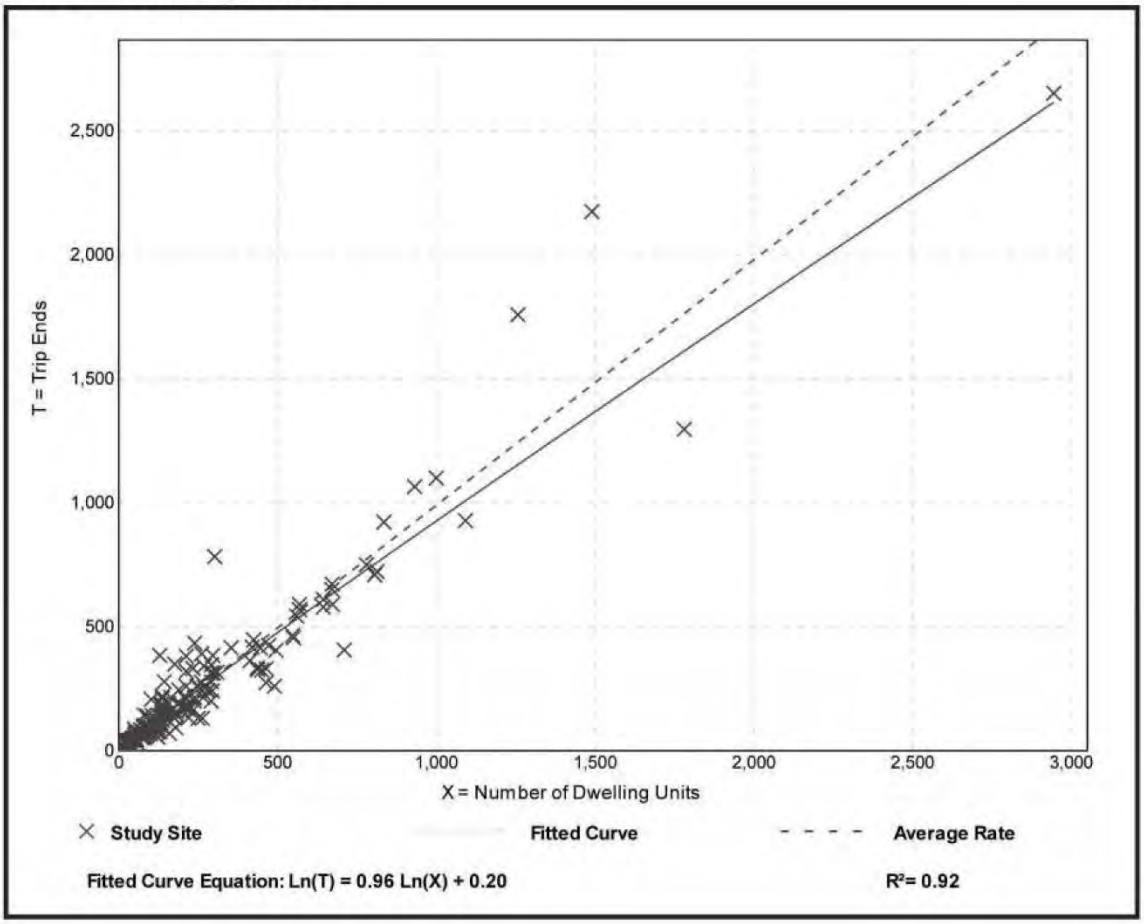
Single-Family Detached Housing
(210)

Vehicle Trip Ends vs:	**Dwelling Units**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	190
Avg. Num. of Dwelling Units:	242
Directional Distribution:	63% entering, 37% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.99	0.44 - 2.98	0.31

Data Plot and Equation



Single-Family Detached Housing
(210)

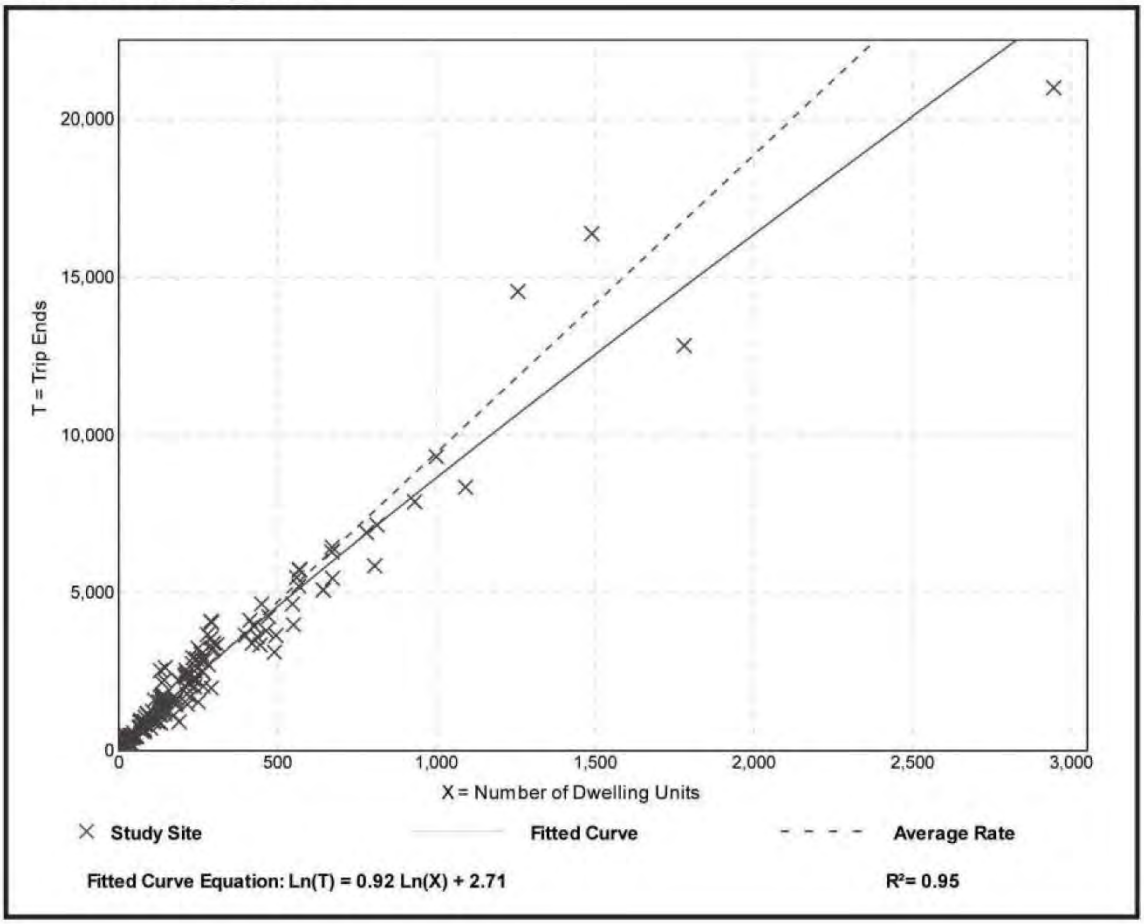
Vehicle Trip Ends vs: Dwelling Units
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 159
Avg. Num. of Dwelling Units: 264
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
9.44	4.81 - 19.39	2.10

Data Plot and Equation



Single-Family Detached Housing
(210)

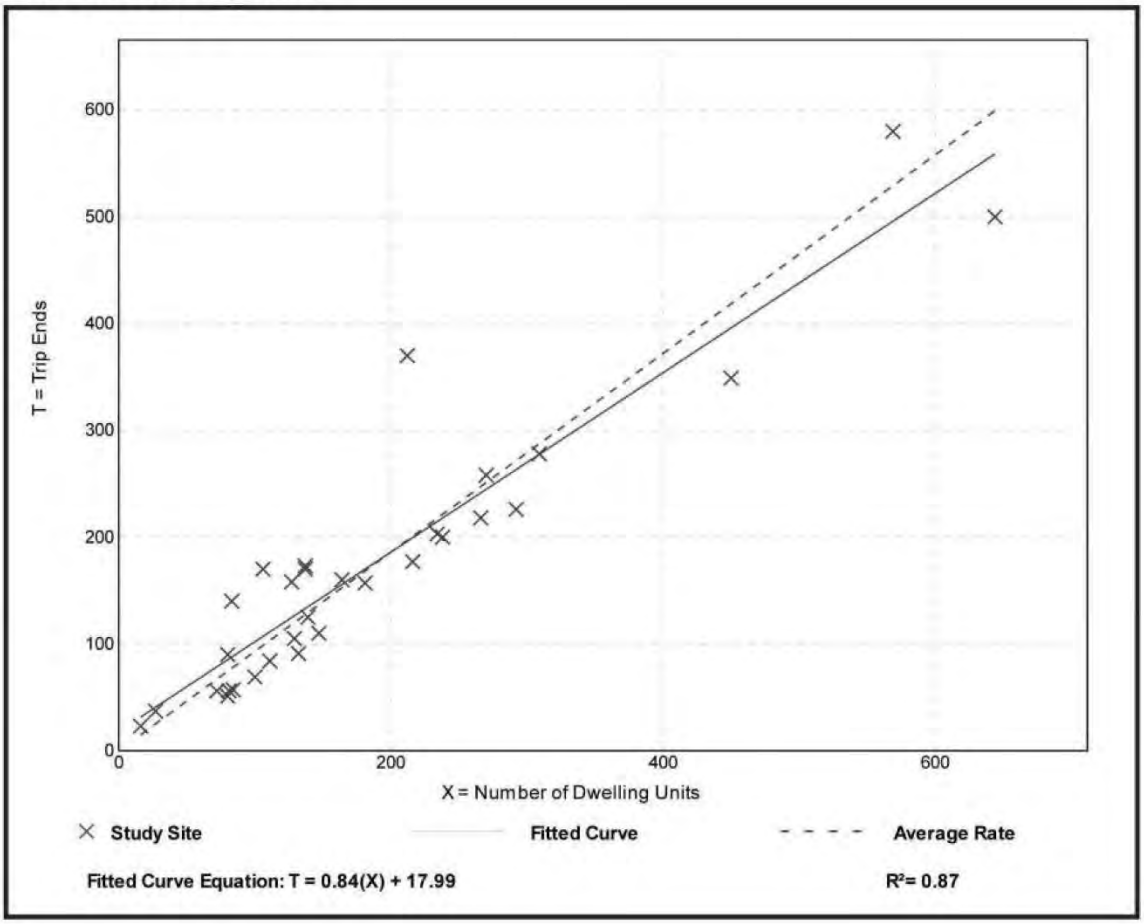
Vehicle Trip Ends vs: Dwelling Units
On a: Saturday, Peak Hour of Generator

Setting/Location: General Urban/Suburban
Number of Studies: 31
Avg. Num. of Dwelling Units: 188
Directional Distribution: 54% entering, 46% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.93	0.64 - 1.75	0.26

Data Plot and Equation



Single-Family Detached Housing
(210)

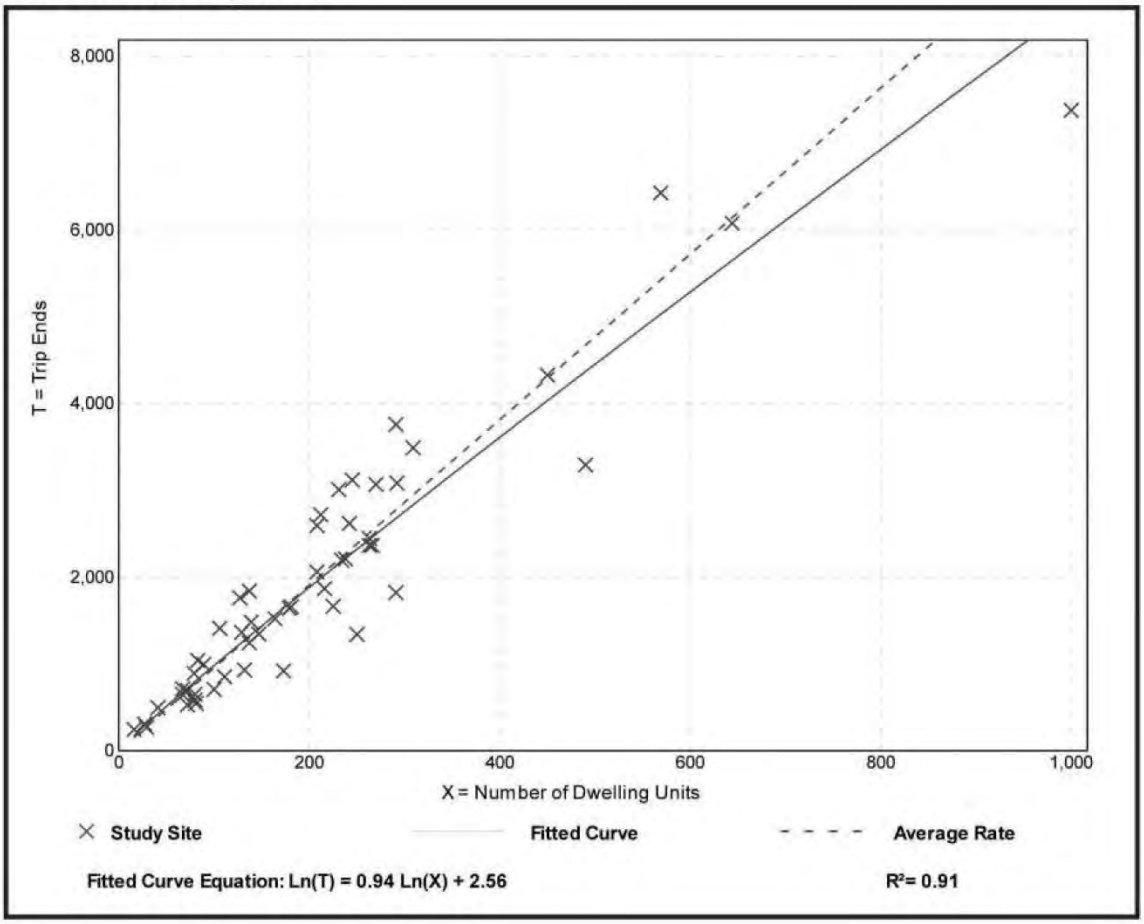
Vehicle Trip Ends vs: Dwelling Units
On a: Saturday

Setting/Location: General Urban/Suburban
Number of Studies: 52
Avg. Num. of Dwelling Units: 207
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
9.54	5.32 - 15.25	2.17

Data Plot and Equation



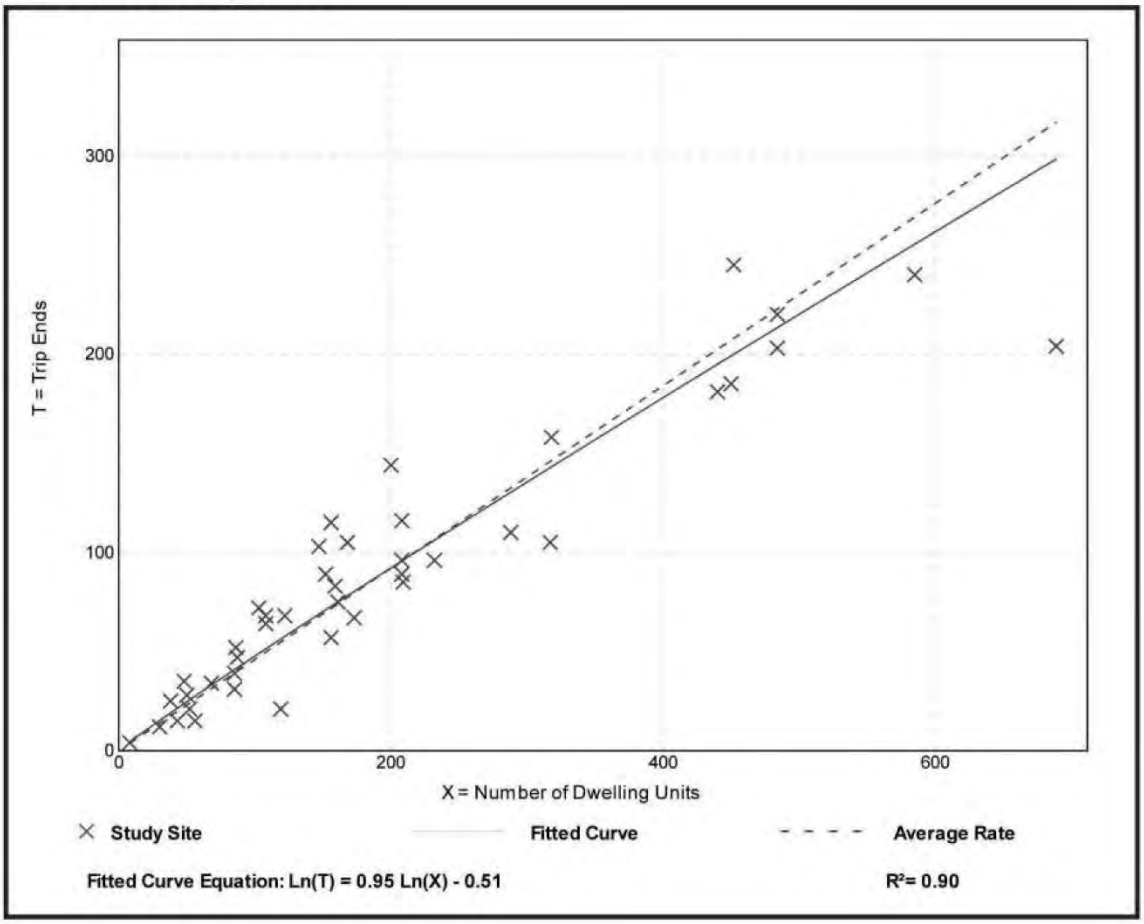
Multifamily Housing (Low-Rise)
(220)

Vehicle Trip Ends vs:	**Dwelling Units**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	42
Avg. Num. of Dwelling Units:	199
Directional Distribution:	23% entering, 77% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.46	0.18 - 0.74	0.12

Data Plot and Equation



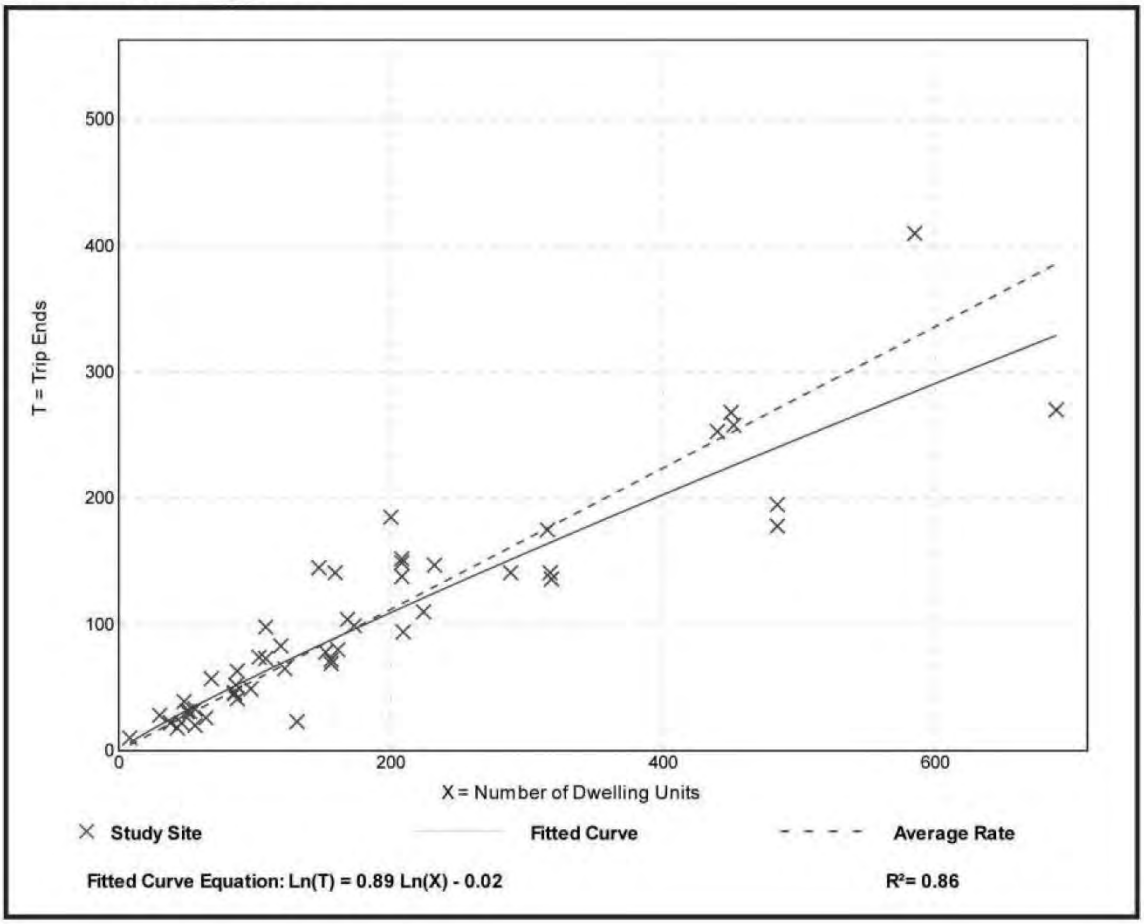
Multifamily Housing (Low-Rise)
(220)

Vehicle Trip Ends vs:	**Dwelling Units**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	50
Avg. Num. of Dwelling Units:	187
Directional Distribution:	63% entering, 37% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.56	0.18 - 1.25	0.16

Data Plot and Equation



Multifamily Housing (Low-Rise)
(220)

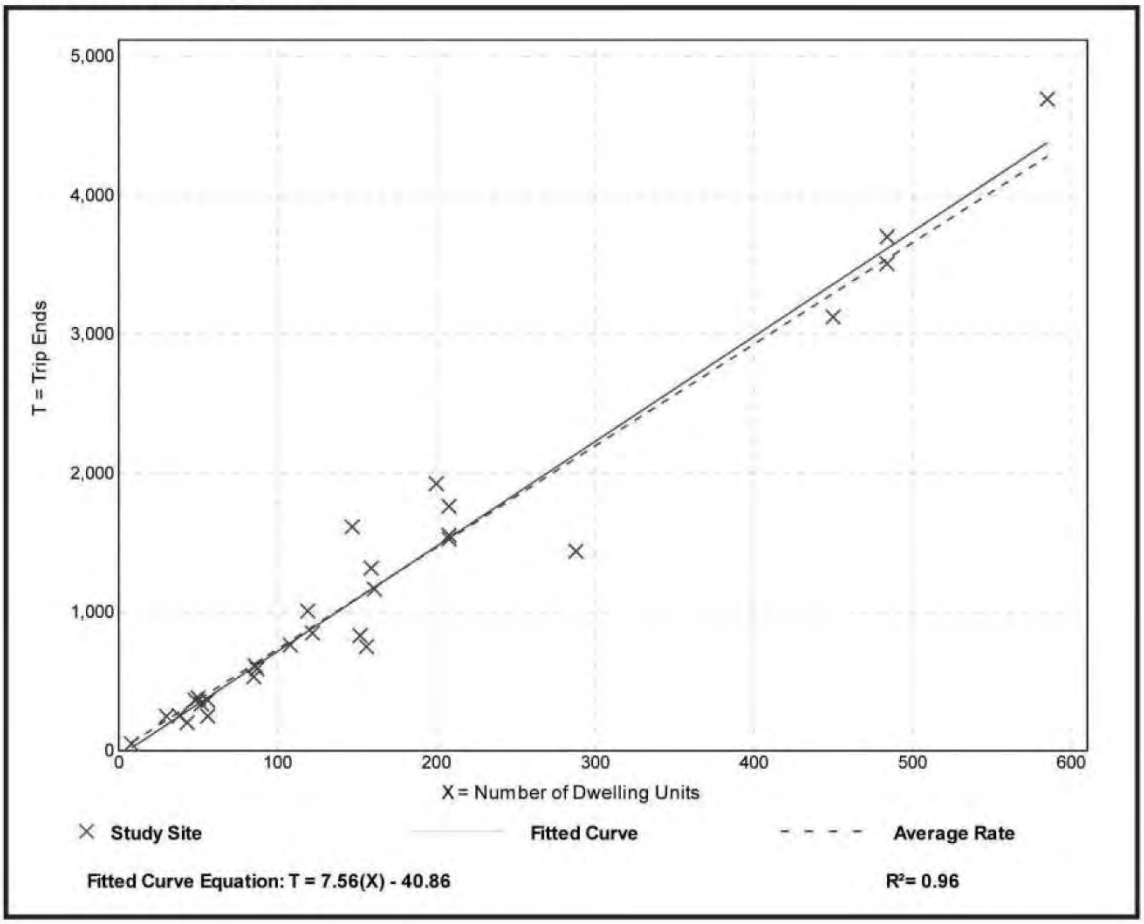
Vehicle Trip Ends vs: Dwelling Units
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 29
Avg. Num. of Dwelling Units: 168
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
7.32	4.45 - 10.97	1.31

Data Plot and Equation



Multifamily Housing (Low-Rise)
(220)

Vehicle Trip Ends vs: **Dwelling Units**
On a: **Saturday, Peak Hour of Generator**

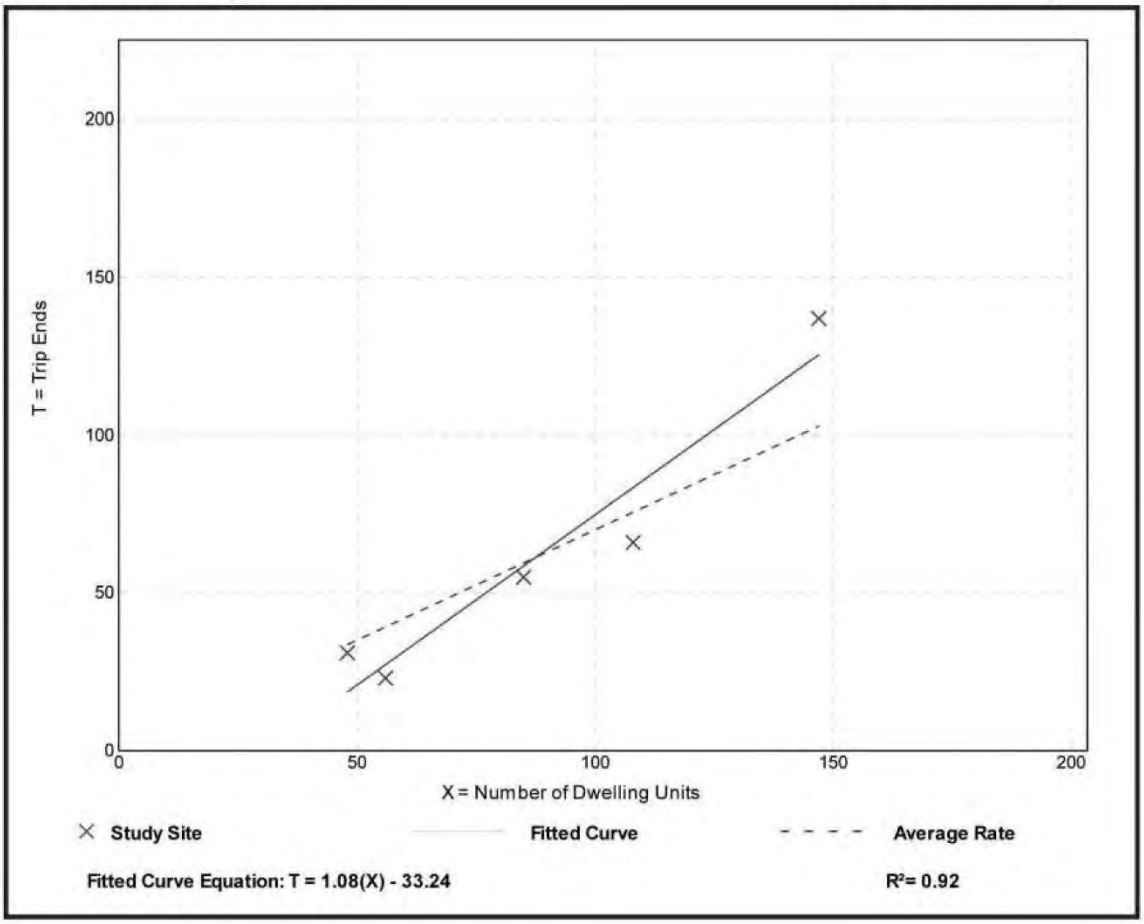
Setting/Location: **General Urban/Suburban**
Number of Studies: 5
Avg. Num. of Dwelling Units: 89
Directional Distribution: Not Available

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.70	0.41 - 0.93	0.20

Data Plot and Equation

Caution – Small Sample Size



Multifamily Housing (Low-Rise)
(220)

Vehicle Trip Ends vs: Dwelling Units
On a: Saturday

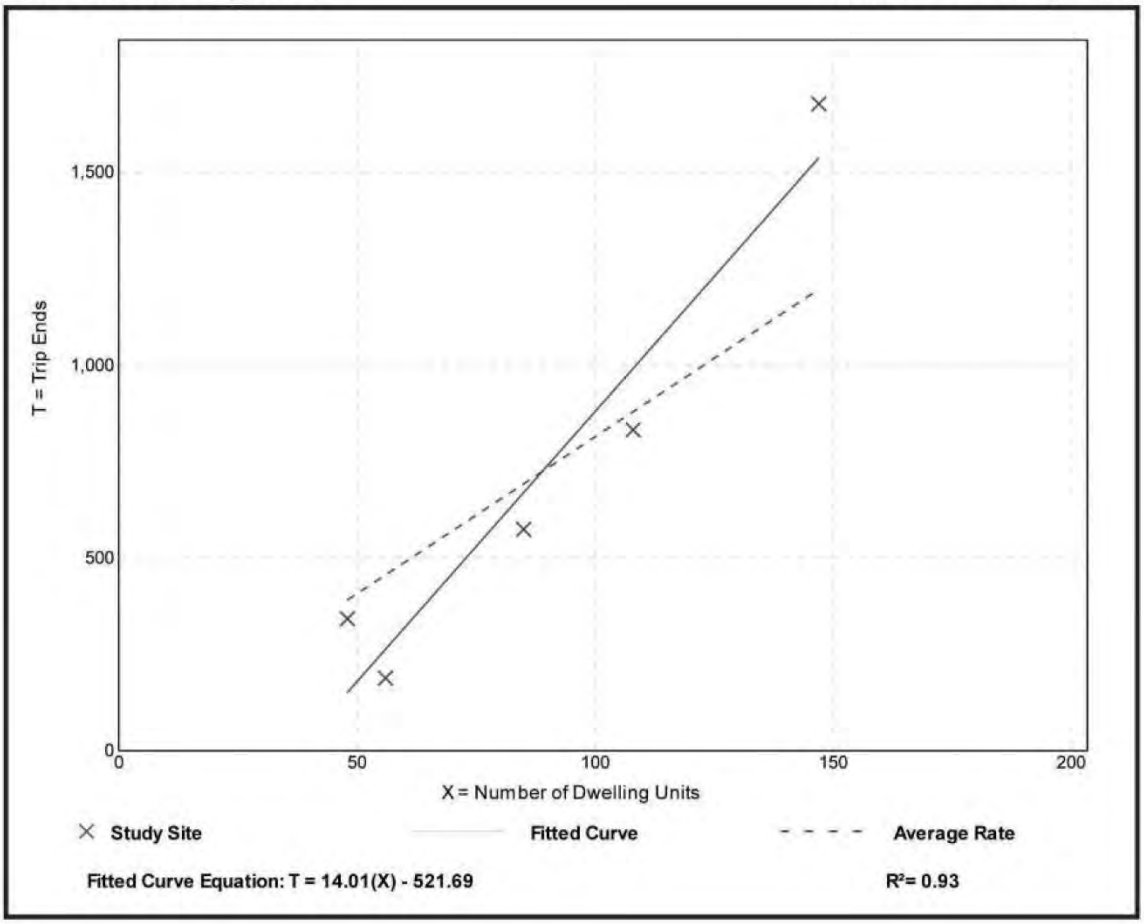
Setting/Location: General Urban/Suburban
Number of Studies: 5
Avg. Num. of Dwelling Units: 89
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
8.14	3.36 - 11.40	2.94

Data Plot and Equation

Caution – Small Sample Size



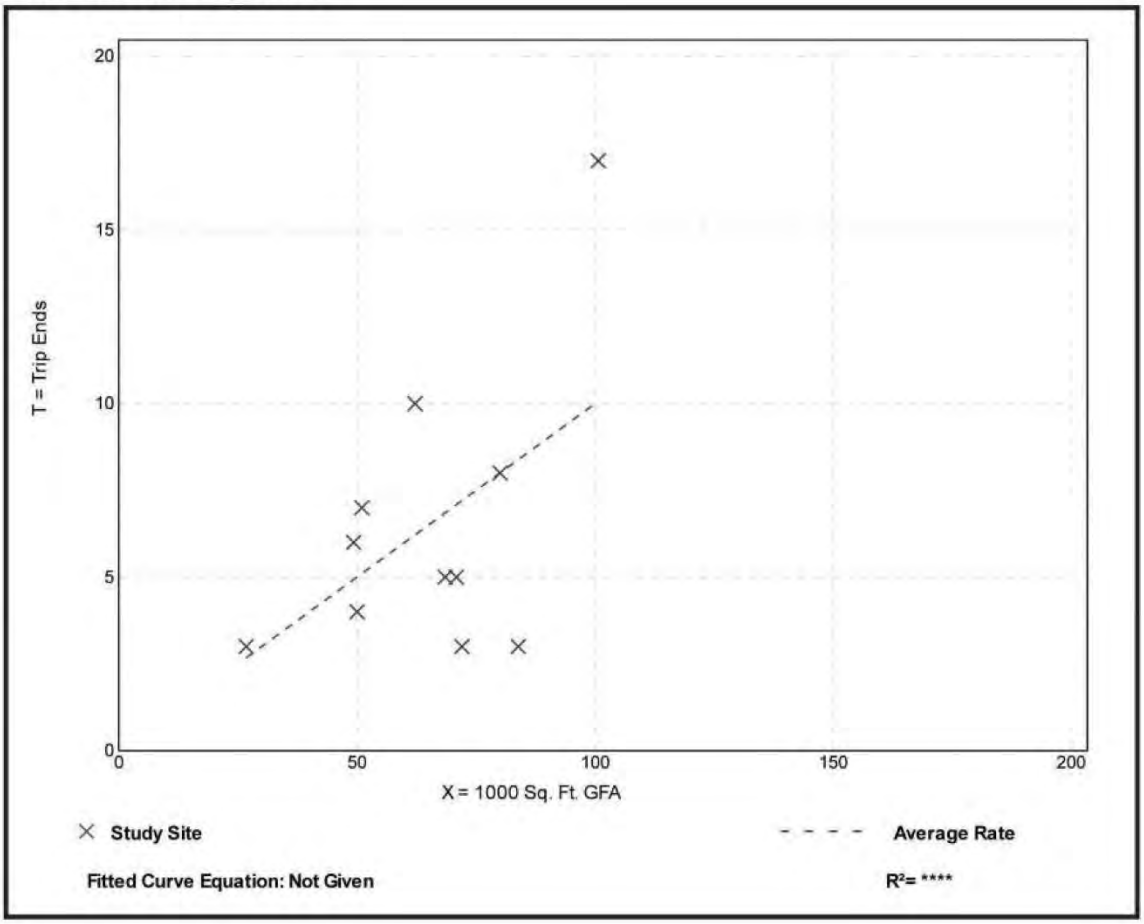
Mini-Warehouse
(151)

Vehicle Trip Ends vs:	**1000 Sq. Ft. GFA**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	11
1000 Sq. Ft. GFA:	65
Directional Distribution:	60% entering, 40% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.10	0.04 - 0.17	0.05

Data Plot and Equation



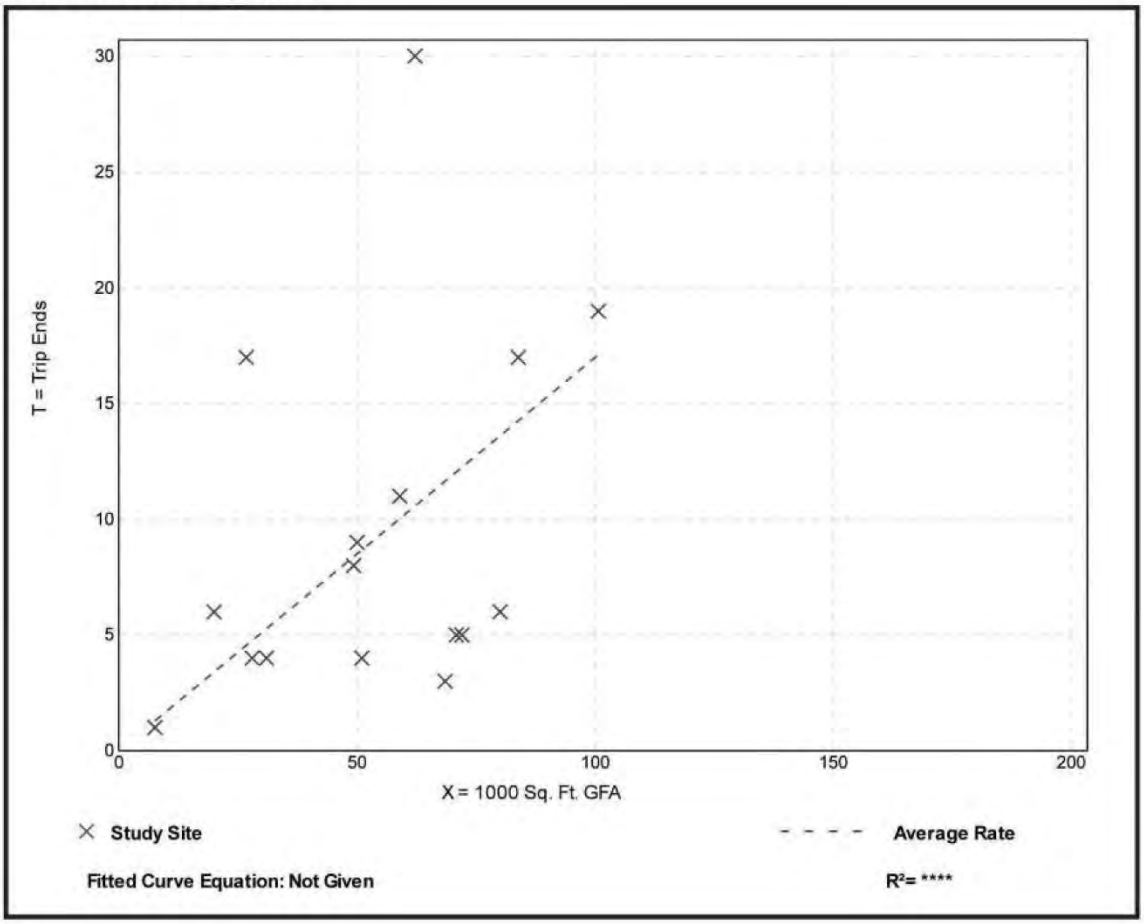
Mini-Warehouse
(151)

Vehicle Trip Ends vs:	**1000 Sq. Ft. GFA**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	16
1000 Sq. Ft. GFA:	54
Directional Distribution:	47% entering, 53% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.17	0.04 - 0.64	0.14

Data Plot and Equation



Mini-Warehouse
(151)

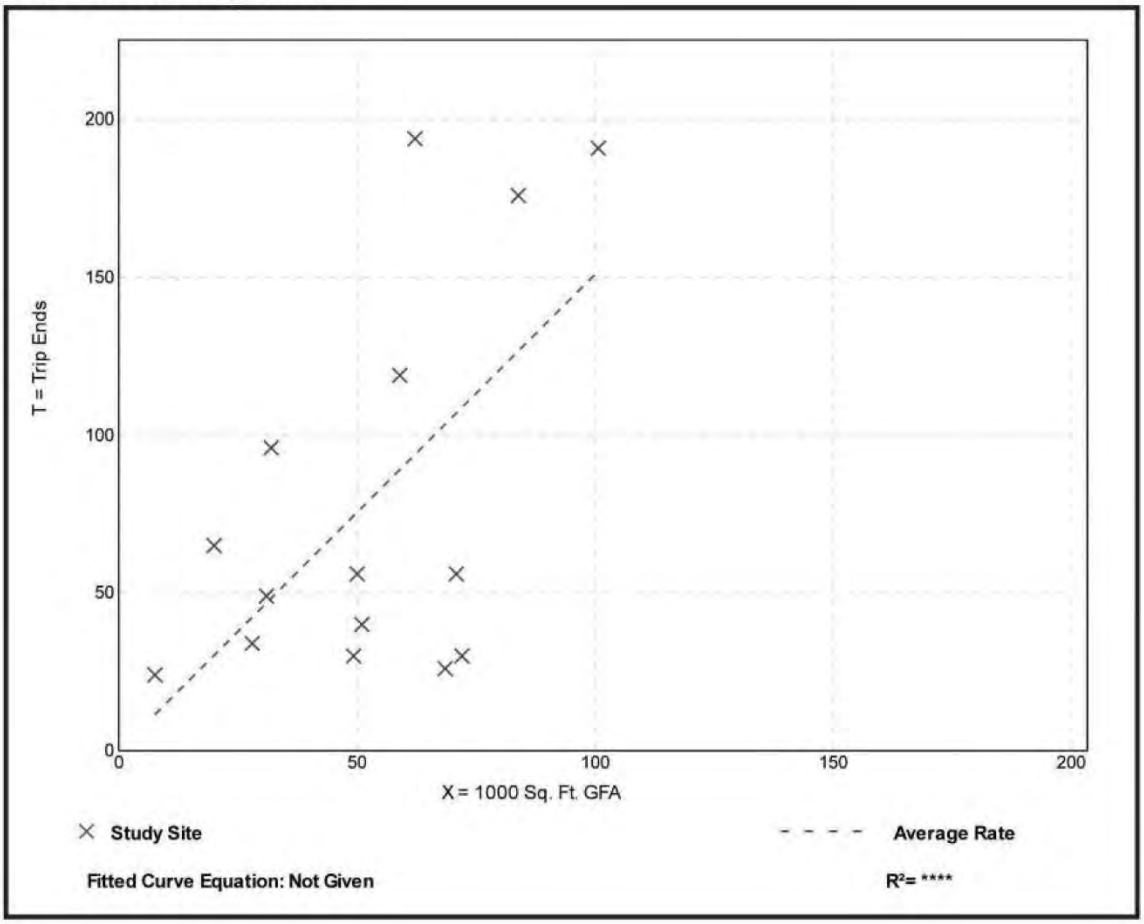
Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 15
1000 Sq. Ft. GFA: 52
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
1.51	0.38 - 3.25	0.95

Data Plot and Equation



Mini-Warehouse
(151)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Saturday, Peak Hour of Generator

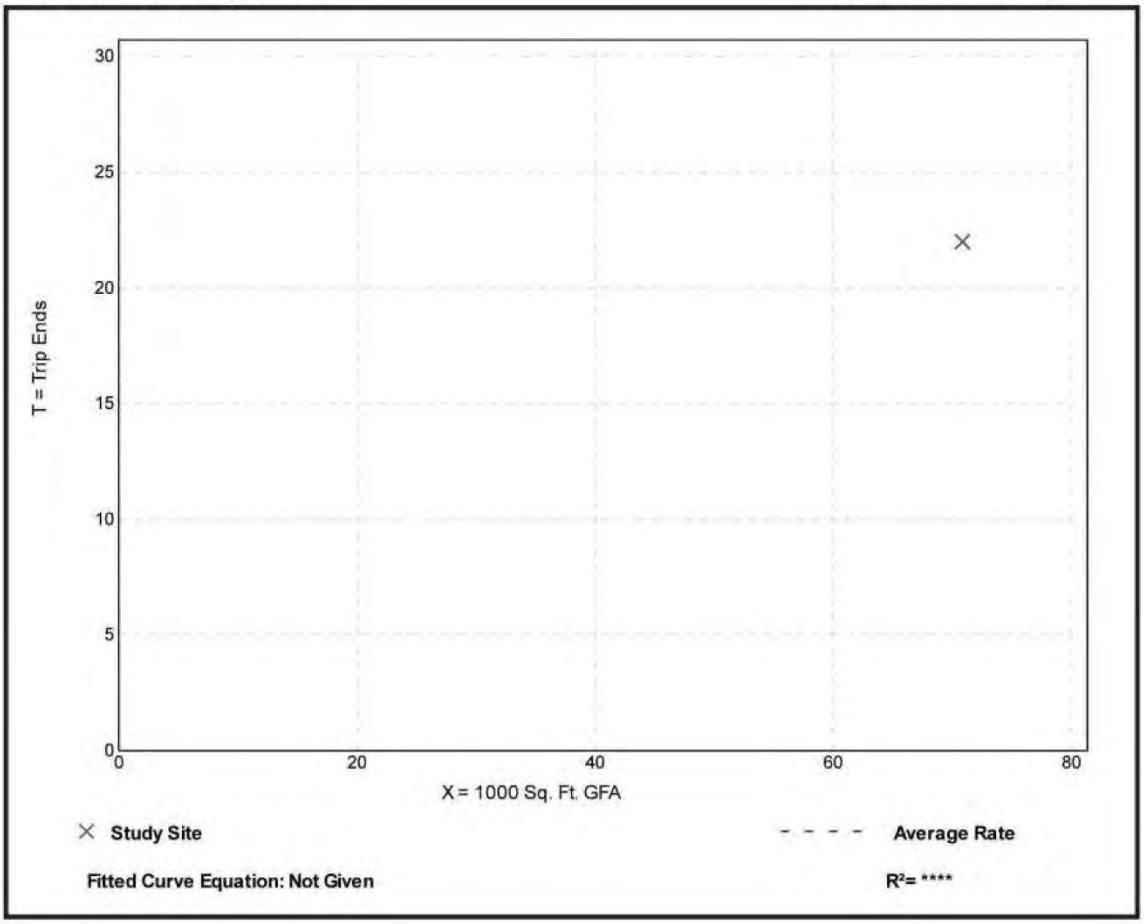
Setting/Location: General Urban/Suburban
Number of Studies: 1
1000 Sq. Ft. GFA: 71
Directional Distribution: 59% entering, 41% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.31	0.31 - 0.31	*

Data Plot and Equation

Caution – Small Sample Size



Mini-Warehouse
(151)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Saturday

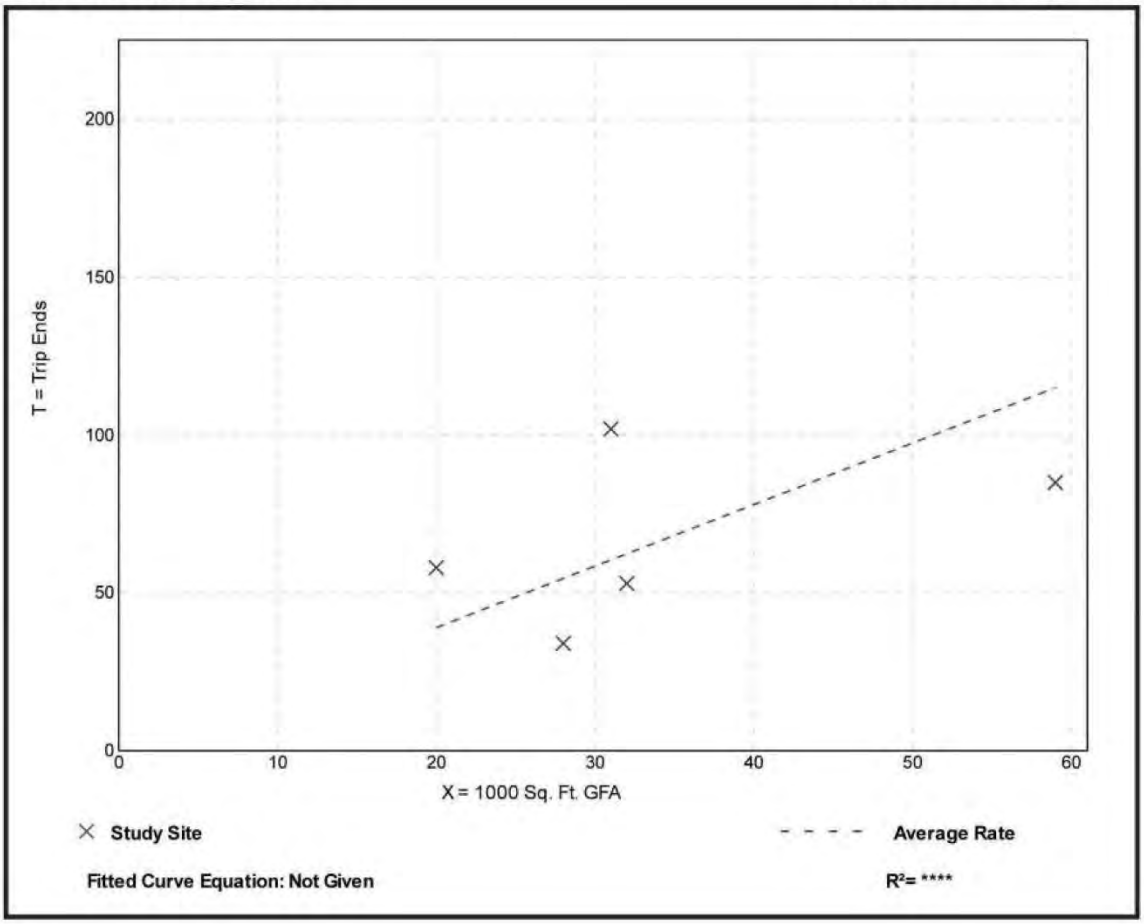
Setting/Location: General Urban/Suburban
Number of Studies: 5
1000 Sq. Ft. GFA: 34
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
1.95	1.21 - 3.29	0.89

Data Plot and Equation

Caution – Small Sample Size



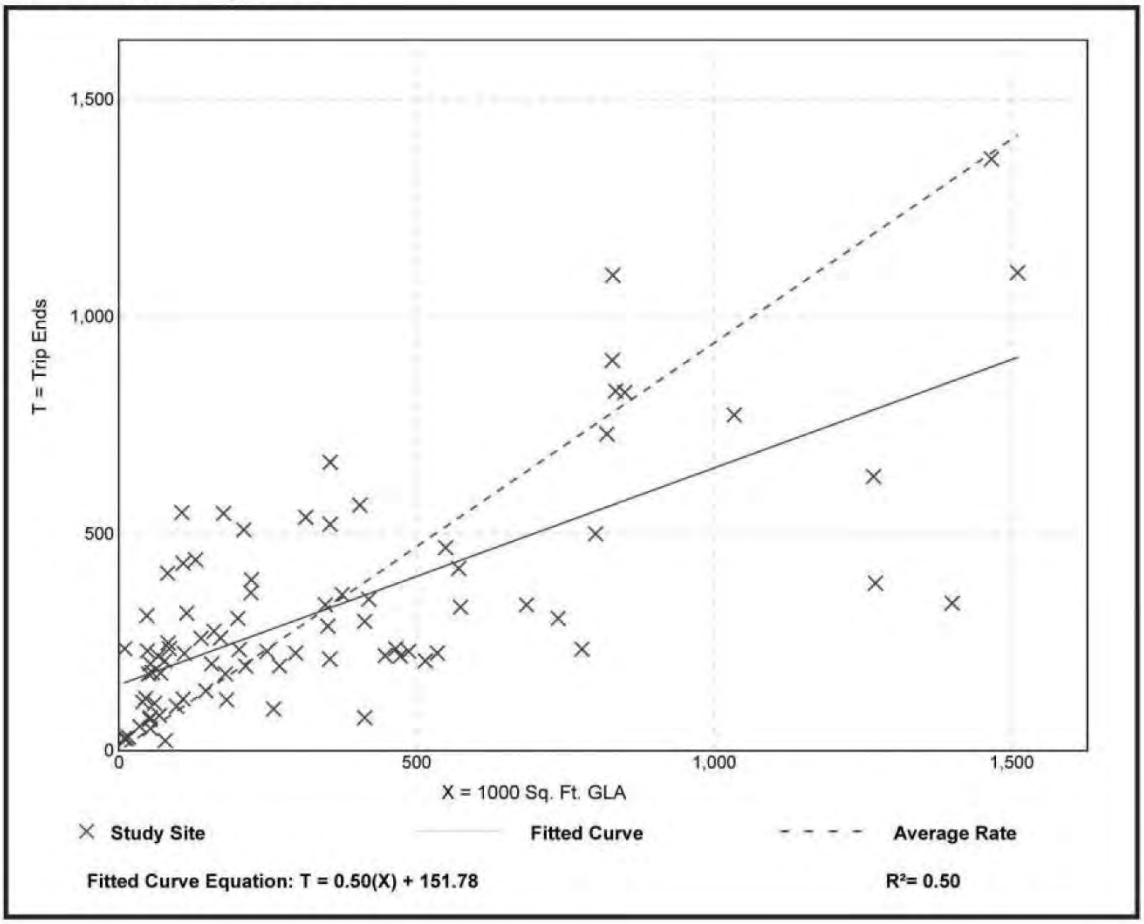
Shopping Center
(820)

Vehicle Trip Ends vs:	**1000 Sq. Ft. GLA**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	84
1000 Sq. Ft. GLA:	351
Directional Distribution:	62% entering, 38% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
0.94	0.18 - 23.74	0.87

Data Plot and Equation



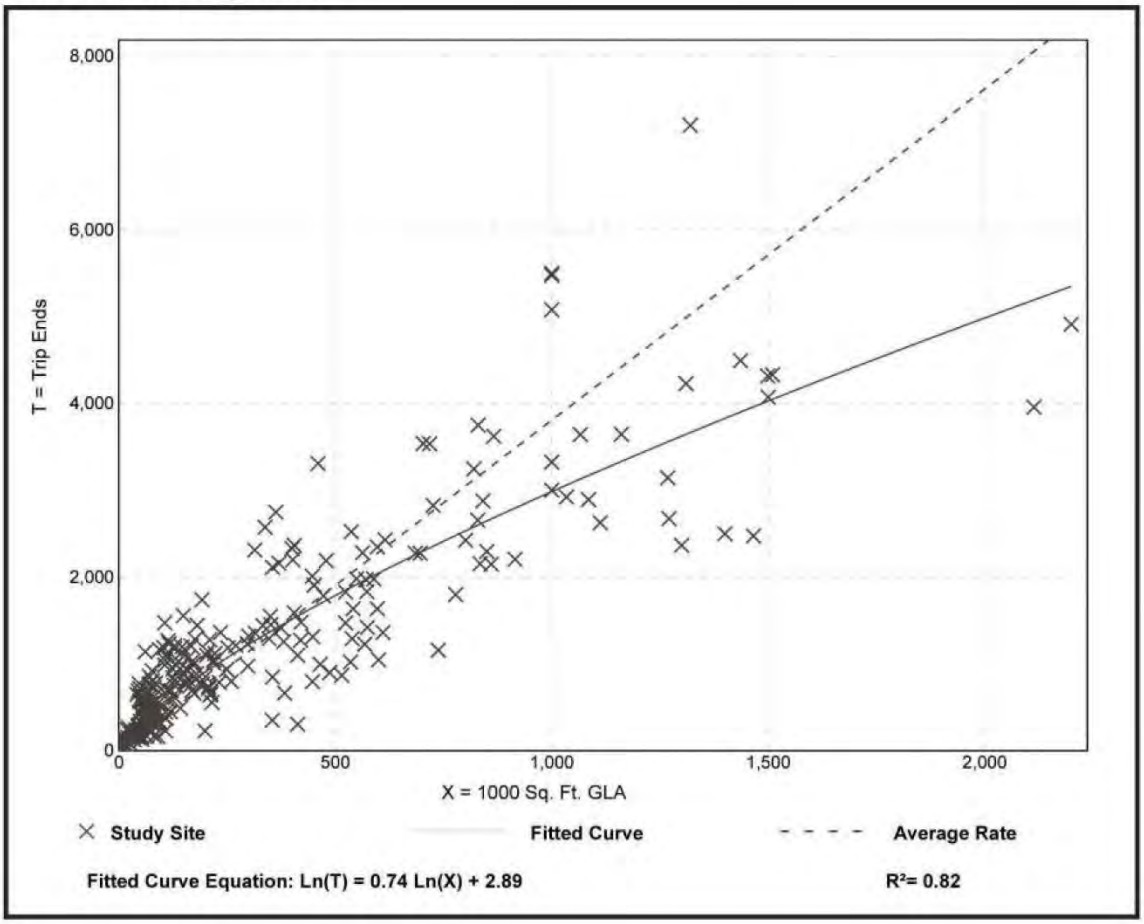
Shopping Center
(820)

Vehicle Trip Ends vs:	**1000 Sq. Ft. GLA**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	261
1000 Sq. Ft. GLA:	327
Directional Distribution:	48% entering, 52% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
3.81	0.74 - 18.69	2.04

Data Plot and Equation



Shopping Center
(820)

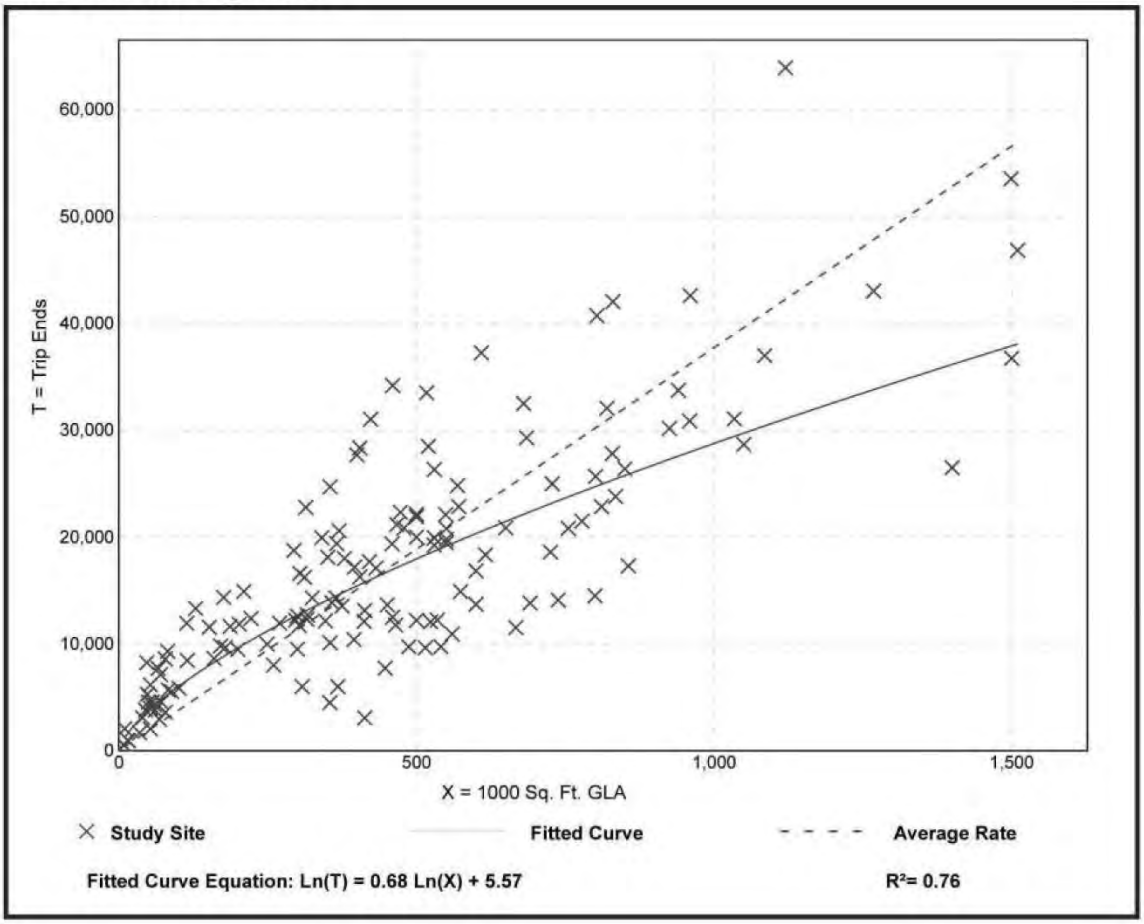
Vehicle Trip Ends vs: 1000 Sq. Ft. GLA
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 147
1000 Sq. Ft. GLA: 453
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
37.75	7.42 - 207.98	16.41

Data Plot and Equation



Shopping Center
(820)

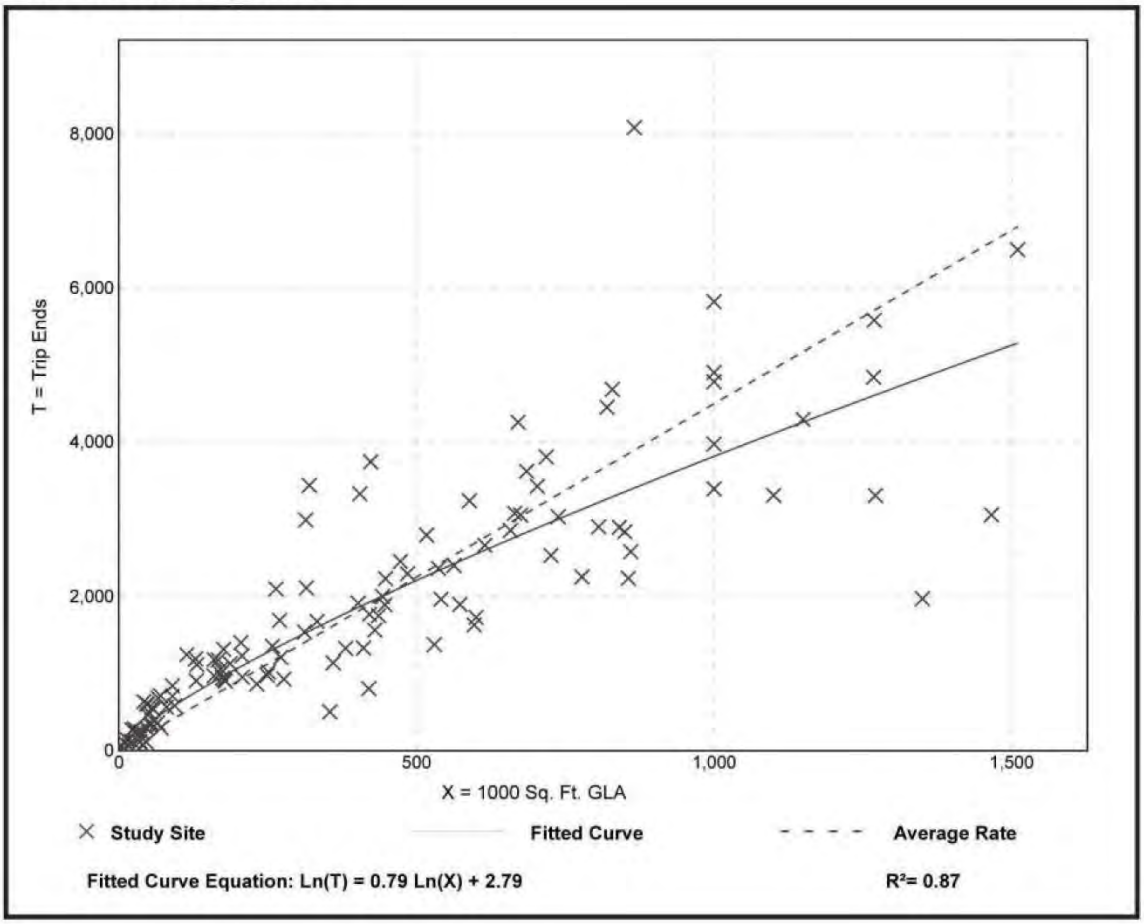
Vehicle Trip Ends vs: **1000 Sq. Ft. GLA**
On a: **Saturday, Peak Hour of Generator**

Setting/Location: **General Urban/Suburban**
Number of Studies: 119
1000 Sq. Ft. GLA: 416
Directional Distribution: 52% entering, 48% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
4.50	1.42 - 15.10	1.88

Data Plot and Equation



Shopping Center
(820)

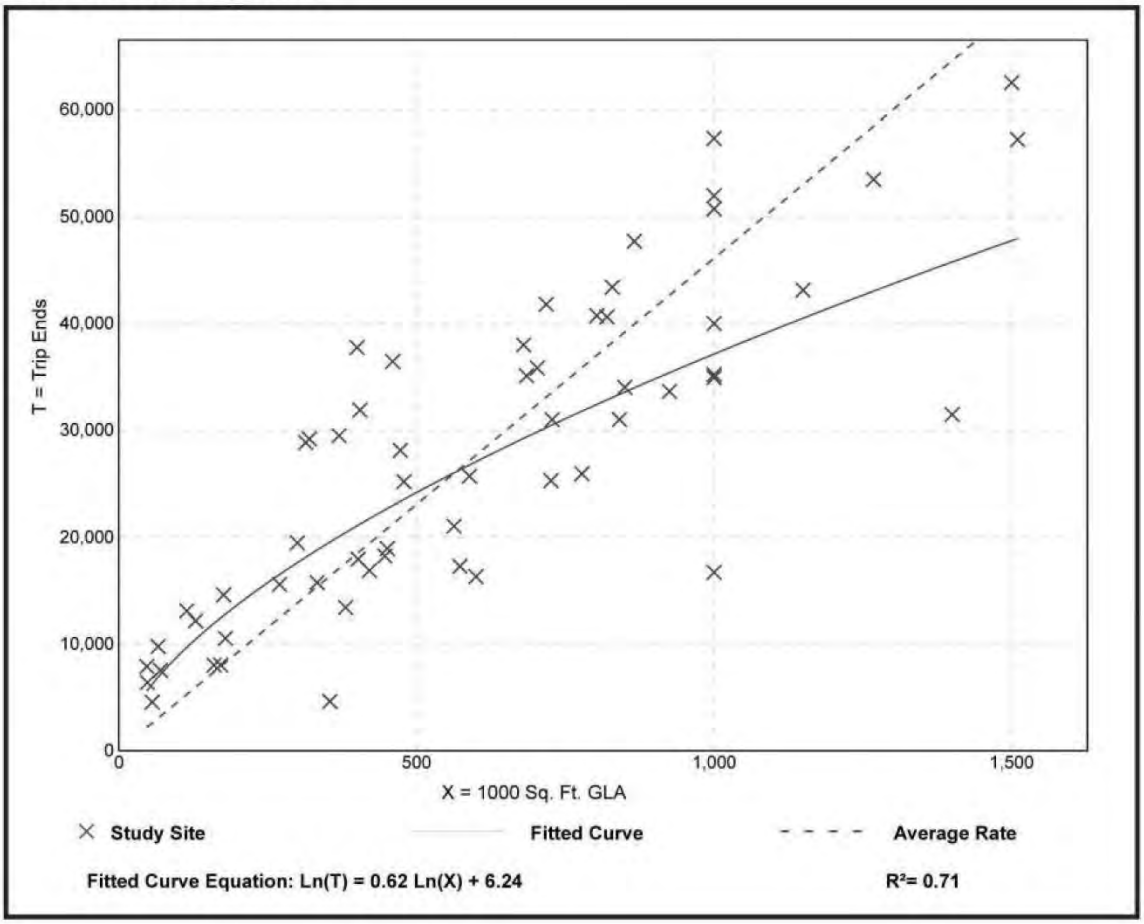
Vehicle Trip Ends vs: 1000 Sq. Ft. GLA
On a: Saturday

Setting/Location: General Urban/Suburban
Number of Studies: 58
1000 Sq. Ft. GLA: 602
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
46.12	13.01 - 167.89	17.91

Data Plot and Equation



TRIP GENERATION

LAND USE: Single-Family Detached Housing

TRIP GENERATION CALCULATIONS ARE BASED ON THE ITE
TRIP GENERATION, 10TH EDITION. THE ITE LAND USE CODE IS
Single-Family Detached Housing (210)

North Boyer
133 **SFDU**

North Boyer Housing
AM PEAK HOUR (ONE HOUR BETWEEN 7 AND 9 AM)

Rate: T = 0.71(X) +4.80

	T =	**99 VPH**
ENTER:	25%	**25 VPH**
EXIT:	75%	**74 VPH**

TRIP GENERATION

LAND USE: Single-Family Detached Housing

TRIP GENERATION CALCULATIONS ARE BASED ON THE ITE
TRIP GENERATION, 10TH EDITION. THE ITE LAND USE CODE IS
Single-Family Detached Housing (210)

North Boyer
133 **SFDU**

North Boyer Housing
PM PEAK HOUR (ONE HOUR BETWEEN 4 AND 6 PM)

Rate: Ln(T) = 0.96* Ln(X) +0.20

	T =	**134**	**VPH**
ENTER:	63%	**84**	**VPH**
EXIT:	37%	**50**	**VPH**

TRIP GENERATION

LAND USE: Single-Family Detached Housing

TRIP GENERATION CALCULATIONS ARE BASED ON THE ITE
TRIP GENERATION, 10TH EDITION. THE ITE LAND USE CODE IS
Single-Family Detached Housing (210)

North Boyer
133 **SFDU**

North Boyer Housing
DAILY TRIPS

Rate: Ln(T) = 0.92* Ln(X) +2.71

	T =	**1,352**	**VPD**
ENTER:	50%	**676**	**VPD**
EXIT:	50%	**676**	**VPD**

TRIP GENERATION

LAND USE: Single-Family Detached Housing

TRIP GENERATION CALCULATIONS ARE BASED ON THE ITE
TRIP GENERATION, 10TH EDITION. THE ITE LAND USE CODE IS
Single-Family Detached Housing (210)

North Boyer
133 **SFDU**

North Boyer Housing
PEAK HOUR SATURDAY

Rate: T = 0.84(X) +17.99

	T =	**130**	**VPH**
ENTER:	54%	**70**	**VPH**
EXIT:	46%	**60**	**VPH**

TRIP GENERATION

LAND USE: Single-Family Detached Housing

TRIP GENERATION CALCULATIONS ARE BASED ON THE ITE
TRIP GENERATION, 10TH EDITION. THE ITE LAND USE CODE IS
Single-Family Detached Housing (210)

North Boyer
133 **SFDU**

North Boyer Housing
DAILY TRIPS SATURDAY

Rate: Ln(T) = 0.94* Ln(X) +2.56

	T =	**1,283**	**VPD**
ENTER:	50%	**641**	**VPD**
EXIT:	50%	**642**	**VPD**

TRIP GENERATION

LAND USE: Multi-Family Housing

TRIP GENERATION CALCULATIONS ARE BASED ON THE ITE
TRIP GENERATION, 10TH EDITION. THE ITE LAND USE CODE IS
Multi-Family Housing (Low-Rise) (220)

North Boyer
150 **MFDU**

North Boyer Housing
AM PEAK HOUR (ONE HOUR BETWEEN 7 AND 9 AM)

Rate: Ln(T) = 0.95* Ln(X) -0.51

	T =	**70**	**VPH**
ENTER:	23%	**16**	**VPH**
EXIT:	77%	**54**	**VPH**

TRIP GENERATION

LAND USE: Multi-Family Housing

TRIP GENERATION CALCULATIONS ARE BASED ON THE ITE
TRIP GENERATION, 10TH EDITION. THE ITE LAND USE CODE IS
Multi-Family Housing (Low-Rise) (220)

North Boyer
150 **MFDU**

North Boyer Housing
PM PEAK HOUR (ONE HOUR BETWEEN 4 AND 6 PM)

Rate: Ln(T) = 0.89* Ln(X) -0.02

	T =	**85**	**VPH**
ENTER:	63%	**54**	**VPH**
EXIT:	37%	**31**	**VPH**

TRIP GENERATION

LAND USE: Multi-Family Housing

TRIP GENERATION CALCULATIONS ARE BASED ON THE ITE
TRIP GENERATION, 10TH EDITION. THE ITE LAND USE CODE IS
Multi-Family Housing (Low-Rise) (220)

North Boyer
150 **MFDU**

North Boyer Housing
DAILY TRIPS

Rate: T = 7.56(X) -40.86

	T =	**1,093**	**VPD**
ENTER:	50%	**546**	**VPD**
EXIT:	50%	**547**	**VPD**

TRIP GENERATION

LAND USE: Multi-Family Housing

TRIP GENERATION CALCULATIONS ARE BASED ON THE ITE
TRIP GENERATION, 10TH EDITION. THE ITE LAND USE CODE IS
Multi-Family Housing (Low-Rise) (220)

North Boyer
150 **MFDU**

North Boyer Housing
PEAK HOUR SATURDAY

Rate: T = 1.08(X) -33.24

	T =	**129 VPH**
ENTER:	54%*	**70 VPH**
EXIT:	46%*	**59 VPH**

* ITE does not provide a percent split for this time period. Percentages are from Single-Family Detached Housing (210).

TRIP GENERATION

LAND USE: Multi-Family Housing

TRIP GENERATION CALCULATIONS ARE BASED ON THE ITE
TRIP GENERATION, 10TH EDITION. THE ITE LAND USE CODE IS
Multi-Family Housing (Low-Rise) (220)

North Boyer
150 **MFDU**

North Boyer Housing
DAILY TRIPS SATURDAY

Rate: T = 14.01(X) -521.69

	T =	**1,580**	**VPD**
ENTER:	50%	**790**	**VPD**
EXIT:	50%	**790**	**VPD**

TRIP GENERATION

LAND USE: Mini-Warehouse

TRIP GENERATION CALCULATIONS ARE BASED ON THE ITE
TRIP GENERATION, 10TH EDITION. THE ITE LAND USE CODE IS
Mini-Warehouse (151)

North Boyer
45 **KSF**

North Boyer Industrial
AM PEAK HOUR (ONE HOUR BETWEEN 7 AND 9 AM)

Rate: T = 0.10

	T =	**5 VPH**
ENTER:	60%	**3 VPH**
EXIT:	40%	**2 VPH**

TRIP GENERATION

LAND USE: Mini-Warehouse

TRIP GENERATION CALCULATIONS ARE BASED ON THE ITE
TRIP GENERATION, 10TH EDITION. THE ITE LAND USE CODE IS
Mini-Warehouse (151)

North Boyer
45 **KSF**

North Boyer Industrial
PM PEAK HOUR (ONE HOUR BETWEEN 4 AND 6 PM)

Rate: T = 0.17

	T =	**8 VPH**
ENTER:	47%	**4 VPH**
EXIT:	53%	**4 VPH**

TRIP GENERATION

LAND USE: Mini-Warehouse

TRIP GENERATION CALCULATIONS ARE BASED ON THE ITE
TRIP GENERATION, 10TH EDITION. THE ITE LAND USE CODE IS
Mini-Warehouse (151)

North Boyer
45 **KSF**

North Boyer Industrial
DAILY TRIPS

Rate: T = 1.51

	T =	**68 VPD**
ENTER:	50%	**34 VPD**
EXIT:	50%	**34 VPD**

TRIP GENERATION

LAND USE: Mini-Warehouse

TRIP GENERATION CALCULATIONS ARE BASED ON THE ITE
TRIP GENERATION, 10TH EDITION. THE ITE LAND USE CODE IS
Mini-Warehouse (151)

North Boyer
45 **KSF**

North Boyer Industrial
PEAK HOUR SATURDAY

Rate: T = 0.31

	T =	**14 VPH**
ENTER:	59%	**8 VPH**
EXIT:	41%	**6 VPH**

TRIP GENERATION

LAND USE: Mini-Warehouse

TRIP GENERATION CALCULATIONS ARE BASED ON THE ITE
TRIP GENERATION, 10TH EDITION. THE ITE LAND USE CODE IS
Mini-Warehouse (151)

North Boyer
45 **KSF**

North Boyer Industrial
DAILY TRIPS SATURDAY

Rate: T = 1.95

	T =	**88 VPD**
ENTER:	50%	**44 VPD**
EXIT:	50%	**44 VPD**

TRIP GENERATION

LAND USE: Shopping Center

TRIP GENERATION CALCULATIONS ARE BASED ON THE ITE
TRIP GENERATION, 10TH EDITION. THE ITE LAND USE CODE IS
Shopping Center (820)

North Boyer
10 **KSF**

North Boyer Commercial
AM PEAK HOUR (ONE HOUR BETWEEN 7 AND 9 AM)

Rate: T = 0.50(X) +151.78

	T =	**157 VPH**	**PASS BY 0%***	**Net New Trips**
ENTER:	62%	**97 VPH**	**0**	**97**
EXIT:	38%	**60 VPH**	**0**	**60**

* ITE does not provide a pass by reduction for this time period.

TRIP GENERATION

LAND USE: Shopping Center

TRIP GENERATION CALCULATIONS ARE BASED ON THE ITE
TRIP GENERATION, 10TH EDITION. THE ITE LAND USE CODE IS
Shopping Center (820)

North Boyer
10 **KSF**

North Boyer Commercial
PM PEAK HOUR (ONE HOUR BETWEEN 4 AND 6 PM)

Rate: Ln(T) = 0.74* Ln(X) +2.89

	T =	**99 VPH**	**PASS BY 34%**	**Net New Trips**
ENTER:	48%	**48 VPH**	**16**	**32**
EXIT:	52%	**51 VPH**	**18**	**33**

TRIP GENERATION

LAND USE: Shopping Center

TRIP GENERATION CALCULATIONS ARE BASED ON THE ITE
TRIP GENERATION, 10TH EDITION. THE ITE LAND USE CODE IS
Shopping Center (820)

North Boyer
10 **KSF**

North Boyer Commercial
DAILY TRIPS

Rate: Ln(T) = 0.68* Ln(X) +5.57

	T =	**1,256 VPD**	**PASS BY 0%***	**Net New Trips**
ENTER:	50%	**628 VPD**	**0**	**628**
EXIT:	50%	**628 VPD**	**0**	**628**

* ITE does not provide a pass by reduction for this time period.

TRIP GENERATION

LAND USE: Shopping Center

TRIP GENERATION CALCULATIONS ARE BASED ON THE ITE
TRIP GENERATION, 10TH EDITION. THE ITE LAND USE CODE IS
Shopping Center (820)

North Boyer
10 **KSF**

North Boyer Commercial
PEAK HOUR SATURDAY

Rate: Ln(T) = 0.79* Ln(X) +2.79

	T =	**100 VPH**	**PASS BY 26%**	**Net New Trips**
ENTER:	52%	**52 VPH**	**14**	**38**
EXIT:	48%	**48 VPH**	**12**	**36**

TRIP GENERATION

LAND USE: Shopping Center

TRIP GENERATION CALCULATIONS ARE BASED ON THE ITE
TRIP GENERATION, 10TH EDITION. THE ITE LAND USE CODE IS
Shopping Center (820)

North Boyer
10 **KSF**

North Boyer Commercial
DAILY TRIPS SATURDAY

Rate: Ln(T) = 0.62* Ln(X) +6.24

	T =	**2,138 VPD**	**PASS BY 0%***	**Net New Trips**
ENTER:	50%	**1069 VPD**	**0**	**1069**
EXIT:	50%	**1069 VPD**	**0**	**1069**

* ITE does not provide a pass by reduction for this time period.

Amanda Wilson

From: Jerremy Clark <Jecl@deainc.com>
Sent: Thursday, May 14, 2020 8:53 AM
To: Amanda Wilson; 'Jeremy grimm'
Cc: Tim McDonnell; Rluttmann@centurywest.com; Chad Karns; Ryan Shea; Aaron Qualls; Dan Tadic
Subject: RE: North Boyer Development

Good Morning Amanda,

Thank you for providing a review of the TGDL for the North Boyer Development. We have reviewed the letter and see the only comment requiring further action is regarding a connection between the two halves across the drainage channel. Based on the site plan, there are two roadway connections across the channel. Our trip distribution and allocation of volume to various access points, although very similar to the geometric "north and south" halves, was estimated based on where trips were originating from and destined to. Rather than specify elements of the civil design, the discussion of circulating roadways was excluded from the letter. The TIA includes similar methodology and narrative, which includes the two proposed crossing locations.

Please let me know if the City will require revision of the TIA to include a discussion of the connecting roadways. I appreciate your feedback, thank you again!

Jerremy Clark, PE, PTOE
d: 509.232.8695 | c: 208.215.9046
David Evans and Associates, Inc.

ENERGY | LAND DEVELOPMENT | MARINE SERVICES | SURVEYING AND GEOMATICS | TRANSPORTATION | WATER AND ENVIRONMENT

DEA's commitment to our employees, clients, partners, and communities remains our priority during the COVID-19 pandemic. Our teams are continually adapting, with a great many working remotely. All of us are focused on achieving and exceeding our clients' expectations. Our mail correspondence is currently routed through our corporate headquarters. Please email me with urgent items to ensure timely response.

From: Amanda Wilson <awilson@sandpointidaho.gov>
Sent: Thursday, May 14, 2020 7:18 AM
To: 'Jeremy grimm' <jeremy@whiskeyrockplanning.com>
Cc: Tim McDonnell <tfmcdonnell@hotmail.com>; Rluttmann@centurywest.com; Chad Karns <Cak@deainc.com>; Jerremy Clark <Jecl@deainc.com>; Ryan Shea <rshea@sandpointidaho.gov>; Aaron Qualls <aqualls@sandpointidaho.gov>; Dan Tadic <dtadic@sandpointidaho.gov>
Subject: RE: North Boyer Development

Good morning, Jeremy.

Please find attached the City's response regarding the revised TGDL for the North Boyer Development.

Thank you,
Amanda

Amanda Wilson
Infrastructure & Development Services Manager
City of Sandpoint | 1123 Lake Street, Sandpoint, ID 83864
Direct: 208.263.3411 | awilson@sandpointidaho.gov

From: Jerremy Clark <Jecl@deainc.com>
Sent: Wednesday, April 22, 2020 1:58 PM
To: Amanda Wilson <awilson@sandpointidaho.gov>
Cc: Tim McDonnell <tfmcdonnell@hotmail.com>; Rluttmann@centurywest.com; Chad Karns <Cak@deainc.com>
Subject: North Boyer Development

Good afternoon Amanda,

Based on the comments provided on our first submittal of the trip generation and distribution letter (TGDL) for the referenced project, I have attached a revised TGDL for your review and approval. Please let me know if you have any further questions or comments. I appreciate your feedback.

Thank you,

Jerremy Clark, PE, PTOE | Associate, Traffic Engineer
David Evans and Associates, Inc. | Smart Mobility Group
663 West Canfield Avenue | Coeur d'Alene, ID 83854 | www.deainc.com
908 North Howard Street, Suite 300 | Spokane, WA 99201
d: 509.232.8695 | c: 208.215.9046 | cisco: 48695 | jecl@deainc.com

ENERGY | LAND DEVELOPMENT | MARINE SERVICES | SURVEYING AND GEOMATICS | TRANSPORTATION | WATER AND ENVIRONMENT

DEA's commitment to our employees, clients, partners, and communities remains our priority during the COVID-19 pandemic. Our teams are continually adapting, with a great many working remotely. All of us are focused on achieving and exceeding our clients' expectations. Our mail correspondence is currently routed through our corporate headquarters. Please email me with urgent items to ensure timely response.

North Boyer Development
Traffic Impact Analysis

Prepared for the

City of Sandpoint

DEA Project No. KMEP0000-0001

May 5, 2020

PROFESSIONAL ENGINEER
REGISTERED
14434
05/05/2020
STATE OF IDAHO
JEREMY EUGENE CLARK

DAVID EVANS AND ASSOCIATES INC.

908 N. Howard Street, Suite 300
Spokane, WA 99021

EXECUTIVE SUMMARY

The proposed North Boyer Development is located on the former University of Idaho property along North Boyer Avenue south of Mountain View Drive. A vicinity map is provided as Error! Reference source not found.. The vision for the site is mixed-use, with the majority being residential. A commercial area on the southern end of the site has been reserved with possible land uses included for evaluation. The table below provides a brief summary of pertinent aspects of the study for the project. A detailed discussion of the trip generation for the site, including documentation of the daily weekday and weekend day trip generation, is provided within the body of this report.

Traffic Impact Summary

North Boyer Development Project Summary		
Estimated Development Traffic (Net New Vehicle Trips)	Weekday AM Peak Hour	331
	Weekday PM Peak Hour	292
	Weekday Daily Total	3,769
	Weekend Day (Saturday) Peak Hour	347
	Weekend Day (Saturday) Daily Total	5,089
Primary Access Locations	• Two driveways onto Mountain View Drive connecting to North Boyer Ave • Two driveways directly onto North Boyer Ave	
Intersection Analysis	Number of Study Intersections	11
	Number of Study Project Driveways	4
	Analysis Periods	Weekday AM Peak (7-9 AM)
		Weekday PM Peak (4-6 PM)
		Weekend Day Peak Hour
		Winter Seasonal

An operational analysis was completed for each of the scenarios listed below using Synchro and Sidra software and the HCM 6th edition methodologies. Per City of Sandpoint guidelines, conditions are analyzed for opening year (2025) and five years after (2030).

1. Existing Conditions (Year 2019 / 2020)
2. 2025 Background Weekday AM and PM Peak Hour Conditions (without project)
3. 2030 Background Weekday AM and PM Peak Hour Conditions (without project)
4. 2025 Conditions plus Project Weekday AM and PM Peak Hour Conditions (Opening Year 2025)
5. 2030 Background plus Project Weekday AM and PM Peak Hour Conditions

Weekend day peak hour and winter seasonal conditions were also reviewed; however, volumes at study area intersections were found to be significantly lower compared to weekday AM and PM peak hours. Turning movement counts and trip generation for these conditions are documented in the report, but full analyses were not conducted.

The minimum acceptable level of service threshold for signalized and unsignalized intersections in the City of Sandpoint is LOS D. Based on the analysis presented herein of all intersections in all scenarios, the eastbound left turn movement at the unsignalized intersection of North Boyer Avenue / Baldy Mountain Road is anticipated to operate at

LOS E under 2025 Background PM Peak Hour Conditions and LOS F under 2030 Background PM Peak Hour Conditions for the overall approach assuming the current configuration that is in place. The eastbound minor approach at the unsignalized intersection of North Boyer Avenue / Baldy Mountain Road is anticipated to operate at LOS F under both the 2025 and 2030 Background plus Project PM Peak Hour Conditions assuming the current configuration that is in place. All other study area intersections are shown to operate at LOS D or better in both AM and PM peak hours in 2025 with the addition of project-related traffic.

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PROJECT INTRODUCTION

The proposed North Boyer Development is located on the former University of Idaho property along the east side of North Boyer Avenue south of Mountain View Drive in the City of Sandpoint, Idaho. A vicinity map is provided as **Figure 1**.

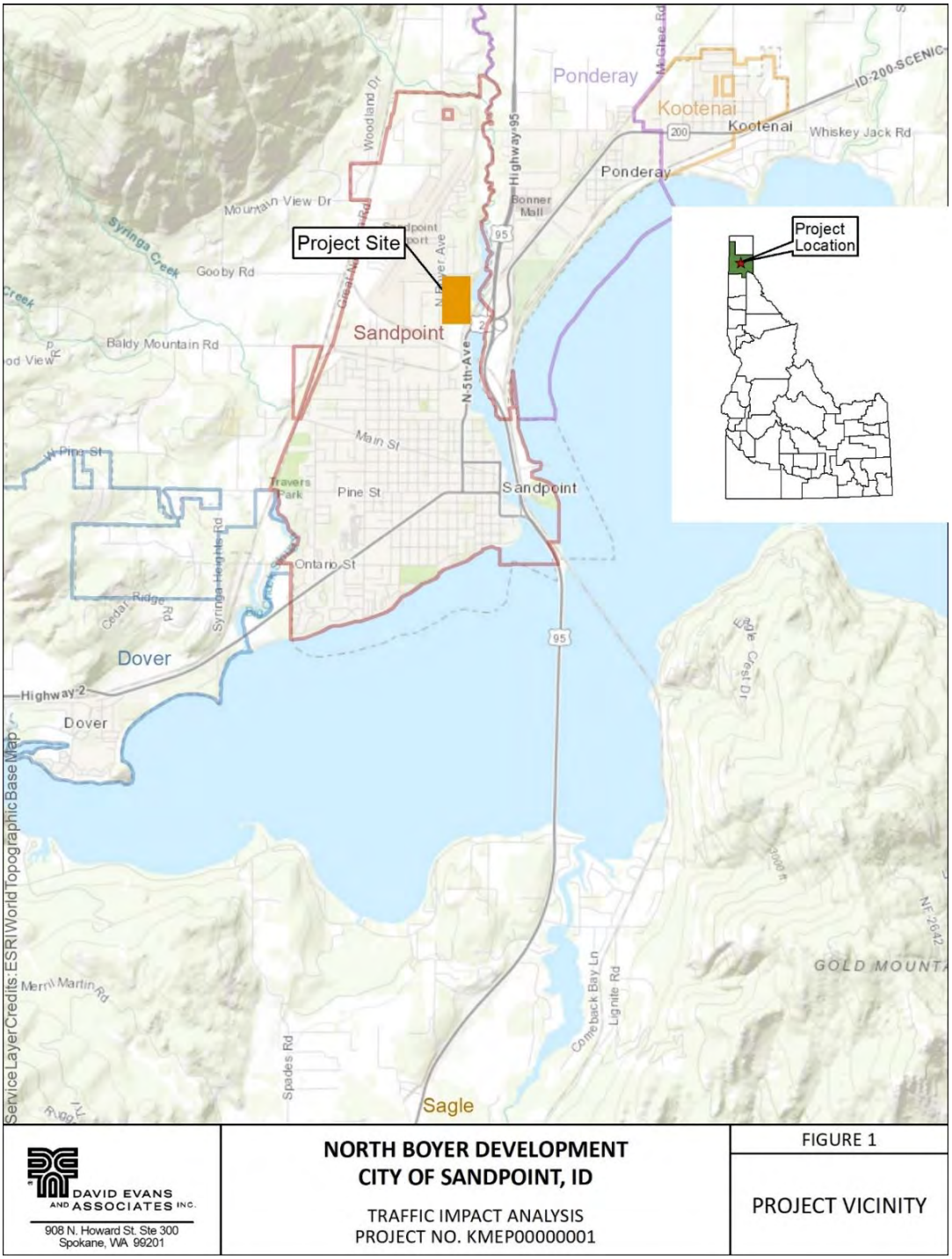


Figure 1. Vicinity Map

Land Use and Zoning

The proposed project is expected to include the construction of 133 single-family dwelling units (SFDU), 150 multi-family dwelling units (MFDU), a 45,000 square foot self-storage facility, and 10,000 square foot commercial shopping center.

The Official City of Sandpoint Zoning Map shows the proposed site is currently zoned as Residential Single Family (RS). This zoning designation is also applied to adjacent properties to the north and southwest of the site. Industrial Technical Park and Residential Multifamily are also nearby to the west and Industrial Business Park to the south. The developer of the proposed project is working with the City for a change in zoning, either in full or specific portions that will be occupied by non-RS uses, to accommodate the mixed-use plans presented within this report.

Facing southeast towards the proposed project site along North Boyer Avenue (right), south of Mountain View Drive.

Access

As shown on the proposed site plan in **Figure 2**, the access to the site will be provided via two driveways onto Mountain View Drive connecting to North Boyer Avenue and two driveways directly onto North Boyer Avenue: one at Ebbett Way and one approximately 700 feet north. The site is bordered by Sand Creek and the Union Pacific Railroad to the east and the BNSF railroad to the south, preventing access to the site from these directions.

*Note: Site plan provided by KM Enterprises, modified to illustrate two accesses onto North Boyer Avenue.

Figure 2. Site Plan

ANALYSIS METHODOLOGY AND ASSUMPTIONS

As requested by City staff, both the AM and PM weekday peak hours served as the primary time periods for analyzing the impacts of the proposed development on traffic operations at study area intersections. Additionally, with North Boyer Avenue serving as one of the major roads providing access to the Schweitzer Mountain Resort, the weekend day peak hour and winter seasonal peaks were reviewed. However, traffic volumes during these two scenarios were found to be significantly less at study area intersections compared to typical weekday peak hour conditions. Therefore, a full operational analysis of these conditions was not conducted. Further documentation regarding these conditions and the decision to forego analysis is provided in this report.

In general, the transportation system experiences its greatest demand during the weekday PM peak hour, and if the system operates acceptably under PM peak hour traffic conditions, it will operate better as lower traffic volumes are observed during other times of the day or during weekend hours.

Intersection capacity analyses at the stop-controlled and signalized intersections were based on Highway Capacity Manual (HCM) 6th Edition procedures and the use of Synchro 10 software. For purpose of this analysis, HCM2000 procedures and Sidra 8 software were utilized for the roundabout analysis.

For the purpose of this analysis, the project is anticipated to be in place in the year 2025. Per City of Sandpoint guidelines, conditions five years after project completion (Year 2030) must also be analyzed. The five scenarios were analyzed as listed below:

1. Existing Conditions (Year 2019 / 2020)
2. 2025 Background AM and PM Peak Hour Conditions (without project)
3. 2030 Background AM and PM Peak Hour Conditions (without project)
4. 2025 Conditions plus Project AM and PM Peak Hour Conditions (Opening Year 2025)
5. 2030 Background plus Project AM and PM Peak Hour Conditions

EXISTING CONDITIONS

The following section describes the transportation network in proximity to the proposed project site including classified roadway network with existing traffic counts, transit, and bicycle/pedestrian conditions. An operational analysis is performed using the existing traffic counts to provide pre-project baseline conditions to be compared against in the following section.

Street Network

A description of the primary roadways within the study area is included below.

North Boyer Avenue is a north-south two-lane minor arterial west of the project site with turn lanes at major intersections. It is designated as a truck route north of US-2 and serves as a local alternative to US-2. The posted speed limit is 25 mph until just north of Baldy Mountain Road where it is 35 mph. All project-generated traffic will use this roadway to travel to/from the site.

Mountain View Drive is an east-west two-lane local road along the north end of the property and intersects North Boyer Avenue to the northwest of the project site. Two of the project access driveways will be onto Mountain View Drive. The speed limit is assumed to be 25 mph east of North Boyer Avenue.

Eastbound Mountain View Drive, east of North Boyer Avenue and along the north side of the proposed project site.

Mountain View Drive is designated as a Minor Arterial by 2026 east of North Boyer Avenue in the 2007 Sandpoint Urban Area Transportation Plan, as it was planned to cross Sand Creek and connect to US-2/US-95. It is designated to have an Arterial 3 cross-section, which would require a 3-lane profile, with two travel lanes and a center turn lane. This project was proposed as a mid-term capital improvement in the plan. Bicycle and pedestrian improvements required of this cross-section are provided within the Bicycle and Pedestrian Facilities subsection.

Baldy Mountain Road is an east-west two-lane collector west of the project site, running west from North Boyer Road into the hills/mountains west of Sandpoint. The posted speed limit west of North Boyer Avenue is 35 mph.

Larch Street is an east-west two-lane collector that runs between US-2 and Division Avenue approximately 0.6 miles south of the proposed project site. It is striped with turn lanes and signed as a truck route between US-2 and North Boyer Avenue, after which it is unstriped with trucks prohibited between North Boyer Avenue and Division Avenue. The posted speed limit is 25 mph.

Division Avenue is a north-south two-lane minor arterial that runs south from Baldy Mountain Road all the way through the south end of Sandpoint. It provides access to Farmin-Stidwell Elementary School, Sandpoint Middle School, and Sandpoint High School. It is striped with turn lanes and signed as a truck route between US-2 and Baldy Mountain Road. The posted speed limit is 25 mph, with 20 mph school zones adjacent to the schools (7:30am to 3:30pm, Monday through Friday).

Schweitzer Cutoff Road is an east-west two-lane minor arterial approximately one mile north of the project site. After Larch Street, it is the next roadway to connect to US-2 / US-95, and is the terminus for North Boyer Avenue. To the west it begins at North Boyer Road and serves as a primary route for traffic to/from the Schweitzer Mountain Resort. To the east it eventually becomes Kootenai Cutoff Road which connects to ID-200 and continues into Montana. The posted speed limit west of the North Boyer Avenue roundabout is 25 mph, while 35 mph to the east.

North Boyer Road is a north-south two-lane facility that extends north of Schweitzer Cutoff Road as a minor arterial that serves as the primary route to/from the Schweitzer Mountain Resort. The segment south of Schweitzer Cutoff Road is a collector that ends at the north side of the Sandpoint Airport. The posted speed limit is 35 mph.

Highway 2 (US-2) is a north-south principal arterial east of the project area opposite the UPRR tracks under the jurisdiction of the Idaho Transportation Department (ITD). In Sandpoint, US-2 shares a portion of its route with North Fifth Avenue and Pine Street. US-2 connects to Spokane via Newport and Priest River to the southwest. To the east, it merges with US-95 in northern Sandpoint to connect to Bonners Ferry and eventually the Canadian border, providing connections to many rural communities in between.

US-2 transitions between a three-lane (two north, one south) and four-lane facility south of the US-95 junction. It becomes a five-lane facility north of Larch Street with a center turn lane and dedicated left turn lanes at key intersections. Through downtown Sandpoint, US-2 is a two-lane facility south of Cedar Street with turn lanes at major intersections, and remains as such as it enters/exits the City to the southwest. The posted speed limit is 25 mph through the heart of Sandpoint and near the project site, increasing to 35 mph at the fringes of the City, north of Larch Street and southwest of downtown.

Intersections

Existing intersection geometrics were compiled from aerial imagery. The study area was reviewed to determine the existing number and type of lanes and the traffic control along the roadway. Three of the study intersections along US-2 are signalized, while two along North Boyer Avenue are roundabouts. The remaining six study intersections are unsignalized. Descriptions of the study intersections and their controls are discussed below**.** The existing lane geometries and traffic control are illustrated in

Figure 3.

Geometry and Control

#1 Schweitzer Cutoff Road / North Boyer Road is an unsignalized “T” intersection with the terminus of Schweitzer Cutoff Road forming the eastern leg. The northbound approach is stop-controlled and consists of a single shared through/right lane. The southbound approach consists of a single shared left/through lane as a free movement. The westbound approach is stop-controlled consists of a left turn lane and right turn lane. This intersection was analyzed as all-way stop control to comply with control guidelines of the highway capacity manual. The posted speed limit is 25 mph for the Schweitzer Cutoff Road approach, while 35 mph for the North Boyer Road approaches.

#2 North Boyer Avenue / Mountain View Drive is an unsignalized intersection with stop control on the Mountain View Drive approaches. All approaches consist of a single shared left/through/right lane. The posted speed limit is 35 mph for the North Boyer Avenue approaches, while 25 mph for the Mountain View Drive approaches.

#3 North Boyer Avenue / Baldy Mountain Road is an unsignalized intersection with stop control on the Baldy Mountain Road approaches. The eastbound approach has a left turn lane and right turn lane, the westbound approach is a single-lane driveway access, the northbound approach has a left turn lane and a through lane, and the southbound approach has a shared through/right lane. The posted speed limit is 25 mph along North Boyer Avenue and 35 mph for Baldy Mountain Road. The driveway to an industrial site east of the intersection that acts as a fourth leg. Pavement markings on Baldy Mountain

Road and North Boyer Avenue restrict movements onto the driveway; however, no physical restrictions are in place.

#4 North Boyer Avenue / Larch Street is a single-lane roundabout. The eastern Larch Street leg has a center left turn lane for use to access Sixth Avenue, which is directly east of this intersection. The posted speed limit is 25 mph for all approaches.

#5 US-2 / US-95 / Schweitzer Cutoff Road / Kootenai Cutoff Road is a signalized intersection. The northbound, southbound, and eastbound approaches consist of a left turn lane, two through lanes, and right turn lane. The westbound approach has two left turn lanes, a through lane, and a shared through/right lane. All approaches have a protected left turn phase. The posted speed limit is 45 mph for the north and south approaches, 25 mph on Kootenai Cutoff Road, and 35 mph on Schweitzer Cutoff Road.

#6 US-2 (Fifth Avenue) / Larch Street is a signalized intersection. The northbound and southbound approaches of US-2 consist of a left turn lane with protected phasing, through lane, and shared through/right lane. The eastbound approach has a left turn lane with protected phasing and a shared through/right lane, while the westbound approach has a shared left/through lane with protected/permitted phasing and a right turn lane. The posted speed limit is 25 mph for all approaches; however, the speed limit on US-2 changes to/from 35 mph just north of the intersection.

#7 North Division Avenue / Baldy Mountain Road is an unsignalized “T” intersection with stop control on the North Division Avenue approach. The eastbound approach consists of a single shared through/right lane, the westbound approach consist of a single shared left/through lane, and the northbound approach consists of a left turn lane and right turn lane. The posted speed limit is 25 mph for the North Division Avenue approach, while 35 mph for the Baldy Mountain Road approaches.

#8 North Division Avenue / Larch Street is an unsignalized “T” intersection with stop control on the Larch Street approach. All approaches consist of a single shared left/through/right lane and have a posted speed limit of 25 mph.

#9 US-2 / North Boyer Avenue is a signalized intersection. All approaches consist of a left turn lane and a shared through/right lane. The eastbound and westbound approaches of US-2 have protected left turn phases, while the northbound and southbound approaches of North Boyer Avenue utilize permitted phases. The posted speed limit is 25 mph for all approaches; however, the westbound speed limit on US-2 increases to 35 mph just west of the intersection.

#10 Schweitzer Cutoff Road / North Boyer Avenue is a single-lane “T” roundabout with the terminus of North Boyer Avenue forming the southern leg. All approaches consist of a single lane. The posted speed limit is 35 mph for the east and south legs, and 25 mph for the west leg.

#14 North Boyer Avenue / Ebbett Way is an unsignalized “T” intersection with stop control on the Ebbett Way approach. The eastbound approach has a left turn lane and right turn lane, the northbound approach has a left turn lane and a through lane, and the southbound approach has a shared through/right lane. The posted speed limit is 35 mph along North Boyer Avenue and 25 mph for Ebbett Way. This intersection is being analyzed because it aligns with the planned southern driveway for the site onto North Boyer Avenue.

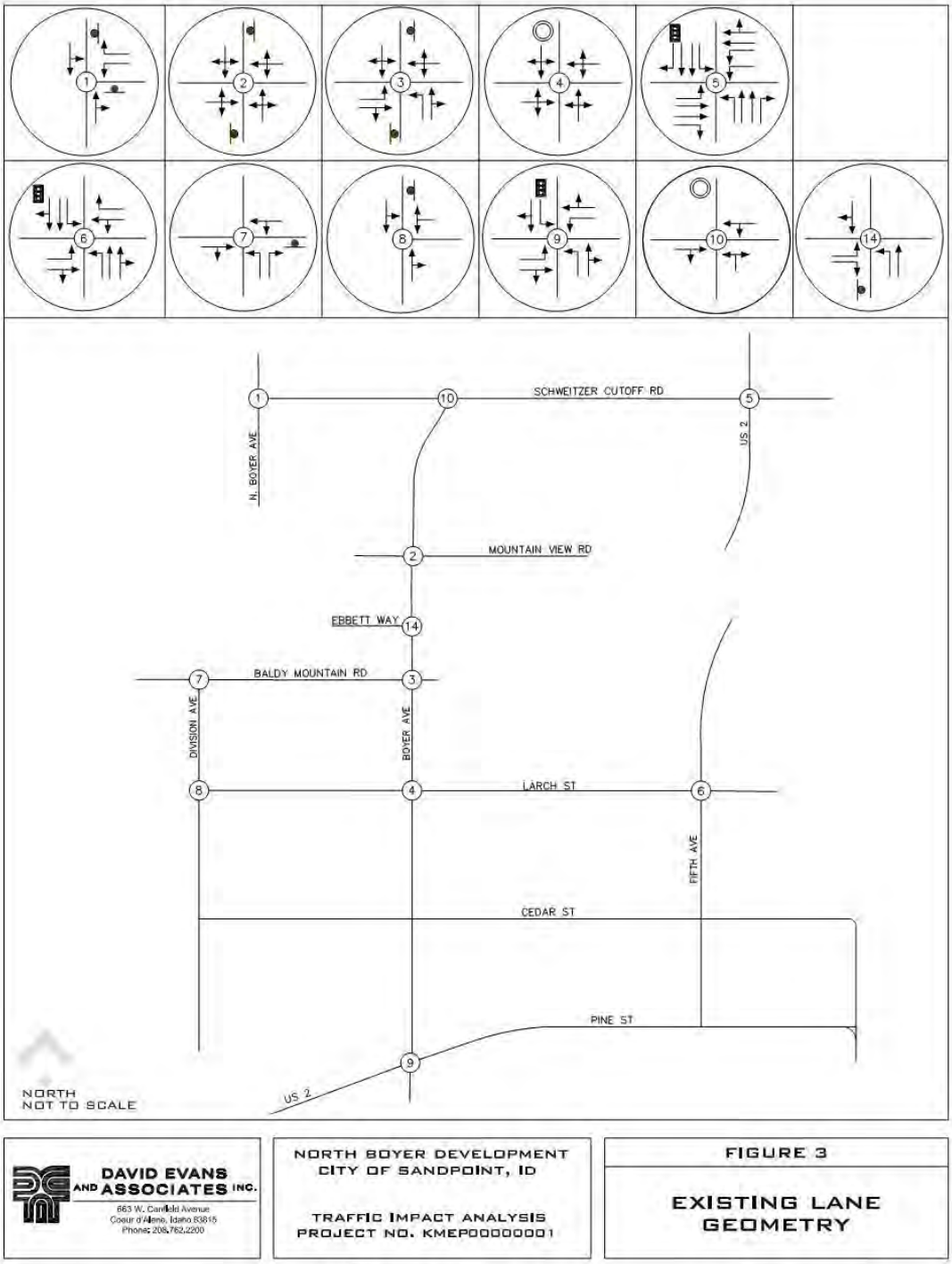


Figure 3. Existing Lane Geometry

Existing Turning Movement Counts

Turning movement counts were collected for study intersections during the PM peak hour during the course of three separate occasions: October 2, 2019 and November 7, 2019 representing typical conditions (shown in in **Figure 5**) and March 10, 2020 representing winter seasonal conditions (shown in in **Figure 6**). The winter seasonal counts were only conducted at the following intersections:

2. North Boyer Avenue / Mountain View Drive
3. North Boyer Avenue / Baldy Mountain Road
4. North Boyer Avenue / Larch Street
7. Division Avenue / Baldy Mountain Road
8. Division Avenue / Larch Street
10. North Boyer Avenue / Schweitzer Cutoff Road

AM peak hour counts were also conducted at these select intersections on March 10, 2020 to assess the implications of site generated traffic traveling to/from area schools. These counts serve as the typical condition for the AM peak hour and are shown in in **Figure 4.**

Additionally, weekend day AM and PM peak hour counts were collected for intersections #3, #4, and #10 on Saturday, March 14, 2020 (shown in in **Figure 7**) to further assess the impacts of recreational travel in the winter season.

Lastly, turning movement counts were also conducted at the North Boyer Avenue / Ebbett Way intersection (which is identified as Culvers Drive on Google Earth) during the AM and PM peak hours on March 10, 2020 to provide context to where one of the site driveways will be located, creating a four-way intersection. The counts revealed a low volume at the intersection that may be attributed to a low volume day or an incorrect count location given two locations of Culvers Drive on Google ©. Given the current reduced traffic volume on roadways, it is not feasible to recount the intersection. The counted volumes were analyzed as collected. All traffic count data sheets are provided in **Appendix A**.

Transit

Transit service in Sandpoint is provided by Selkirks-Pend Oreille Transit (SPOT) free of charge. The service consists of three routes, with Blue and Green routes serving Sandpoint, Dover, Ponderay, and Kootenai and the Red route linking Sandpoint and the Schweitzer Mountain Resort. The only route with a stop near the project site is the Blue route, with the closest stop at North Boyer Avenue and Spruce Street, approximately ½ mile from the southernmost site driveway at North Boyer Avenue and Ebbett Way. Buses operate on a once per hour headway between the hours of 6:30am and 6:30pm, seven days a week.

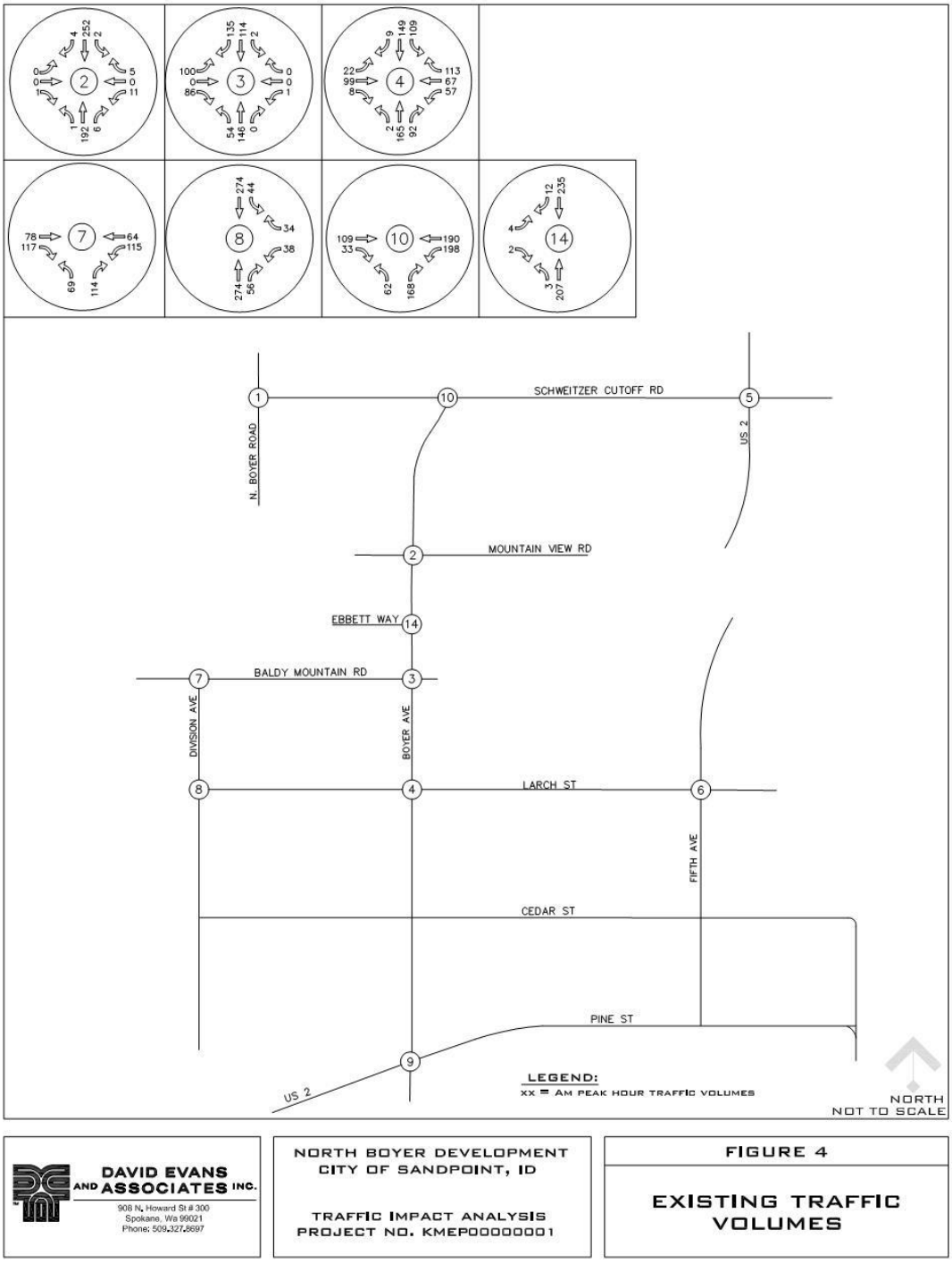


Figure 4. Existing Traffic Volumes – Weekday AM Peak Hour

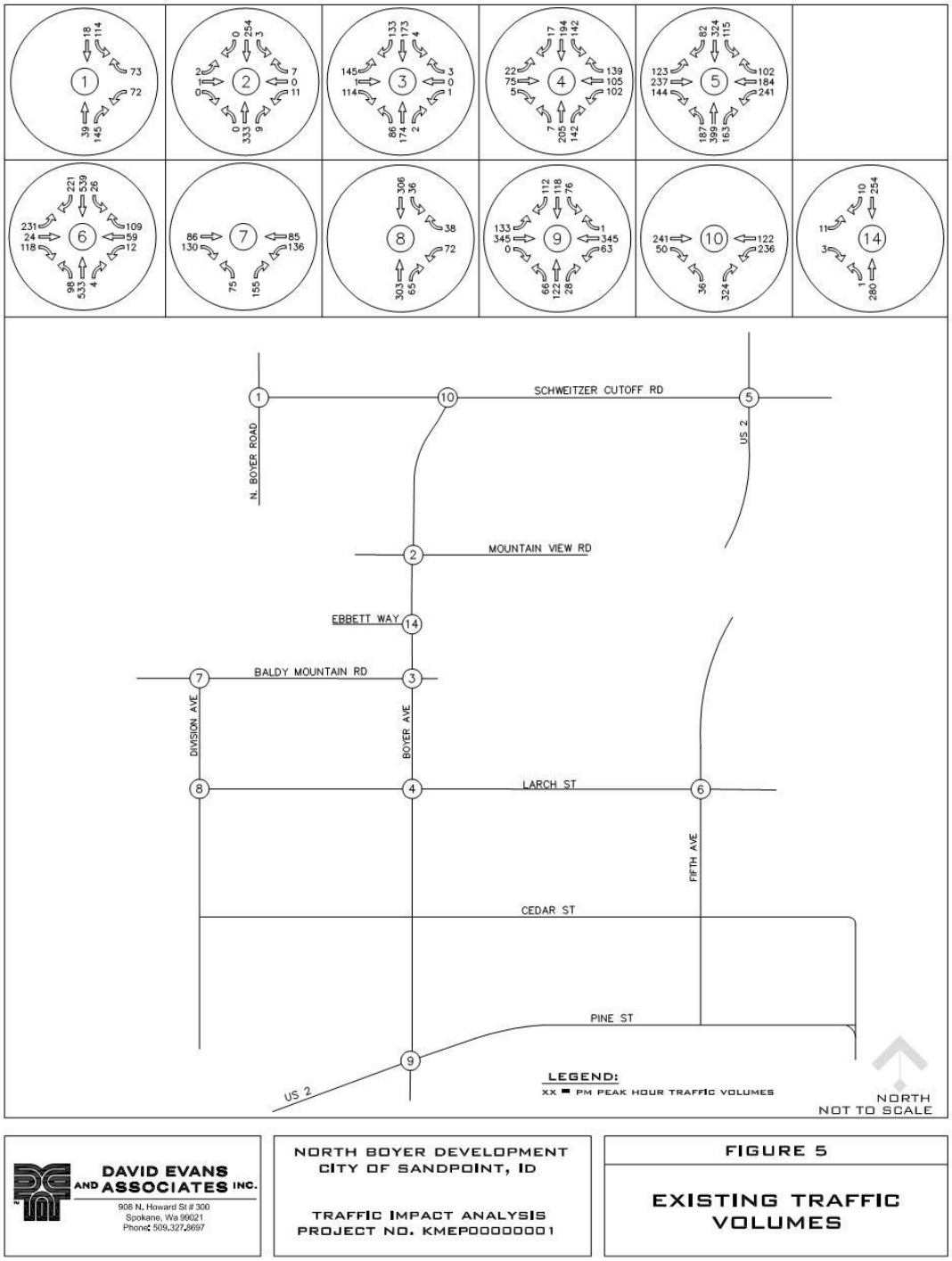


Figure 5. Existing Traffic Volumes – Weekday PM Peak Hour

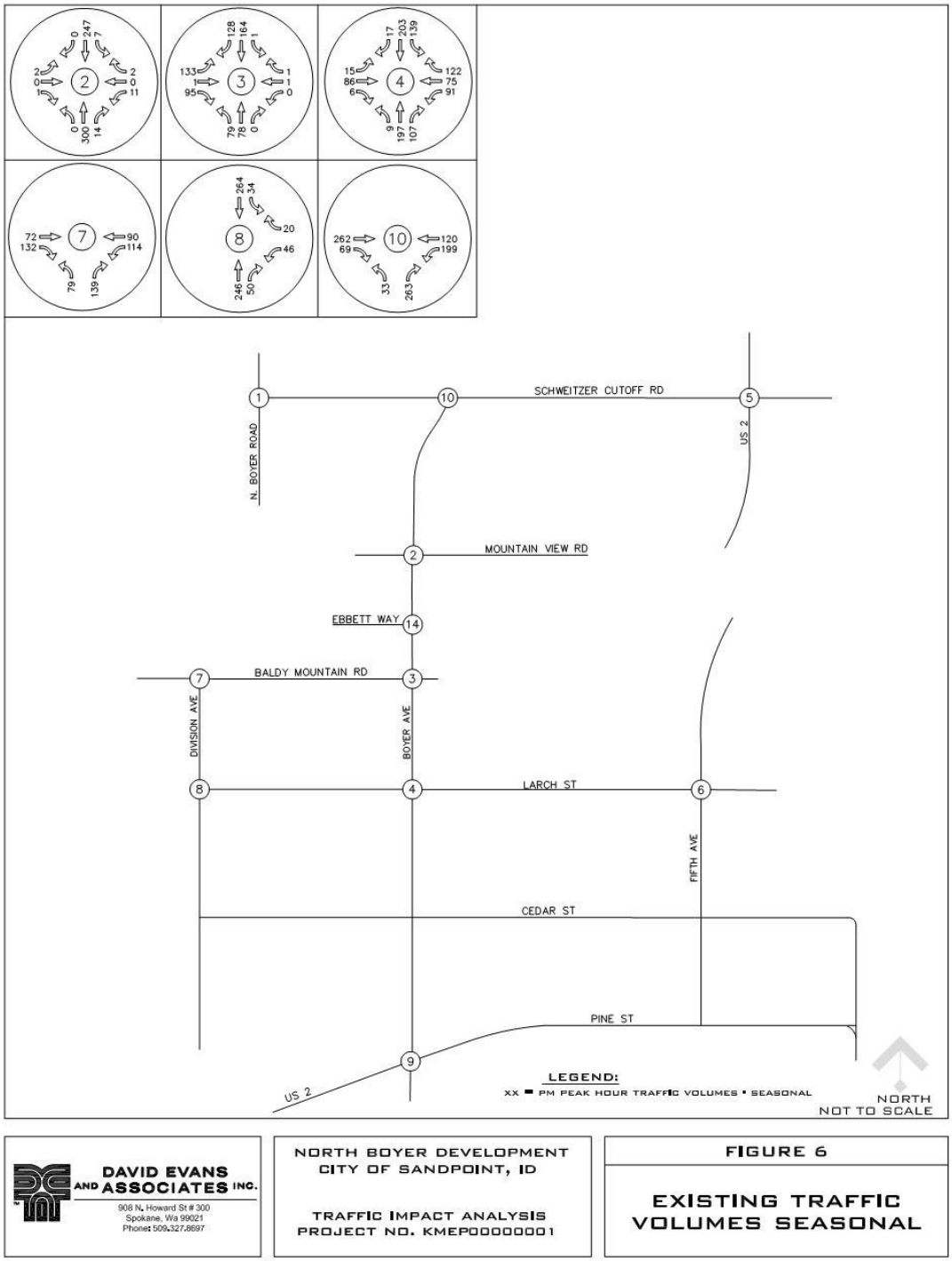


Figure 6. Existing Traffic Volumes – Winter Seasonal Weekday PM Peak Hour

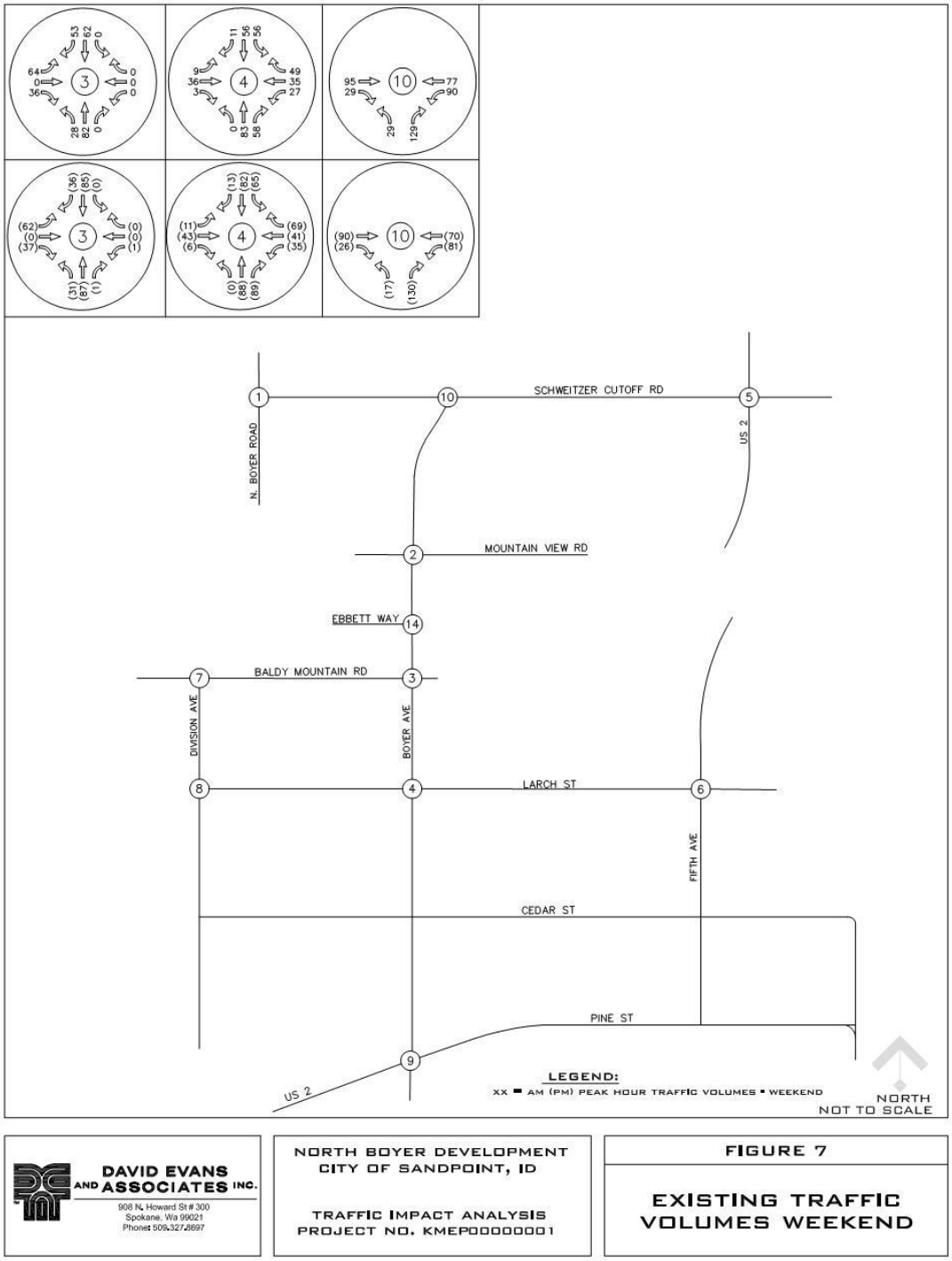


Figure 7. Existing Traffic Volumes – Weekend Day AM and PM Peak Hours

Bicycle and Pedestrian Facilities

The proposed project site is directly served by three bicycle facilities. North Boyer Avenue, the major road serving the development, is signed and striped with bicycle lanes and is designated as the North-South bicycle route north to Schweitzer Cutoff Road and south into the city center. Additionally, a paved regional shared use path runs adjacent to the proposed project site along the eastern side of North Boyer Avenue from Schweitzer Cutoff Road to Larch Street, after which it continues along Larch Street and then US-2 through Sandpoint and west into the community of Dover. On the north end of the development at the east end of Mountain View Drive, a trail connects to 'Popsicle Bridge'. This provides a connection to a paved scenic regional trail that heads to City Beach and into downtown Sandpoint along the east edge of Sand Creek.

Mountain View Drive between North Boyer Avenue and the bridge is also signed as a bicycle route, but with no on-street facilities. The 2007 Sandpoint Urban Area Transportation Plan designates this portion of Mountain View Drive as part of the Class 1 bicycle network. Combined with the Arterial 3 cross-section designation, a 12-foot shared use path separated with a 5-foot planting strip is required along one side and an 8-foot detached sidewalk is required along the opposite side.

Bike lanes on North Boyer Avenue and regional shared use path adjacent to the site (right).

Since the site is adjacent to more industrial-oriented uses, large lot residential, and undeveloped land and sits approximately a half mile north of more centrally located retail and residential developments, sidewalks and pedestrian paths are limited in areas surrounding the site. However, internal sidewalk connections will be important to connect to the shared use path along North Boyer Avenue and the recreational trail at the east end of Mountain View Drive.

Crashes

Crashes for the most recent five years of data (2014 to 2018) within 250 feet of the project intersections were obtained from LHTAC and reviewed. Crash locations displayed by year in **Figure 8**. There were a total of 92 crashes of which 68 (74%) were intersection related. None of the crashes were fatal, three were pedestrian or bicycle related, and one was related to drugs or alcohol. The intersection with the most crashes is the US-2 / US-95 / Schweitzer Cutoff Road / Kootenai Cutoff Road intersection. Only one crash occurred adjacent to the proposed project site, occurring near the North Boyer Avenue / Mountain View Drive intersection involving a pedestrian attempting to cross North Boyer Avenue. Crashes have generally increased since 2014 and are primarily property damage only with no fatalities. **Table 1** and **Table 2** provide details.

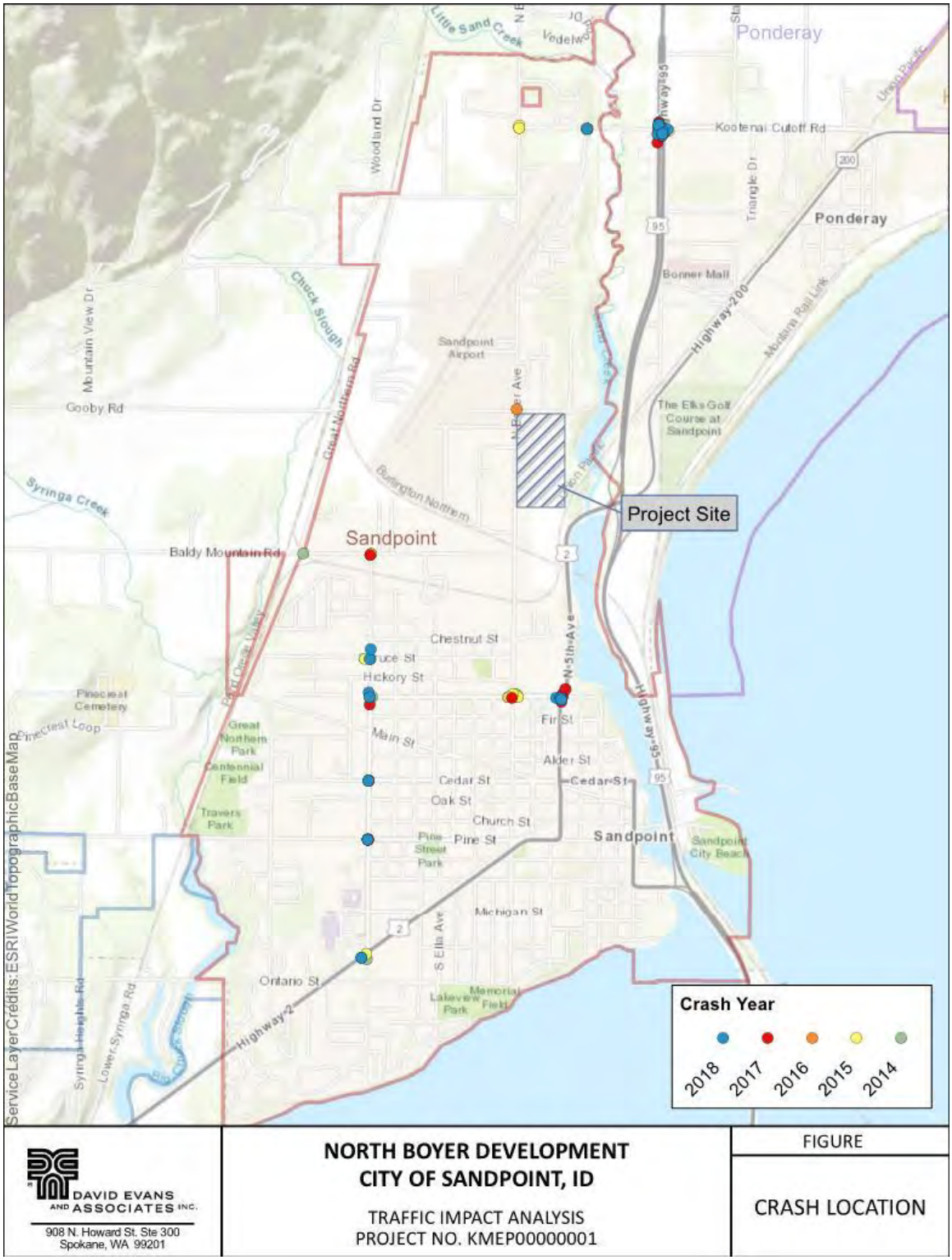


Figure 8. Crashes within 250 Feet of Project Intersections

Table 1. Crash Summary by Year

Year	Crashes
2014	14
2015	27
2016	17
2017	12
2018	22
Total	**92**

Table 2. Crash Severity

Injury Type	Crashes
A Injury Accident	2
A Injury Accident	6
A Injury Accident	17
Fatal Accident	0
Property Damage Report	67
Total	**92**

Operational Analysis

An intersection operational analysis was performed using the Synchro (version 10) operational analysis software for signalized and stop-controlled intersections, while Sidra (version 8) was used for roundabout controlled intersections. Analyses were based on approach geometry, intersection control, and signal timing provided by the City of Sandpoint.

Three measures of effectiveness were considered in this analysis: Vehicular Delay, Level of Service (LOS), and Volume-to-Capacity (V/C) ratio. Based on the volumes provided from the turning movement counts and volumes projected to future years, an intersection-level analysis was conducted at 11 intersections confirmed by City staff. They are listed as follows:

1. Schweitzer Cutoff Road at North Boyer Road
2. North Boyer Avenue at Mountain View Drive
3. North Boyer Avenue at Baldy Mountain Road
4. North Boyer Avenue at Larch Street
5. US-2/US-95 at Schweitzer Cutoff Road/Kootenai Cutoff Road
6. US-2/Fifth Avenue at Larch Street
7. Division Avenue at Baldy Mountain Road
8. Division Avenue at Larch Street
9. US-2 at North Boyer Avenue
10. Schweitzer Cutoff Road at North Boyer Avenue
14. North Boyer Avenue at Ebbett Way

Each of the intersections listed above was evaluated for operations during the weekday PM peak hour as this is typically the 'worst case' weekday traffic condition. Additionally, the AM peak hour was evaluated for intersections #2, #3, #4 #7, #8, #10, and #14 to assess impacts of morning school related traffic. The technical analysis focused on intersections only and did not include roadway segment analysis. This approach is common as intersections are typically the weak link of a roadway network.

Weekend and Seasonal Conditions

As noted earlier in this report, winter seasonal counts for the PM peak hour were conducted for six of the study area intersections (**Figure 6**) and weekend day AM and PM peak hour counts were collected for three of those intersections (**Figure 7**). Both sets of counts were conducted to assess conditions related to winter recreational traffic, primarily associated with the Schweitzer Mountain Resort.

Upon review of these counts, it was determined volumes at the counted intersections for the weekend and winter seasonal conditions were substantially lower than the typical weekday AM and PM peak hour conditions (see **Figure 4** through **Figure 7**). As such, an operational analysis was not be performed for these scenarios because their conditions would be no worse than those that will be analyzed in the weekday AM and PM peak hours. Even with slightly higher trip generation by the proposed project for the weekend day peak hour compared to the weekday AM and PM peak hours (see TRIP GENERATION, DISTRIBUTION, AND ASSIGNMENT Section), traffic volumes are significantly lower than typical weekday peak hours.

Level of Service Thresholds

Level of service (LOS) is a qualifiable premise developed by the transportation profession to quantify driver perception for such elements as travel time, number of stops, total amount of stopped delay, and impediments caused by other vehicles afforded to drivers who utilize the roadway network. It has been defined by the Transportation Research Board in the Highway Capacity Manual, which quantifies level of service into a range from “A” indicating little, if any, vehicle delay, to “F” indicating significant vehicle delay and congestion that may lead to system breakdown due to traffic volumes exceeding capacity. For signalized and stop-controlled intersections, LOS is calculated using methodology from the HCM 6th Edition. For roundabout intersections, LOS is calculated using the HCM2000 methodology. Each LOS corresponds to a range of delay and worsens as delay increases. **Figure 9** describes each LOS and range of delay for signalized and unsignalized intersections.

Current agency guidelines require intersections to operate at LOS D or better during the peak periods. Transportation improvements may be required to mitigate conditions created by development that cause level of service to drop below these established thresholds.

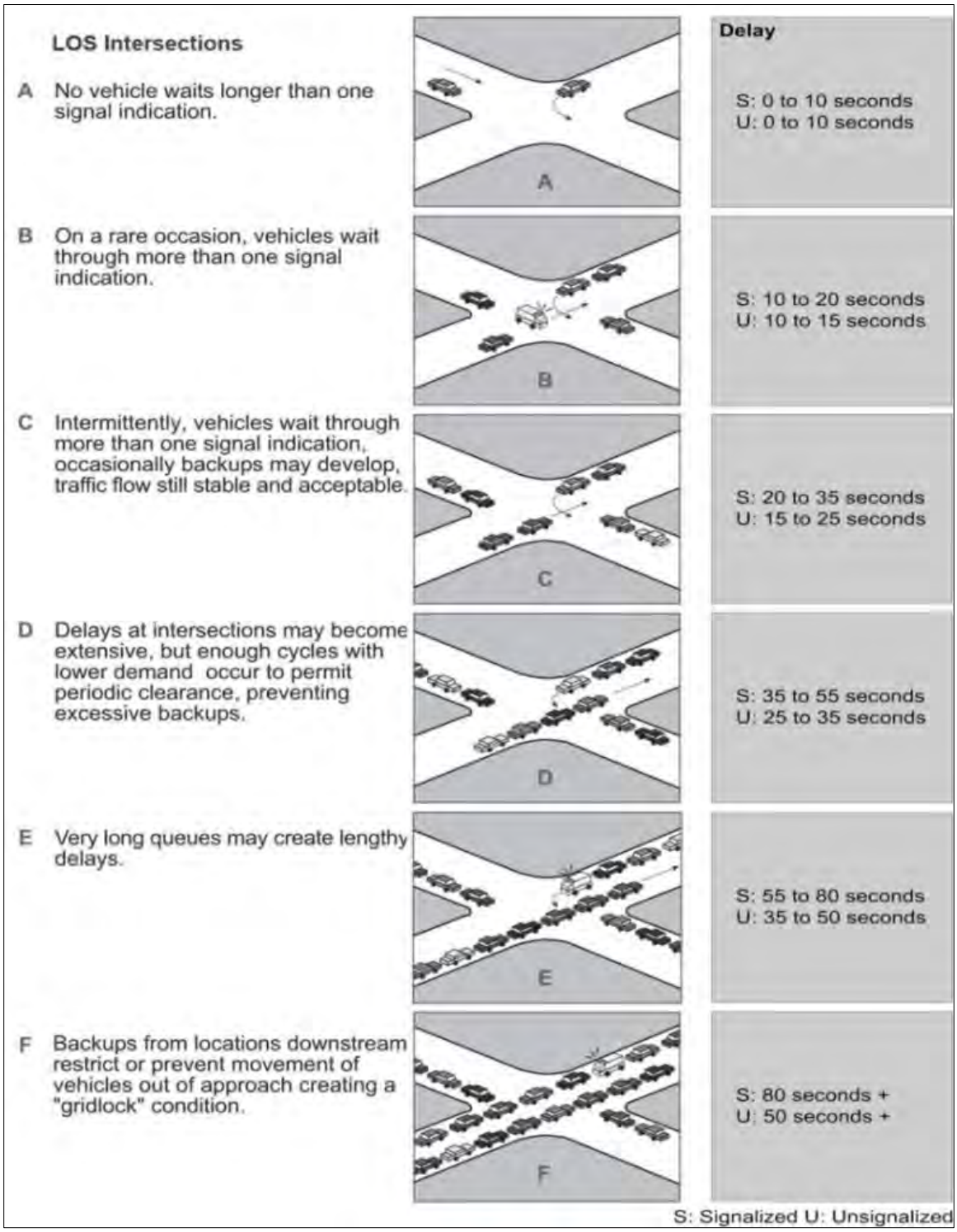


Figure 9. Level of Service Criteria

Existing Conditions Summary

The existing operations for weekday AM and PM peak hours were evaluated through the use of existing traffic counts as documented earlier in this report and shown in **Figure 4** and **Figure 5** respectively. The intersection operations are shown in **Table 3**. Synchro and Sidra analysis worksheets are provided in **Appendix C**.

Table 3. Intersection Operations – Weekday AM and PM Peak Hour Existing Conditions

INTERSECTION		Control Type	Int. LOS	Int. Delay (s)	Critical Movement		
					MVMT	Delay (s)	V/C
AM PEAK HOUR							
1	Schweitzer Cutoff Rd / N Boyer Rd	AWSC					
2	N Boyer Ave / Mountain View Dr	TWSC	B	0.5	WBLTR	12.3	0.04
3	N Boyer Ave / Baldy Mountain Rd	TWSC	C	4.7	EBL	16.7	0.28
4	N Boyer Ave / Larch St	RAB	A	1.6	EBLTR	2.6	0.16
5	US-2 / Schweitzer Cutoff Rd	Signal					
6	US-2 (Fifth Ave) / Larch St	Signal					
7	Division Ave / Baldy Mountain Rd	TWSC	C	5.7	NBL	15.5	0.21
8	Division Ave / Larch St	TWSC	C	2.0	WBLR	15.5	0.21
9	US-2 / N Boyer Ave	Signal					
10	N Boyer Ave / Schweitzer Cutoff Rd	RAB	A	1.1	WBLT	1.1	0.39
14	N Boyer Ave / Ebbett Wy	TWSC	B	0.2	EBL	12.3	0.01
PM PEAK HOUR							
1	Schweitzer Cutoff Rd / N Boyer Rd	AWSC	A	9.1	WBL	9.9	0.16
2	N Boyer Ave / Mountain View Dr	TWSC	B	0.5	EBLTR	14.5	0.01
3	N Boyer Ave / Baldy Mountain Rd	TWSC	C	6.5	EBL	23.6	0.46
4	N Boyer Ave / Larch St	RAB	A	1.7	EBLTR	3.0	0.12
5	US-2 / Schweitzer Cutoff Rd	Signal	A	7.3	EBL	9.6	0.26
6	US-2 (Fifth Ave) / Larch St	Signal	C	26.9	WBR	34.5	0.72
7	Division Ave / Baldy Mountain Rd	TWSC	C	6.0	NBL	17.0	0.23
8	Division Ave / Larch St	TWSC	C	2.7	WBLR	17.4	0.30
9	US-2 / N Boyer Ave	Signal	B	19.1	NBL	22.5	0.28
10	N Boyer Ave / Schweitzer Cutoff Rd	RAB	A	1.3	NBLR	1.5	0.34
14	N Boyer Ave / Ebbett Wy	TWSC	B	0.3	EBL	12.9	0.03

NOTE: Volumes, PHF and Heavy Vehicle percentages taken from Existing Traffic counts

As shown in **Table 3**, all study area intersections are currently operating at LOS D or better. Therefore, no improvements are currently required of the study area intersections.

FUTURE BACKGROUND CONDITIONS

Per City guidelines, operations must be assessed for the buildout year and for five years after anticipated project completion. It is anticipated the proposed project will be completed in Year 2025; therefore, the five-year future analysis year for this study is Year 2030. To provide a baseline to compare against, annual growth over this time span that does not include this project was used to develop future background conditions.

For this analysis, the existing volumes were combined with a 3.4% annual growth rate (as provided by City of Sandpoint staff) applied for to 2025 and 2030 to estimate background growth. Additionally, volumes estimated by the Milltown Medical Office development (PM

peak hour only) and Samuelson Place developments currently in process were incorporated into the background growth based on their respective Trip Generation and Distribution Letters (TGDL).

Weekday AM and PM peak hour Background Year 2025 Traffic Volumes developed for this analysis scenario are illustrated in **Figure 10** and **Figure 11**, respectively. Weekday AM and PM peak hour Background Year 2030 Traffic Volumes developed for this analysis scenario are illustrated in **Figure 12** and **Figure 13**, respectively.

Given these projected future turning movement volumes, the intersections were evaluated for level of service. The results of the intersection operational analyses for Year 2025 are summarized in **Table 4**, while results for Year 2030 are summarized in **Table 5**. Synchro and Sidra analysis worksheets are provided in **Appendix C**.

Table 4. Intersection Operations - Future 2025 Background Conditions

INTERSECTION		Control Type	Int. LOS	Int. Delay (s)	Critical Movement		
					MVMT	Delay (s)	V/C
AM PEAK HOUR							
1	Schweitzer Cutoff Rd / N Boyer Rd	AWSC					
2	N Boyer Ave / Mountain View Dr	TWSC	B	0.5	WBLTR	12.4	0.04
3	N Boyer Ave / Baldy Mountain Rd	TWSC	C	4.8	EBL	17.0	0.29
4	N Boyer Ave / Larch St	RAB	A	2.1	EBLTR	3.7	0.15
5	US-2 / Schweitzer Cutoff Rd	Signal					
6	US-2 (Fifth Ave) / Larch St	Signal					
7	Division Ave / Baldy Mountain Rd	TWSC	C	5.6	NBL	15.1	0.20
8	Division Ave / Larch St	TWSC	C	2.1	WBLR	15.7	0.21
9	US-2 / N Boyer Ave	Signal					
10	N Boyer Ave / Schweitzer Cutoff Rd	RAB	A	1.0	WBLT	1.1	0.38
14	N Boyer Ave / Ebbett Wy	TWSC	B	0.2	EBL	13.1	0.01
PM PEAK HOUR							
1	Schweitzer Cutoff Rd / N Boyer Rd	AWSC	A	9.0	WBL	9.9	0.17
2	N Boyer Ave / Mountain View Dr	TWSC	C	0.5	EBLTR	16.2	0.01
3	N Boyer Ave / Baldy Mountain Rd	TWSC	**E**	9.6	EBL	**41.2**	0.68
4	N Boyer Ave / Larch St	RAB	A	2.2	EBLTR	3.9	0.15
5	US-2 / Schweitzer Cutoff Rd	Signal	A	8.3	EBL	11.3	0.32
6	US-2 (Fifth Ave) / Larch St	Signal	D	35.0	WBR	52.3	0.79
7	Division Ave / Baldy Mountain Rd	TWSC	C	6.0	NBL	17.3	0.24
8	Division Ave / Larch St	TWSC	C	3.2	WBLR	20.8	0.38
9	US-2 / N Boyer Ave	Signal	C	21.6	NBL	25.5	0.36
10	N Boyer Ave / Schweitzer Cutoff Rd	RAB	A	1.5	NBLR	1.9	0.42
14	N Boyer Ave / Ebbett Wy	TWSC	C	0.3	EBL	15.5	0.04

As shown in **Table 4**, the eastbound left turn movement at the unsignalized intersection of North Boyer Avenue / Baldy Mountain Road is anticipated to operate at LOS E under 2025 Background PM Peak Hour Conditions assuming the current configuration that is in place. All other study area intersections are shown to operate at LOS D or better in both AM and PM peak hours.

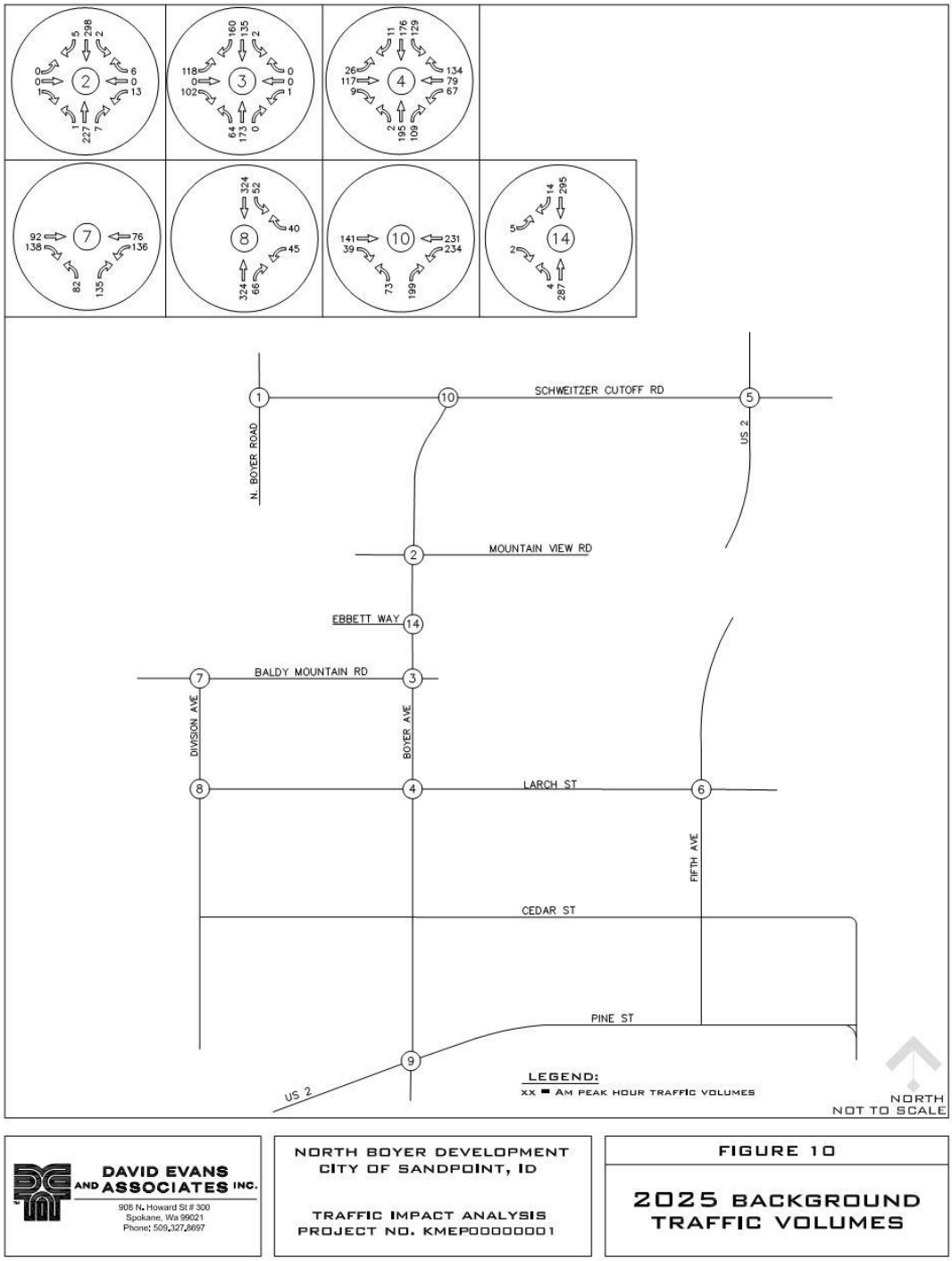


Figure 10. Year 2025 Background Traffic Volumes – Weekday AM Peak Hour

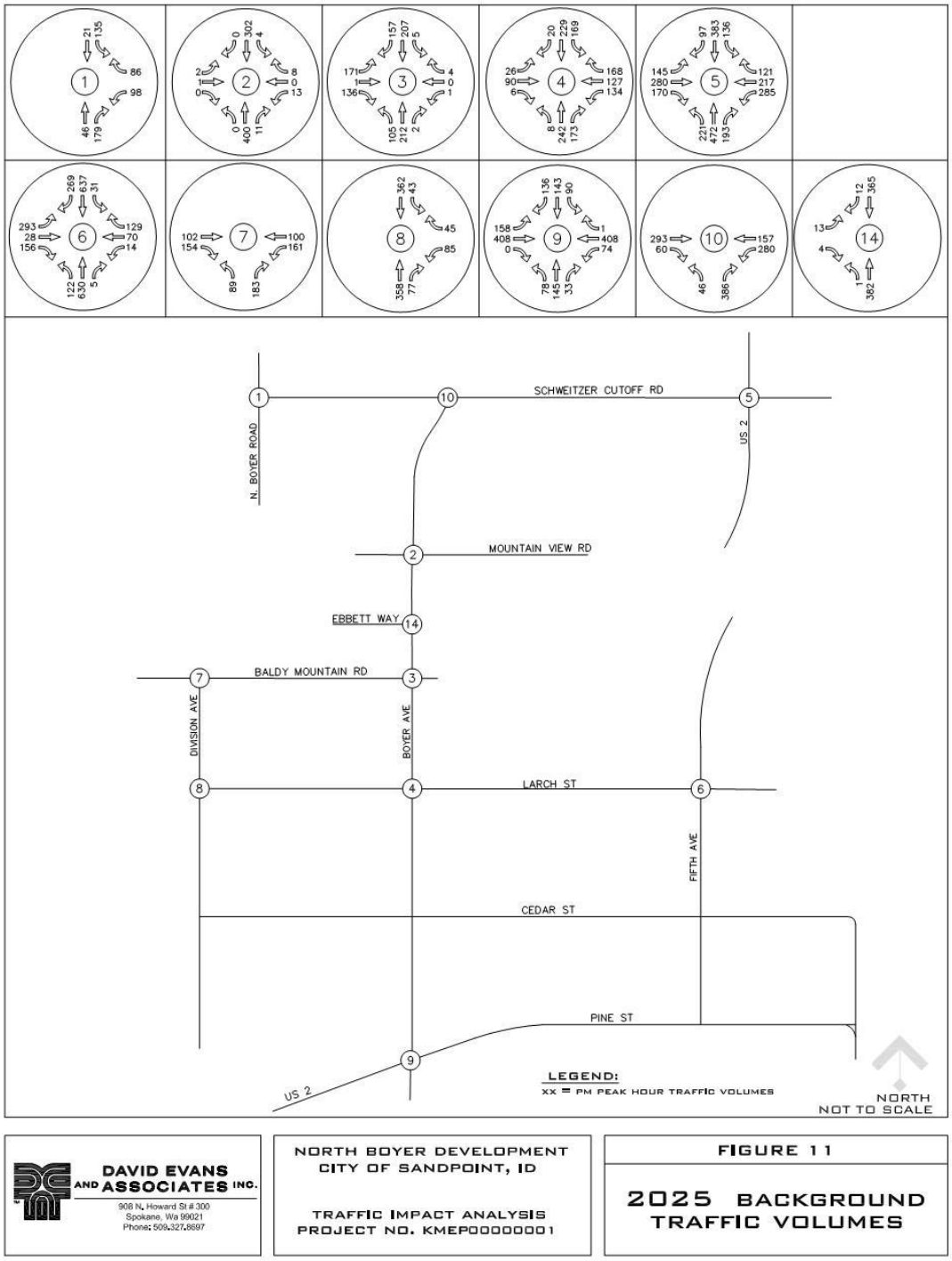


Figure 11. Year 2025 Background Traffic Volumes – Weekday PM Peak Hour

Table 5. Intersection Operations - Future 2030 Background Conditions

INTERSECTION		Control Type	Int. LOS	Int. Delay (s)	Critical Movement		
					MVMT	Delay (s)	V/C
AM PEAK HOUR							
1	Schweitzer Cutoff Rd / N Boyer Rd	AWSC					
2	N Boyer Ave / Mountain View Dr	TWSC	B	0.5	WBLTR	13.6	0.05
3	N Boyer Ave / Baldy Mountain Rd	TWSC	C	5.6	EBL	21.8	0.41
4	N Boyer Ave / Larch St	RAB	A	2.1	EBLTR	3.4	0.21
5	US-2 / Schweitzer Cutoff Rd	Signal					
6	US-2 (Fifth Ave) / Larch St	Signal					
7	Division Ave / Baldy Mountain Rd	TWSC	C	6.1	NBL	18.0	0.27
8	Division Ave / Larch St	TWSC	C	2.5	WBLR	19.3	0.30
9	US-2 / N Boyer Ave	Signal					
10	N Boyer Ave / Schweitzer Cutoff Rd	RAB	A	1.2	EBTR	1.3	0.20
14	N Boyer Ave / Ebbett Wy	TWSC	B	0.2	EBL	14.1	0.02
PM PEAK HOUR							
1	Schweitzer Cutoff Rd / N Boyer Rd	AWSC	A	9.6	WBL	10.4	0.20
2	N Boyer Ave / Mountain View Dr	TWSC	C	0.6	EBLTR	19.0	0.02
3	N Boyer Ave / Baldy Mountain Rd	TWSC	**F**	16.9	EBL	**82.7**	0.91
4	N Boyer Ave / Larch St	RAB	A	2.8	EBLTR	4.9	0.20
5	US-2 / Schweitzer Cutoff Rd	Signal	A	9.6	NBL	15.1	0.60
6	US-2 (Fifth Ave) / Larch St	Signal	D	51.1	WBR	**105.8**	**0.99**
7	Division Ave / Baldy Mountain Rd	TWSC	C	6.8	NBL	22.4	0.35
8	Division Ave / Larch St	TWSC	D	4.6	WBLR	31.3	0.55
9	US-2 / N Boyer Ave	Signal	C	27.7	SBTR	37.0	0.85
10	N Boyer Ave / Schweitzer Cutoff Rd	RAB	A	1.9	NBLR	2.5	0.52
14	N Boyer Ave / Ebbett Wy	TWSC	C	0.3	EBL	18.0	0.05

As shown in **Table 5**, the eastbound minor approach at the unsignalized intersection of North Boyer Avenue / Baldy Mountain Road is anticipated to operate at LOS F under 2030 Background PM Peak Hour Conditions assuming the current configuration that is in place. All other study area intersections are shown to operate at LOS D or better in both AM and PM peak hours.

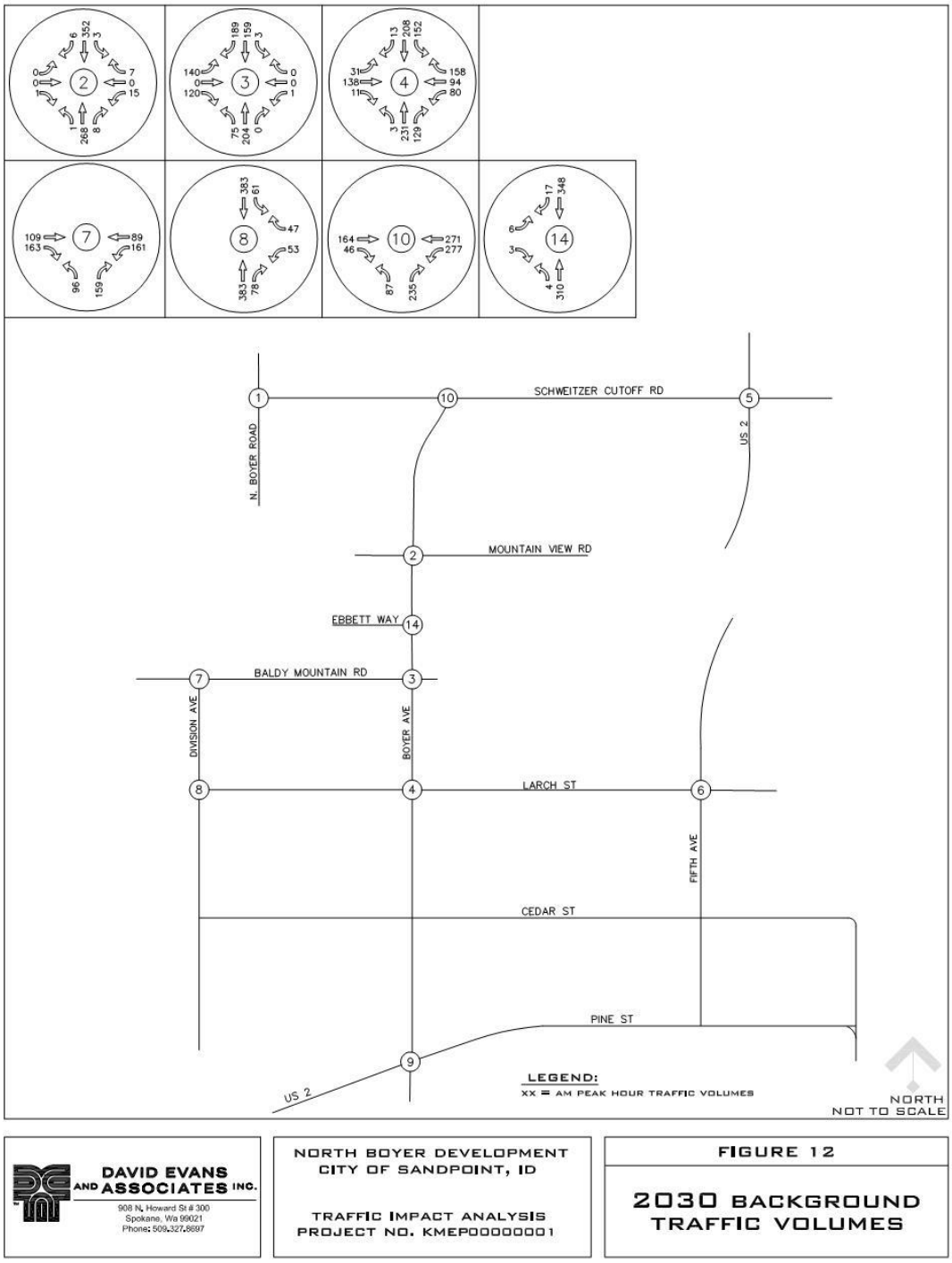


Figure 12. Year 2030 Background Traffic Volumes – Weekday AM Peak Hour

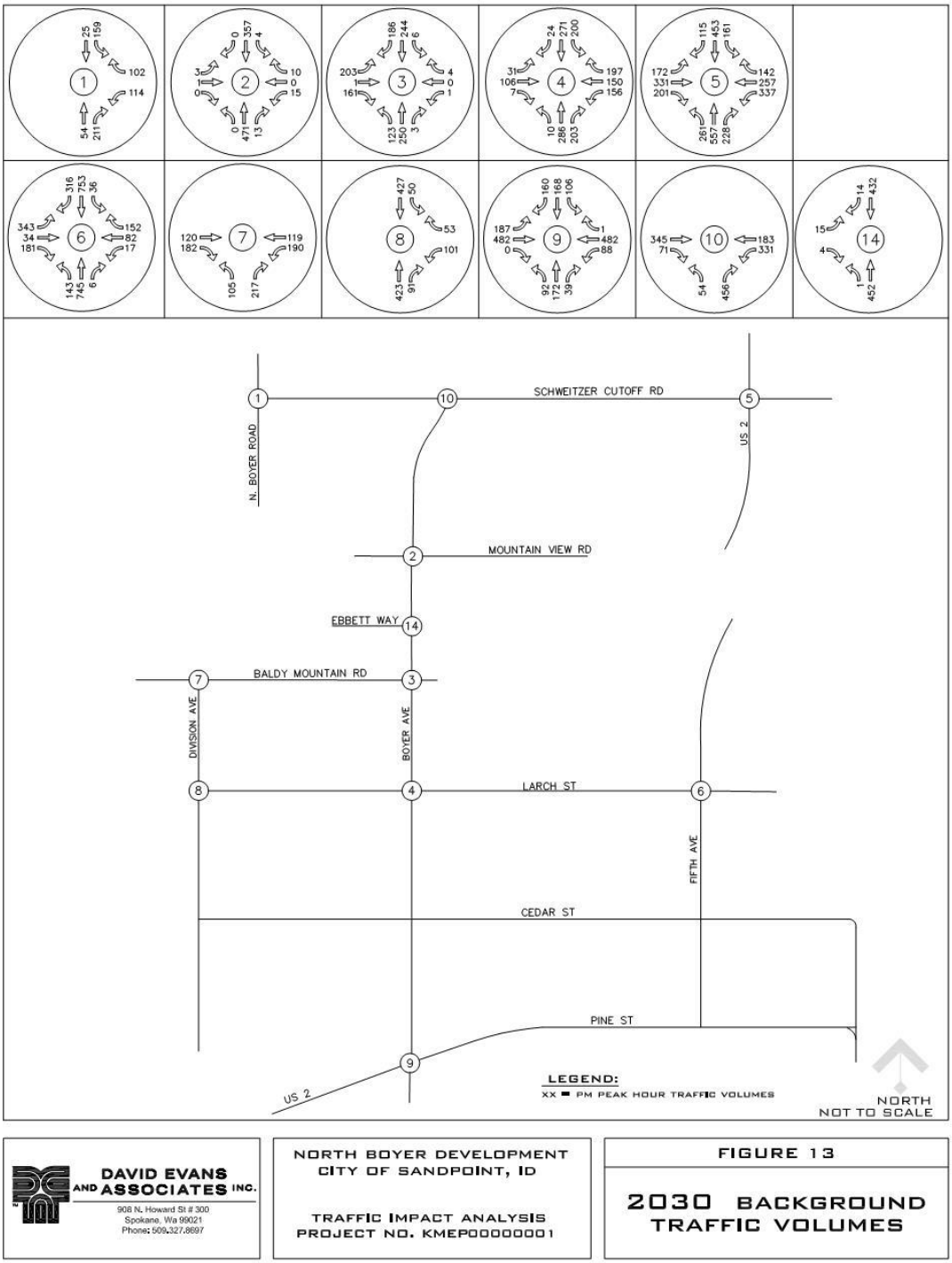


Figure 13. Year 2030 Background Traffic Volumes – Weekday PM Peak Hour

TRIP GENERATION, DISTRIBUTION, AND ASSIGNMENT

This section summarizes the trip generation and distribution assumptions resulting from the updated Trip Generation and Distribution Letter (TGDL) sent to the City of Sandpoint staff dated April 21, 2020.

Trip Generation

Trip generation for the proposed project was estimated based on Land Use categories within the 10th Edition of the ITE Trip Generation Manual. The following trip generation calculations for the buildout of the proposed project were conducted.

- Weekday AM peak hour – **Table 6**
- Weekday PM peak hour – **Table 7**
- Weekday daily – **Table 8**
- Weekend day peak hour – **Table 9**
- Weekend day (Saturday) daily – **Table 10**

Saturday was chosen as the weekend day to be conservative in estimating trips, as it generates more trips than Sunday calculations. The ITE Trip Generation data sheets and calculations are provided in **Appendix B**.

Additionally, the ITE Trip Generation Handbook 3rd Edition allows for trip generation reductions for qualifying land uses in specific time periods. Using this guidance, these reductions were calculated for the Shopping Center land use for the weekday PM peak hour and weekend day (Saturday) peak hour and applied to the trip generation totals in **Table 7** and **Table 9**, respectively. Additional information regarding pass-by trip reductions follows the trip generation tables.

Table 6. Trip Generation – Weekday AM Peak Hour

Land Use	Units	Variable	ITE LU Code	Rate/ Equation	Inbound		Outbound		Total VPH
					%	VPH	%	VPH	
SFDU	133	Dwelling Units	210	T=0.71(X) + 4.80	25%	25	75%	74	99
MFDU	150	Dwelling Units	220	LN(T)=0.95*LN(X) - 0.51	23%	16	77%	54	70
Mini-Warehouse	45	Thousand Square Feet	151	T=0.10	60%	3	40%	2	5
Shopping Center	10	Thousand Square Feet	820	T=0.50(X) + 151.78	62%	97	38%	60	157
				Total Trips Generated	**-**	**141**	**-**	**190**	**331**

X = Land Use Units
VPH = Vehicles per Hour

Table 7. Trip Generation – Weekday PM Peak Hour

Land Use	Units	Variable	ITE LU Code	Rate/ Equation	Inbound		Outbound		Total VPH
					%	VPH	%	VPH	
SFDU	133	Dwelling Units	210	LN(T)=0.96*LN(X) + 0.20	63%	84	37%	50	134
MFDU	150	Dwelling Units	220	LN(T)=0.89*LN(X) - 0.02	63%	54	37%	31	85
Mini-Warehouse	45	Thousand Square Feet	151	T=0.17	47%	4	53%	4	8
Shopping Center	10	Thousand Square Feet	820	LN(T)=0.74*LN(X) + 2.89	48%	48	52%	51	99
				Total Trips Generated	**-**	**190**	**-**	**136**	**326**
				Shopping Center Pass-By Trip Reduction	34%	16	34%	18	34
				Net New Trips	-	*174*	-	*118*	*292*

X = Land Use Units
VPH = Vehicles per Hour
Note: ITE 820 Pass-By 34% for Weekday PM Peak Hour

Table 8. Trip Generation – Weekday Daily Total

Land Use	Units	Variable	ITE LU Code	Rate/ Equation	Inbound		Outbound		Total VPD
					%	VPD	%	VPD	
SFDU	133	Dwelling Units	210	LN(T)=0.92*LN(X) + 2.71	50%	676	50%	676	1,352
MFDU	150	Dwelling Units	220	T=7.56(X) – 40.86	50%	546	50%	547	1,093
Mini-Warehouse	45	Thousand Square Feet	151	T=1.51	50%	34	50%	34	68
Shopping Center	10	Thousand Square Feet	820	LN(T)=0.68*LN(X) + 5.57	50%	628	50%	628	1,256
				Total Trips Generated	**-**	**1,884**	**-**	**1,885**	**3,769**

X = Land Use Units
VPD = Vehicles per Day

Table 9. Trip Generation – Weekend Day (Saturday) Peak Hour

Land Use	Units	Variable	ITE LU Code	Rate/ Equation	Inbound		Outbound		Total VPH
					%	VPH	%	VPH	
SFDU	133	Dwelling Units	210	T=0.84(X) + 17.99	54%	70	46%	60	130
MFDU	150	Dwelling Units	220	T=1.08(X) – 33.24	54%†	70	46%†	59	129
Mini-Warehouse	45	Thousand Square Feet	151	T=0.31	59%	8	41%	6	14
Shopping Center	10	Thousand Square Feet	820	LN(T)=0.79*LN(X) + 2.79	52%	52	48%	48	100
				Total Trips Generated	**-**	**200**	**-**	**173**	**373**
				Shopping Center Pass-By Trip Reduction	26%	14	26%	12	26
				Net New Trips	-	*186*	-	*161*	*347*

† ITE does not provide percent split for this time period; percentages are from ITE 210 (SFDU).
X = Land Use Units
VPH = Vehicles per Hour
Note: ITE 820 Pass-By 26% for Saturday Peak Hour

Table 10. Trip Generation – Weekend Day (Saturday) Daily Total

Land Use	Units	Variable	ITE LU Code	Rate/ Equation	Inbound		Outbound		Total VPD
					%	VPD	%	VPD	
SFDU	133	Dwelling Units	210	LN(T)=0.94*LN(X) + 2.56	50%	641	50%	642	1,283
MFDU	150	Dwelling Units	220	T=14.01(X) – 521.69	50%	790	50%	790	1,580
Mini-Warehouse	45	Thousand Square Feet	151	T=1.95	50%	44	50%	44	88
Shopping Center	10	Thousand Square Feet	820	LN(T)=0.62*LN(X) + 6.24	50%	1,069	50%	1,069	2,138
				Total Trips Generated	**-**	**2,544**	**-**	**2,545**	**5,089**

X = Land Use Units
VPD = Vehicles per Day

As shown in the above trip generation tables, the proposed project is anticipated to generate the following approximate net new trips and entering/exiting splits:

- Weekday AM Peak Hour: 331 trips (141 entering, 190 exiting)
- Weekday PM Peak Hour: 292 trips (174 entering, 118 existing)
- Weekday Daily Total: 3,769 trips (1,884 entering, 1,885 exiting)
- Weekend Day (Saturday) Peak Hour: 347 trips (186 entering, 161 exiting)

As mentioned previously in this report, despite the weekend day peak hour being the highest peak hour generator, this time period is not being analyzed in the remainder of the report because the ultimate turning movement volumes are significantly lower compared to weekday peak hours.

Trip Reductions and Net New Trips

Mixed-use developments experience a number of different trip types: Shared (or Internal) Trips, Pass-by Trips, and New Trips. These trip types are further described below.

Shared (Internal) Trips - These are trips which occur on or within the site where a vehicle will stop at more than one place on the site or a patron will visit multiple uses on a site. For purpose of this analysis, there are no shared trips assumed with this development.

Pass-By Trips - These trips represent vehicles which currently use adjacent roadways providing primary access to the new land use / project. These trips, however, have an ultimate destination other than the project in question. They should be viewed as drop-in customers who stop in on their way to/from work or on their way to/from another site. Pass-by trips add turning movements to the site access points but do not represent additional trips to the greater transportation system. For this particular project, pass-by traffic would come primarily from the existing traffic stream on North Boyer Avenue.

New (Destination) Trips - These trips occur only to access a specific land use. For this project, the specific land uses are Single-Family Residential, Multi-Family Residential, Mini-Warehouse Self-Storage, and Commercial Shopping Center. These types of trips will travel to/from the new site and a single other destination such as a home. This is the only trip type that will result in a net increase in the total amount of traffic within the study area.

Weekday AM and PM peak hour trip totals summarized above will serve as the Net New Trips used for the remaining analyses.

Trip Distribution

The Sandpoint Travel Demand Model and traffic counts at study area intersections were used to identify what percentage of trips to/from the development will travel on surrounding roadways. Distribution has been estimated for two scenarios: weekday AM peak hour and weekday PM peak hour. Distribution for the weekend day peak hour is assumed to be the same as the weekday PM peak distribution based on review of existing counts at study area intersections.

Four driveways were assumed for the development: two providing access to the southern half of the development onto North Boyer Avenue and two providing access to the northern half of the development onto Mountain View Road. Land uses have been distributed between the two halves to best compliment the local environment and most efficiently distribute trips to/from the development. Access to/from North Boyer Avenue and the site was provided via two driveways rather than one to avoid minimize driveway queueing at the North Boyer Avenue / Ebbett Way intersection and to separate trips generated by the multi-family residential units and commercial land uses. The driveways onto North Boyer Avenue are expected to serve all commercial and multi-family residential trips as well as a portion of the single-family residential trips. Driveways onto Mountain View Road are expected to serve only single-family residential trips.

The majority of trips (75 percent) in the weekday AM peak hour are estimated to travel to/from south of the development using North Boyer Avenue, while the remaining trips (25 percent) are estimated to travel to/from north of the development using North Boyer Avenue. Distribution to/from the west account for traffic between the site and Sandpoint schools. Traffic to/from the proposed project is expected to be distributed to the broader roadway network in the following manner, with greater detail shown in **Figure 14**.

- 15% to/from areas north and east of the site using Schweitzer Cutoff Road
- 50% to/from areas west of the site using Baldy Mountain Road (20%) Larch Street (20%), or Cedar Street (10%)
- 15% to/from areas east of the site using Larch Street
- 10% to/from areas north and west of the site using Schweitzer Cutoff Road
- 10% to/from areas south and west of the site using US-2

The majority of trips (60 percent) in the weekday PM peak hour and weekend day peak hour are estimated to travel to/from south of the development using North Boyer Avenue, while the remaining trips (40 percent) are estimated to travel to/from north of the development using North Boyer Avenue. Traffic to/from the proposed project is expected to be distributed to the broader roadway network in the following manner, with greater detail shown in **Figure 15**.

- 30% to/from areas north and east of the site using Schweitzer Cutoff Road
- 20% to/from areas west of the site using Baldy Mountain Road or Larch Street (10% each)
- 20% to/from areas east of the site using Larch Street
- 10% to/from areas north and west of the site using Schweitzer Cutoff Road
- 10% to/from areas south and west of the site using US-2
- 10% to/from land uses along North Boyer Avenue between Larch Street and Cedar Street

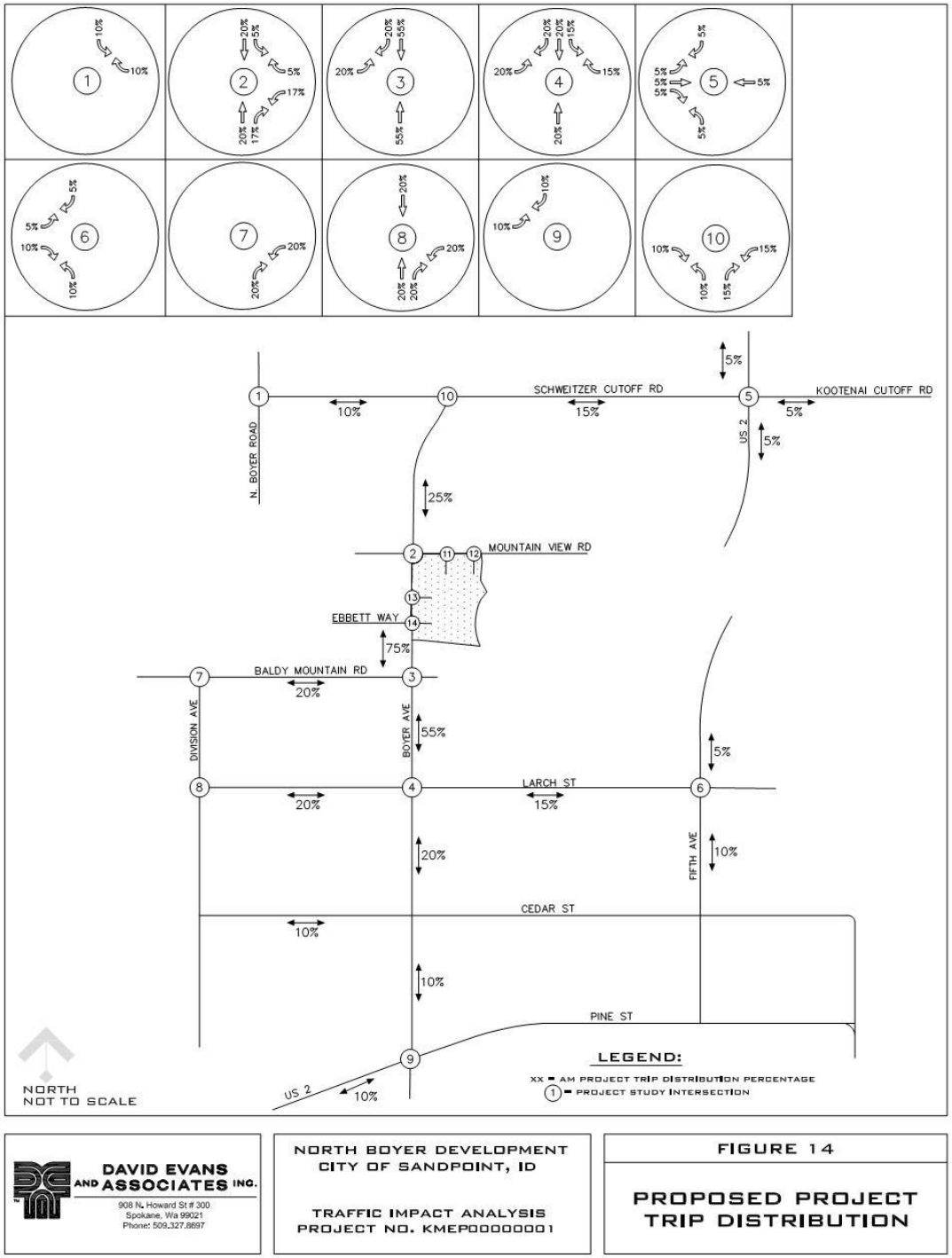


Figure 14. Proposed Project Trip Distribution – Weekday AM Peak Hour

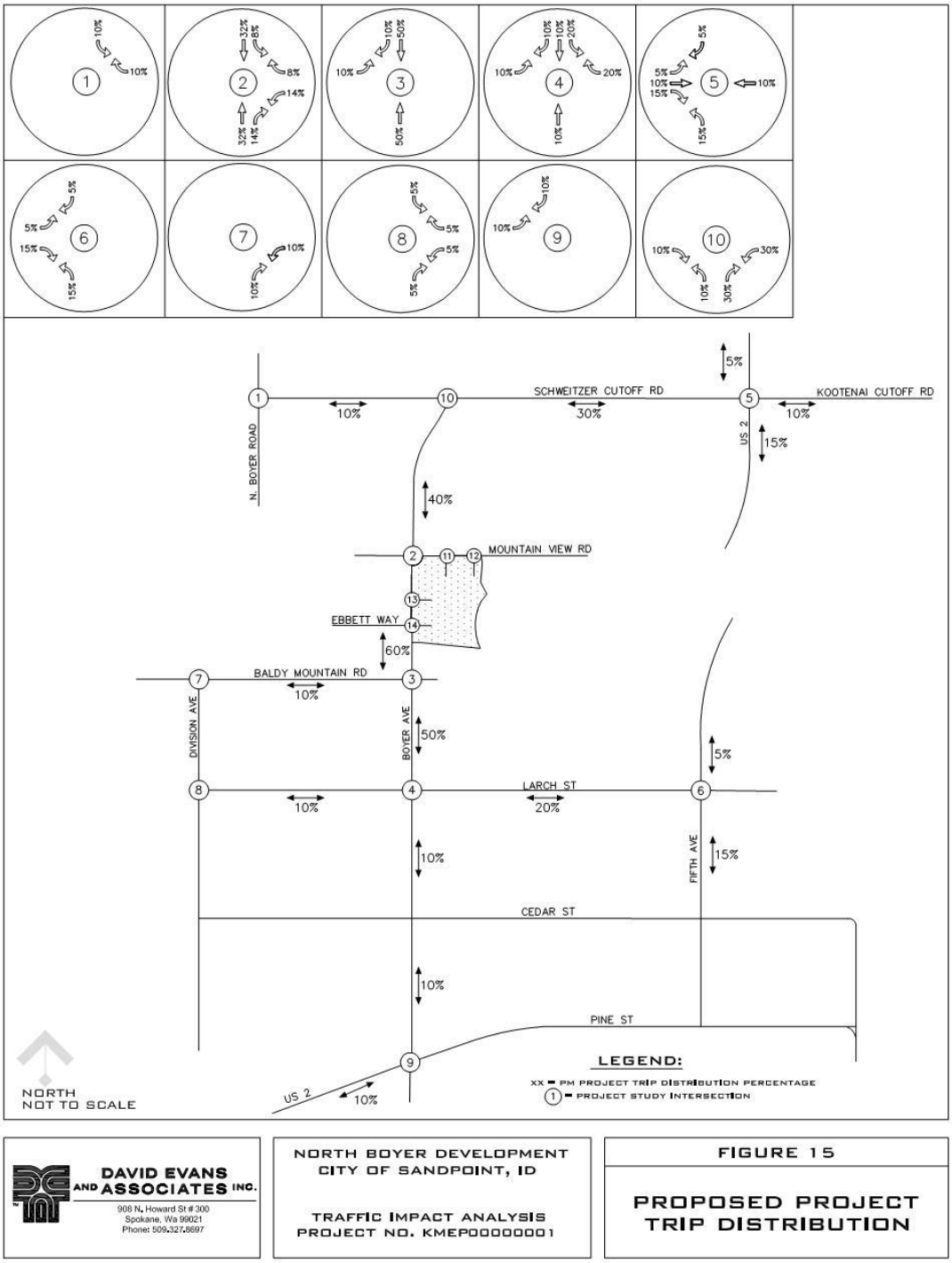


Figure 15. Proposed Project Trip Distribution – Weekday PM and Weekend Day Peak Hours

Inbound and outbound trips at each of the driveways were determined by applying the distributions described above to the trips generated by each land use type of each section of the development for each time scenario, taking into account the location of each land use type in relation to the driveways and desired direction of travel. **Table 11** and **Table 12** document the percent distribution of trips by land use type at each driveway.

Table 11. Development Driveways Trip Distribution by Land Use – Weekday AM Peak Hour

Intersection		Land Use				Overall
		Single Family	Multi-Family	Self-Storage	Commercial Shopping Center	
11	Mountain View Rd / Aspen Wy / Driveway West	44%	-	-	-	13%
12	Mountain View Rd / Driveway East	24%	-	-	-	7%
Overall Split Between 11 and 12		*#11: 65% / #12: 35%*				
13	N Boyer Ave / Driveway North	3%	9%	0%	0%	10%
14	N Boyer Ave / Ebbett Wy / Driveway South	29%	91%	100%	100%	70%
Overall Split Between 13 and 14		*#13: 13% / #14: 87%*				

Table 12. Development Driveways Trip Distribution by Land Use – Weekday PM Peak Hour

Intersection		Land Use				Overall
		Single Family	Multi-Family	Self-Storage	Commercial Shopping Center	
11	Mountain View Rd / Aspen Wy / Driveway West	44%	-	-	-	18%
12	Mountain View Rd / Driveway East	24%	-	-	-	10%
Overall Split Between 11 and 12		*#11: 65% / #12: 35%*				
13	N Boyer Ave / Driveway North	2%	9%	0%	0%	15%
14	N Boyer Ave / Ebbett Wy / Driveway South	30%	91%	100%	100%	57%
Overall Split Between 13 and 14		*#13: 20% / #14: 80%*				

As shown in the above tables, the driveways along Mountain View Road only serve single family uses, accounting for between 20 to 30 percent of total trips generated by the development depending on the time period. The driveway at Ebbett Way and North Boyer Avenue is expected to facilitate most of the trips generated by the development. This is because all of the commercial and most of the multi-family are situated in a manner that lends to the use of the Ebbett Way / North Boyer Avenue driveway for both inbound and outbound trips regardless of whether the trips are coming to/from the north or south via North Boyer Avenue.

Trip Assignment

The projected trips were assigned to the street network based on the trip distribution assumptions presented. Weekday AM and PM project trip assignments are illustrated in **Figure 16** and **Figure 17**, respectively.

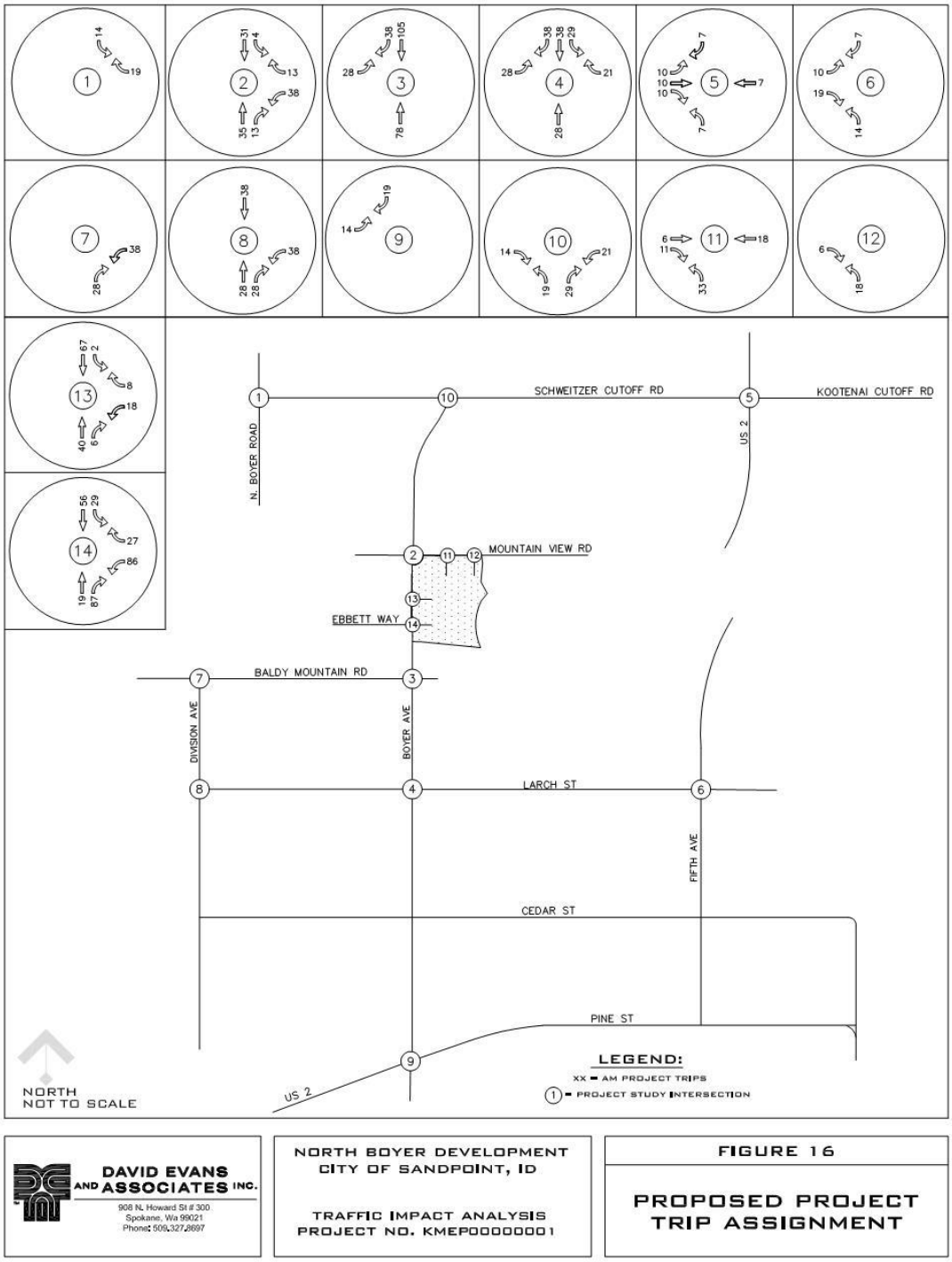


Figure 16. Project Trip Assignment – Weekday AM Peak Hour

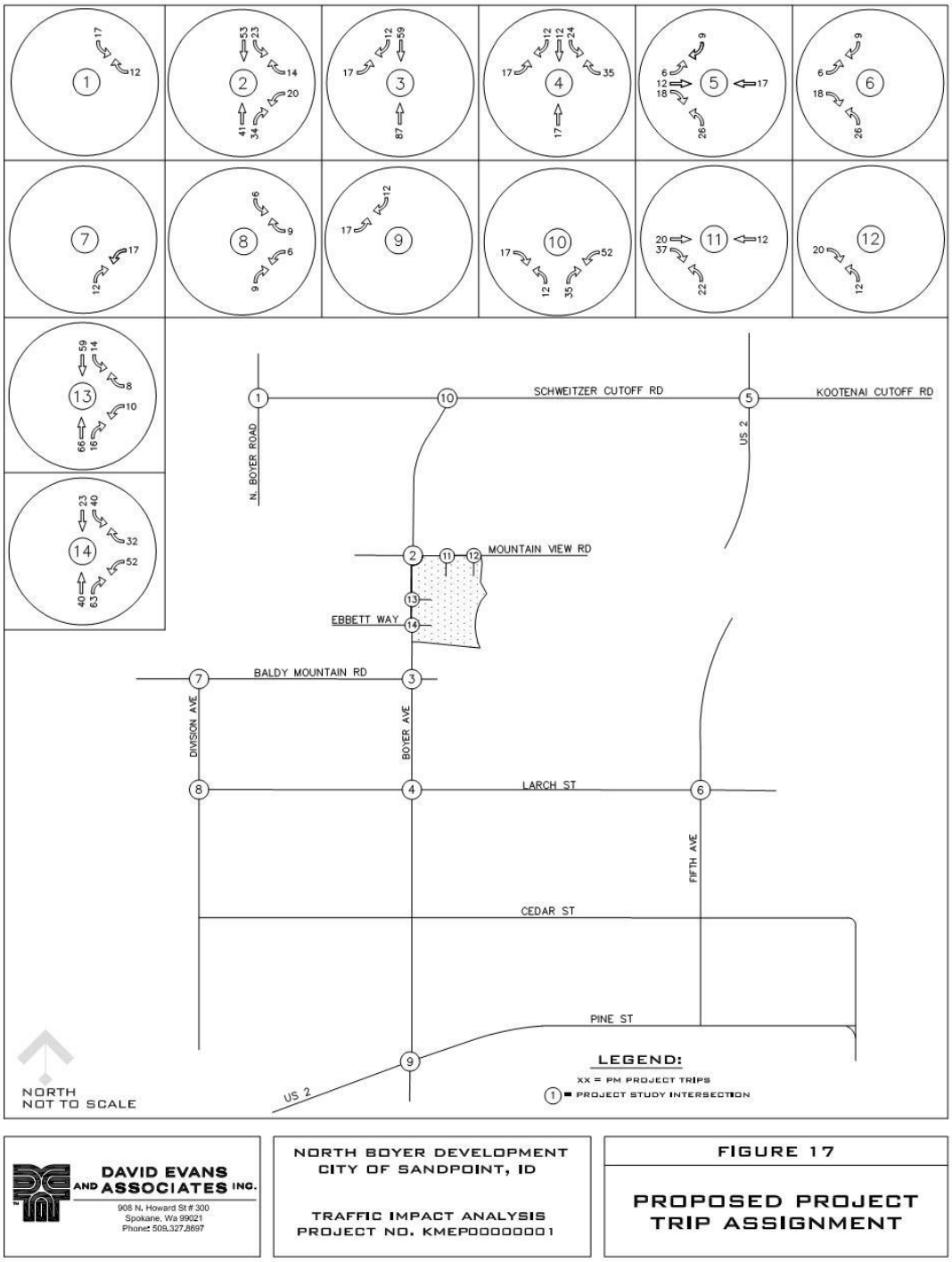


Figure 17. Project Trip Assignment – Weekday PM Peak Hour

FUTURE BACKGROUND PLUS PROJECT CONDITIONS

For this analysis, the project-generated trips were added to projected Year 2025 background traffic to forecast traffic conditions at buildout of the development, as well as to projected Year 2030 background traffic to forecast traffic conditions that would occur five years after project opening, as required by City of Sandpoint guidelines.

AM and PM peak hour total traffic volumes for Year 2025 at the study intersections are shown in **Figure 18** and **Figure 19**, respectively, while volumes for Year 2030 are shown in **Figure 20** and **Figure 21**, respectively. **Table 13** summarizes the results of the intersection operational analysis for Year 2025, while **Table 14** summarizes the results for Year 2030. Synchro and Sidra analysis worksheets are provided in **Appendix C**.

Table 13. Intersection Operations – 2025 Background Plus Project Conditions

INTERSECTION		Control Type	Int. LOS	Int. Delay (s)	Critical Movement		
					MVMT	Delay (s)	V/C
AM PEAK HOUR							
1	Schweitzer Cutoff Rd / N Boyer Rd	AWSC					
2	N Boyer Ave / Mountain View Dr	TWSC	C	1.6	WBLTR	15.0	0.17
3	N Boyer Ave / Baldy Mountain Rd	TWSC	D	5.8	EBL	28.2	0.50
		Signal	B	11.1	WBL	17.6	0.00
4	N Boyer Ave / Larch St	RAB	A	2.0	EBLTR	3.4	0.21
5	US-2 / Schweitzer Cutoff Rd	Signal					
6	US-2 (Fifth Ave) / Larch St	Signal					
7	Division Ave / Baldy Mountain Rd	TWSC	C	6.1	NBL	16.8	0.22
8	Division Ave / Larch St	TWSC	C	3.2	WBLR	21.6	0.38
9	US-2 / N Boyer Ave	Signal					
10	N Boyer Ave / Schweitzer Cutoff Rd	RAB	A	1.2	WBLT	1.2	0.40
11	Mountain View Dr / Aspen Wy / Driveway West	TWSC	A	4.3	NBLTR	8.8	0.04
12	Mountain View Dr / Driveway East	TWSC	A	6.0	NBLR	8.6	0.02
13	N Boyer Ave / Driveway North	TWSC	C	0.5	WBL	15.1	0.05
14	N Boyer Ave / Ebbett Wy / Driveway South	TWSC	C	2.9	WBL	23.1	0.31
PM PEAK HOUR							
1	Schweitzer Cutoff Rd / N Boyer Rd	AWSC	A	9.2	WBL	10.0	0.17
2	N Boyer Ave / Mountain View Dr	TWSC	C	1.4	EBLTR	20.2	0.01
3	N Boyer Ave / Baldy Mountain Rd	TWSC	**F**	18.8	EBL	**102.6**	**0.98**
		Signal	B	13.2	WBTR	18.5	0.03
4	N Boyer Ave / Larch St	RAB	A	2.4	EBLTR	4.3	0.18
5	US-2 / Schweitzer Cutoff Rd	Signal	A	8.6	EBL	12.0	0.35
6	US-2 (Fifth Ave) / Larch St	Signal	D	36.3	WBR	53.9	0.79
7	Division Ave / Baldy Mountain Rd	TWSC	C	6.3	NBL	18.1	0.26
8	Division Ave / Larch St	TWSC	C	3.6	WBLR	22.2	0.42
9	US-2 / N Boyer Ave	Signal	C	22.1	NBL	26.3	0.38
10	N Boyer Ave / Schweitzer Cutoff Rd	RAB	A	1.7	NBLR	2.0	0.47
11	Mountain View Dr / Aspen Wy / Driveway West	TWSC	A	2.1	NBLTR	8.9	0.03
12	Mountain View Dr / Driveway East	TWSC	A	3.0	NBLR	8.6	0.01
13	N Boyer Ave / Driveway North	TWSC	C	0.4	WBL	18.8	0.04
14	N Boyer Ave / Ebbett Wy / Driveway South	TWSC	D	2.4	WBL	26.1	0.24

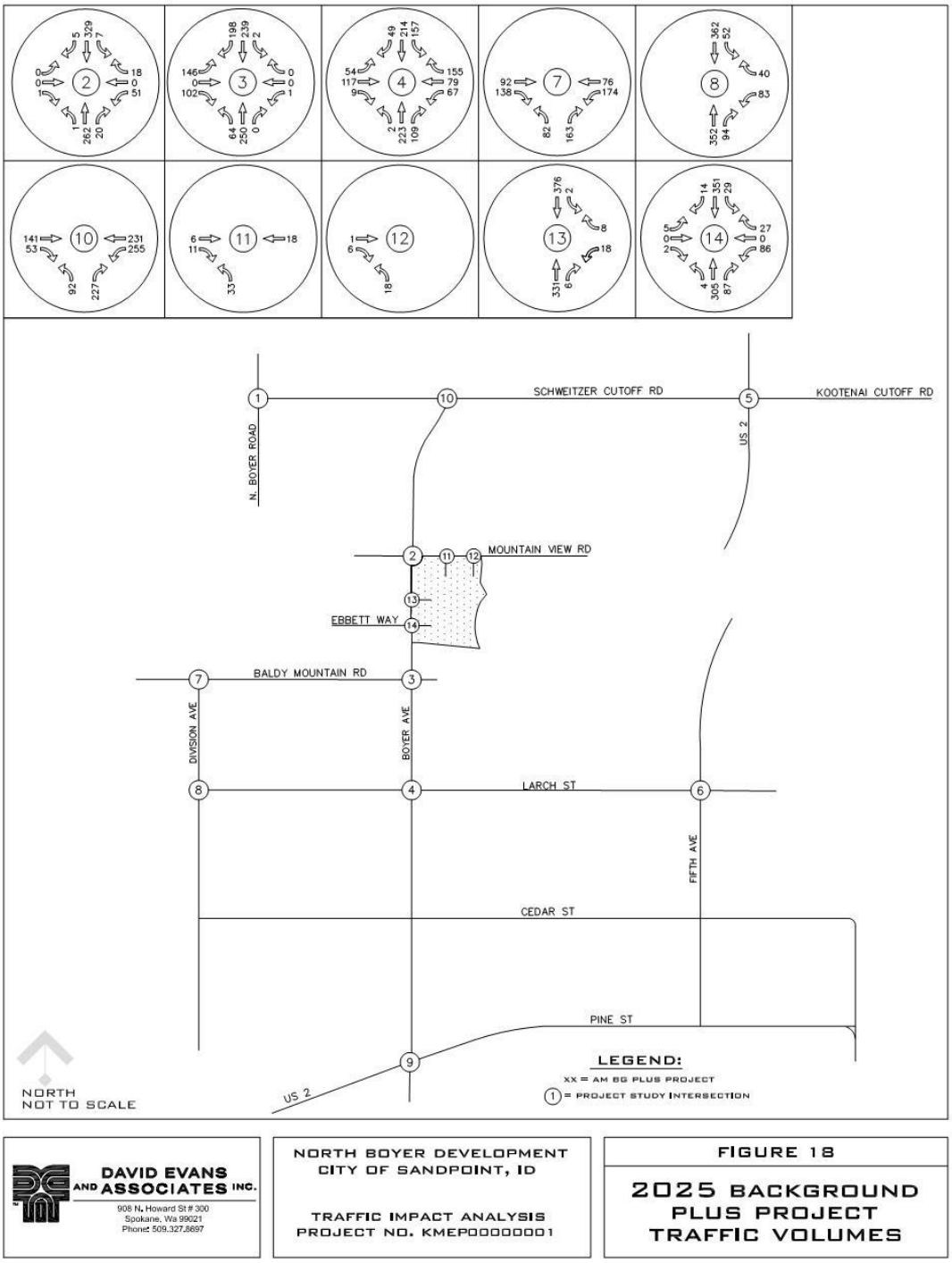


Figure 18. 2025 Background plus Project Traffic Volumes – Weekday AM Peak Hour

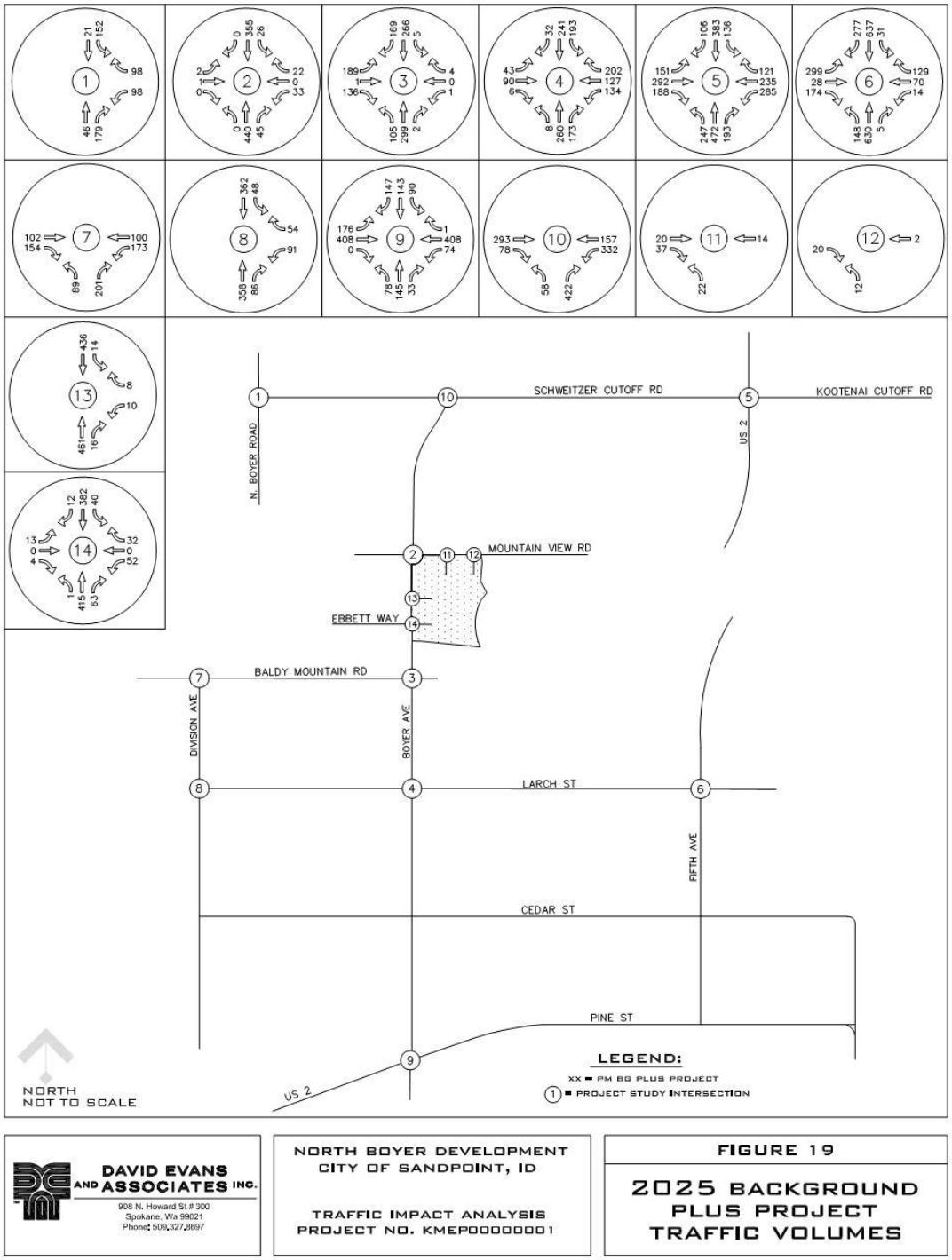
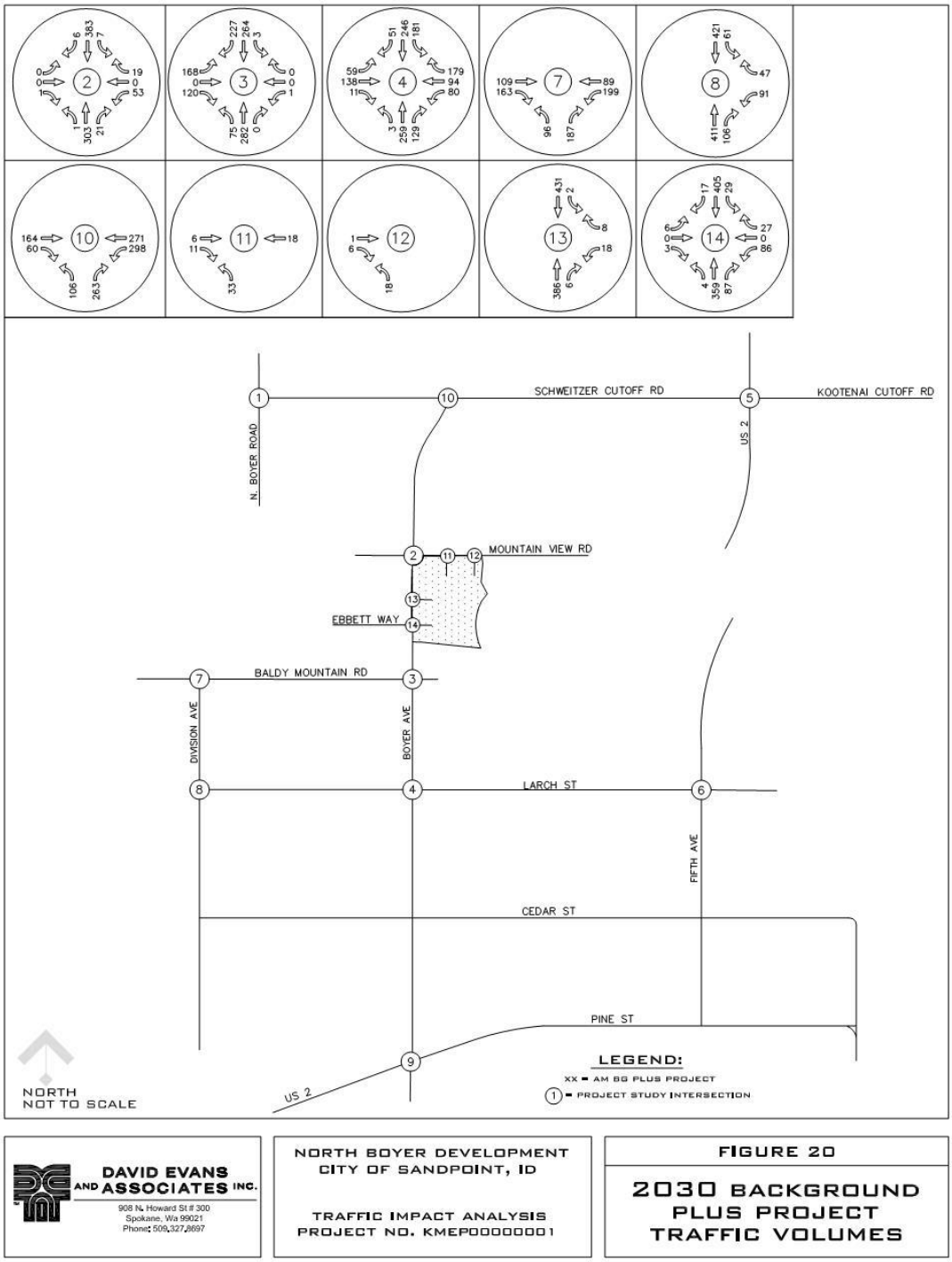


Figure 19. 2025 Background plus Project Traffic Volumes – Weekday PM Peak Hour

Table 14. Intersection Operations – 2030 Background Plus Project Conditions

INTERSECTION		Control Type	Int. LOS	Int. Delay (s)	Critical Movement		
					MVMT	Delay (s)	V/C
AM PEAK HOUR							
1	Schweitzer Cutoff Rd / N Boyer Rd	AWSC					
2	N Boyer Ave / Mountain View Dr	TWSC	C	1.6	WBLTR	16.9	0.20
3	N Boyer Ave / Baldy Mountain Rd	TWSC	**E**	8.5	EBL	**45.5**	0.69
		Signal	B	12.0	WBL	19.4	0.01
4	N Boyer Ave / Larch St	RAB	A	2.5	EBLTR	4.2	0.27
5	US-2 / Schweitzer Cutoff Rd	Signal					
6	US-2 (Fifth Ave) / Larch St	Signal					
7	Division Ave / Baldy Mountain Rd	TWSC	C	6.7	NBL	20.6	0.31
8	Division Ave / Larch St	TWSC	D	4.1	WBLR	30.1	0.51
9	US-2 / N Boyer Ave	Signal					
10	N Boyer Ave / Schweitzer Cutoff Rd	RAB	A	1.3	EBTR	1.5	0.22
11	Mountain View Dr / Aspen Wy / Driveway West	TWSC	A	4.3	NBLTR	8.8	0.04
12	Mountain View Dr / Driveway East	TWSC	A	6.0	NBLR	8.6	0.02
13	N Boyer Ave / Driveway North	TWSC	C	0.5	WBL	16.9	0.06
14	N Boyer Ave / Ebbett Wy / Driveway South	TWSC	D	3.1	WBL	28.8	0.38
PM PEAK HOUR							
1	Schweitzer Cutoff Rd / N Boyer Rd	AWSC	A	9.8	WBL	10.5	0.21
2	N Boyer Ave / Mountain View Dr	TWSC	C	1.6	EBLTR	24.2	0.02
3	N Boyer Ave / Baldy Mountain Rd	TWSC	**F**	**36.9**	EBL	**211.9**	**1.28**
		Signal	B	14.6	WBTR	21.1	0.03
4	N Boyer Ave / Larch St	RAB	A	3.3	EBLTR	5.4	0.244
5	US-2 / Schweitzer Cutoff Rd	Signal	A	10.0	NBL	17.6	0.67
6	US-2 (Fifth Ave) / Larch St	Signal	D	53.4	WBR	**107.4**	**0.99**
7	Division Ave / Baldy Mountain Rd	TWSC	C	7.1	NBL	23.7	0.37
8	Division Ave / Larch St	TWSC	D	5.4	WBLR	34.6	0.61
9	US-2 / N Boyer Ave	Signal	C	28.8	SBTR	42.4	0.89
10	N Boyer Ave / Schweitzer Cutoff Rd	RAB	A	2.3	NBLR	3.0	0.56
11	Mountain View Dr / Aspen Wy / Driveway West	TWSC	A	2.1	NBLTR	8.9	0.03
12	Mountain View Dr / Driveway East	TWSC	A	3.0	NBLR	8.6	0.01
13	N Boyer Ave / Driveway North	TWSC	C	0.4	WBL	21.0	0.05
14	N Boyer Ave / Ebbett Wy / Driveway South	TWSC	D	2.6	WBL	32.9	0.30

As shown in both the 2025 and 2030 'Plus Project' tables (**Table 13** and **Table 14**), the eastbound minor approach at the unsignalized intersection of North Boyer Avenue / Baldy Mountain Road is anticipated to deteriorate beyond the LOS E and LOS F conditions calculated without the project during the PM peak hour. The approach was also shown to deteriorate below the LOS C conditions without the project during the AM peak hour in 2025 and 2030 to LOS D and LOS E, respectively. A traffic signal was evaluated at the intersection as an assumed mitigation and is expected to operate at LOS B in both 2025 and 2030. All other study area intersections are shown to operate at LOS D or better in both AM and PM peak hours.



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NORTH BOYER DEVELOPMENT
CITY OF SANDPOINT, ID

TRAFFIC IMPACT ANALYSIS
PROJECT NO. KMEP00000001

FIGURE 20

2030 BACKGROUND PLUS PROJECT TRAFFIC VOLUMES

Figure 20. 2030 Background plus Project Traffic Volumes – Weekday AM Peak Hour

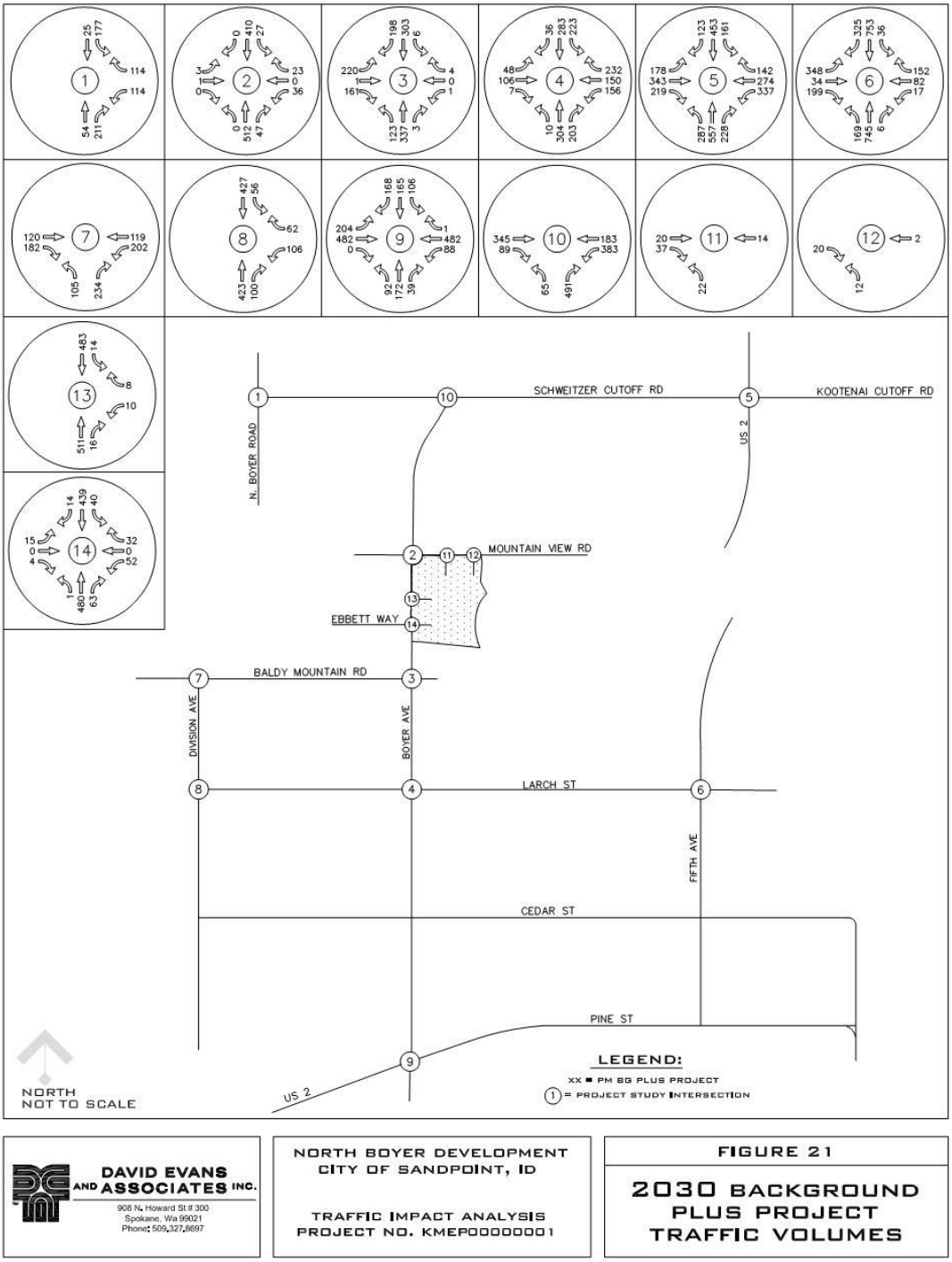


Figure 21. 2030 Background plus Project Traffic Volumes – Weekday PM Peak Hour

FAIR SHARE CONTRIBUTION

Based on the operational performance and subsequent mitigation of the intersections as a result of the analysis presented in the previous section, the financial responsibility of the developer is typically assessed to determine the "fair share contribution" of off-site improvements. The North Boyer Avenue / Baldy Mountain Road intersection is expected to operate below acceptable levels of service.

North Boyer Avenue / Baldy Mountain Road: This intersection is expected to degrade below acceptable levels based on background growth without additional development by 2025. There are three proposed developments that will contribute additional trip volumes through the intersection. Calculations were completed to determine the fair share contribution of this development on the installation of a traffic signal. The analysis was conducted by increasing intersection volumes until the level of service degraded below LOS D to determine the maximum volume accommodated. Based on the calculations summarized below, it was determined that the proposed development would be responsible for 16.65% of a mitigated traffic signal at the intersection. Fair share contribution may vary for other mitigation options, such as a roundabout.

Maximum intersection volume with existing two-way stop control =	952 vehicles
Maximum intersection volume with mitigated traffic signal =	2,003 vehicles
Increased Capacity of Mitigation (traffic signal) = 2,003-952 =	1,051 vehicles
Estimated Project Trips Through Intersection =	175 vehicles
Fair Share Contribution of Proposed Development = 1,051 / 175 =	16.65%

Based on this calculation, it was determined that the proposed North Boyer development would have a moderate impact on the intersection of Boyer and Baldy. Given that a preferred improvement has not been identified at the intersection, intersection improvement costs will need to be developed or referenced in a capital improvement plan. No additional mitigation is recommended by this development beyond site and frontage improvements.

FINDINGS, SUMMARY, AND CONCLUSIONS

In conformance with City of Sandpoint requirements, a Traffic Impact Analysis was completed for the proposed North Boyer Development. The proposed project calls for the construction of 133 single-family dwelling units (SFDU), 150 multi-family dwelling units (MFDU), a 45,000 square foot self-storage facility, and 10,000 square foot commercial shopping center.

The proposed project is anticipated to generate approximately 3,769 daily trips with 331 weekday AM peak hour net new trips and 292 weekday peak hour net new trips occurring during the PM peak hour. The proposed project is anticipated to generate approximately 5,089 daily trips (Saturday) with 347 weekend (Saturday) peak hour net new trips. It is anticipated that this level of traffic will create moderate traffic impacts on the surrounding roadway network given existing intersection configurations.

An operational analysis was completed for each of the scenarios listed below using Synchro and Sidra software and the HCM 6th edition methodologies. Per City of Sandpoint guidelines, conditions are analyzed for opening year (2025) and five years after (2030).

The minimum acceptable level of service threshold for signalized and unsignalized intersections in the City of Sandpoint is LOS D. Based on the analysis presented herein of all intersections in all scenarios, the eastbound left turn movement at the unsignalized intersection of North Boyer Avenue / Baldy Mountain Road is anticipated to operate at LOS E under 2025 Background PM Peak Hour Conditions and LOS F under 2030 Background PM Peak Hour Conditions assuming the current configuration that is in place. The eastbound minor approach at the unsignalized intersection of North Boyer Avenue / Baldy Mountain Road is anticipated to operate at LOS F under both the 2025 and 2030 Background plus Project PM Peak Hour Conditions assuming the current configuration that is in place. All other study area intersections are shown to operate at LOS D or better in both AM and PM peak hours in 2025 with the addition of project-related traffic.

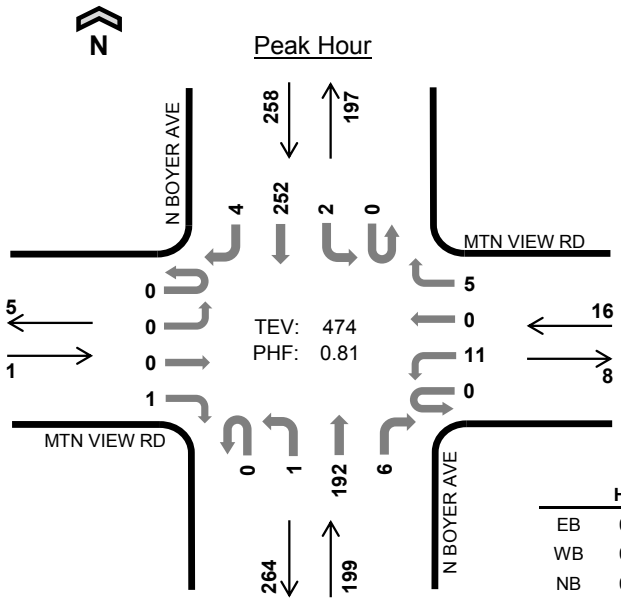
Based upon the technical analysis and recommendations presented herein, sufficient capacity will be available to accommodate the North Boyer Development provided signalization or roundabout control is implemented as mitigation at the North Boyer Avenue / Baldy Mountain Road intersection. The intersection should be monitored and signal warrants conducted to ensure traffic operation/level of service is maintained. No additional mitigation is recommended by this development beyond site and frontage improvements.

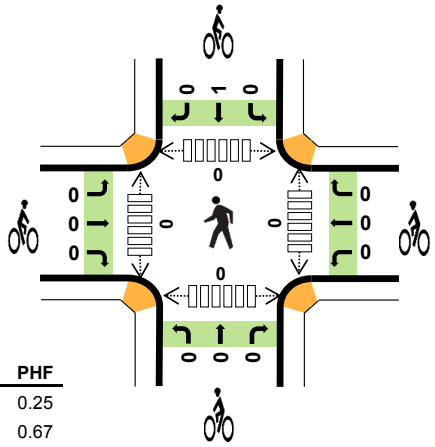
Appendix A - Traffic Count Data

Weekday AM Peak Hour Turning Movement Counts

N BOYER AVE
MTN VIEW RD

Date: 03-10-2020
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:15 AM to 8:15 AM





	HV %:	PHF
EB	0.0%	0.25
WB	0.0%	0.67
NB	0.0%	0.67
SB	2.3%	0.72
TOTAL	1.3%	0.81

Two-Hour Count Summaries

Interval Start		MTN VIEW RD Eastbound UT	LT	TH	RT	MTN VIEW RD Westbound UT	LT	TH	RT	N BOYER AVE Northbound UT	LT	TH	RT	N BOYER AVE Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
7:00 AM		0	0	0	0	0	2	0	1	0	0	38	0	0	1	24	0	66	0
7:15 AM		**0**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**29**	**1**	**0**	**0**	**64**	**0**	**97**	0
7:30 AM		**0**	**0**	**0**	**0**	**0**	**4**	**0**	**1**	**0**	**1**	**41**	**3**	**0**	**2**	**59**	**2**	**113**	0
7:45 AM		**0**	**0**	**0**	**0**	**0**	**3**	**0**	**3**	**0**	**0**	**48**	**2**	**0**	**0**	**89**	**1**	**146**	422
8:00 AM		**0**	**0**	**0**	**1**	**0**	**1**	**0**	**1**	**0**	**0**	**74**	**0**	**0**	**0**	**40**	**1**	**118**	**474**
8:15 AM		0	0	0	0	0	1	0	1	0	0	48	1	0	0	39	0	90	467
8:30 AM		0	2	0	0	0	1	0	2	0	0	66	1	0	0	35	1	108	462
8:45 AM		0	1	0	1	0	1	0	2	0	0	55	1	0	0	47	2	110	426
Count Total		0	3	0	2	0	16	0	11	0	1	399	9	0	3	397	7	848	0
Peak Hour	**All**	**0**	**0**	**0**	**1**	**0**	**11**	**0**	**5**	**0**	**1**	**192**	**6**	**0**	**2**	**252**	**4**	**474**	**0**
	HV	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**6**	**0**	**6**	**0**
	HV%	**-**	**-**	**-**	**0%**	**-**	**0%**	**-**	**0%**	**-**	**0%**	**0%**	**0%**	**-**	**0%**	**2%**	**0%**	**1%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
7:00 AM	0	0	3	1	*4*	0	0	0	0	*0*	0	0	1	0	*1*
7:15 AM	**0**	**0**	**0**	**1**	***1***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
7:30 AM	**0**	**0**	**0**	**3**	***3***	**0**	**0**	**0**	**1**	***1***	**0**	**0**	**0**	**0**	*0*
7:45 AM	**0**	**0**	**0**	**2**	***2***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
8:00 AM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
8:15 AM	0	0	1	1	*2*	0	0	0	0	*0*	0	0	0	0	*0*
8:30 AM	0	0	2	0	*2*	0	0	0	0	*0*	0	0	0	0	*0*
8:45 AM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	0	0	6	8	*14*	0	0	0	1	*1*	0	0	1	0	*1*
Peak Hour	**0**	**0**	**0**	**6**	***6***	**0**	**0**	**0**	**1**	***1***	**0**	**0**	**0**	**0**	***0***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	MTN VIEW RD				MTN VIEW RD				N BOYER AVE				N BOYER AVE				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	1	0	4	0
7:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	0
7:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**3**	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**2**	10
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**6**
8:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2	7
8:30 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	6
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Count Total	0	0	0	0	0	0	0	0	0	0	6	0	0	0	8	0	14	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**6**	**0**	**6**	**0**

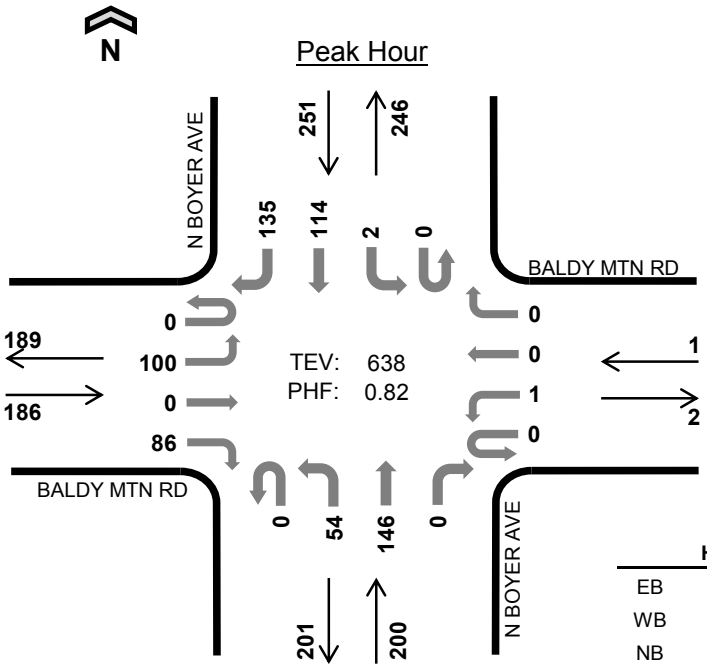
Two-Hour Count Summaries - Bikes

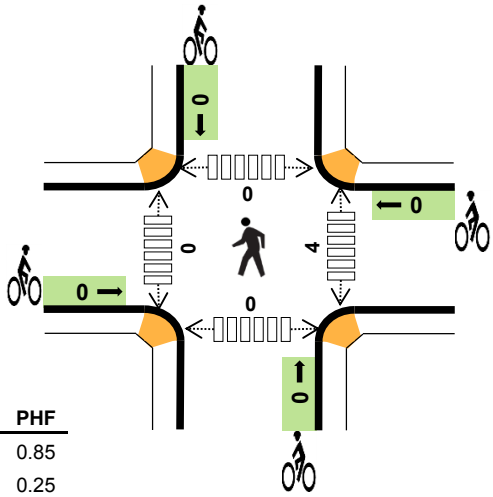
Interval Start	MTN VIEW RD			MTN VIEW RD			N BOYER AVE			N BOYER AVE			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
7:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	1	0	1	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

N BOYER AVE
BALDY MTN RD

Date: Tue, Mar 10, 2020
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:15 AM to 8:15 AM





	HV %:	PHF
EB	2.7%	0.85
WB	0.0%	0.25
NB	9.0%	0.79
SB	2.0%	0.81
TOTAL	4.4%	0.82

Two-Hour Count Summaries

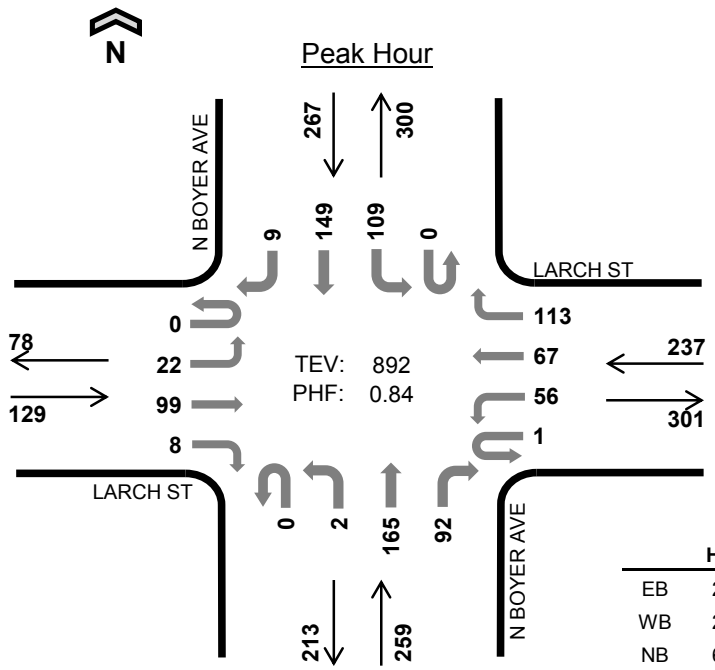
Interval Start	BALDY MTN RD Eastbound				BALDY MTN RD Westbound				N BOYER AVE Northbound				N BOYER AVE Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	17	1	5	0	1	0	0	0	7	19	0	0	0	10	17	77	0
7:15 AM	**0**	**23**	**0**	**13**	**0**	**1**	**0**	**0**	**0**	**8**	**19**	**0**	**0**	**0**	**33**	**33**	**130**	0
7:30 AM	**0**	**19**	**0**	**22**	**0**	**0**	**0**	**0**	**0**	**18**	**30**	**0**	**0**	**0**	**26**	**41**	**156**	0
7:45 AM	**0**	**17**	**0**	**38**	**0**	**0**	**0**	**0**	**0**	**14**	**49**	**0**	**0**	**1**	**31**	**45**	**195**	558
8:00 AM	**0**	**41**	**0**	**13**	**0**	**0**	**0**	**0**	**0**	**14**	**48**	**0**	**0**	**1**	**24**	**16**	**157**	**638**
8:15 AM	0	20	0	17	0	0	0	1	0	10	40	0	0	1	14	23	126	634
8:30 AM	0	30	0	9	0	0	0	0	0	12	51	2	0	0	16	14	134	612
8:45 AM	0	27	2	12	0	0	0	0	0	9	44	1	0	0	25	23	143	560
Count Total	0	194	3	129	0	2	0	1	0	92	300	3	0	3	179	212	1,118	0
Peak Hour	**0**	**100**	**0**	**86**	**0**	**1**	**0**	**0**	**0**	**54**	**146**	**0**	**0**	**2**	**114**	**135**	**638**	**0**

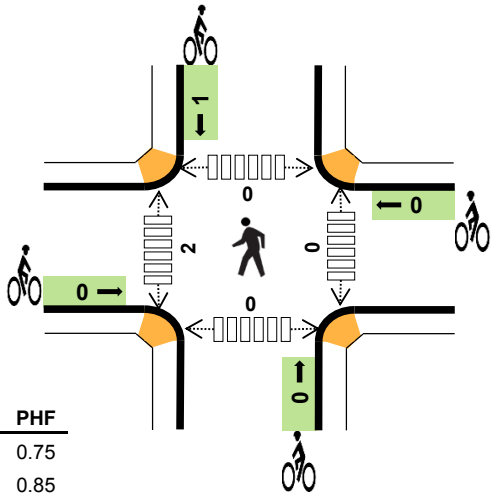
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	2	0	1	1	*4*	0	0	0	0	*0*	0	0	0	0	*0*
7:15 AM	**4**	**0**	**2**	**1**	***7***	**0**	**0**	**0**	**0**	***0***	**1**	**0**	**0**	**0**	*1*
7:30 AM	**0**	**0**	**8**	**2**	***10***	**0**	**0**	**0**	**0**	***0***	**2**	**0**	**0**	**0**	*2*
7:45 AM	**0**	**0**	**5**	**2**	***7***	**0**	**0**	**0**	**0**	***0***	**1**	**0**	**0**	**0**	*1*
8:00 AM	**1**	**0**	**3**	**0**	***4***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
8:15 AM	3	0	1	1	*5*	0	0	0	0	*0*	0	0	0	0	*0*
8:30 AM	0	0	4	0	*4*	0	0	0	0	*0*	0	0	0	0	*0*
8:45 AM	1	0	1	1	*3*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	11	0	25	8	*44*	0	0	0	0	*0*	4	0	0	0	*4*
Peak Hour	**5**	**0**	**18**	**5**	***28***	**0**	**0**	**0**	**0**	***0***	**4**	**0**	**0**	**0**	***4***

N BOYER AVE
LARCH ST

Date: Tue, Mar 10, 2020
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:15 AM to 8:15 AM





	HV %:	PHF
EB	2.3%	0.75
WB	2.1%	0.85
NB	6.9%	0.70
SB	3.4%	0.81
TOTAL	3.9%	0.84

Two-Hour Count Summaries

Interval Start	LARCH ST Eastbound				LARCH ST Westbound				N BOYER AVE Northbound				N BOYER AVE Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	11	2	0	5	13	12	0	2	16	16	0	18	17	1	113	0
7:15 AM	**0**	**3**	**16**	**1**	**0**	**10**	**22**	**23**	**0**	**0**	**18**	**10**	**0**	**12**	**45**	**1**	**161**	0
7:30 AM	**0**	**7**	**33**	**2**	**0**	**18**	**17**	**30**	**0**	**2**	**56**	**34**	**0**	**39**	**28**	**1**	**267**	0
7:45 AM	**0**	**8**	**33**	**2**	**1**	**19**	**11**	**39**	**0**	**0**	**45**	**26**	**0**	**40**	**38**	**4**	**266**	807
8:00 AM	**0**	**4**	**17**	**3**	**0**	**9**	**17**	**21**	**0**	**0**	**46**	**22**	**0**	**18**	**38**	**3**	**198**	**892**
8:15 AM	0	3	15	0	0	8	11	13	0	1	31	13	0	21	18	1	135	866
8:30 AM	0	2	13	0	0	9	10	22	0	1	38	19	0	12	20	0	146	745
8:45 AM	0	1	12	1	0	10	7	26	0	1	29	16	0	18	28	3	152	631
Count Total	0	28	150	11	1	88	108	186	0	7	279	156	0	178	232	14	1,438	0
Peak Hour	**0**	**22**	**99**	**8**	**1**	**56**	**67**	**113**	**0**	**2**	**165**	**92**	**0**	**109**	**149**	**9**	**892**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

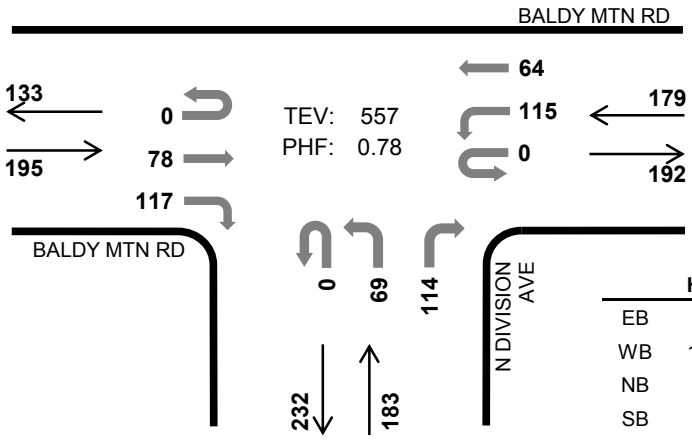
Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	0	0	1	0	*1*	0	0	0	0	*0*	0	0	1	0	*1*
7:15 AM	**1**	**2**	**4**	**5**	***12***	**0**	**0**	**0**	**1**	***1***	**0**	**1**	**0**	**0**	*1*
7:30 AM	**0**	**0**	**12**	**1**	***13***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
7:45 AM	**2**	**1**	**2**	**1**	***6***	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**0**	**0**	*1*
8:00 AM	**0**	**2**	**0**	**2**	***4***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
8:15 AM	0	2	1	0	*3*	0	0	0	0	*0*	0	0	0	0	*0*
8:30 AM	0	2	2	0	*4*	0	0	0	1	*1*	0	0	0	0	*0*
8:45 AM	0	1	0	2	*3*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	3	10	22	11	*46*	0	0	0	2	*2*	0	2	1	0	*3*
Peak Hour	**3**	**5**	**18**	**9**	***35***	**0**	**0**	**0**	**1**	***1***	**0**	**2**	**0**	**0**	***2***

N DIVISION AVE
BALDY MTN RD

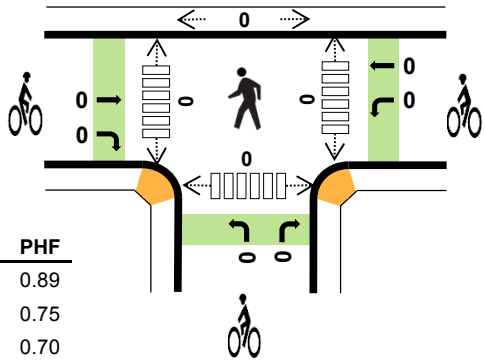
N

Peak Hour

Date: 03-10-2020
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:15 AM to 8:15 AM



	HV %:	PHF
EB	4.6%	0.89
WB	11.2%	0.75
NB	3.8%	0.70
SB	-	-
TOTAL	6.5%	0.78



Two-Hour Count Summaries

Interval Start		BALDY MTN RD Eastbound UT	LT	TH	RT	BALDY MTN RD Westbound UT	LT	TH	RT	N DIVISION AVE Northbound UT	LT	TH	RT	0 Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
7:00 AM		0	0	15	7	0	16	2	0	0	17	0	16	0	0	0	0	73	0
7:15 AM		**0**	**0**	**13**	**35**	**0**	**26**	**9**	**0**	**0**	**10**	**0**	**22**	**0**	**0**	**0**	**0**	**115**	0
7:30 AM		**0**	**0**	**15**	**40**	**0**	**28**	**13**	**0**	**0**	**21**	**0**	**25**	**0**	**0**	**0**	**0**	**142**	0
7:45 AM		**0**	**0**	**24**	**30**	**0**	**43**	**17**	**0**	**0**	**27**	**0**	**38**	**0**	**0**	**0**	**0**	**179**	509
8:00 AM		**0**	**0**	**26**	**12**	**0**	**18**	**25**	**0**	**0**	**11**	**0**	**29**	**0**	**0**	**0**	**0**	**121**	**557**
8:15 AM		0	0	12	10	0	21	11	0	0	12	0	22	0	0	0	0	88	530
8:30 AM		0	0	18	13	0	16	10	0	0	16	0	22	0	0	0	0	95	483
8:45 AM		0	0	17	11	0	14	17	0	0	12	0	19	0	0	0	0	90	394
Count Total		0	0	140	158	0	182	104	0	0	126	0	193	0	0	0	0	903	0
Peak Hour	**All**	**0**	**0**	**78**	**117**	**0**	**115**	**64**	**0**	**0**	**69**	**0**	**114**	**0**	**0**	**0**	**0**	**557**	**0**
	HV	**0**	**0**	**6**	**3**	**0**	**1**	**19**	**0**	**0**	**7**	**0**	**0**	**0**	**0**	**0**	**0**	**36**	**0**
	HV%	**-**	**-**	**8%**	**3%**	**-**	**1%**	**30%**	**-**	**-**	**10%**	**-**	**0%**	**-**	**-**	**-**	**-**	**6%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
7:00 AM	3	0	1	0	*4*	0	0	0	0	*0*	0	0	0	0	*0*
7:15 AM	**4**	**2**	**0**	**0**	***6***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
7:30 AM	**2**	**9**	**5**	**0**	***16***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
7:45 AM	**0**	**8**	**1**	**0**	***9***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
8:00 AM	**3**	**1**	**1**	**0**	***5***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
8:15 AM	1	2	1	0	*4*	0	0	0	0	*0*	0	0	0	0	*0*
8:30 AM	1	2	1	0	*4*	0	0	0	0	*0*	0	0	0	0	*0*
8:45 AM	0	1	1	0	*2*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	14	25	11	0	*50*	0	0	0	0	*0*	0	0	0	0	*0*
Peak Hr	**9**	**20**	**7**	**0**	***36***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	BALDY MTN RD				BALDY MTN RD				N DIVISION AVE				0				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	3	0	0	0	0	0	0	1	0	0	0	0	0	0	4	0
7:15 AM	**0**	**0**	**3**	**1**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**6**	0
7:30 AM	**0**	**0**	**0**	**2**	**0**	**1**	**8**	**0**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**16**	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**8**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**9**	35
8:00 AM	**0**	**0**	**3**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**36**
8:15 AM	0	0	1	0	0	0	2	0	0	0	0	1	0	0	0	0	4	34
8:30 AM	0	0	0	1	0	1	1	0	0	1	0	0	0	0	0	0	4	22
8:45 AM	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	2	15
Count Total	0	0	10	4	0	2	23	0	0	9	0	2	0	0	0	0	50	0
Peak Hour	**0**	**0**	**6**	**3**	**0**	**1**	**19**	**0**	**0**	**7**	**0**	**0**	**0**	**0**	**0**	**0**	**36**	**0**

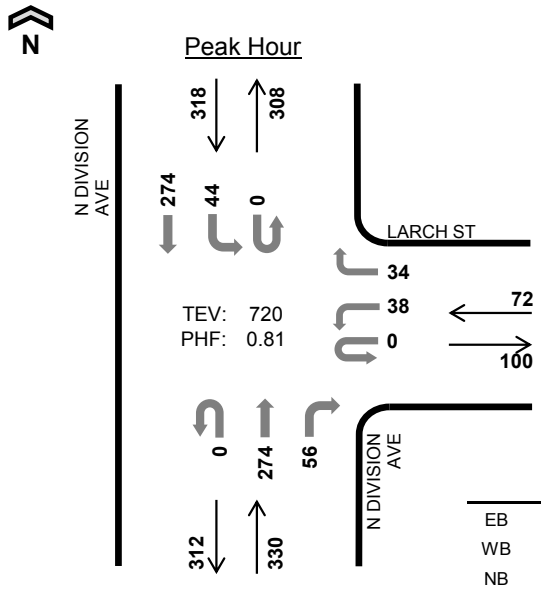
Two-Hour Count Summaries - Bikes

Interval Start	BALDY MTN RD			BALDY MTN RD			N DIVISION AVE			0			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
7:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

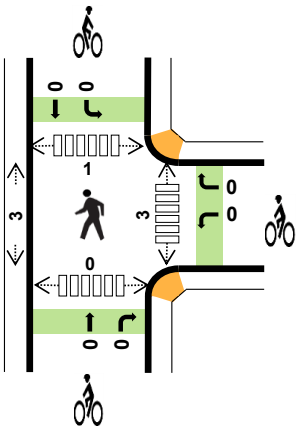
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

N DIVISION AVE
LARCH ST

Date: 03-10-2020
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:15 AM to 8:15 AM



	HV %:	PHF
EB	-	-
WB	0.0%	0.95
NB	2.7%	0.78
SB	2.8%	0.78
TOTAL	2.5%	0.81



Two-Hour Count Summaries

Interval Start		0				LARCH ST				N DIVISION AVE				N DIVISION AVE				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	0	0	0	0	5	0	6	0	0	37	5	0	3	18	0	74	0
7:15 AM		**0**	**0**	**0**	**0**	**0**	**9**	**0**	**10**	**0**	**0**	**53**	**8**	**0**	**7**	**66**	**0**	**153**	0
7:30 AM		**0**	**0**	**0**	**0**	**0**	**7**	**0**	**11**	**0**	**0**	**84**	**22**	**0**	**13**	**83**	**0**	**220**	0
7:45 AM		**0**	**0**	**0**	**0**	**0**	**7**	**0**	**11**	**0**	**0**	**84**	**17**	**0**	**17**	**85**	**0**	**221**	668
8:00 AM		**0**	**0**	**0**	**0**	**0**	**15**	**0**	**2**	**0**	**0**	**53**	**9**	**0**	**7**	**40**	**0**	**126**	**720**
8:15 AM		0	0	0	0	0	6	0	3	0	0	41	5	0	4	39	0	98	665
8:30 AM		0	0	0	0	0	6	0	3	0	0	37	5	0	4	37	0	92	537
8:45 AM		0	0	0	0	0	8	0	4	0	0	42	6	0	5	24	0	89	405
Count Total		0	0	0	0	0	63	0	50	0	0	431	77	0	60	392	0	1,073	0
Peak Hour	**All**	**0**	**0**	**0**	**0**	**0**	**38**	**0**	**34**	**0**	**0**	**274**	**56**	**0**	**44**	**274**	**0**	**720**	**0**
	HV	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**8**	**1**	**0**	**3**	**6**	**0**	**18**	**0**
	HV%	**-**	**-**	**-**	**-**	**-**	**0%**	**-**	**0%**	**-**	**-**	**3%**	**2%**	**-**	**7%**	**2%**	**-**	**3%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	0	0	0	0	*0*	0	0	0	0	*0*	0	2	0	0	*2*
7:15 AM	**0**	**0**	**1**	**1**	***2***	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**1**	**0**	*2*
7:30 AM	**0**	**0**	**7**	**3**	***10***	**0**	**0**	**0**	**0**	***0***	**1**	**1**	**0**	**0**	*2*
7:45 AM	**0**	**0**	**0**	**5**	***5***	**0**	**0**	**0**	**0**	***0***	**2**	**1**	**0**	**0**	*3*
8:00 AM	**0**	**0**	**1**	**0**	***1***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
8:15 AM	0	0	1	1	*2*	0	0	0	0	*0*	0	0	0	0	*0*
8:30 AM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
8:45 AM	0	0	1	0	*1*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	0	0	11	10	*21*	0	0	0	0	*0*	3	5	1	0	*9*
Peak Hr	**0**	**0**	**9**	**9**	***18***	**0**	**0**	**0**	**0**	***0***	**3**	**3**	**1**	**0**	***7***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	0				LARCH ST				N DIVISION AVE				N DIVISION AVE				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**2**	0
7:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**6**	**1**	**0**	**2**	**1**	**0**	**10**	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**4**	**0**	**5**	17
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**18**
8:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2	18
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8
8:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	4
Count Total	0	0	0	0	0	0	0	0	0	0	10	1	0	3	7	0	21	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**8**	**1**	**0**	**3**	**6**	**0**	**18**	**0**

Two-Hour Count Summaries - Bikes

Interval Start	0			LARCH ST			N DIVISION AVE			N DIVISION AVE			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
7:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

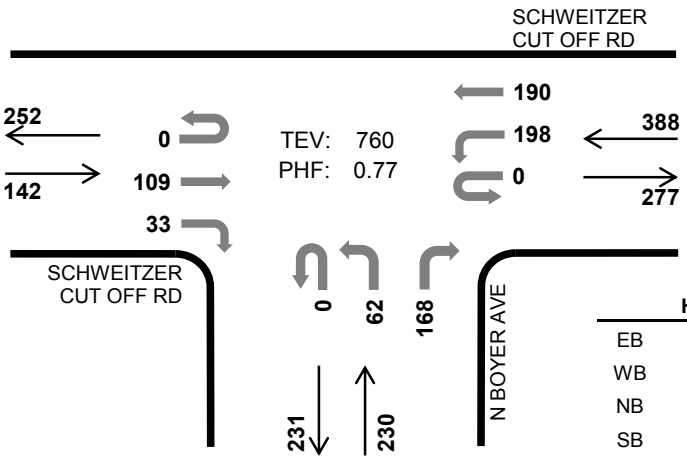
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

N BOYER AVE
SCHWEITZER CUT OFF RD

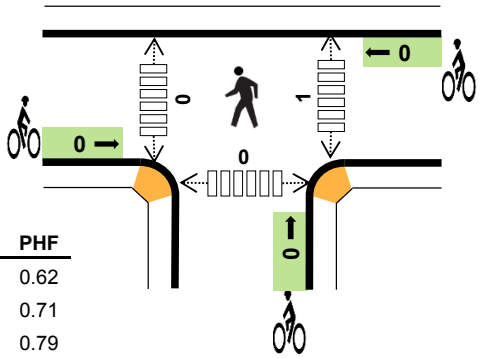
N

Peak Hour

Date: Tue, Mar 10, 2020
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:30 AM to 8:30 AM



	HV %:	PHF
EB	2.1%	0.62
WB	2.8%	0.71
NB	0.4%	0.79
SB	-	-
TOTAL	2.0%	0.77



Two-Hour Count Summaries

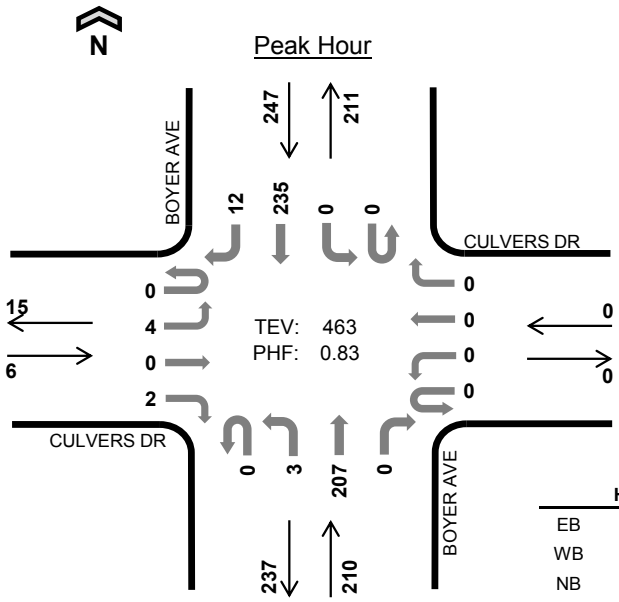
Interval Start	SCHWEITZER CUT OFF RD				SCHWEITZER CUT OFF RD				N BOYER AVE				0				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	30	4	0	21	27	0	0	11	0	37	0	0	0	0	130	0
7:15 AM	0	0	19	17	0	41	39	0	0	4	0	26	0	0	0	0	146	0
7:30 AM	**0**	**0**	**29**	**7**	**0**	**49**	**44**	**0**	**0**	**11**	**0**	**39**	**0**	**0**	**0**	**0**	**179**	0
7:45 AM	**0**	**0**	**39**	**18**	**0**	**68**	**68**	**0**	**0**	**16**	**0**	**37**	**0**	**0**	**0**	**0**	**246**	701
8:00 AM	**0**	**0**	**17**	**4**	**0**	**42**	**29**	**0**	**0**	**21**	**0**	**52**	**0**	**0**	**0**	**0**	**165**	736
8:15 AM	**0**	**0**	**24**	**4**	**0**	**39**	**49**	**0**	**0**	**14**	**0**	**40**	**0**	**0**	**0**	**0**	**170**	**760**
8:30 AM	0	0	19	5	0	31	42	0	0	12	0	58	0	0	0	0	167	748
8:45 AM	0	0	26	10	0	40	45	0	0	14	0	48	0	0	0	0	183	685
Count Total	0	0	203	69	0	331	343	0	0	103	0	337	0	0	0	0	1,386	0
Peak Hour	**0**	**0**	**109**	**33**	**0**	**198**	**190**	**0**	**0**	**62**	**0**	**168**	**0**	**0**	**0**	**0**	**760**	**0**

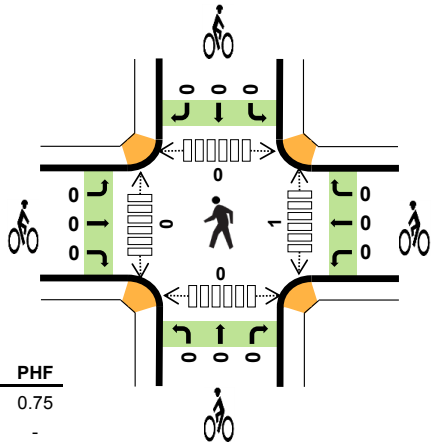
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	2	1	2	0	*5*	0	0	0	0	*0*	0	0	0	0	*0*
7:15 AM	2	1	0	0	*3*	0	0	0	0	*0*	0	0	0	0	*0*
7:30 AM	**0**	**5**	**0**	**0**	***5***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
7:45 AM	**1**	**4**	**0**	**0**	***5***	**0**	**0**	**0**	**0**	***0***	**1**	**0**	**1**	**0**	*2*
8:00 AM	**1**	**0**	**0**	**0**	***1***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
8:15 AM	**1**	**2**	**1**	**0**	***4***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
8:30 AM	1	0	2	0	*3*	0	0	0	0	*0*	0	0	0	0	*0*
8:45 AM	0	1	1	0	*2*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	8	14	6	0	*28*	0	0	0	0	*0*	1	0	1	0	*2*
Peak Hr	**3**	**11**	**1**	**0**	***15***	**0**	**0**	**0**	**0**	***0***	**1**	**0**	**1**	**0**	***2***

BOYER AVE
CULVERS DR

Date: 03-10-2020
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:15 AM to 8:15 AM





	HV %:	PHF
EB	0.0%	0.75
WB	-	-
NB	0.5%	0.68
SB	2.4%	0.75
TOTAL	1.5%	0.83

Two-Hour Count Summaries

Interval Start		CULVERS DR Eastbound UT	LT	TH	RT	CULVERS DR Westbound UT	LT	TH	RT	BOYER AVE Northbound UT	LT	TH	RT	BOYER AVE Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
7:00 AM		0	2	0	0	0	0	0	0	0	0	32	0	0	0	25	0	59	0
7:15 AM		**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**35**	**0**	**0**	**0**	**61**	**2**	**100**	0
7:30 AM		**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**42**	**0**	**0**	**0**	**64**	**1**	**108**	0
7:45 AM		**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**2**	**53**	**0**	**0**	**0**	**75**	**7**	**139**	406
8:00 AM		**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**77**	**0**	**0**	**0**	**35**	**2**	**116**	**463**
8:15 AM		0	1	0	0	0	0	0	0	0	1	45	0	0	0	36	4	87	450
8:30 AM		0	2	0	0	0	0	0	0	0	1	66	0	0	0	31	1	101	443
8:45 AM		0	1	0	1	0	0	0	0	0	1	52	0	0	0	41	3	99	403
Count Total		0	10	0	3	0	0	0	0	0	6	402	0	0	0	368	20	809	0
Peak Hour	**All**	**0**	**4**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**3**	**207**	**0**	**0**	**0**	**235**	**12**	**463**	**0**
	HV	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**5**	**1**	**7**	**0**
	HV%	**-**	**0%**	**-**	**0%**	**-**	**-**	**-**	**-**	**-**	**33%**	**0%**	**-**	**-**	**-**	**2%**	**8%**	**2%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
7:00 AM	0	0	3	1	*4*	0	0	0	0	*0*	1	0	0	0	*1*
7:15 AM	**0**	**0**	**1**	**1**	***2***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
7:30 AM	**0**	**0**	**0**	**3**	***3***	**0**	**0**	**0**	**0**	***0***	**1**	**0**	**0**	**0**	*1*
7:45 AM	**0**	**0**	**0**	**2**	***2***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
8:00 AM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
8:15 AM	0	0	1	1	*2*	0	0	0	0	*0*	0	0	0	0	*0*
8:30 AM	0	0	2	0	*2*	0	0	0	0	*0*	0	0	0	0	*0*
8:45 AM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	0	0	7	8	*15*	0	0	0	0	*0*	2	0	0	0	*2*
Peak Hour	**0**	**0**	**1**	**6**	***7***	**0**	**0**	**0**	**0**	***0***	**1**	**0**	**0**	**0**	***1***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	CULVERS DR Eastbound				CULVERS DR Westbound				BOYER AVE Northbound				BOYER AVE Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	1	0	4	0
7:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**2**	0
7:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**3**	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**2**	11
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**7**
8:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2	7
8:30 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	6
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Count Total	0	0	0	0	0	0	0	0	0	1	6	0	0	0	7	1	15	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**5**	**1**	**7**	**0**

Two-Hour Count Summaries - Bikes

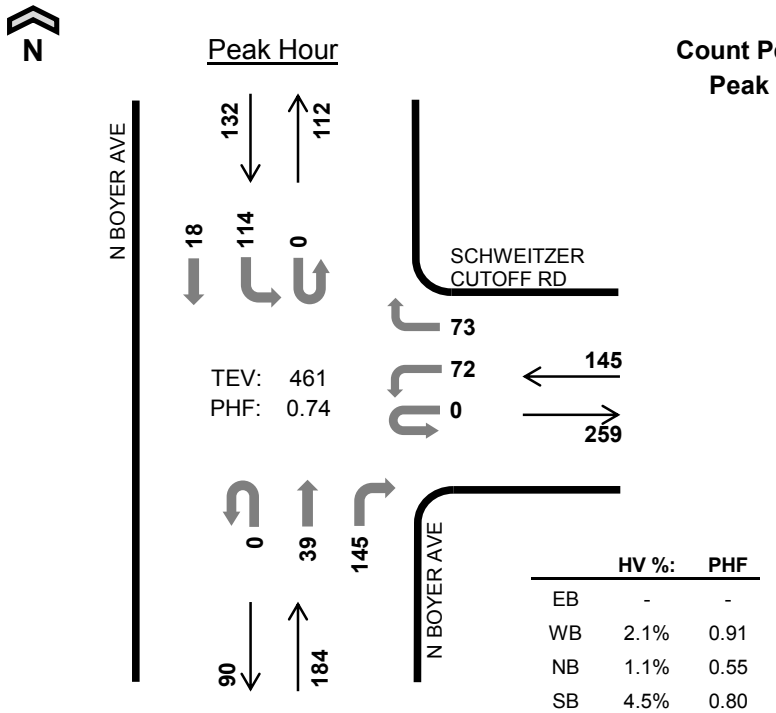
Interval Start	CULVERS DR Eastbound			CULVERS DR Westbound			BOYER AVE Northbound			BOYER AVE Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
7:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

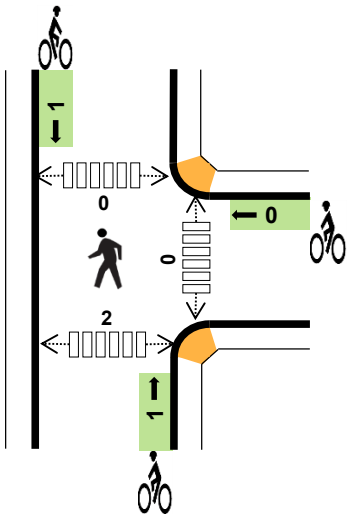
Weekday PM Peak Hour Turning Movement Counts

N BOYER AVE
SCHWEITZER CUTOFF RD

Date: Wed, Oct 02, 2019
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:00 PM to 5:00 PM



	HV %:	PHF
EB	-	-
WB	2.1%	0.91
NB	1.1%	0.55
SB	4.5%	0.80
TOTAL	2.4%	0.74



Two-Hour Count Summaries

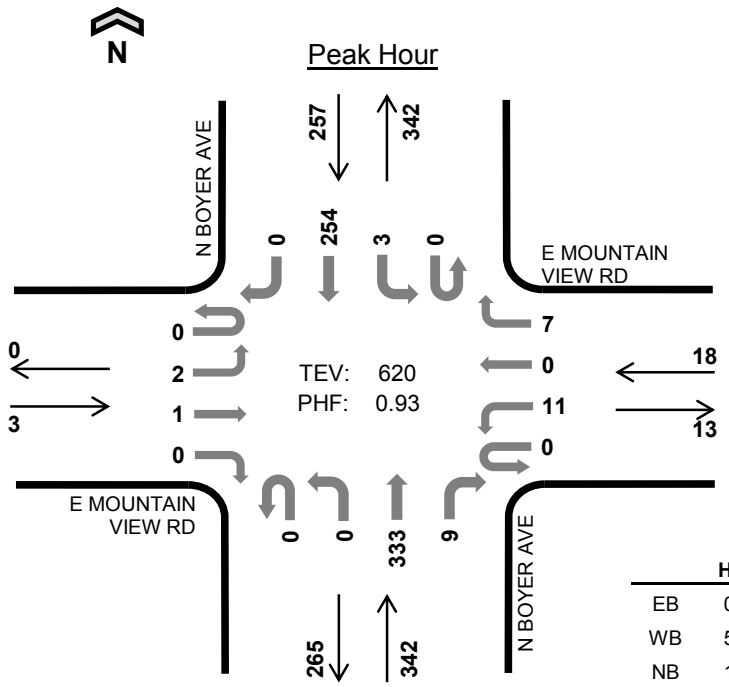
Interval Start	0				SCHWEITZER CUTOFF RD				N BOYER AVE				N BOYER AVE				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	**0**	**0**	**0**	**0**	**0**	**20**	**0**	**20**	**0**	**0**	**7**	**27**	**0**	**24**	**4**	**0**	**102**	0
4:15 PM	**0**	**0**	**0**	**0**	**0**	**18**	**0**	**22**	**0**	**0**	**9**	**33**	**0**	**34**	**7**	**0**	**123**	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**18**	**0**	**18**	**0**	**0**	**11**	**73**	**0**	**33**	**3**	**0**	**156**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**16**	**0**	**13**	**0**	**0**	**12**	**12**	**0**	**23**	**4**	**0**	**80**	**461**
5:00 PM	0	0	0	0	0	11	0	22	0	0	4	22	0	14	5	0	78	437
5:15 PM	0	0	0	0	0	19	0	25	0	0	6	17	0	24	7	0	98	412
5:30 PM	0	0	0	0	0	18	0	18	0	0	7	15	0	22	3	0	83	339
5:45 PM	0	0	0	0	0	8	0	22	0	0	3	8	0	32	4	0	77	336
Count Total	0	0	0	0	0	128	0	160	0	0	59	207	0	206	37	0	797	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**72**	**0**	**73**	**0**	**0**	**39**	**145**	**0**	**114**	**18**	**0**	**461**	**0**

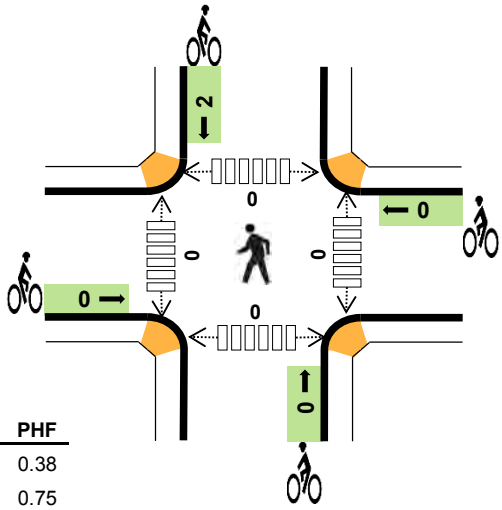
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	**0**	**0**	**1**	**3**	***4***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
4:15 PM	**0**	**1**	**1**	**1**	***3***	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**0**	**1**	*2*
4:30 PM	**0**	**1**	**0**	**2**	***3***	**0**	**0**	**0**	**1**	***1***	**0**	**0**	**0**	**0**	*0*
4:45 PM	**0**	**1**	**0**	**0**	***1***	**0**	**0**	**1**	**0**	***1***	**0**	**0**	**0**	**1**	***1***
5:00 PM	0	0	0	1	*1*	0	0	0	0	*0*	0	0	2	0	*2*
5:15 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
5:30 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	1	*1*
5:45 PM	0	1	0	4	*5*	0	0	0	0	*0*	0	1	0	0	*1*
Count Total	0	4	2	11	*17*	0	0	1	1	*2*	0	2	2	3	*7*
Peak Hr	**0**	**3**	**2**	**6**	***11***	**0**	**0**	**1**	**1**	***2***	**0**	**1**	**0**	**2**	***3***

N BOYER AVE
E MOUNTAIN VIEW RD

Date: Wed, Oct 02, 2019
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:00 PM to 5:00 PM





	HV %:	PHF
EB	0.0%	0.38
WB	5.6%	0.75
NB	1.5%	0.83
SB	3.1%	0.97
TOTAL	2.3%	0.93

Two-Hour Count Summaries

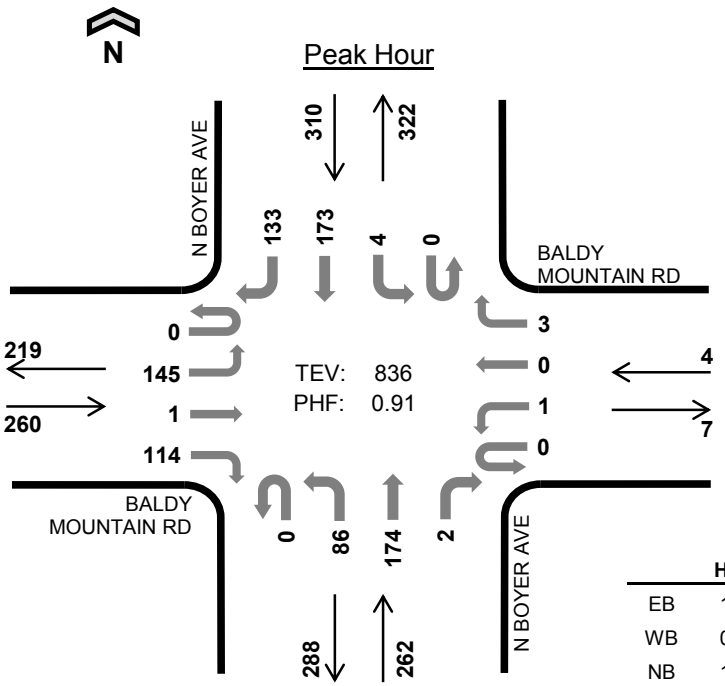
Interval Start	E MOUNTAIN VIEW RD Eastbound				E MOUNTAIN VIEW RD Westbound				N BOYER AVE Northbound				N BOYER AVE Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	**0**	**1**	**1**	**0**	**0**	**2**	**0**	**1**	**0**	**0**	**102**	**1**	**0**	**0**	**59**	**0**	**167**	0
4:15 PM	**0**	**0**	**0**	**0**	**0**	**4**	**0**	**1**	**0**	**0**	**61**	**3**	**0**	**2**	**64**	**0**	**135**	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**3**	**0**	**0**	**82**	**4**	**0**	**0**	**66**	**0**	**158**	0
4:45 PM	**0**	**1**	**0**	**0**	**0**	**2**	**0**	**2**	**0**	**0**	**88**	**1**	**0**	**1**	**65**	**0**	**160**	**620**
5:00 PM	0	0	0	0	0	0	0	0	0	0	90	5	0	0	56	0	151	604
5:15 PM	0	0	1	0	0	3	0	1	0	0	88	3	0	0	49	0	145	614
5:30 PM	0	0	0	0	0	3	0	2	0	0	89	3	0	2	50	0	149	605
5:45 PM	0	0	0	0	0	2	0	1	0	0	65	4	0	0	51	0	123	568
Count Total	0	2	2	0	0	19	0	11	0	0	665	24	0	5	460	0	1,188	0
Peak Hour	**0**	**2**	**1**	**0**	**0**	**11**	**0**	**7**	**0**	**0**	**333**	**9**	**0**	**3**	**254**	**0**	**620**	**0**

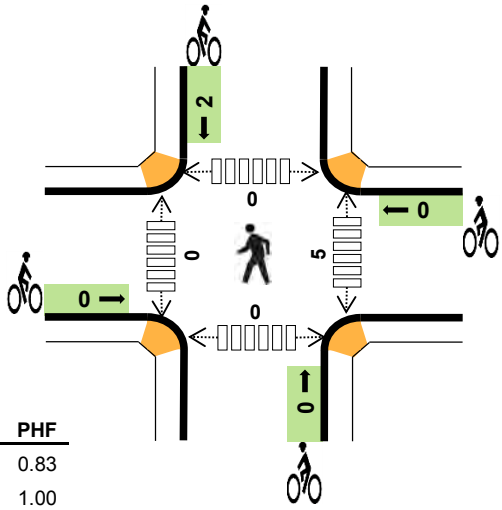
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	**0**	**0**	**4**	**1**	***5***	**0**	**0**	**0**	**1**	***1***	**0**	**0**	**0**	**0**	*0*
4:15 PM	**0**	**0**	**1**	**1**	***2***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
4:30 PM	**0**	**1**	**0**	**1**	***2***	**0**	**0**	**0**	**1**	***1***	**0**	**0**	**0**	**0**	*0*
4:45 PM	**0**	**0**	**0**	**5**	***5***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
5:00 PM	0	0	0	1	*1*	0	0	0	2	*2*	1	0	0	0	*1*
5:15 PM	0	0	2	1	*3*	0	0	0	0	*0*	2	0	0	0	*2*
5:30 PM	0	0	1	1	*2*	0	0	2	0	*2*	0	0	0	0	*0*
5:45 PM	0	0	1	1	*2*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	0	1	9	12	*22*	0	0	2	4	*6*	3	0	0	0	*3*
Peak Hour	**0**	**1**	**5**	**8**	***14***	**0**	**0**	**0**	**2**	***2***	**0**	**0**	**0**	**0**	***0***

N BOYER AVE
BALDY MOUNTAIN RD

Date: Wed, Oct 02, 2019
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:00 PM to 5:00 PM





	HV %:	PHF
EB	1.5%	0.83
WB	0.0%	1.00
NB	1.5%	0.84
SB	1.9%	0.92
TOTAL	1.7%	0.91

Two-Hour Count Summaries

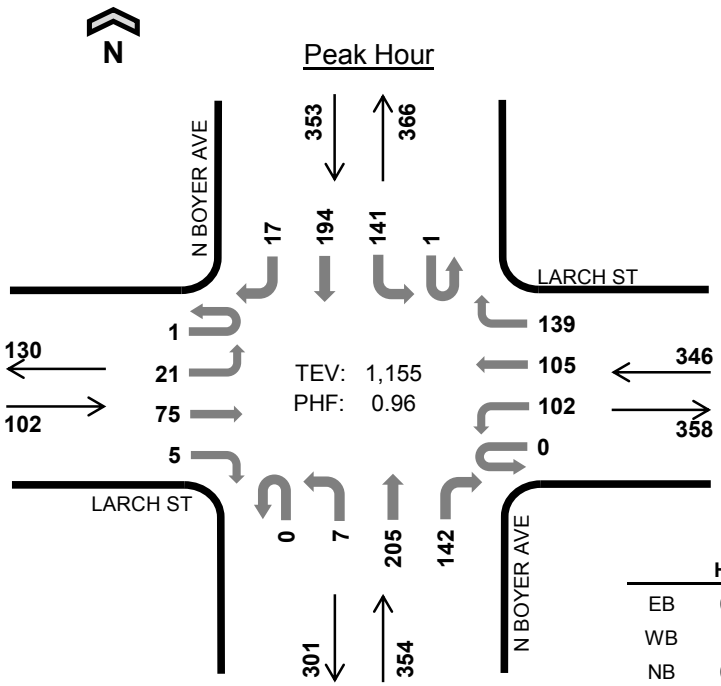
Interval Start	BALDY MOUNTAIN RD Eastbound				BALDY MOUNTAIN RD Westbound				N BOYER AVE Northbound				N BOYER AVE Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	**0**	**46**	**0**	**32**	**0**	**1**	**0**	**0**	**0**	**21**	**57**	**0**	**0**	**1**	**45**	**26**	**229**	0
4:15 PM	**0**	**20**	**0**	**36**	**0**	**0**	**0**	**1**	**0**	**22**	**32**	**1**	**0**	**1**	**46**	**34**	**193**	0
4:30 PM	**0**	**35**	**0**	**28**	**0**	**0**	**0**	**1**	**0**	**21**	**45**	**1**	**0**	**1**	**46**	**37**	**215**	0
4:45 PM	**0**	**44**	**1**	**18**	**0**	**0**	**0**	**1**	**0**	**22**	**40**	**0**	**0**	**1**	**36**	**36**	**199**	**836**
5:00 PM	0	45	0	21	0	0	0	0	0	14	52	0	0	0	40	30	202	809
5:15 PM	0	46	0	21	0	0	1	1	0	16	42	0	0	0	25	36	188	804
5:30 PM	0	41	0	16	0	0	0	0	0	7	49	0	0	0	32	20	165	754
5:45 PM	0	27	0	7	0	0	0	1	0	18	39	0	0	2	38	19	151	706
Count Total	0	304	1	179	0	1	1	5	0	141	356	2	0	6	308	238	1,542	0
Peak Hour	**0**	**145**	**1**	**114**	**0**	**1**	**0**	**3**	**0**	**86**	**174**	**2**	**0**	**4**	**173**	**133**	**836**	**0**

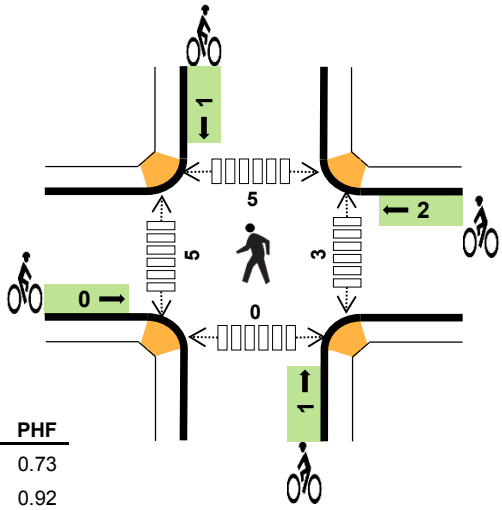
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	**3**	**0**	**1**	**1**	***5***	**0**	**0**	**0**	**0**	***0***	**4**	**0**	**0**	**0**	*4*
4:15 PM	**1**	**0**	**1**	**1**	***3***	**0**	**0**	**0**	**1**	***1***	**1**	**0**	**0**	**0**	*1*
4:30 PM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
4:45 PM	**0**	**0**	**2**	**4**	***6***	**0**	**0**	**0**	**1**	***1***	**0**	**0**	**0**	**0**	***0***
5:00 PM	0	0	0	0	*0*	0	0	0	2	*2*	2	0	0	0	*2*
5:15 PM	1	0	2	0	*3*	1	0	2	0	*3*	3	0	0	0	*3*
5:30 PM	0	0	1	0	*1*	0	0	2	0	*2*	1	0	0	0	*1*
5:45 PM	1	0	2	0	*3*	0	0	0	0	*0*	1	0	0	0	*1*
Count Total	6	0	9	6	*21*	1	0	4	4	*9*	12	0	0	0	*12*
Peak Hour	**4**	**0**	**4**	**6**	***14***	**0**	**0**	**0**	**2**	***2***	**5**	**0**	**0**	**0**	***5***

N BOYER AVE
LARCH ST

Date: Wed, Oct 02, 2019
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:15 PM to 5:15 PM





	HV %:	PHF
EB	0.0%	0.73
WB	1.7%	0.92
NB	0.3%	0.80
SB	0.6%	0.86
TOTAL	0.8%	0.96

Two-Hour Count Summaries

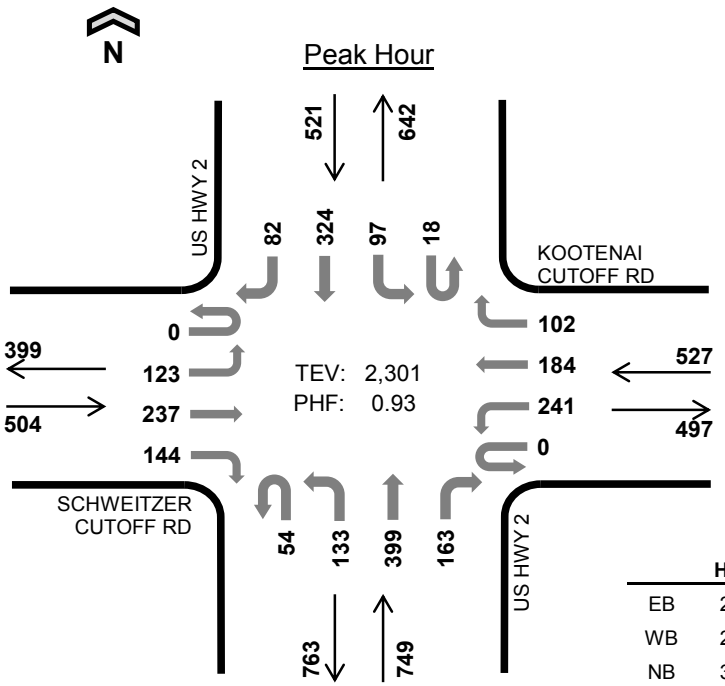
Interval Start	LARCH ST Eastbound				LARCH ST Westbound				N BOYER AVE Northbound				N BOYER AVE Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	8	15	2	0	15	17	29	0	2	47	18	0	31	46	4	234	0
4:15 PM	**0**	**3**	**14**	**2**	**0**	**25**	**27**	**31**	**0**	**3**	**39**	**26**	**1**	**45**	**52**	**5**	**273**	0
4:30 PM	**1**	**10**	**23**	**1**	**0**	**22**	**30**	**33**	**0**	**2**	**54**	**31**	**0**	**34**	**53**	**3**	**297**	0
4:45 PM	**0**	**4**	**17**	**2**	**0**	**24**	**24**	**46**	**0**	**0**	**52**	**36**	**0**	**25**	**47**	**6**	**283**	1,087
5:00 PM	**0**	**4**	**21**	**0**	**0**	**31**	**24**	**29**	**0**	**2**	**60**	**49**	**0**	**37**	**42**	**3**	**302**	**1,155**
5:15 PM	0	7	24	2	0	28	26	25	0	1	45	24	0	11	44	4	241	1,123
5:30 PM	0	6	16	2	0	17	24	20	0	1	29	29	0	30	42	5	221	1,047
5:45 PM	0	6	19	0	0	15	24	24	0	1	33	17	0	23	43	4	209	973
Count Total	1	48	149	11	0	177	196	237	0	12	359	230	1	236	369	34	2,060	0
Peak Hour	**1**	**21**	**75**	**5**	**0**	**102**	**105**	**139**	**0**	**7**	**205**	**142**	**1**	**141**	**194**	**17**	**1,155**	**0**

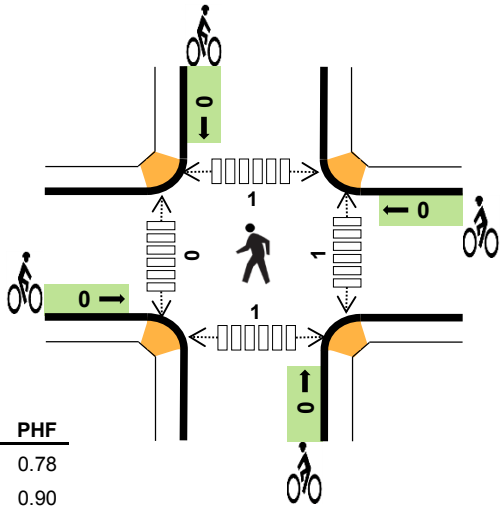
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	0	0	0	*0*	0	0	0	0	*0*	4	5	3	2	*14*
4:15 PM	**0**	**2**	**0**	**1**	***3***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**1**	**0**	*1*
4:30 PM	**0**	**1**	**0**	**0**	***1***	**0**	**2**	**0**	**0**	***2***	**0**	**1**	**0**	**0**	*1*
4:45 PM	**0**	**2**	**1**	**1**	***4***	**0**	**0**	**1**	**1**	***2***	**2**	**2**	**4**	**0**	*8*
5:00 PM	**0**	**1**	**0**	**0**	***1***	**0**	**0**	**0**	**0**	***0***	**1**	**2**	**0**	**0**	***3***
5:15 PM	0	0	2	1	*3*	0	0	2	0	*2*	0	2	0	0	*2*
5:30 PM	0	1	1	0	*2*	0	0	0	0	*0*	0	4	2	0	*6*
5:45 PM	0	1	1	0	*2*	0	0	0	0	*0*	0	2	0	0	*2*
Count Total	0	8	5	3	*16*	0	2	3	1	*6*	7	18	10	2	*37*
Peak Hour	**0**	**6**	**1**	**2**	***9***	**0**	**2**	**1**	**1**	***4***	**3**	**5**	**5**	**0**	***13***

US HWY 2
SCHWEITZER CUTOFF RD

Date: Wed, Oct 02, 2019
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:15 PM to 5:15 PM





	HV %:	PHF
EB	2.0%	0.78
WB	2.8%	0.90
NB	3.3%	0.90
SB	8.3%	0.96
TOTAL	4.0%	0.93

Two-Hour Count Summaries

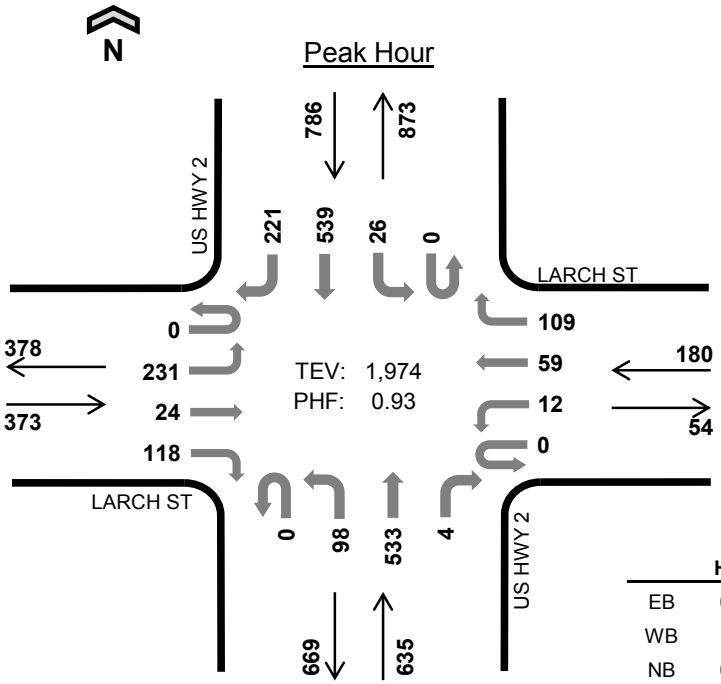
Interval Start	SCHWEITZER CUTOFF RD				KOOTENAI CUTOFF RD				US HWY 2				US HWY 2				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	38	69	33	0	69	54	41	5	27	69	34	2	19	56	7	523	0
4:15 PM	**0**	**29**	**59**	**27**	**0**	**64**	**29**	**24**	**10**	**50**	**106**	**42**	**7**	**30**	**81**	**18**	**576**	0
4:30 PM	**0**	**35**	**69**	**58**	**0**	**52**	**50**	**21**	**12**	**32**	**108**	**49**	**6**	**22**	**79**	**27**	**620**	0
4:45 PM	**0**	**30**	**70**	**34**	**0**	**59**	**60**	**28**	**14**	**17**	**95**	**35**	**3**	**21**	**78**	**14**	**558**	2,277
5:00 PM	**0**	**29**	**39**	**25**	**0**	**66**	**45**	**29**	**18**	**34**	**90**	**37**	**2**	**24**	**86**	**23**	**547**	**2,301**
5:15 PM	0	33	61	19	0	64	39	32	8	20	94	29	3	27	82	18	529	2,254
5:30 PM	0	38	43	17	0	51	42	36	17	28	82	30	3	24	59	14	484	2,118
5:45 PM	0	25	41	37	0	44	27	22	6	21	81	37	6	20	51	14	432	1,992
Count Total	0	257	451	250	0	469	346	233	90	229	725	293	32	187	572	135	4,269	0
Peak Hour	**0**	**123**	**237**	**144**	**0**	**241**	**184**	**102**	**54**	**133**	**399**	**163**	**18**	**97**	**324**	**82**	**2,301**	**0**

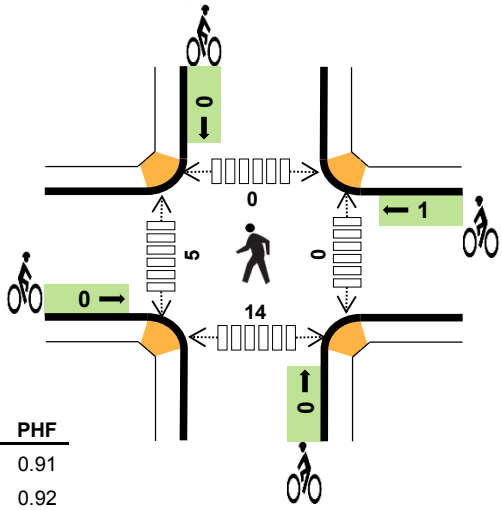
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	3	2	8	7	*20*	0	0	0	0	*0*	0	0	1	0	*1*
4:15 PM	**4**	**3**	**7**	**11**	***25***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
4:30 PM	**2**	**2**	**9**	**10**	***23***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
4:45 PM	**0**	**7**	**5**	**11**	***23***	**0**	**0**	**0**	**0**	***0***	**1**	**0**	**1**	**1**	*3*
5:00 PM	**4**	**3**	**4**	**11**	***22***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
5:15 PM	2	0	6	7	*15*	0	0	0	0	*0*	0	2	0	2	*4*
5:30 PM	1	0	4	8	*13*	0	0	0	0	*0*	0	0	0	0	*0*
5:45 PM	3	1	5	7	*16*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	19	18	48	72	*157*	0	0	0	0	*0*	1	2	2	3	*8*
Peak Hour	**10**	**15**	**25**	**43**	***93***	**0**	**0**	**0**	**0**	***0***	**1**	**0**	**1**	**1**	***3***

US HWY 2
LARCH ST

Date: Wed, Oct 02, 2019
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:15 PM to 5:15 PM





	HV %:	PHF
EB	0.3%	0.91
WB	1.1%	0.92
NB	0.5%	0.83
SB	2.3%	0.88
TOTAL	1.2%	0.93

Two-Hour Count Summaries

Interval Start	LARCH ST Eastbound				LARCH ST Westbound				US HWY 2 Northbound				US HWY 2 Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	51	7	26	0	9	16	29	0	23	156	2	0	6	141	46	512	0
4:15 PM	**0**	**69**	**7**	**27**	**0**	**3**	**11**	**29**	**0**	**23**	**124**	**0**	**0**	**5**	**107**	**49**	**454**	0
4:30 PM	**0**	**41**	**9**	**28**	**0**	**5**	**16**	**28**	**0**	**22**	**154**	**3**	**0**	**8**	**148**	**67**	**529**	0
4:45 PM	**0**	**58**	**6**	**30**	**0**	**3**	**19**	**24**	**0**	**24**	**94**	**0**	**0**	**8**	**138**	**56**	**460**	1,955
5:00 PM	**0**	**63**	**2**	**33**	**0**	**1**	**13**	**28**	**0**	**29**	**161**	**1**	**0**	**5**	**146**	**49**	**531**	**1,974**
5:15 PM	0	54	5	24	0	5	10	22	0	23	129	0	0	0	130	50	452	1,972
5:30 PM	0	52	6	17	0	3	8	24	0	16	95	1	0	6	124	45	397	1,840
5:45 PM	0	45	3	20	0	4	4	20	0	14	92	0	0	5	115	42	364	1,744
Count Total	0	433	45	205	0	33	97	204	0	174	1,005	7	0	43	1,049	404	3,699	0
Peak Hour	**0**	**231**	**24**	**118**	**0**	**12**	**59**	**109**	**0**	**98**	**533**	**4**	**0**	**26**	**539**	**221**	**1,974**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

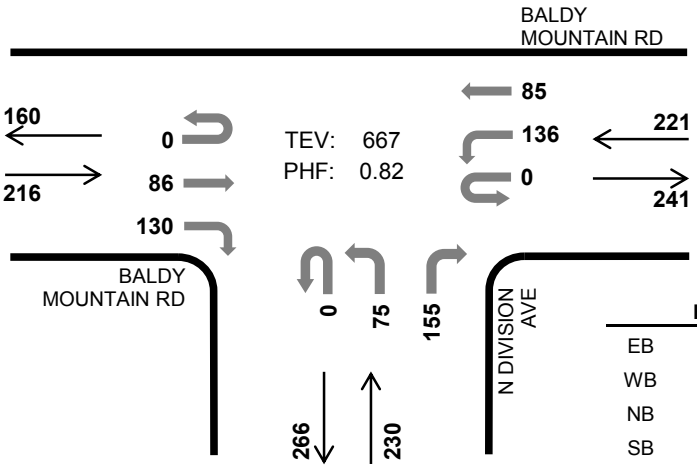
Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	0	2	4	*6*	0	0	0	0	*0*	0	0	0	2	*2*
4:15 PM	**0**	**1**	**0**	**4**	***5***	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**0**	**5**	*6*
4:30 PM	**0**	**1**	**0**	**5**	***6***	**0**	**1**	**0**	**0**	***1***	**0**	**0**	**0**	**1**	*1*
4:45 PM	**1**	**0**	**1**	**5**	***7***	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**0**	**3**	*4*
5:00 PM	**0**	**0**	**2**	**4**	***6***	**0**	**0**	**0**	**0**	***0***	**0**	**3**	**0**	**5**	***8***
5:15 PM	0	1	1	1	*3*	0	0	0	0	*0*	0	3	0	6	*9*
5:30 PM	1	1	0	2	*4*	0	0	0	0	*0*	0	1	0	1	*2*
5:45 PM	0	0	1	3	*4*	0	0	0	0	*0*	1	0	0	0	*1*
Count Total	2	4	7	28	*41*	0	1	0	0	*1*	1	9	0	23	*33*
Peak Hour	**1**	**2**	**3**	**18**	***24***	**0**	**1**	**0**	**0**	***1***	**0**	**5**	**0**	**14**	***19***

N DIVISION AVE
BALDY MOUNTAIN RD

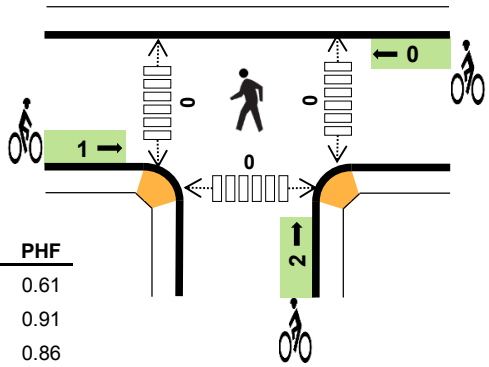
N

Peak Hour

Date: Wed, Oct 02, 2019
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:30 PM to 5:30 PM



	HV %:	PHF
EB	0.0%	0.61
WB	2.7%	0.91
NB	1.3%	0.86
SB	-	-
TOTAL	1.3%	0.82



Two-Hour Count Summaries

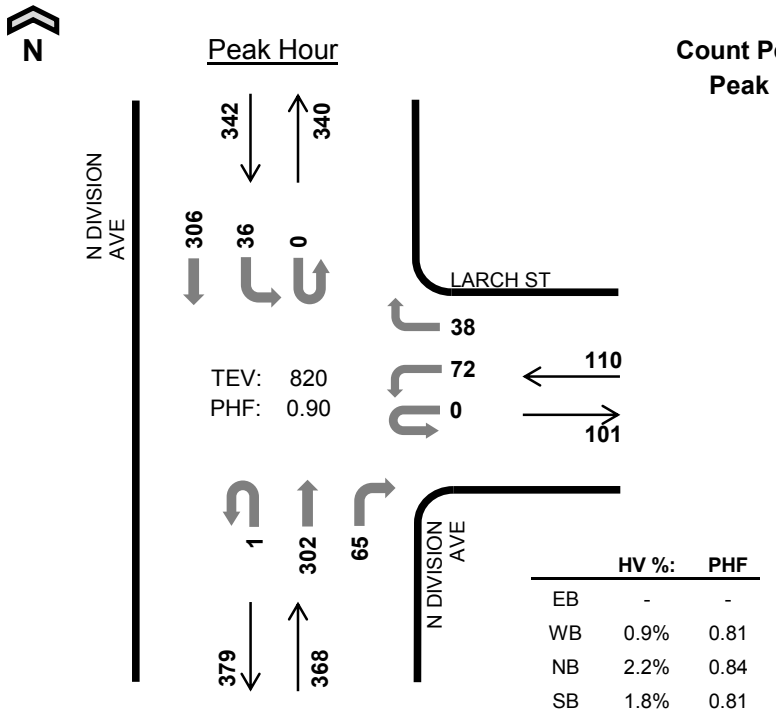
Interval Start	BALDY MOUNTAIN RD Eastbound				BALDY MOUNTAIN RD Westbound				N DIVISION AVE Northbound				0 Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	38	20	0	20	24	0	0	21	0	37	0	0	0	0	160	0
4:15 PM	0	0	21	25	0	36	28	0	0	21	0	27	0	0	0	0	158	0
4:30 PM	**0**	**0**	**34**	**55**	**0**	**38**	**23**	**0**	**0**	**20**	**0**	**34**	**0**	**0**	**0**	**0**	**204**	0
4:45 PM	**0**	**0**	**15**	**24**	**0**	**31**	**23**	**0**	**0**	**13**	**0**	**38**	**0**	**0**	**0**	**0**	**144**	666
5:00 PM	**0**	**0**	**19**	**26**	**0**	**31**	**20**	**0**	**0**	**18**	**0**	**40**	**0**	**0**	**0**	**0**	**154**	660
5:15 PM	**0**	**0**	**18**	**25**	**0**	**36**	**19**	**0**	**0**	**24**	**0**	**43**	**0**	**0**	**0**	**0**	**165**	**667**
5:30 PM	0	0	10	19	0	20	7	0	0	24	0	51	0	0	0	0	131	594
5:45 PM	0	0	6	20	0	26	15	0	0	11	0	25	0	0	0	0	103	553
Count Total	0	0	161	214	0	238	159	0	0	152	0	295	0	0	0	0	1,219	0
Peak Hour	**0**	**0**	**86**	**130**	**0**	**136**	**85**	**0**	**0**	**75**	**0**	**155**	**0**	**0**	**0**	**0**	**667**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

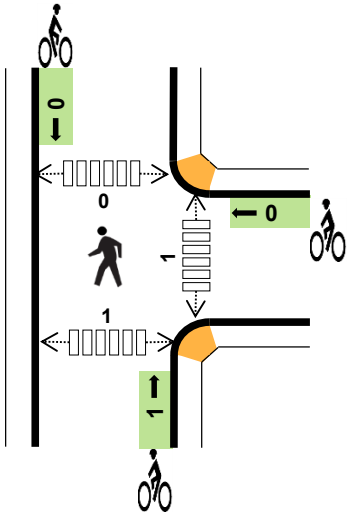
Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	1	4	0	*5*	0	2	2	0	*4*	0	0	0	0	*0*
4:15 PM	1	1	1	0	*3*	0	0	0	0	*0*	0	0	0	0	*0*
4:30 PM	**0**	**2**	**1**	**0**	***3***	**1**	**0**	**1**	**0**	***2***	**0**	**0**	**0**	**0**	*0*
4:45 PM	**0**	**4**	**0**	**0**	***4***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
5:00 PM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
5:15 PM	**0**	**0**	**2**	**0**	***2***	**0**	**0**	**1**	**0**	***1***	**0**	**0**	**0**	**0**	***0***
5:30 PM	0	0	1	0	*1*	0	2	0	0	*2*	0	0	0	0	*0*
5:45 PM	0	0	2	0	*2*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	1	8	11	0	*20*	1	4	4	0	*9*	0	0	0	0	*0*
Peak Hr	**0**	**6**	**3**	**0**	***9***	**1**	**0**	**2**	**0**	***3***	**0**	**0**	**0**	**0**	***0***

N DIVISION AVE
LARCH ST

Date: Wed, Oct 02, 2019
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:30 PM to 5:30 PM



	HV %:	PHF
EB	-	-
WB	0.9%	0.81
NB	2.2%	0.84
SB	1.8%	0.81
TOTAL	1.8%	0.90



Two-Hour Count Summaries

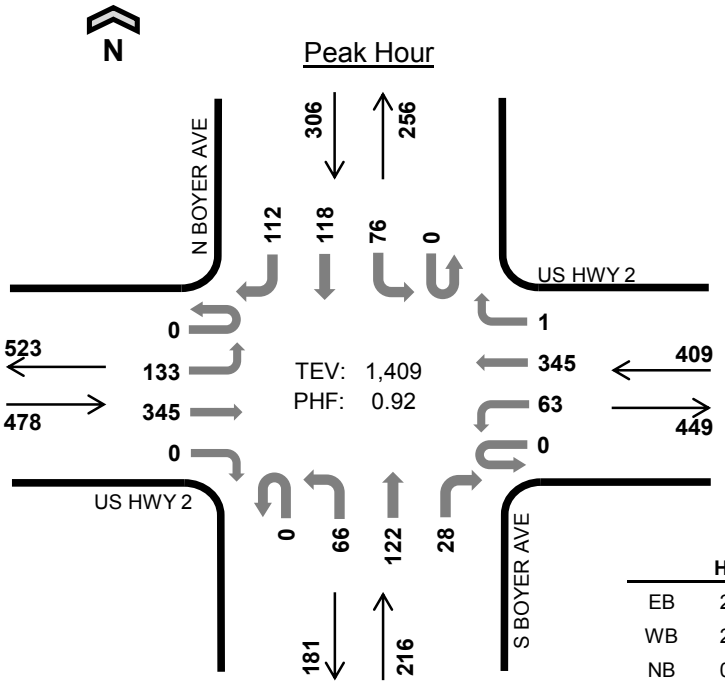
Interval Start	0				LARCH ST				N DIVISION AVE				N DIVISION AVE				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	10	0	6	0	0	65	13	0	5	42	0	141	0
4:15 PM	0	0	0	0	0	13	0	10	0	0	66	6	0	6	60	0	161	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**23**	**0**	**11**	**0**	**0**	**70**	**18**	**0**	**12**	**93**	**0**	**227**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**17**	**0**	**3**	**1**	**0**	**65**	**12**	**0**	**9**	**70**	**0**	**177**	706
5:00 PM	**0**	**0**	**0**	**0**	**0**	**17**	**0**	**12**	**0**	**0**	**77**	**16**	**0**	**10**	**67**	**0**	**199**	764
5:15 PM	**0**	**0**	**0**	**0**	**0**	**15**	**0**	**12**	**0**	**0**	**90**	**19**	**0**	**5**	**76**	**0**	**217**	**820**
5:30 PM	0	0	0	0	0	8	0	8	0	0	87	14	0	3	55	0	175	768
5:45 PM	0	0	0	0	0	19	0	6	0	0	39	15	0	3	65	0	147	738
Count Total	0	0	0	0	0	122	0	68	1	0	559	113	0	53	528	0	1,444	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**72**	**0**	**38**	**1**	**0**	**302**	**65**	**0**	**36**	**306**	**0**	**820**	**0**

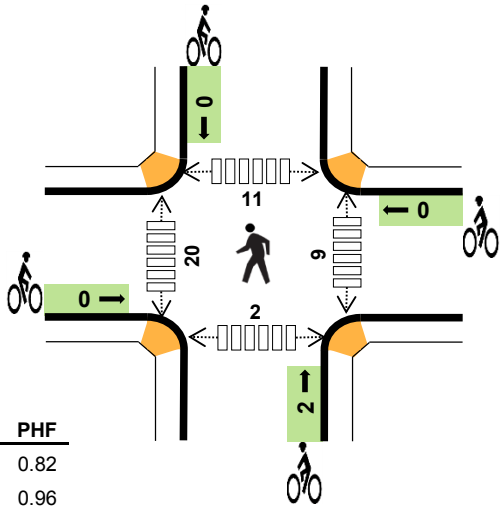
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	0	4	1	*5*	0	0	2	1	*3*	0	2	0	0	*2*
4:15 PM	0	0	3	2	*5*	0	0	0	0	*0*	0	2	0	0	*2*
4:30 PM	**0**	**0**	**3**	**1**	***4***	**0**	**0**	**0**	**0**	***0***	**0**	**6**	**0**	**0**	*6*
4:45 PM	**0**	**0**	**2**	**2**	***4***	**0**	**0**	**0**	**0**	***0***	**1**	**3**	**0**	**1**	*5*
5:00 PM	**0**	**0**	**0**	**1**	***1***	**0**	**0**	**1**	**0**	***1***	**0**	**0**	**0**	**0**	*0*
5:15 PM	**0**	**1**	**3**	**2**	***6***	**0**	**0**	**0**	**0**	***0***	**0**	**2**	**0**	**0**	***2***
5:30 PM	0	0	2	1	*3*	0	0	1	0	*1*	0	1	0	0	*1*
5:45 PM	0	0	1	0	*1*	0	0	2	0	*2*	1	1	0	0	*2*
Count Total	0	1	18	10	*29*	0	0	6	1	*7*	2	17	0	1	*20*
Peak Hr	**0**	**1**	**8**	**6**	***15***	**0**	**0**	**1**	**0**	***1***	**1**	**11**	**0**	**1**	***13***

S BOYER AVE
US HWY 2

Date: Wed, Oct 02, 2019
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:30 PM to 5:30 PM





	HV %:	PHF
EB	2.1%	0.82
WB	2.0%	0.96
NB	0.5%	0.84
SB	0.3%	0.88
TOTAL	1.4%	0.92

Two-Hour Count Summaries

Interval Start	US HWY 2 Eastbound				US HWY 2 Westbound				S BOYER AVE Northbound				N BOYER AVE Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	23	102	0	0	15	86	0	0	12	26	8	0	24	20	31	347	0
4:15 PM	0	28	64	0	0	11	80	0	0	16	29	11	0	17	19	36	311	0
4:30 PM	**0**	**40**	**83**	**0**	**0**	**16**	**81**	**0**	**0**	**18**	**30**	**8**	**0**	**10**	**26**	**26**	**338**	0
4:45 PM	**0**	**27**	**86**	**0**	**0**	**15**	**91**	**1**	**0**	**20**	**36**	**8**	**0**	**26**	**31**	**30**	**371**	1,367
5:00 PM	**0**	**42**	**103**	**0**	**0**	**17**	**89**	**0**	**0**	**19**	**28**	**7**	**0**	**20**	**23**	**33**	**381**	1,401
5:15 PM	**0**	**24**	**73**	**0**	**0**	**15**	**84**	**0**	**0**	**9**	**28**	**5**	**0**	**20**	**38**	**23**	**319**	**1,409**
5:30 PM	0	28	81	0	0	25	80	0	0	6	29	8	0	9	31	24	321	1,392
5:45 PM	0	23	58	0	0	25	61	0	0	11	20	7	0	15	36	22	278	1,299
Count Total	0	235	650	0	0	139	652	1	0	111	226	62	0	141	224	225	2,666	0
Peak Hour	**0**	**133**	**345**	**0**	**0**	**63**	**345**	**1**	**0**	**66**	**122**	**28**	**0**	**76**	**118**	**112**	**1,409**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

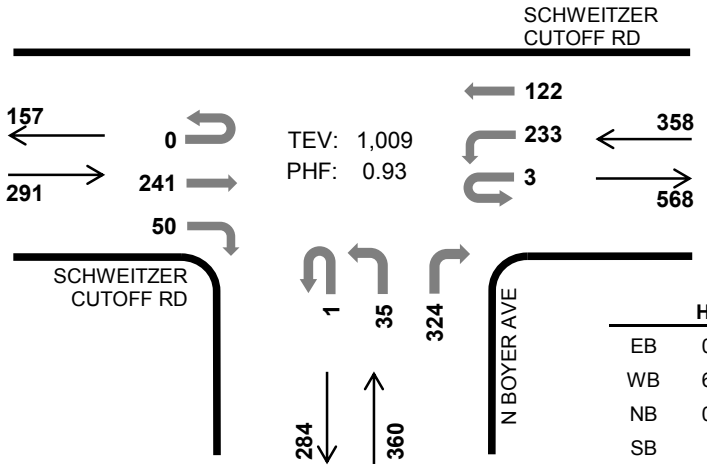
Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	3	2	0	2	*7*	0	1	0	0	*1*	2	8	1	2	*13*
4:15 PM	0	3	1	1	*5*	0	0	2	0	*2*	0	1	1	0	*2*
4:30 PM	**1**	**2**	**0**	**1**	***4***	**0**	**0**	**0**	**0**	***0***	**4**	**1**	**0**	**1**	*6*
4:45 PM	**2**	**4**	**0**	**0**	***6***	**0**	**0**	**0**	**0**	***0***	**2**	**11**	**0**	**1**	*14*
5:00 PM	**2**	**1**	**0**	**0**	***3***	**0**	**0**	**0**	**0**	***0***	**3**	**5**	**4**	**0**	*12*
5:15 PM	**5**	**1**	**1**	**0**	***7***	**0**	**0**	**2**	**0**	***2***	**0**	**3**	**7**	**0**	***10***
5:30 PM	0	1	0	1	*2*	0	0	0	0	*0*	2	2	3	0	*7*
5:45 PM	2	1	0	0	*3*	0	0	0	0	*0*	1	3	6	0	*10*
Count Total	15	15	2	5	*37*	0	1	4	0	*5*	14	34	22	4	*74*
Peak Hour	**10**	**8**	**1**	**1**	***20***	**0**	**0**	**2**	**0**	***2***	**9**	**20**	**11**	**2**	***42***

N BOYER AVE
SCHWEITZER CUTOFF RD

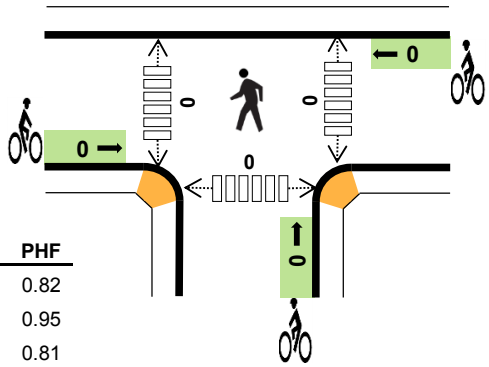
N

Peak Hour

Date: Thu, Nov 07, 2019
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:00 PM to 5:00 PM



	HV %:	PHF
EB	0.7%	0.82
WB	6.7%	0.95
NB	0.6%	0.81
SB	-	-
TOTAL	2.8%	0.93



Two-Hour Count Summaries

Interval Start	SCHWEITZER CUTOFF RD				SCHWEITZER CUTOFF RD				N BOYER AVE				0				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	**0**	**0**	**50**	**18**	**1**	**64**	**27**	**0**	**0**	**13**	**0**	**98**	**0**	**0**	**0**	**0**	**271**	0
4:15 PM	**0**	**0**	**57**	**11**	**1**	**55**	**33**	**0**	**1**	**8**	**0**	**70**	**0**	**0**	**0**	**0**	**236**	0
4:30 PM	**0**	**0**	**84**	**5**	**1**	**46**	**36**	**0**	**0**	**10**	**0**	**78**	**0**	**0**	**0**	**0**	**260**	0
4:45 PM	**0**	**0**	**50**	**16**	**0**	**68**	**26**	**0**	**0**	**4**	**0**	**78**	**0**	**0**	**0**	**0**	**242**	**1,009**
5:00 PM	0	0	35	11	0	52	31	0	0	8	0	70	0	0	0	0	207	945
5:15 PM	0	0	32	5	0	42	38	0	0	6	0	65	0	0	0	0	188	897
5:30 PM	0	0	23	6	0	33	35	0	0	12	0	63	0	0	0	0	172	809
5:45 PM	0	0	22	3	0	27	37	0	0	10	0	43	0	0	0	0	142	709
Count Total	0	0	353	75	3	387	263	0	1	71	0	565	0	0	0	0	1,718	0
Peak Hour	**0**	**0**	**241**	**50**	**3**	**233**	**122**	**0**	**1**	**35**	**0**	**324**	**0**	**0**	**0**	**0**	**1,009**	**0**

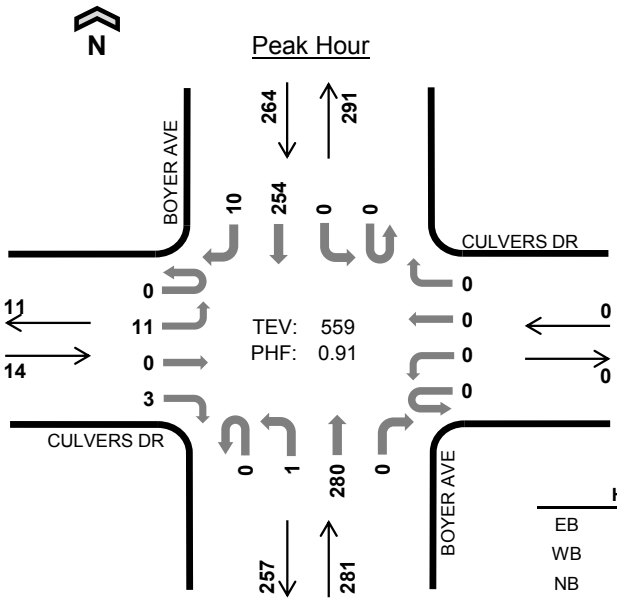
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

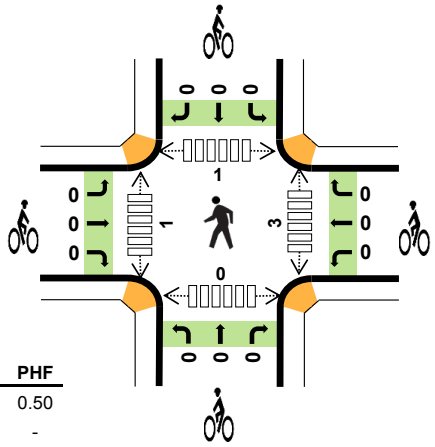
Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	**0**	**6**	**0**	**0**	***6***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
4:15 PM	**1**	**3**	**1**	**0**	***5***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
4:30 PM	**0**	**8**	**0**	**0**	***8***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
4:45 PM	**1**	**7**	**1**	**0**	***9***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
5:00 PM	1	1	0	0	*2*	0	0	0	0	*0*	0	0	0	0	*0*
5:15 PM	0	1	1	0	*2*	0	0	0	0	*0*	1	0	1	0	*2*
5:30 PM	0	2	0	0	*2*	0	0	0	0	*0*	0	0	1	0	*1*
5:45 PM	1	4	1	0	*6*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	4	32	4	0	*40*	0	0	0	0	*0*	1	0	2	0	*3*
Peak Hr	**2**	**24**	**2**	**0**	***28***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***

Mark Skaggs: (425) 250-0777 mark.skaggs@idaxdata.com

BOYER AVE
CULVERS DR

Date: 03-10-2020
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:15 PM to 5:15 PM





	HV %:	PHF
EB	0.0%	0.50
WB	-	-
NB	1.8%	0.78
SB	4.9%	0.90
TOTAL	3.2%	0.91

Two-Hour Count Summaries

Interval Start		CULVERS DR Eastbound UT	LT	TH	RT	CULVERS DR Westbound UT	LT	TH	RT	BOYER AVE Northbound UT	LT	TH	RT	BOYER AVE Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
4:00 PM		0	5	0	0	0	0	0	0	0	0	76	0	0	0	62	5	148	0
4:15 PM		**0**	**2**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**68**	**0**	**0**	**0**	**70**	**0**	**141**	0
4:30 PM		**0**	**5**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**52**	**0**	**0**	**0**	**67**	**6**	**132**	0
4:45 PM		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**70**	**0**	**0**	**0**	**58**	**4**	**133**	554
5:00 PM		**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**90**	**0**	**0**	**0**	**59**	**0**	**153**	**559**
5:15 PM		0	1	0	0	0	0	0	0	0	2	78	0	0	0	49	0	130	548
5:30 PM		0	5	0	2	0	0	0	0	0	2	55	0	0	0	43	2	109	525
5:45 PM		0	1	0	0	0	0	0	0	0	0	58	0	0	0	31	2	92	484
Count Total		0	23	0	5	0	0	0	0	0	5	547	0	0	0	439	19	1,038	0
Peak Hour	**All**	**0**	**11**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**1**	**280**	**0**	**0**	**0**	**254**	**10**	**559**	**0**
	HV	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**13**	**0**	**18**	**0**
	HV%	**-**	**0%**	**-**	**0%**	**-**	**-**	**-**	**-**	**-**	**0%**	**2%**	**-**	**-**	**-**	**5%**	**0%**	**3%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
4:00 PM	0	0	0	2	*2*	0	0	0	0	*0*	0	0	0	0	*0*
4:15 PM	**0**	**0**	**2**	**3**	***5***	**0**	**0**	**0**	**0**	***0***	**2**	**0**	**0**	**0**	*2*
4:30 PM	**0**	**0**	**2**	**6**	***8***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
4:45 PM	**0**	**0**	**1**	**1**	***2***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
5:00 PM	**0**	**0**	**0**	**3**	***3***	**0**	**0**	**0**	**0**	***0***	**1**	**1**	**1**	**0**	***3***
5:15 PM	0	0	0	2	*2*	0	0	0	0	*0*	0	0	0	0	*0*
5:30 PM	0	0	0	2	*2*	0	0	0	0	*0*	0	0	0	0	*0*
5:45 PM	0	0	1	3	*4*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	0	0	6	22	*28*	0	0	0	0	*0*	3	1	1	0	*5*
Peak Hour	**0**	**0**	**5**	**13**	***18***	**0**	**0**	**0**	**0**	***0***	**3**	**1**	**1**	**0**	***5***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	CULVERS DR				CULVERS DR				BOYER AVE				BOYER AVE				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0
4:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**3**	**0**	**5**	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**6**	**0**	**8**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**2**	17
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**3**	**18**
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	15
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	9
5:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	3	0	4	11
Count Total	0	0	0	0	0	0	0	0	0	0	6	0	0	0	22	0	28	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**13**	**0**	**18**	**0**

Two-Hour Count Summaries - Bikes

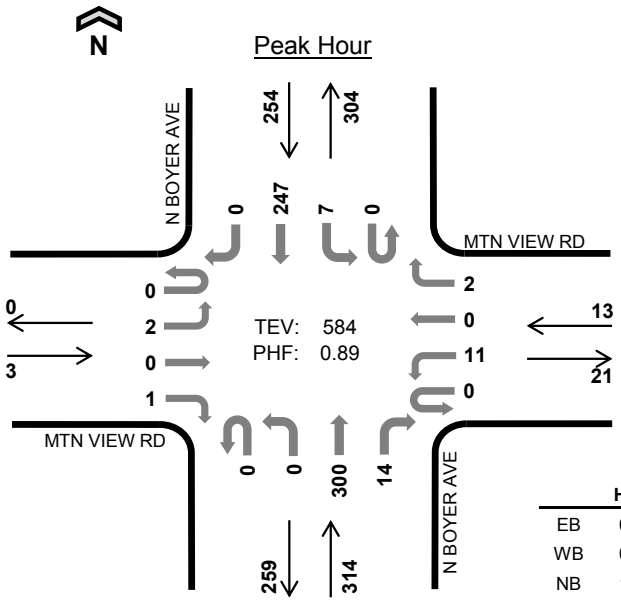
Interval Start	CULVERS DR			CULVERS DR			BOYER AVE			BOYER AVE			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

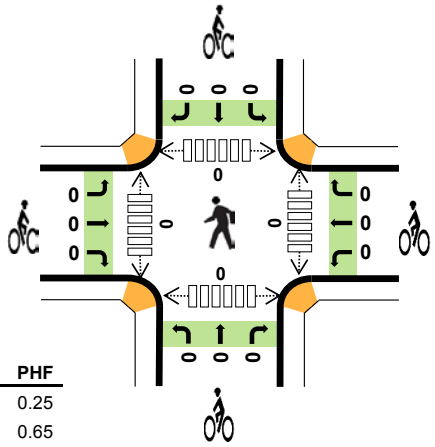
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Weekday Seasonal PM Peak Hour Turning Movement Counts

N BOYER AVE
MTN VIEW RD

Date: 03-10-2020
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:00 PM to 5:00 PM





	HV %:	PHF
EB	0.0%	0.25
WB	0.0%	0.65
NB	1.6%	0.83
SB	4.7%	0.91
TOTAL	2.9%	0.89

Two-Hour Count Summaries

Interval Start	MTN VIEW RD Eastbound UT	LT	TH	RT	MTN VIEW RD Westbound UT	LT	TH	RT	N BOYER AVE Northbound UT	LT	TH	RT	N BOYER AVE Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
4:00 PM	**0**	**2**	**0**	**1**	**0**	**2**	**0**	**1**	**0**	**0**	**90**	**5**	**0**	**2**	**61**	**0**	**164**	0
4:15 PM	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**1**	**0**	**0**	**77**	**1**	**0**	**4**	**63**	**0**	**149**	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**59**	**4**	**0**	**1**	**69**	**0**	**134**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**0**	**74**	**4**	**0**	**0**	**54**	**0**	**137**	**584**
5:00 PM	0	0	0	0	0	3	0	1	0	0	93	2	0	1	56	0	156	576
5:15 PM	0	0	0	0	0	1	0	0	0	0	79	3	0	2	46	0	131	558
5:30 PM	0	0	0	0	0	1	0	0	0	0	67	2	0	2	47	0	119	543
5:45 PM	0	0	0	0	0	1	0	0	0	0	58	1	0	0	30	0	90	496
Count Total	0	2	0	1	0	17	0	3	0	0	597	22	0	12	426	0	1,080	0
Peak Hour All	**0**	**2**	**0**	**1**	**0**	**11**	**0**	**2**	**0**	**0**	**300**	**14**	**0**	**7**	**247**	**0**	**584**	**0**
Peak Hour HV	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**12**	**0**	**17**	**0**
Peak Hour HV%	**-**	**0%**	**-**	**0%**	**-**	**0%**	**-**	**0%**	**-**	**-**	**2%**	**0%**	**-**	**0%**	**5%**	**-**	**3%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
4:00 PM	**0**	**0**	**0**	**3**	***3***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
4:15 PM	**0**	**0**	**2**	**2**	***4***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
4:30 PM	**0**	**0**	**2**	**6**	***8***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
4:45 PM	**0**	**0**	**1**	**1**	***2***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
5:00 PM	0	0	0	3	*3*	0	0	0	0	*0*	0	0	0	0	*0*
5:15 PM	0	0	0	2	*2*	0	0	0	0	*0*	0	0	0	0	*0*
5:30 PM	0	0	0	2	*2*	0	0	0	0	*0*	0	1	0	0	*1*
5:45 PM	0	0	1	3	*4*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	0	0	6	22	*28*	0	0	0	0	*0*	0	1	0	0	*1*
Peak Hour	**0**	**0**	**5**	**12**	***17***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	MTN VIEW RD				MTN VIEW RD				N BOYER AVE				N BOYER AVE				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**3**	0
4:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**2**	**0**	**4**	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**6**	**0**	**8**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**2**	**17**
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	17
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	15
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	9
5:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	3	0	4	11
Count Total	0	0	0	0	0	0	0	0	0	0	6	0	0	0	22	0	28	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**12**	**0**	**17**	**0**

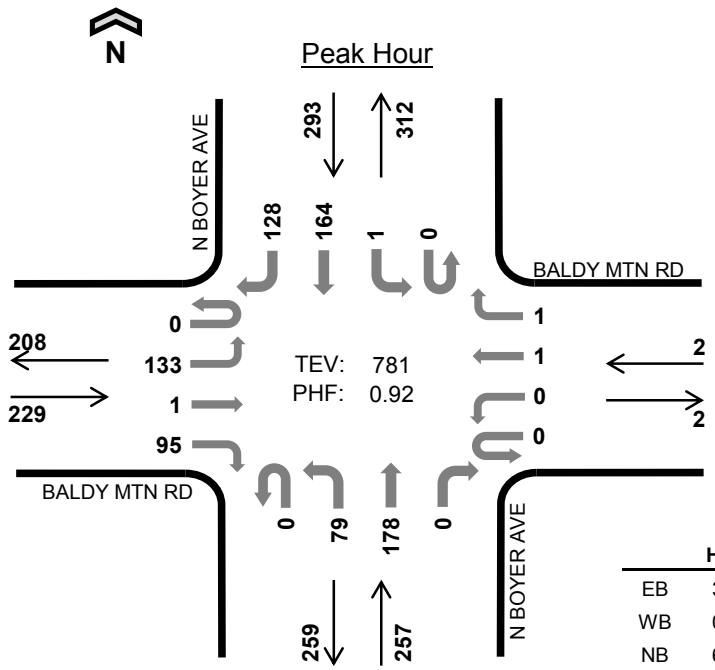
Two-Hour Count Summaries - Bikes

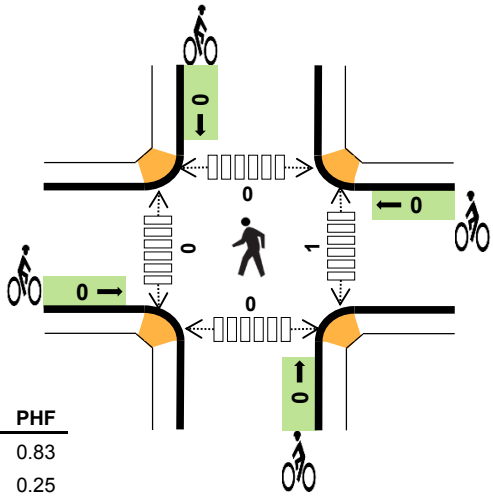
Interval Start	MTN VIEW RD			MTN VIEW RD			N BOYER AVE			N BOYER AVE			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

N BOYER AVE
BALDY MTN RD

Date: Tue, Mar 10, 2020
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:15 PM to 5:15 PM





	HV %:	PHF
EB	3.5%	0.83
WB	0.0%	0.25
NB	6.2%	0.90
SB	2.7%	0.88
TOTAL	4.1%	0.92

Two-Hour Count Summaries

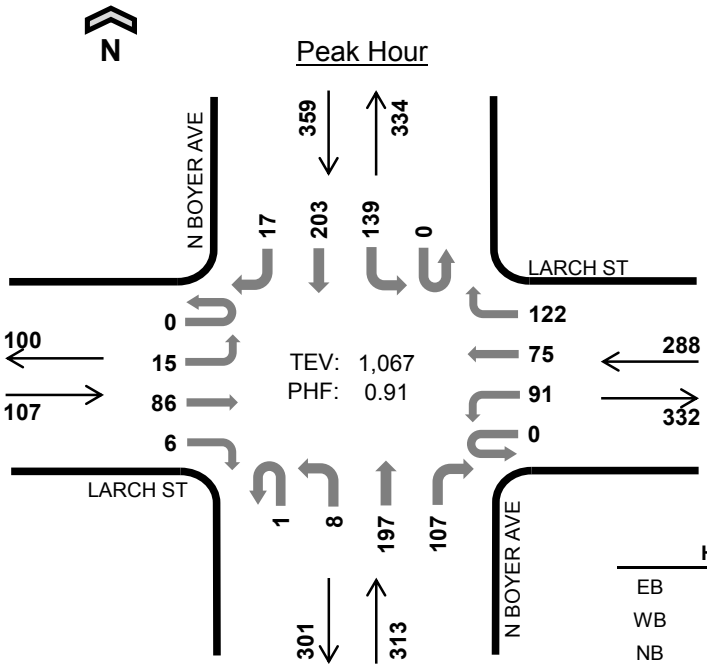
Interval Start	BALDY MTN RD Eastbound				BALDY MTN RD Westbound				N BOYER AVE Northbound				N BOYER AVE Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	41	2	29	0	0	0	0	0	19	34	0	0	0	50	21	196	0
4:15 PM	**0**	**35**	**0**	**19**	**0**	**0**	**0**	**0**	**0**	**24**	**42**	**0**	**0**	**0**	**48**	**35**	**203**	0
4:30 PM	**0**	**14**	**0**	**42**	**0**	**0**	**0**	**0**	**0**	**20**	**41**	**0**	**0**	**1**	**42**	**27**	**187**	0
4:45 PM	**0**	**37**	**0**	**13**	**0**	**0**	**0**	**0**	**0**	**16**	**43**	**0**	**0**	**0**	**37**	**32**	**178**	764
5:00 PM	**0**	**47**	**1**	**21**	**0**	**0**	**1**	**1**	**0**	**19**	**52**	**0**	**0**	**0**	**37**	**34**	**213**	**781**
5:15 PM	0	35	0	13	0	0	0	0	0	15	52	0	0	0	26	34	175	753
5:30 PM	0	32	0	12	0	0	0	0	0	11	26	0	0	0	24	20	125	691
5:45 PM	0	23	0	16	0	0	0	0	0	6	41	0	0	0	32	10	128	641
Count Total	0	264	3	165	0	0	1	1	0	130	331	0	0	1	296	213	1,405	0
Peak Hour	**0**	**133**	**1**	**95**	**0**	**0**	**1**	**1**	**0**	**79**	**178**	**0**	**0**	**1**	**164**	**128**	**781**	**0**

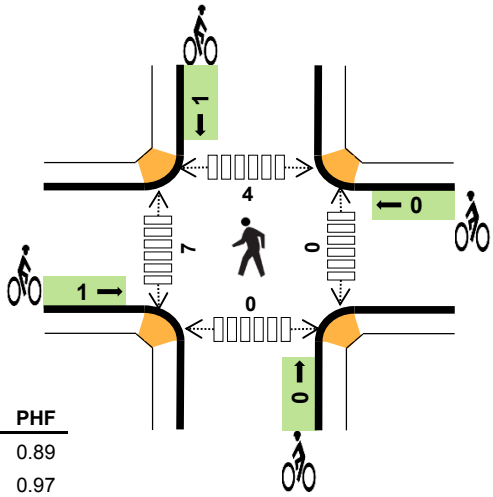
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	0	5	2	*7*	0	0	0	0	*0*	0	0	0	0	*0*
4:15 PM	**2**	**0**	**8**	**3**	***13***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
4:30 PM	**3**	**0**	**4**	**4**	***11***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
4:45 PM	**3**	**0**	**2**	**1**	***6***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
5:00 PM	**0**	**0**	**2**	**0**	***2***	**0**	**0**	**0**	**0**	***0***	**1**	**0**	**0**	**0**	***1***
5:15 PM	0	0	2	0	*2*	0	0	0	0	*0*	0	0	0	0	*0*
5:30 PM	0	0	0	1	*1*	0	0	0	0	*0*	0	0	0	0	*0*
5:45 PM	1	0	1	0	*2*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	9	0	24	11	*44*	0	0	0	0	*0*	1	0	0	0	*1*
Peak Hour	**8**	**0**	**16**	**8**	***32***	**0**	**0**	**0**	**0**	***0***	**1**	**0**	**0**	**0**	***1***

N BOYER AVE
LARCH ST

Date: Tue, Mar 10, 2020
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:15 PM to 5:15 PM





	HV %:	PHF
EB	0.0%	0.89
WB	1.4%	0.97
NB	3.5%	0.92
SB	1.7%	0.83
TOTAL	2.0%	0.91

Two-Hour Count Summaries

Interval Start	LARCH ST Eastbound				LARCH ST Westbound				N BOYER AVE Northbound				N BOYER AVE Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	5	18	3	0	23	17	29	0	2	43	28	0	37	50	1	256	0
4:15 PM	**0**	**4**	**18**	**2**	**0**	**28**	**13**	**28**	**0**	**3**	**43**	**30**	**0**	**30**	**60**	**4**	**263**	0
4:30 PM	**0**	**4**	**20**	**2**	**0**	**23**	**18**	**32**	**0**	**1**	**51**	**33**	**0**	**48**	**55**	**5**	**292**	0
4:45 PM	**0**	**4**	**21**	**2**	**0**	**16**	**24**	**32**	**0**	**2**	**47**	**19**	**0**	**28**	**42**	**1**	**238**	1,049
5:00 PM	**0**	**3**	**27**	**0**	**0**	**24**	**20**	**30**	**1**	**2**	**56**	**25**	**0**	**33**	**46**	**7**	**274**	**1,067**
5:15 PM	0	4	23	3	1	25	17	26	1	2	38	31	0	17	40	5	233	1,037
5:30 PM	0	3	21	3	0	27	21	22	0	0	31	22	0	17	34	2	203	948
5:45 PM	0	3	24	0	0	11	12	16	0	1	31	19	0	13	40	3	173	883
Count Total	0	30	172	15	1	177	142	215	2	13	340	207	0	223	367	28	1,932	0
Peak Hour	**0**	**15**	**86**	**6**	**0**	**91**	**75**	**122**	**1**	**8**	**197**	**107**	**0**	**139**	**203**	**17**	**1,067**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

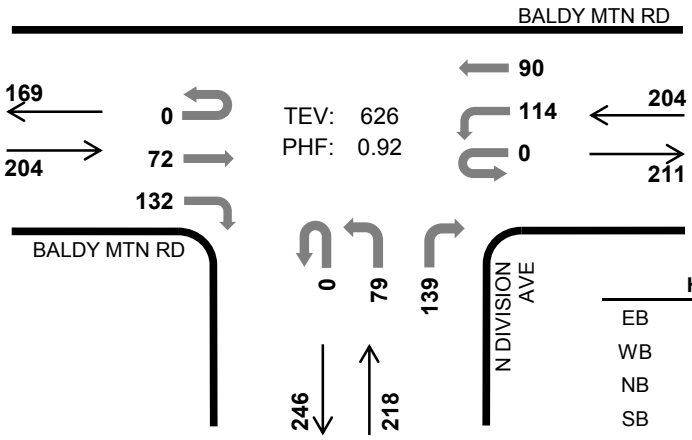
Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	0	5	0	*5*	0	0	0	0	*0*	0	3	0	0	*3*
4:15 PM	**0**	**2**	**5**	**2**	***9***	**0**	**0**	**0**	**0**	***0***	**0**	**2**	**2**	**0**	*4*
4:30 PM	**0**	**1**	**3**	**1**	***5***	**1**	**0**	**0**	**1**	***2***	**0**	**0**	**0**	**0**	*0*
4:45 PM	**0**	**0**	**2**	**3**	***5***	**0**	**0**	**0**	**0**	***0***	**0**	**2**	**0**	**0**	*2*
5:00 PM	**0**	**1**	**1**	**0**	***2***	**0**	**0**	**0**	**0**	***0***	**0**	**3**	**2**	**0**	***5***
5:15 PM	0	0	2	0	*2*	0	0	0	1	*1*	0	4	3	0	*7*
5:30 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	1	0	*1*
5:45 PM	0	0	1	0	*1*	1	0	0	0	*1*	0	0	0	0	*0*
Count Total	0	4	19	6	*29*	2	0	0	2	*4*	0	14	8	0	*22*
Peak Hour	**0**	**4**	**11**	**6**	***21***	**1**	**0**	**0**	**1**	***2***	**0**	**7**	**4**	**0**	***11***

N DIVISION AVE
BALDY MTN RD

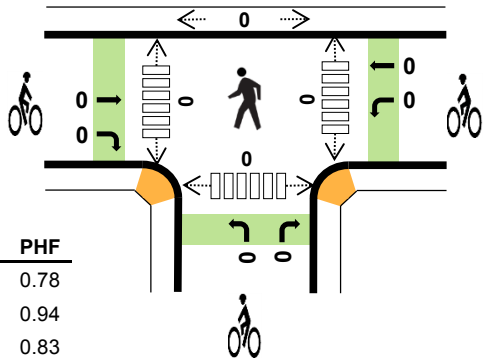
N

Peak Hour

Date: 03-10-2020
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:15 PM to 5:15 PM



	HV %:	PHF
EB	0.0%	0.78
WB	9.8%	0.94
NB	1.8%	0.83
SB	-	-
TOTAL	3.8%	0.92



Two-Hour Count Summaries

Interval Start		BALDY MTN RD Eastbound UT	LT	TH	RT	BALDY MTN RD Westbound UT	LT	TH	RT	N DIVISION AVE Northbound UT	LT	TH	RT	0 Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
4:00 PM		0	0	24	26	0	22	22	0	0	17	0	38	0	0	0	0	149	0
4:15 PM		**0**	**0**	**20**	**23**	**0**	**31**	**23**	**0**	**0**	**18**	**0**	**31**	**0**	**0**	**0**	**0**	**146**	0
4:30 PM		**0**	**0**	**18**	**47**	**0**	**21**	**28**	**0**	**0**	**14**	**0**	**31**	**0**	**0**	**0**	**0**	**159**	0
4:45 PM		**0**	**0**	**13**	**26**	**0**	**33**	**21**	**0**	**0**	**20**	**0**	**38**	**0**	**0**	**0**	**0**	**151**	605
5:00 PM		**0**	**0**	**21**	**36**	**0**	**29**	**18**	**0**	**0**	**27**	**0**	**39**	**0**	**0**	**0**	**0**	**170**	**626**
5:15 PM		0	0	11	24	0	32	21	0	0	20	0	30	0	0	0	0	138	618
5:30 PM		0	0	15	14	0	17	15	0	0	25	0	32	0	0	0	0	118	577
5:45 PM		0	0	9	13	0	15	4	0	0	15	0	21	0	0	0	0	77	503
Count Total		0	0	131	209	0	200	152	0	0	156	0	260	0	0	0	0	1,108	0
Peak Hour	**All**	**0**	**0**	**72**	**132**	**0**	**114**	**90**	**0**	**0**	**79**	**0**	**139**	**0**	**0**	**0**	**0**	**626**	**0**
	HV	**0**	**0**	**0**	**0**	**0**	**0**	**20**	**0**	**0**	**1**	**0**	**3**	**0**	**0**	**0**	**0**	**24**	**0**
	HV%	**-**	**-**	**0%**	**0%**	**-**	**0%**	**22%**	**-**	**-**	**1%**	**-**	**2%**	**-**	**-**	**-**	**-**	**4%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
4:00 PM	0	9	0	0	*9*	0	0	0	0	*0*	1	0	0	0	*1*
4:15 PM	**0**	**7**	**1**	**0**	***8***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
4:30 PM	**0**	**9**	**0**	**0**	***9***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
4:45 PM	**0**	**3**	**3**	**0**	***6***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
5:00 PM	**0**	**1**	**0**	**0**	***1***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
5:15 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
5:30 PM	1	0	0	0	*1*	0	0	0	0	*0*	0	0	1	0	*1*
5:45 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	1	29	4	0	*34*	0	0	0	0	*0*	1	0	1	0	*2*
Peak Hr	**0**	**20**	**4**	**0**	***24***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	BALDY MTN RD				BALDY MTN RD				N DIVISION AVE				0				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	2	7	0	0	0	0	0	0	0	0	0	9	0
4:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**7**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**8**	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**9**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**9**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**1**	**0**	**2**	**0**	**0**	**0**	**0**	**6**	32
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**24**
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16
5:30 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	8
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Count Total	0	0	0	1	0	2	27	0	0	1	0	3	0	0	0	0	34	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**20**	**0**	**0**	**1**	**0**	**3**	**0**	**0**	**0**	**0**	**24**	**0**

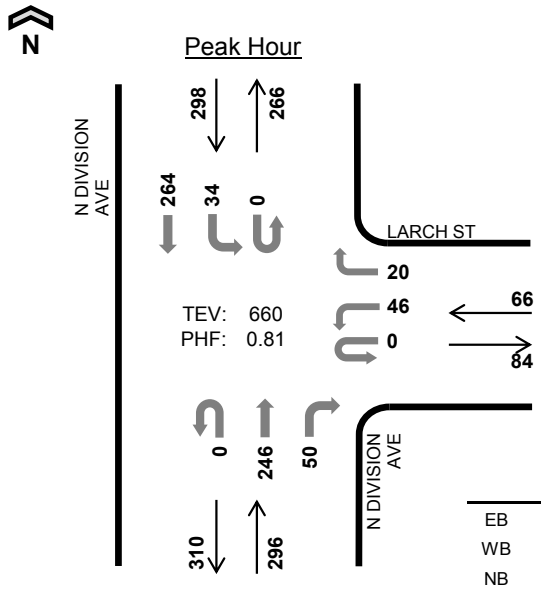
Two-Hour Count Summaries - Bikes

Interval Start	BALDY MTN RD			BALDY MTN RD			N DIVISION AVE			0			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

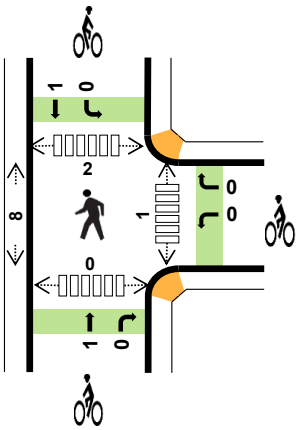
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

N DIVISION AVE
LARCH ST

Date: 03-10-2020
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:30 PM to 5:30 PM



	HV %:	PHF
EB	-	-
WB	0.0%	0.83
NB	1.0%	0.80
SB	0.3%	0.83
TOTAL	0.6%	0.81



Two-Hour Count Summaries

Interval Start		0				LARCH ST				N DIVISION AVE				N DIVISION AVE				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	0	0	0	0	13	0	3	0	0	47	14	0	4	65	0	146	0
4:15 PM		0	0	0	0	0	9	0	4	0	0	51	15	0	2	57	0	138	0
4:30 PM		**0**	**0**	**0**	**0**	**0**	**9**	**0**	**2**	**0**	**0**	**54**	**11**	**0**	**8**	**70**	**0**	**154**	0
4:45 PM		**0**	**0**	**0**	**0**	**0**	**12**	**0**	**6**	**0**	**0**	**61**	**11**	**0**	**8**	**55**	**0**	**153**	591
5:00 PM		**0**	**0**	**0**	**0**	**0**	**14**	**0**	**6**	**0**	**0**	**76**	**17**	**0**	**10**	**80**	**0**	**203**	648
5:15 PM		**0**	**0**	**0**	**0**	**0**	**11**	**0**	**6**	**0**	**0**	**55**	**11**	**0**	**8**	**59**	**0**	**150**	**660**
5:30 PM		0	0	0	0	0	13	0	7	0	0	52	25	0	3	47	0	147	653
5:45 PM		0	0	0	0	0	11	0	4	0	0	38	15	0	3	31	0	102	602
Count Total		0	0	0	0	0	92	0	38	0	0	434	119	0	46	464	0	1,193	0
Peak Hour	**All**	**0**	**0**	**0**	**0**	**0**	**46**	**0**	**20**	**0**	**0**	**246**	**50**	**0**	**34**	**264**	**0**	**660**	**0**
	HV	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**1**	**0**	**4**	**0**
	HV%	**-**	**-**	**-**	**-**	**-**	**0%**	**-**	**0%**	**-**	**-**	**1%**	**0%**	**-**	**0%**	**0%**	**-**	**1%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	0	0	1	*1*	0	0	0	0	*0*	0	0	0	0	*0*
4:15 PM	0	0	2	2	*4*	0	0	0	0	*0*	2	0	1	0	*3*
4:30 PM	**0**	**0**	**1**	**0**	***1***	**0**	**0**	**0**	**1**	***1***	**0**	**2**	**0**	**0**	*2*
4:45 PM	**0**	**0**	**1**	**0**	***1***	**0**	**0**	**1**	**0**	***1***	**1**	**4**	**2**	**0**	*7*
5:00 PM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**0**	**2**	**0**	**0**	*2*
5:15 PM	**0**	**0**	**1**	**1**	***2***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
5:30 PM	0	0	0	1	*1*	0	0	0	0	*0*	0	2	0	0	*2*
5:45 PM	0	0	0	0	*0*	0	0	0	1	*1*	1	1	0	0	*2*
Count Total	0	0	5	5	*10*	0	0	1	2	*3*	4	11	3	0	*18*
Peak Hr	**0**	**0**	**3**	**1**	***4***	**0**	**0**	**1**	**1**	***2***	**1**	**8**	**2**	**0**	***11***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	0				LARCH ST				N DIVISION AVE				N DIVISION AVE				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	4	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	7
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	6
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**2**	**4**
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	4
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Count Total	0	0	0	0	0	0	0	0	0	0	5	0	0	0	5	0	10	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**1**	**0**	**4**	**0**

Two-Hour Count Summaries - Bikes

Interval Start	0			LARCH ST			N DIVISION AVE			N DIVISION AVE			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	2
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	2
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	1	1
Count Total	0	0	0	0	0	0	0	1	0	1	1	0	3	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**2**	**0**

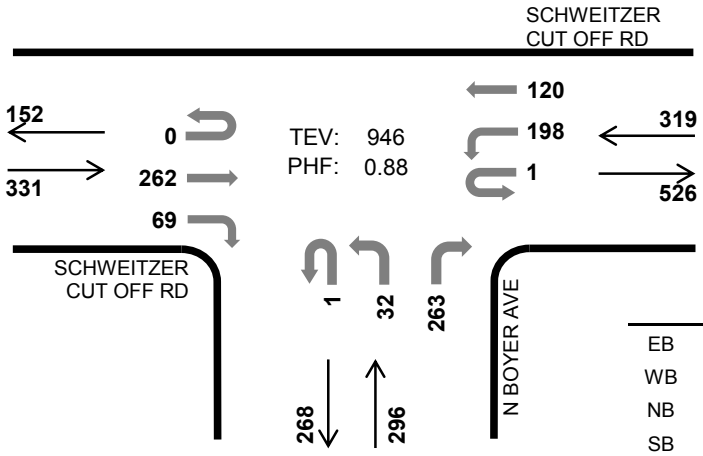
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

N BOYER AVE
SCHWEITZER CUT OFF RD

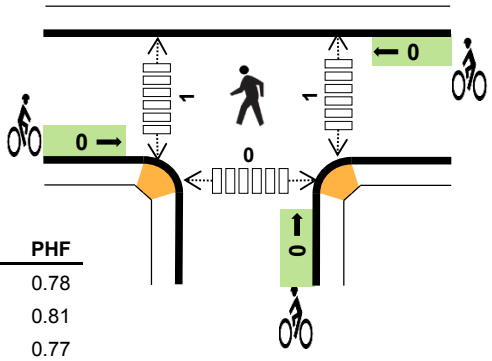
N

Peak Hour

Date: Tue, Mar 10, 2020
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:00 PM to 5:00 PM



	HV %:	PHF
EB	0.9%	0.78
WB	3.4%	0.81
NB	1.7%	0.77
SB	-	-
TOTAL	2.0%	0.88



Two-Hour Count Summaries

Interval Start	SCHWEITZER CUT OFF RD				SCHWEITZER CUT OFF RD				N BOYER AVE				0				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	**0**	**0**	**73**	**27**	**1**	**45**	**22**	**0**	**0**	**10**	**0**	**86**	**0**	**0**	**0**	**0**	**264**	0
4:15 PM	**0**	**0**	**56**	**13**	**0**	**48**	**27**	**0**	**0**	**9**	**0**	**57**	**0**	**0**	**0**	**0**	**210**	0
4:30 PM	**0**	**0**	**89**	**17**	**0**	**62**	**37**	**0**	**1**	**6**	**0**	**57**	**0**	**0**	**0**	**0**	**269**	0
4:45 PM	**0**	**0**	**44**	**12**	**0**	**43**	**34**	**0**	**0**	**7**	**0**	**63**	**0**	**0**	**0**	**0**	**203**	**946**
5:00 PM	0	0	45	9	0	46	33	0	0	17	0	61	0	0	0	0	211	893
5:15 PM	0	0	31	11	0	43	39	0	0	8	0	71	0	0	0	0	203	886
5:30 PM	0	0	27	11	0	42	43	0	1	12	0	50	0	0	0	0	186	803
5:45 PM	0	0	22	5	0	31	49	0	0	17	0	48	0	0	0	0	172	772
Count Total	0	0	387	105	1	360	284	0	2	86	0	493	0	0	0	0	1,718	0
Peak Hour	**0**	**0**	**262**	**69**	**1**	**198**	**120**	**0**	**1**	**32**	**0**	**263**	**0**	**0**	**0**	**0**	**946**	**0**

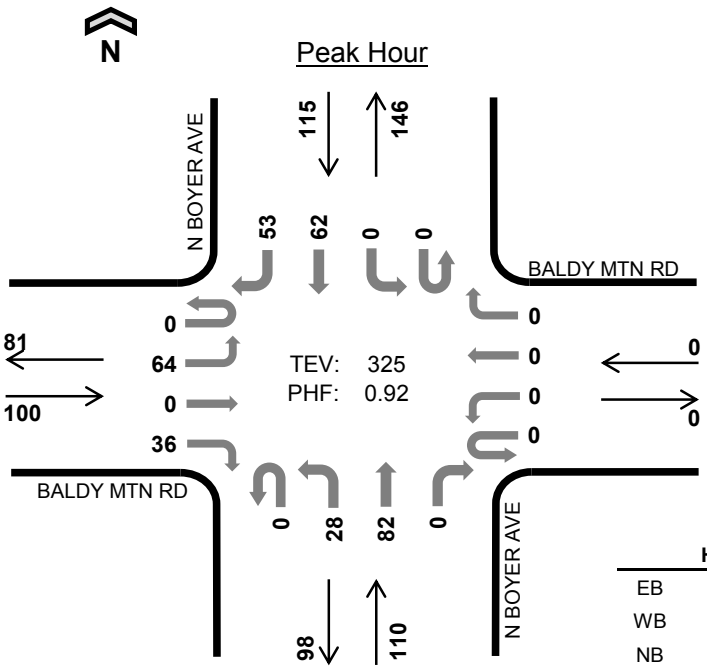
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

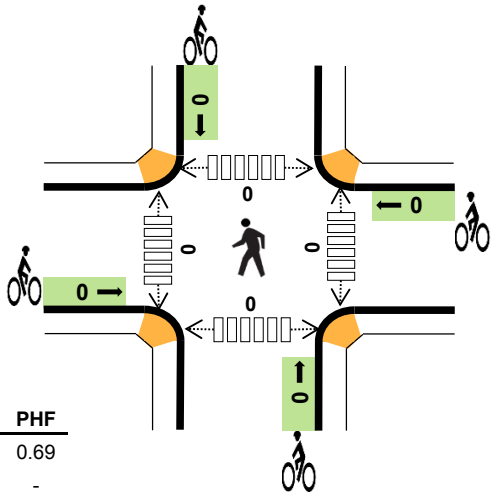
Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	**2**	**2**	**0**	**0**	***4***	**0**	**0**	**0**	**0**	***0***	**1**	**0**	**1**	**0**	*2*
4:15 PM	**0**	**2**	**2**	**0**	***4***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
4:30 PM	**0**	**6**	**1**	**0**	***7***	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**1**	**0**	*2*
4:45 PM	**1**	**1**	**2**	**0**	***4***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
5:00 PM	1	4	0	0	*5*	0	0	0	0	*0*	0	0	1	0	*1*
5:15 PM	0	2	0	0	*2*	0	0	0	0	*0*	0	0	0	0	*0*
5:30 PM	2	1	0	0	*3*	0	0	0	0	*0*	0	0	0	0	*0*
5:45 PM	0	3	1	0	*4*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	6	21	6	0	*33*	0	0	0	0	*0*	1	1	3	0	*5*
Peak Hr	**3**	**11**	**5**	**0**	***19***	**0**	**0**	**0**	**0**	***0***	**1**	**1**	**2**	**0**	***4***

Weekend AM and PM Peak Hour Turning Movement Counts

N BOYER AVE
BALDY MTN RD

Date: Sat, Mar 14, 2020
Count Period: 7:00 AM to 10:00 AM
Peak Hour: 8:45 AM to 9:45 AM





	HV %:	PHF
EB	2.0%	0.69
WB	-	-
NB	0.9%	0.86
SB	1.7%	0.76
TOTAL	1.5%	0.92

Three-Hour Count Summaries

Interval Start	BALDY MTN RD Eastbound				BALDY MTN RD Westbound				N BOYER AVE Northbound				N BOYER AVE Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
8:45 AM	0	8	0	11	0	0	0	0	0	7	15	0	0	0	18	20	79	0
9:00 AM	0	9	0	9	0	0	0	0	0	7	22	0	0	0	15	9	71	0
9:15 AM	0	29	0	7	0	0	0	0	0	8	24	0	0	0	9	10	87	0
9:30 AM	0	18	0	9	0	0	0	0	0	6	21	0	0	0	20	14	88	325
Peak Hour	0	64	0	36	0	0	0	0	0	28	82	0	0	0	62	53	325	0

Note: For all three-hour count summary, see next page.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
8:45 AM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
9:00 AM	0	0	1	0	*1*	0	0	0	0	*0*	0	0	0	0	*0*
9:15 AM	2	0	0	0	*2*	0	0	0	0	*0*	0	0	0	0	*0*
9:30 AM	0	0	0	2	*2*	0	0	0	0	*0*	0	0	0	0	*0*
Peak Hour	2	0	1	2	*5*	0	0	0	0	*0*	0	0	0	0	*0*

Three-Hour Count Summaries

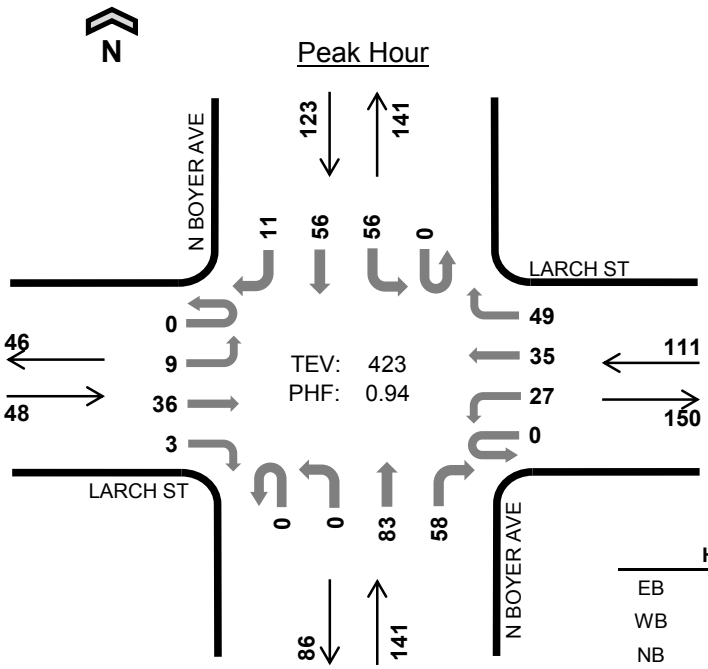
Interval Start	BALDY MTN RD				BALDY MTN RD				N BOYER AVE				N BOYER AVE				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	3	0	3	0	0	0	0	0	2	11	0	0	0	9	2	30	0
7:15 AM	0	7	0	9	0	0	0	0	0	1	19	0	0	0	5	3	44	0
7:30 AM	0	7	0	3	0	0	0	0	0	2	14	0	0	0	7	3	36	0
7:45 AM	0	9	0	2	0	0	0	0	0	4	19	0	0	0	11	3	48	158
8:00 AM	0	5	0	6	0	0	0	0	0	4	16	0	0	1	10	4	46	174
8:15 AM	0	6	0	8	0	0	0	0	1	4	20	0	0	0	7	4	50	180
8:30 AM	0	15	0	7	0	0	0	1	0	7	13	0	0	0	12	7	62	206
8:45 AM	**0**	**8**	**0**	**11**	**0**	**0**	**0**	**0**	**0**	**7**	**15**	**0**	**0**	**0**	**18**	**20**	**79**	237
9:00 AM	**0**	**9**	**0**	**9**	**0**	**0**	**0**	**0**	**0**	**7**	**22**	**0**	**0**	**0**	**15**	**9**	**71**	262
9:15 AM	**0**	**29**	**0**	**7**	**0**	**0**	**0**	**0**	**0**	**8**	**24**	**0**	**0**	**0**	**9**	**10**	**87**	299
9:30 AM	**0**	**18**	**0**	**9**	**0**	**0**	**0**	**0**	**0**	**6**	**21**	**0**	**0**	**0**	**20**	**14**	**88**	**325**
9:45 AM	0	6	0	12	0	0	0	0	1	2	13	0	0	0	14	7	55	301
Count Total	0	122	0	86	0	0	0	1	2	54	207	0	0	1	137	86	696	0
Peak Hour	**0**	**64**	**0**	**36**	**0**	**0**	**0**	**0**	**0**	**28**	**82**	**0**	**0**	**0**	**62**	**53**	**325**	**0**

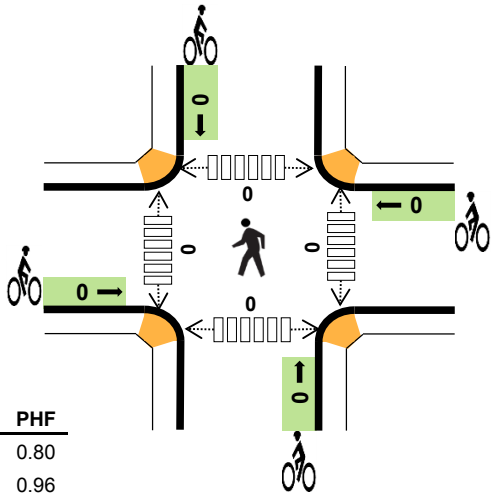
Note: Three-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	0	0	1	0	*1*	0	0	0	0	*0*	0	0	0	0	*0*
7:15 AM	0	0	1	0	*1*	0	0	0	0	*0*	0	0	0	0	*0*
7:30 AM	1	0	0	0	*1*	0	0	0	0	*0*	1	0	0	0	*1*
7:45 AM	1	0	0	1	*2*	0	0	0	0	*0*	0	0	0	0	*0*
8:00 AM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
8:15 AM	1	0	1	0	*2*	0	0	0	0	*0*	0	0	0	0	*0*
8:30 AM	2	0	0	0	*2*	0	0	0	0	*0*	0	0	0	0	*0*
8:45 AM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
9:00 AM	**0**	**0**	**1**	**0**	***1***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
9:15 AM	**2**	**0**	**0**	**0**	***2***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
9:30 AM	**0**	**0**	**0**	**2**	***2***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
9:45 AM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	7	0	4	3	*14*	0	0	0	0	*0*	1	0	0	0	*1*
Peak Hour	**2**	**0**	**1**	**2**	***5***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***

N BOYER AVE
LARCH ST

Date: Sat, Mar 14, 2020
Count Period: 7:00 AM to 10:00 AM
Peak Hour: 9:00 AM to 10:00 AM





	HV %:	PHF
EB	0.0%	0.80
WB	0.9%	0.96
NB	0.0%	0.80
SB	0.8%	0.83
TOTAL	0.5%	0.94

Three-Hour Count Summaries

Interval Start	LARCH ST Eastbound				LARCH ST Westbound				N BOYER AVE Northbound				N BOYER AVE Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
9:00 AM	0	1	10	0	0	7	10	10	0	0	30	14	0	12	14	3	111	0
9:15 AM	0	3	8	1	0	8	8	12	0	0	19	13	0	14	10	2	98	0
9:30 AM	0	1	8	1	0	8	9	12	0	0	17	15	0	14	16	1	102	0
9:45 AM	0	4	10	1	0	4	8	15	0	0	17	16	0	16	16	5	112	423
Peak Hour	0	9	36	3	0	27	35	49	0	0	83	58	0	56	56	11	423	0

Note: For all three-hour count summary, see next page.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
9:00 AM	0	1	0	0	*1*	0	0	0	0	*0*	0	0	0	0	*0*
9:15 AM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
9:30 AM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
9:45 AM	0	0	0	1	*1*	0	0	0	0	*0*	0	0	0	0	*0*
Peak Hour	0	1	0	1	*2*	0	0	0	0	*0*	0	0	0	0	*0*

Three-Hour Count Summaries

Interval Start	LARCH ST Eastbound				LARCH ST Westbound				N BOYER AVE Northbound				N BOYER AVE Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	2	4	1	0	1	3	4	0	0	5	4	0	4	6	1	35	0
7:15 AM	0	6	3	3	0	2	4	6	0	0	13	9	1	4	7	0	58	0
7:30 AM	0	2	5	0	0	8	5	4	0	0	10	10	0	7	6	0	57	0
7:45 AM	0	3	7	1	0	7	4	8	0	0	14	9	0	11	7	0	71	221
8:00 AM	0	1	6	0	0	1	10	9	0	0	18	6	0	7	11	3	72	258
8:15 AM	0	1	6	1	0	6	1	6	0	0	19	14	0	11	16	0	81	281
8:30 AM	0	2	7	0	0	10	6	12	0	0	14	17	0	9	16	1	94	318
8:45 AM	0	3	10	1	1	3	7	7	0	0	18	12	0	12	24	2	100	347
9:00 AM	**0**	**1**	**10**	**0**	**0**	**7**	**10**	**10**	**0**	**0**	**30**	**14**	**0**	**12**	**14**	**3**	**111**	386
9:15 AM	**0**	**3**	**8**	**1**	**0**	**8**	**8**	**12**	**0**	**0**	**19**	**13**	**0**	**14**	**10**	**2**	**98**	403
9:30 AM	**0**	**1**	**8**	**1**	**0**	**8**	**9**	**12**	**0**	**0**	**17**	**15**	**0**	**14**	**16**	**1**	**102**	411
9:45 AM	**0**	**4**	**10**	**1**	**0**	**4**	**8**	**15**	**0**	**0**	**17**	**16**	**0**	**16**	**16**	**5**	**112**	**423**
Count Total	0	29	84	10	1	65	75	105	0	0	194	139	1	121	149	18	991	0
Peak Hour	**0**	**9**	**36**	**3**	**0**	**27**	**35**	**49**	**0**	**0**	**83**	**58**	**0**	**56**	**56**	**11**	**423**	**0**

Note: Three-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

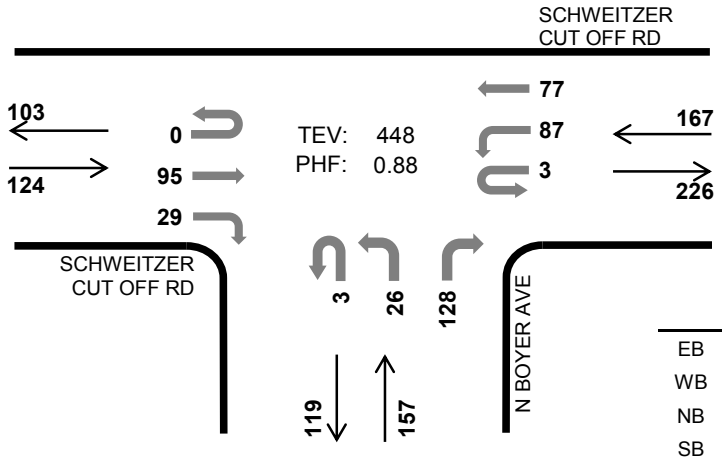
Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	0	1	0	0	*1*	0	0	0	0	*0*	0	0	0	0	*0*
7:15 AM	0	1	0	0	*1*	0	0	0	0	*0*	0	0	0	0	*0*
7:30 AM	0	0	2	0	*2*	0	0	0	0	*0*	0	0	0	0	*0*
7:45 AM	0	0	0	1	*1*	0	0	0	0	*0*	0	1	0	0	*1*
8:00 AM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
8:15 AM	0	1	1	0	*2*	0	0	0	0	*0*	0	0	0	0	*0*
8:30 AM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
8:45 AM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
9:00 AM	**0**	**1**	**0**	**0**	***1***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
9:15 AM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
9:30 AM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
9:45 AM	**0**	**0**	**0**	**1**	***1***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
Count Total	0	4	3	2	*9*	0	0	0	0	*0*	0	1	0	0	*1*
Peak Hour	**0**	**1**	**0**	**1**	***2***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***

N BOYER AVE
SCHWEITZER CUT OFF RD

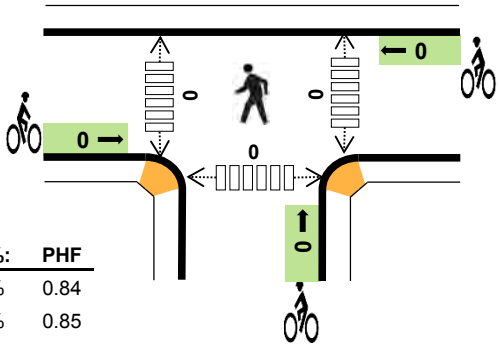
N

Peak Hour

Date: Sat, Mar 14, 2020
Count Period: 7:00 AM to 10:00 AM
Peak Hour: 9:00 AM to 10:00 AM



	HV %:	PHF
EB	2.4%	0.84
WB	3.0%	0.85
NB	1.3%	0.82
SB	-	-
TOTAL	2.2%	0.88



Three-Hour Count Summaries

Interval Start	SCHWEITZER CUT OFF RD				SCHWEITZER CUT OFF RD				N BOYER AVE				0				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
9:00 AM	0	0	23	9	0	20	29	0	2	7	0	22	0	0	0	0	112	0
9:15 AM	0	0	15	5	3	18	11	0	1	7	0	40	0	0	0	0	100	0
9:30 AM	0	0	26	9	0	29	16	0	0	5	0	42	0	0	0	0	127	0
9:45 AM	0	0	31	6	0	20	21	0	0	7	0	24	0	0	0	0	109	448
Peak Hour	0	0	95	29	3	87	77	0	3	26	0	128	0	0	0	0	448	0

Note: For all three-hour count summary, see next page.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
9:00 AM	2	0	0	0	*2*	0	0	0	0	*0*	0	0	0	0	*0*
9:15 AM	0	0	1	0	*1*	0	0	0	0	*0*	0	0	5	0	*5*
9:30 AM	0	3	1	0	*4*	0	0	0	0	*0*	0	0	0	0	*0*
9:45 AM	1	2	0	0	*3*	0	0	0	0	*0*	0	0	0	0	*0*
Peak Hour	3	5	2	0	*10*	0	0	0	0	*0*	0	0	5	0	*5*

Three-Hour Count Summaries

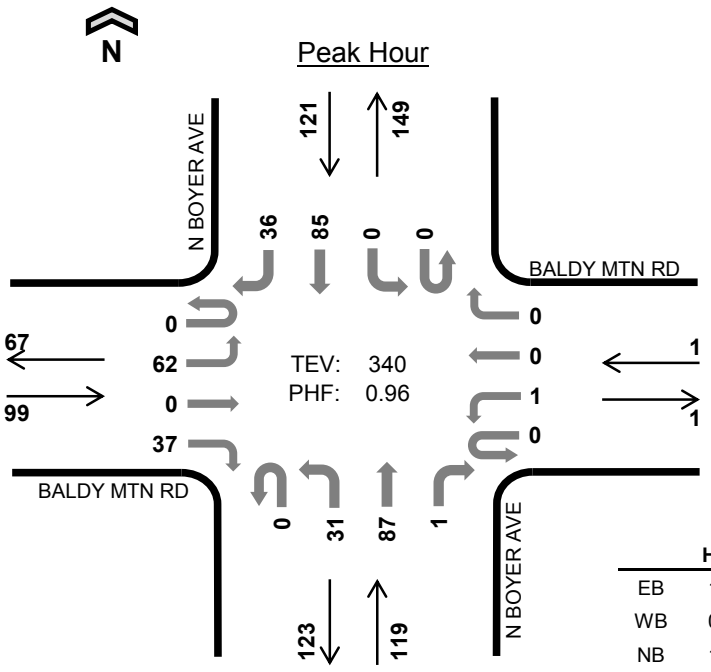
Interval Start	SCHWEITZER CUT OFF RD				SCHWEITZER CUT OFF RD				N BOYER AVE				0				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	7	2	0	8	14	0	0	4	0	10	0	0	0	0	45	0
7:15 AM	0	0	8	0	0	8	23	0	0	10	0	17	0	0	0	0	66	0
7:30 AM	0	0	7	1	0	6	15	0	0	5	0	11	0	0	0	0	45	0
7:45 AM	0	0	11	3	0	12	29	0	0	8	0	21	0	0	0	0	84	240
8:00 AM	0	0	18	2	0	11	17	0	0	1	0	22	0	0	0	0	71	266
8:15 AM	0	0	9	1	1	6	31	0	0	6	0	19	0	0	0	0	73	273
8:30 AM	0	0	19	4	4	17	16	0	1	2	0	28	0	0	0	0	91	319
8:45 AM	0	0	20	10	0	22	16	0	2	1	0	28	0	0	0	0	99	334
9:00 AM	**0**	**0**	**23**	**9**	**0**	**20**	**29**	**0**	**2**	**7**	**0**	**22**	**0**	**0**	**0**	**0**	**112**	375
9:15 AM	**0**	**0**	**15**	**5**	**3**	**18**	**11**	**0**	**1**	**7**	**0**	**40**	**0**	**0**	**0**	**0**	**100**	402
9:30 AM	**0**	**0**	**26**	**9**	**0**	**29**	**16**	**0**	**0**	**5**	**0**	**42**	**0**	**0**	**0**	**0**	**127**	438
9:45 AM	**0**	**0**	**31**	**6**	**0**	**20**	**21**	**0**	**0**	**7**	**0**	**24**	**0**	**0**	**0**	**0**	**109**	**448**
Count Total	0	0	194	52	8	177	238	0	6	63	0	284	0	0	0	0	1,022	0
Peak Hour	**0**	**0**	**95**	**29**	**3**	**87**	**77**	**0**	**3**	**26**	**0**	**128**	**0**	**0**	**0**	**0**	**448**	**0**

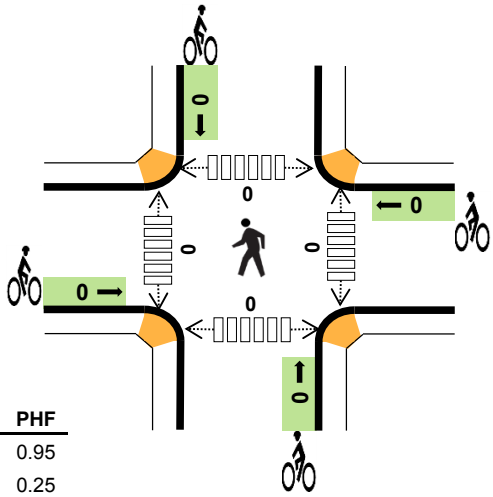
Note: Three-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	1	0	0	0	*1*	0	0	0	0	*0*	0	0	0	0	*0*
7:15 AM	0	1	0	0	*1*	0	0	0	0	*0*	0	0	0	0	*0*
7:30 AM	1	1	1	0	*3*	0	0	0	0	*0*	0	0	0	0	*0*
7:45 AM	1	1	1	0	*3*	0	0	0	0	*0*	0	0	0	0	*0*
8:00 AM	1	0	0	0	*1*	0	0	0	0	*0*	0	0	1	0	*1*
8:15 AM	0	1	0	0	*1*	0	0	0	0	*0*	0	0	0	0	*0*
8:30 AM	0	0	1	0	*1*	0	0	0	0	*0*	0	0	0	0	*0*
8:45 AM	0	1	1	0	*2*	0	0	0	0	*0*	0	0	0	0	*0*
9:00 AM	**2**	**0**	**0**	**0**	***2***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
9:15 AM	**0**	**0**	**1**	**0**	***1***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**5**	**0**	*5*
9:30 AM	**0**	**3**	**1**	**0**	***4***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
9:45 AM	**1**	**2**	**0**	**0**	***3***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
Count Total	7	10	6	0	*23*	0	0	0	0	*0*	0	0	6	0	*6*
Peak Hr	**3**	**5**	**2**	**0**	***10***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**5**	**0**	***5***

N BOYER AVE
BALDY MTN RD

Date: Sat, Mar 14, 2020
Count Period: 4:00 PM to 7:00 PM
Peak Hour: 4:00 PM to 5:00 PM





	HV %:	PHF
EB	1.0%	0.95
WB	0.0%	0.25
NB	1.7%	0.83
SB	1.7%	0.89
TOTAL	1.5%	0.96

Three-Hour Count Summaries

Interval Start	BALDY MTN RD Eastbound				BALDY MTN RD Westbound				N BOYER AVE Northbound				N BOYER AVE Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	16	0	10	0	1	0	0	0	5	21	1	0	0	24	7	85	0
4:15 PM	0	18	0	5	0	0	0	0	0	8	17	0	0	0	24	10	82	0
4:30 PM	0	12	0	12	0	0	0	0	0	10	26	0	0	0	16	8	84	0
4:45 PM	0	16	0	10	0	0	0	0	0	8	23	0	0	0	21	11	89	340
Peak Hour	0	62	0	37	0	1	0	0	0	31	87	1	0	0	85	36	340	0

Note: For all three-hour count summary, see next page.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	0	1	0	*1*	0	0	0	0	*0*	0	0	0	0	*0*
4:15 PM	1	0	0	0	*1*	0	0	0	0	*0*	0	0	0	0	*0*
4:30 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
4:45 PM	0	0	1	2	*3*	0	0	0	0	*0*	0	0	0	0	*0*
Peak Hour	1	0	2	2	*5*	0	0	0	0	*0*	0	0	0	0	*0*

Three-Hour Count Summaries

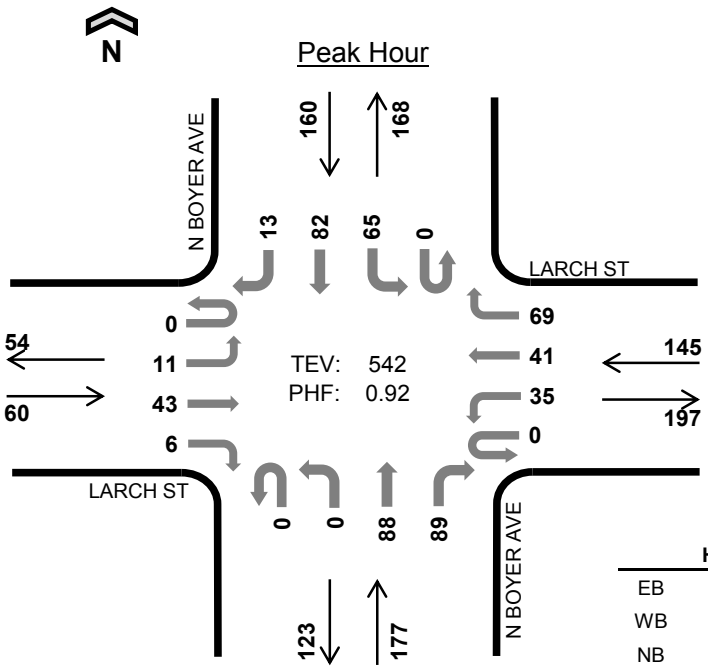
Interval Start	BALDY MTN RD				BALDY MTN RD				N BOYER AVE				N BOYER AVE				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	**0**	**16**	**0**	**10**	**0**	**1**	**0**	**0**	**0**	**5**	**21**	**1**	**0**	**0**	**24**	**7**	**85**	0
4:15 PM	**0**	**18**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**8**	**17**	**0**	**0**	**0**	**24**	**10**	**82**	0
4:30 PM	**0**	**12**	**0**	**12**	**0**	**0**	**0**	**0**	**0**	**10**	**26**	**0**	**0**	**0**	**16**	**8**	**84**	0
4:45 PM	**0**	**16**	**0**	**10**	**0**	**0**	**0**	**0**	**0**	**8**	**23**	**0**	**0**	**0**	**21**	**11**	**89**	**340**
5:00 PM	0	25	0	13	0	0	0	0	2	7	14	0	0	0	12	9	82	337
5:15 PM	0	0	0	19	0	1	0	0	0	23	0	0	0	0	0	0	43	298
5:30 PM	0	5	0	4	0	0	0	0	0	6	15	0	0	1	15	15	61	275
5:45 PM	0	17	0	12	0	0	0	0	0	6	20	0	0	0	16	12	83	269
6:00 PM	0	22	0	5	0	0	0	0	0	10	16	0	0	0	15	13	81	268
6:15 PM	0	13	0	8	0	0	0	0	0	4	10	0	0	0	15	6	56	281
6:30 PM	0	6	0	8	0	1	0	1	0	7	14	0	1	0	5	6	49	269
6:45 PM	0	10	0	8	0	0	0	0	0	4	14	0	0	0	17	13	66	252
Count Total	0	160	0	114	0	3	0	1	2	98	190	1	1	1	180	110	861	0
Peak Hour	**0**	**62**	**0**	**37**	**0**	**1**	**0**	**0**	**0**	**31**	**87**	**1**	**0**	**0**	**85**	**36**	**340**	**0**

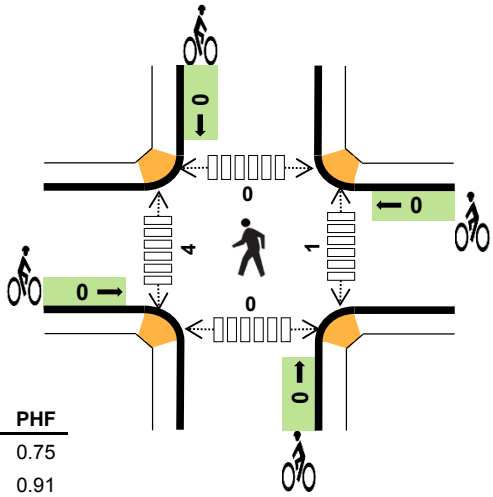
Note: Three-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	**0**	**0**	**1**	**0**	***1***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
4:15 PM	**1**	**0**	**0**	**0**	***1***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
4:30 PM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
4:45 PM	**0**	**0**	**1**	**2**	***3***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
5:00 PM	2	0	0	0	*2*	0	0	0	0	*0*	0	0	0	0	*0*
5:15 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
5:30 PM	0	0	1	1	*2*	0	0	0	0	*0*	0	0	0	0	*0*
5:45 PM	2	0	0	1	*3*	0	0	0	0	*0*	0	0	0	0	*0*
6:00 PM	0	0	2	1	*3*	0	0	0	0	*0*	0	0	0	0	*0*
6:15 PM	1	0	0	0	*1*	0	0	0	0	*0*	0	0	0	0	*0*
6:30 PM	1	0	0	0	*1*	0	0	0	0	*0*	0	0	0	0	*0*
6:45 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	7	0	5	5	*17*	0	0	0	0	*0*	0	0	0	0	*0*
Peak Hour	**1**	**0**	**2**	**2**	***5***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***

N BOYER AVE
LARCH ST

Date: Sat, Mar 14, 2020
Count Period: 4:00 PM to 7:00 PM
Peak Hour: 4:30 PM to 5:30 PM





	HV %:	PHF
EB	0.0%	0.75
WB	0.7%	0.91
NB	1.1%	0.92
SB	1.3%	0.73
TOTAL	0.9%	0.92

Three-Hour Count Summaries

Interval Start	LARCH ST Eastbound				LARCH ST Westbound				N BOYER AVE Northbound				N BOYER AVE Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:30 PM	0	3	14	1	0	5	13	14	0	0	26	20	0	4	29	3	132	0
4:45 PM	0	3	10	1	0	7	10	19	0	0	21	18	0	19	16	3	127	0
5:00 PM	0	3	13	4	0	12	7	18	0	0	21	27	0	12	17	2	136	0
5:15 PM	0	2	6	0	0	11	11	18	0	0	20	24	0	30	20	5	147	542
Peak Hour	0	11	43	6	0	35	41	69	0	0	88	89	0	65	82	13	542	0

Note: For all three-hour count summary, see next page.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:30 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
4:45 PM	0	1	1	2	*4*	0	0	0	0	*0*	1	0	0	0	*1*
5:00 PM	0	0	1	0	*1*	0	0	0	0	*0*	0	2	0	0	*2*
5:15 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	2	0	0	*2*
Peak Hour	0	1	2	2	*5*	0	0	0	0	*0*	1	4	0	0	*5*

Three-Hour Count Summaries

Interval Start	LARCH ST Eastbound				LARCH ST Westbound				N BOYER AVE Northbound				N BOYER AVE Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	3	11	2	0	12	16	15	0	2	19	18	1	15	20	0	134	0
4:15 PM	0	1	7	0	0	13	6	18	1	1	18	10	0	18	23	6	122	0
4:30 PM	**0**	**3**	**14**	**1**	**0**	**5**	**13**	**14**	**0**	**0**	**26**	**20**	**0**	**4**	**29**	**3**	**132**	0
4:45 PM	**0**	**3**	**10**	**1**	**0**	**7**	**10**	**19**	**0**	**0**	**21**	**18**	**0**	**19**	**16**	**3**	**127**	515
5:00 PM	**0**	**3**	**13**	**4**	**0**	**12**	**7**	**18**	**0**	**0**	**21**	**27**	**0**	**12**	**17**	**2**	**136**	517
5:15 PM	**0**	**2**	**6**	**0**	**0**	**11**	**11**	**18**	**0**	**0**	**20**	**24**	**0**	**30**	**20**	**5**	**147**	**542**
5:30 PM	0	2	9	0	0	16	8	13	0	1	15	20	0	9	23	5	121	531
5:45 PM	1	2	13	0	0	15	8	10	1	2	20	20	0	8	19	2	121	525
6:00 PM	0	2	8	0	0	12	6	13	0	2	22	20	0	16	25	3	129	518
6:15 PM	0	1	7	0	0	11	7	6	0	2	16	11	0	11	24	0	96	467
6:30 PM	0	3	6	1	0	8	9	14	0	0	13	5	0	9	15	1	84	430
6:45 PM	0	2	6	1	0	6	10	11	0	0	14	11	0	10	18	2	91	400
Count Total	1	27	110	10	0	128	111	169	2	10	225	204	1	161	249	32	1,440	0
Peak Hour	**0**	**11**	**43**	**6**	**0**	**35**	**41**	**69**	**0**	**0**	**88**	**89**	**0**	**65**	**82**	**13**	**542**	**0**

Note: Three-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

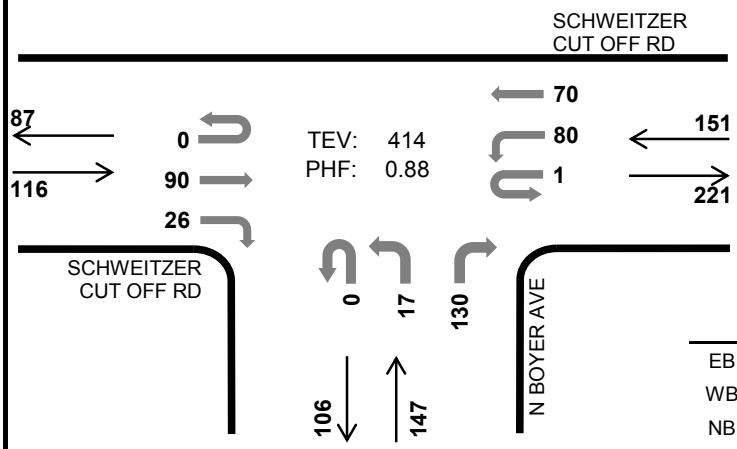
Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	1	0	0	*1*	0	0	0	0	*0*	0	0	1	0	*1*
4:15 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	1	1	0	*2*
4:30 PM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
4:45 PM	**0**	**1**	**1**	**2**	***4***	**0**	**0**	**0**	**0**	***0***	**1**	**0**	**0**	**0**	*1*
5:00 PM	**0**	**0**	**1**	**0**	***1***	**0**	**0**	**0**	**0**	***0***	**0**	**2**	**0**	**0**	*2*
5:15 PM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**0**	**2**	**0**	**0**	***2***
5:30 PM	0	0	1	0	*1*	0	0	0	0	*0*	0	0	0	0	*0*
5:45 PM	1	0	1	3	*5*	0	0	0	0	*0*	0	1	0	0	*1*
6:00 PM	0	0	1	0	*1*	0	0	0	0	*0*	0	0	0	0	*0*
6:15 PM	0	0	0	1	*1*	0	0	0	0	*0*	0	0	0	0	*0*
6:30 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
6:45 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	1	2	5	6	*14*	0	0	0	0	*0*	1	6	2	0	*9*
Peak Hour	**0**	**1**	**2**	**2**	***5***	**0**	**0**	**0**	**0**	***0***	**1**	**4**	**0**	**0**	***5***

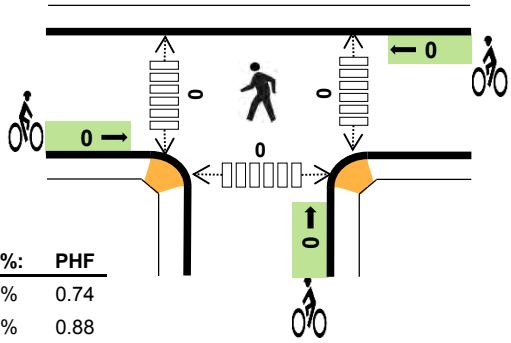
N BOYER AVE
SCHWEITZER CUT OFF RD

N

Peak Hour

Date: Sat, Mar 14, 2020
Count Period: 4:00 PM to 7:00 PM
Peak Hour: 4:15 PM to 5:15 PM





	HV %:	PHF
EB	0.9%	0.74
WB	0.7%	0.88
NB	0.7%	0.74
SB	-	-
TOTAL	0.7%	0.88

Three-Hour Count Summaries

Interval Start	SCHWEITZER CUT OFF RD				SCHWEITZER CUT OFF RD				N BOYER AVE				0				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:15 PM	0	0	17	7	1	22	13	0	0	3	0	28	0	0	0	0	91	0
4:30 PM	0	0	34	5	0	19	20	0	0	6	0	26	0	0	0	0	110	0
4:45 PM	0	0	21	7	0	18	15	0	0	3	0	31	0	0	0	0	95	0
5:00 PM	0	0	18	7	0	21	22	0	0	5	0	45	0	0	0	0	118	414
Peak Hour	0	0	90	26	1	80	70	0	0	17	0	130	0	0	0	0	414	0

Note: For all three-hour count summary, see next page.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:15 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
4:30 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
4:45 PM	0	1	0	0	*1*	0	0	0	0	*0*	0	0	0	0	*0*
5:00 PM	1	0	1	0	*2*	0	0	0	0	*0*	0	0	0	0	*0*
Peak Hour	1	1	1	0	*3*	0	0	0	0	*0*	0	0	0	0	*0*

Three-Hour Count Summaries

Interval Start	SCHWEITZER CUT OFF RD				SCHWEITZER CUT OFF RD				N BOYER AVE				0				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	26	9	0	19	13	0	0	4	0	34	0	0	0	0	105	0
4:15 PM	**0**	**0**	**17**	**7**	**1**	**22**	**13**	**0**	**0**	**3**	**0**	**28**	**0**	**0**	**0**	**0**	**91**	0
4:30 PM	**0**	**0**	**34**	**5**	**0**	**19**	**20**	**0**	**0**	**6**	**0**	**26**	**0**	**0**	**0**	**0**	**110**	0
4:45 PM	**0**	**0**	**21**	**7**	**0**	**18**	**15**	**0**	**0**	**3**	**0**	**31**	**0**	**0**	**0**	**0**	**95**	401
5:00 PM	**0**	**0**	**18**	**7**	**0**	**21**	**22**	**0**	**0**	**5**	**0**	**45**	**0**	**0**	**0**	**0**	**118**	**414**
5:15 PM	0	0	17	2	0	20	26	0	0	1	0	19	0	0	0	0	85	408
5:30 PM	0	0	25	8	0	22	23	0	0	1	0	26	0	0	0	0	105	403
5:45 PM	0	0	18	5	0	18	17	0	0	6	0	26	0	0	0	0	90	398
6:00 PM	0	0	16	6	0	23	20	0	0	3	0	29	0	0	0	0	97	377
6:15 PM	0	0	13	0	0	13	17	0	0	3	0	18	0	0	0	0	64	356
6:30 PM	0	0	13	1	1	19	15	0	0	5	0	18	0	0	0	0	72	323
6:45 PM	0	0	12	3	0	15	18	0	0	4	0	12	0	0	0	0	64	297
Count Total	0	0	230	60	2	229	219	0	0	44	0	312	0	0	0	0	1,096	0
Peak Hour	**0**	**0**	**90**	**26**	**1**	**80**	**70**	**0**	**0**	**17**	**0**	**130**	**0**	**0**	**0**	**0**	**414**	**0**

Note: Three-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	1	0	1	0	*2*	0	0	0	0	*0*	0	0	0	0	*0*
4:15 PM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
4:30 PM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
4:45 PM	**0**	**1**	**0**	**0**	***1***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
5:00 PM	**1**	**0**	**1**	**0**	***2***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
5:15 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
5:30 PM	1	1	0	0	*2*	0	0	0	0	*0*	0	0	0	0	*0*
5:45 PM	1	0	1	0	*2*	0	0	0	0	*0*	0	0	0	0	*0*
6:00 PM	1	0	0	0	*1*	0	0	0	0	*0*	0	0	0	0	*0*
6:15 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	1	0	*1*
6:30 PM	0	0	2	0	*2*	0	0	0	0	*0*	0	0	0	0	*0*
6:45 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	5	2	5	0	*12*	0	0	0	0	*0*	0	0	1	0	*1*
Peak Hr	**1**	**1**	**1**	**0**	***3***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***

Appendix B – Trip Generation Worksheets

Weekday AM Peak Hour Trip Generation Calculations

TRIP GENERATION

LAND USE: Single-Family Detached Housing

TRIP GENERATION CALCULATIONS ARE BASED ON THE ITE
TRIP GENERATION, 10TH EDITION. THE ITE LAND USE CODE IS
Single-Family Detached Housing (210)

North Boyer
133 **SFDU**

North Boyer Housing
AM PEAK HOUR (ONE HOUR BETWEEN 7 AND 9 AM)

Rate: T = 0.71(X) +4.80

	T =	**99 VPH**
ENTER:	25%	**25 VPH**
EXIT:	75%	**74 VPH**

TRIP GENERATION

LAND USE: Multi-Family Housing

TRIP GENERATION CALCULATIONS ARE BASED ON THE ITE
TRIP GENERATION, 10TH EDITION. THE ITE LAND USE CODE IS
Multi-Family Housing (Low-Rise) (220)

North Boyer
150 **MFDU**

North Boyer Housing
AM PEAK HOUR (ONE HOUR BETWEEN 7 AND 9 AM)

Rate: Ln(T) = 0.95* Ln(X) -0.51

	T =	**70**	**VPH**
ENTER:	23%	**16**	**VPH**
EXIT:	77%	**54**	**VPH**

TRIP GENERATION

LAND USE: Mini-Warehouse

TRIP GENERATION CALCULATIONS ARE BASED ON THE ITE
TRIP GENERATION, 10TH EDITION. THE ITE LAND USE CODE IS
Mini-Warehouse (151)

North Boyer
45 **KSF**

North Boyer Industrial
AM PEAK HOUR (ONE HOUR BETWEEN 7 AND 9 AM)

Rate: T = 0.10

	T =	**5 VPH**
ENTER:	60%	**3 VPH**
EXIT:	40%	**2 VPH**

TRIP GENERATION

LAND USE: Shopping Center

TRIP GENERATION CALCULATIONS ARE BASED ON THE ITE
TRIP GENERATION, 10TH EDITION. THE ITE LAND USE CODE IS
Shopping Center (820)

North Boyer
10 **KSF**

North Boyer Commercial
AM PEAK HOUR (ONE HOUR BETWEEN 7 AND 9 AM)

Rate: T = 0.50(X) +151.78

	T =	**157 VPH**	**PASS BY 0%***	**Net New Trips**
ENTER:	62%	**97 VPH**	**0**	**97**
EXIT:	38%	**60 VPH**	**0**	**60**

* ITE does not provide a pass by reduction for this time period.

Weekday PM Peak Hour Trip Generation Calculations

TRIP GENERATION

LAND USE: Single-Family Detached Housing

TRIP GENERATION CALCULATIONS ARE BASED ON THE ITE
TRIP GENERATION, 10TH EDITION. THE ITE LAND USE CODE IS
Single-Family Detached Housing (210)

North Boyer
133 **SFDU**

North Boyer Housing
PM PEAK HOUR (ONE HOUR BETWEEN 4 AND 6 PM)

Rate: Ln(T) = 0.96* Ln(X) +0.20

	T =	**134**	**VPH**
ENTER:	63%	**84**	**VPH**
EXIT:	37%	**50**	**VPH**

TRIP GENERATION

LAND USE: Multi-Family Housing

TRIP GENERATION CALCULATIONS ARE BASED ON THE ITE
TRIP GENERATION, 10TH EDITION. THE ITE LAND USE CODE IS
Multi-Family Housing (Low-Rise) (220)

North Boyer
150 **MFDU**

North Boyer Housing
PM PEAK HOUR (ONE HOUR BETWEEN 4 AND 6 PM)

Rate: Ln(T) = 0.89* Ln(X) -0.02

	T =	**85**	**VPH**
ENTER:	63%	**54**	**VPH**
EXIT:	37%	**31**	**VPH**

TRIP GENERATION

LAND USE: Mini-Warehouse

TRIP GENERATION CALCULATIONS ARE BASED ON THE ITE
TRIP GENERATION, 10TH EDITION. THE ITE LAND USE CODE IS
Mini-Warehouse (151)

North Boyer
45 **KSF**

North Boyer Industrial
PM PEAK HOUR (ONE HOUR BETWEEN 4 AND 6 PM)

Rate: T = 0.17

	T =	**8 VPH**
ENTER:	47%	**4 VPH**
EXIT:	53%	**4 VPH**

TRIP GENERATION

LAND USE: Shopping Center

TRIP GENERATION CALCULATIONS ARE BASED ON THE ITE
TRIP GENERATION, 10TH EDITION. THE ITE LAND USE CODE IS
Shopping Center (820)

North Boyer
10 **KSF**

North Boyer Commercial
PM PEAK HOUR (ONE HOUR BETWEEN 4 AND 6 PM)

Rate: Ln(T) = 0.74* Ln(X) +2.89

	T =	**99 VPH**	**PASS BY 34%**	**Net New Trips**
ENTER:	48%	**48 VPH**	**16**	**32**
EXIT:	52%	**51 VPH**	**18**	**33**

Weekday Daily Trip Generation Calculations

TRIP GENERATION

LAND USE: Single-Family Detached Housing

TRIP GENERATION CALCULATIONS ARE BASED ON THE ITE
TRIP GENERATION, 10TH EDITION. THE ITE LAND USE CODE IS
Single-Family Detached Housing (210)

North Boyer
133 **SFDU**

North Boyer Housing
DAILY TRIPS

Rate: Ln(T) = 0.92* Ln(X) +2.71

	T =	**1,352**	**VPD**
ENTER:	50%	**676**	**VPD**
EXIT:	50%	**676**	**VPD**

TRIP GENERATION

LAND USE: Multi-Family Housing

TRIP GENERATION CALCULATIONS ARE BASED ON THE ITE
TRIP GENERATION, 10TH EDITION. THE ITE LAND USE CODE IS
Multi-Family Housing (Low-Rise) (220)

North Boyer
150 **MFDU**

North Boyer Housing
DAILY TRIPS

Rate: T = 7.56(X) -40.86

	T =	**1,093**	**VPD**
ENTER:	50%	**546**	**VPD**
EXIT:	50%	**547**	**VPD**

TRIP GENERATION

LAND USE: Mini-Warehouse

TRIP GENERATION CALCULATIONS ARE BASED ON THE ITE
TRIP GENERATION, 10TH EDITION. THE ITE LAND USE CODE IS
Mini-Warehouse (151)

North Boyer
45 **KSF**

North Boyer Industrial
DAILY TRIPS

Rate: T = 1.51

	T =	**68 VPD**
ENTER:	50%	**34 VPD**
EXIT:	50%	**34 VPD**

TRIP GENERATION

LAND USE: Shopping Center

TRIP GENERATION CALCULATIONS ARE BASED ON THE ITE
TRIP GENERATION, 10TH EDITION. THE ITE LAND USE CODE IS
Shopping Center (820)

North Boyer
10 **KSF**

North Boyer Commercial
DAILY TRIPS

Rate: Ln(T) = 0.68* Ln(X) +5.57

	T =	**1,256 VPD**	**PASS BY 0%***	**Net New Trips**
ENTER:	50%	**628 VPD**	**0**	**628**
EXIT:	50%	**628 VPD**	**0**	**628**

* ITE does not provide a pass by reduction for this time period.

Weekend (Saturday) Peak Hour Trip Generation Calculations

TRIP GENERATION

LAND USE: Single-Family Detached Housing

TRIP GENERATION CALCULATIONS ARE BASED ON THE ITE
TRIP GENERATION, 10TH EDITION. THE ITE LAND USE CODE IS
Single-Family Detached Housing (210)

North Boyer
133 **SFDU**

North Boyer Housing
PEAK HOUR SATURDAY

Rate: T = 0.84(X) +17.99

	T =	**130**	**VPH**
ENTER:	54%	**70**	**VPH**
EXIT:	46%	**60**	**VPH**

TRIP GENERATION

LAND USE: Multi-Family Housing

TRIP GENERATION CALCULATIONS ARE BASED ON THE ITE
TRIP GENERATION, 10TH EDITION. THE ITE LAND USE CODE IS
Multi-Family Housing (Low-Rise) (220)

North Boyer
150 **MFDU**

North Boyer Housing
PEAK HOUR SATURDAY

Rate: T = 1.08(X) -33.24

	T =	**129 VPH**
ENTER:	54%*	**70 VPH**
EXIT:	46%*	**59 VPH**

* ITE does not provide a percent split for this time period. Percentages are from Single-Family Detached Housing (210).

TRIP GENERATION

LAND USE: Mini-Warehouse

TRIP GENERATION CALCULATIONS ARE BASED ON THE ITE
TRIP GENERATION, 10TH EDITION. THE ITE LAND USE CODE IS
Mini-Warehouse (151)

North Boyer
45 **KSF**

North Boyer Industrial
PEAK HOUR SATURDAY

Rate: T = 0.31

	T =	**14 VPH**
ENTER:	59%	**8 VPH**
EXIT:	41%	**6 VPH**

TRIP GENERATION

LAND USE: Shopping Center

TRIP GENERATION CALCULATIONS ARE BASED ON THE ITE
TRIP GENERATION, 10TH EDITION. THE ITE LAND USE CODE IS
Shopping Center (820)

North Boyer
10 **KSF**

North Boyer Commercial
PEAK HOUR SATURDAY

Rate: Ln(T) = 0.79* Ln(X) +2.79

	T =	**100 VPH**	**PASS BY 26%**	**Net New Trips**
ENTER:	52%	**52 VPH**	**14**	**38**
EXIT:	48%	**48 VPH**	**12**	**36**

Weekend (Saturday) Daily Trip Generation Calculations

TRIP GENERATION

LAND USE: Single-Family Detached Housing

TRIP GENERATION CALCULATIONS ARE BASED ON THE ITE
TRIP GENERATION, 10TH EDITION. THE ITE LAND USE CODE IS
Single-Family Detached Housing (210)

North Boyer
133 **SFDU**

North Boyer Housing
DAILY TRIPS SATURDAY

Rate: Ln(T) = 0.94* Ln(X) +2.56

	T =	**1,283**	**VPD**
ENTER:	50%	**641**	**VPD**
EXIT:	50%	**642**	**VPD**

TRIP GENERATION

LAND USE: Multi-Family Housing

TRIP GENERATION CALCULATIONS ARE BASED ON THE ITE
TRIP GENERATION, 10TH EDITION. THE ITE LAND USE CODE IS
Multi-Family Housing (Low-Rise) (220)

North Boyer
150 **MFDU**

North Boyer Housing
DAILY TRIPS SATURDAY

Rate: T = 14.01(X) -521.69

	T =	**1,580**	**VPD**
ENTER:	50%	**790**	**VPD**
EXIT:	50%	**790**	**VPD**

TRIP GENERATION

LAND USE: Mini-Warehouse

TRIP GENERATION CALCULATIONS ARE BASED ON THE ITE
TRIP GENERATION, 10TH EDITION. THE ITE LAND USE CODE IS
Mini-Warehouse (151)

North Boyer
45 **KSF**

North Boyer Industrial
DAILY TRIPS SATURDAY

Rate: T = 1.95

	T =	**88 VPD**
ENTER:	50%	**44 VPD**
EXIT:	50%	**44 VPD**

TRIP GENERATION

LAND USE: Shopping Center

TRIP GENERATION CALCULATIONS ARE BASED ON THE ITE
TRIP GENERATION, 10TH EDITION. THE ITE LAND USE CODE IS
Shopping Center (820)

North Boyer
10 **KSF**

North Boyer Commercial
DAILY TRIPS SATURDAY

Rate: Ln(T) = 0.62* Ln(X) +6.24

	T =	**2,138 VPD**	**PASS BY 0%***	**Net New Trips**
ENTER:	50%	**1069 VPD**	**0**	**1069**
EXIT:	50%	**1069 VPD**	**0**	**1069**

* ITE does not provide a pass by reduction for this time period.

Appendix C – Synchro and Sidra Output Sheets

Existing Conditions – Weekday AM Peak Hour

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	1	11	0	5	1	192	6	2	252	4
Future Vol, veh/h	0	0	1	11	0	5	1	192	6	2	252	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	81	81	81	81	81	81	81	81	81	81	81	81
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	2	2	2
Mvmt Flow	0	0	1	14	0	6	1	237	7	2	311	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	564	564	314	561	563	241	316	0	0	244	0	0
Stage 1	318	318	-	243	243	-	-	-	-	-	-	-
Stage 2	246	246	-	318	320	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.12	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.218	-	-
Pot Cap-1 Maneuver	439	438	731	441	438	803	1256	-	-	1322	-	-
Stage 1	698	657	-	765	708	-	-	-	-	-	-	-
Stage 2	762	706	-	698	656	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	435	437	731	439	437	803	1256	-	-	1322	-	-
Mov Cap-2 Maneuver	435	437	-	439	437	-	-	-	-	-	-	-
Stage 1	697	656	-	764	707	-	-	-	-	-	-	-
Stage 2	755	705	-	695	655	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.9	12.3	0	0.1
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1256	-	-	731	511	1322	-	-
HCM Lane V/C Ratio	0.001	-	-	0.002	0.039	0.002	-	-
HCM Control Delay (s)	7.9	0	-	9.9	12.3	7.7	0	-
HCM Lane LOS	A	A	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-	-

Intersection	
Int Delay, s/veh	4.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	100	0	86	1	0	0	54	146	0	2	114	135
Future Vol, veh/h	100	0	86	1	0	0	54	146	0	2	114	135
Conflicting Peds, #/hr	0	0	0	4	0	4	0	0	4	4	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	90	-	-	-	256	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	82	82	82	82	82	82	82	82	82	82	82	82
Heavy Vehicles, %	3	3	3	0	0	0	9	9	9	2	2	2
Mvmt Flow	122	0	105	1	0	0	66	178	0	2	139	165

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	540	-	226	596	622	186	304	0	0	182	0	0
Stage 1	226	-	-	314	314	-	-	-	-	-	-	-
Stage 2	314	-	-	282	308	-	-	-	-	-	-	-
Critical Hdwy	7.13	-	6.23	7.1	6.5	6.2	4.19	-	-	4.12	-	-
Critical Hdwy Stg 1	6.13	-	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	-	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	-	3.327	3.5	4	3.3	2.281	-	-	2.218	-	-
Pot Cap-1 Maneuver	451	0	811	418	405	861	1218	-	-	1393	-	-
Stage 1	774	0	-	701	660	-	-	-	-	-	-	-
Stage 2	695	0	-	729	664	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	430	-	808	346	381	855	1218	-	-	1388	-	-
Mov Cap-2 Maneuver	430	-	-	346	381	-	-	-	-	-	-	-
Stage 1	732	-	-	661	622	-	-	-	-	-	-	-
Stage 2	655	-	-	631	663	-	-	-	-	-	-	-

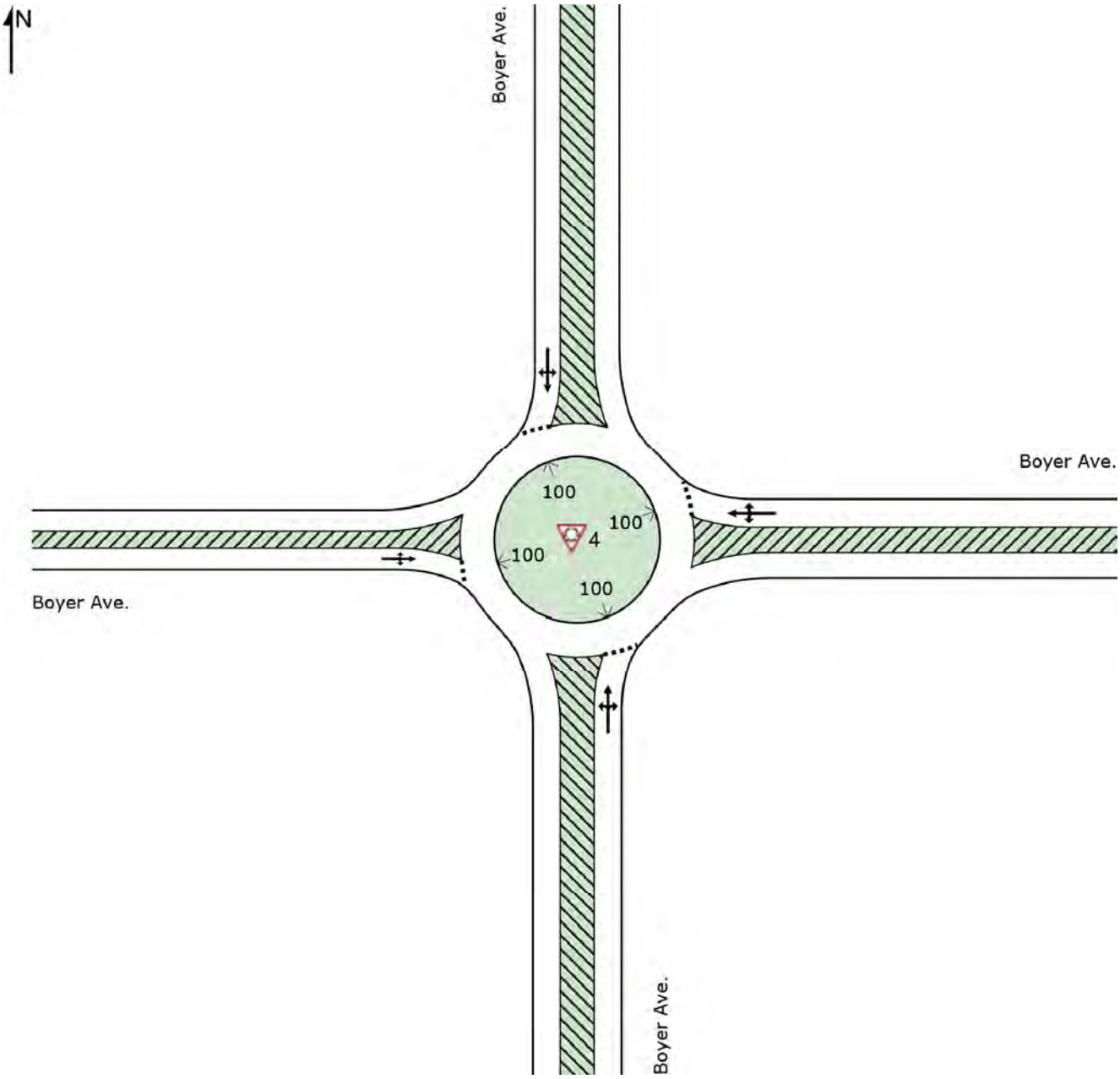
Approach	EB	WB	NB	SB
HCM Control Delay, s	13.6	15.4	2.2	0.1
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1218	-	-	430	808	346	1388	-	-
HCM Lane V/C Ratio	0.054	-	-	0.284	0.13	0.004	0.002	-	-
HCM Control Delay (s)	8.1	-	-	16.7	10.1	15.4	7.6	0	-
HCM Lane LOS	A	-	-	C	B	C	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	1.2	0.4	0	0	-	-

SITE LAYOUT

Site: 4 [Existing Conditions (2020) AM - Larch St. - Boyer Ave.]

Larch/Boyer roundabout
2020 Weekend AM Peak Hour
Site Category: (None)
Roundabout



SIDRA INTERSECTION 8.0 | Copyright © 2000-2018 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: DAVID EVANS & ASSOCIATES INC | Created: Monday, April 20, 2020 11:28:56 AM
Project: P:\K\KMEP00000001\0600INFO\TT\Synchro\Phase_3_TIA\Sidra\Larch_Boyer_Base..sip8

MOVEMENT SUMMARY

Site: 4 [Existing Conditions (2020) AM - Larch St. - Boyer Ave.]

Larch/Boyer roundabout
2020 Weekend AM Peak Hour
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: Boyer Ave.												
3	L2	2	7.0	0.290	2.2	LOS A	1.8	47.0	0.52	0.36	0.52	16.8
8	T1	196	7.0	0.290	1.7	LOS A	1.8	47.0	0.52	0.36	0.52	15.7
18	R2	110	7.0	0.290	1.7	LOS A	1.8	47.0	0.52	0.36	0.52	15.7
Approach		308	7.0	0.290	1.7	LOS A	1.8	47.0	0.52	0.36	0.52	15.7
East: Boyer Ave.												
1	L2	68	2.0	0.244	1.8	LOS A	1.5	38.3	0.47	0.30	0.47	16.9
6	T1	80	2.0	0.244	1.3	LOS A	1.5	38.3	0.47	0.30	0.47	15.7
16	R2	135	2.0	0.244	1.3	LOS A	1.5	38.3	0.47	0.30	0.47	15.7
Approach		282	2.0	0.244	1.4	LOS A	1.5	38.3	0.47	0.30	0.47	16.0
North: Boyer Ave.												
7	L2	130	3.0	0.262	1.4	LOS A	1.7	44.6	0.41	0.23	0.41	16.9
4	T1	177	3.0	0.262	0.9	LOS A	1.7	44.6	0.41	0.23	0.41	15.8
14	R2	11	3.0	0.262	0.9	LOS A	1.7	44.6	0.41	0.23	0.41	15.8
Approach		318	3.0	0.262	1.1	LOS A	1.7	44.6	0.41	0.23	0.41	16.2
West: Boyer Ave.												
5	L2	26	2.0	0.157	3.0	LOS A	1.0	25.6	0.60	0.44	0.60	16.8
2	T1	118	2.0	0.157	2.5	LOS A	1.0	25.6	0.60	0.44	0.60	15.7
12	R2	10	2.0	0.157	2.5	LOS A	1.0	25.6	0.60	0.44	0.60	15.7
Approach		154	2.0	0.157	2.6	LOS A	1.0	25.6	0.60	0.44	0.60	15.8
All Vehicles		1062	3.8	0.290	1.6	LOS A	1.8	47.0	0.48	0.32	0.48	16.0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

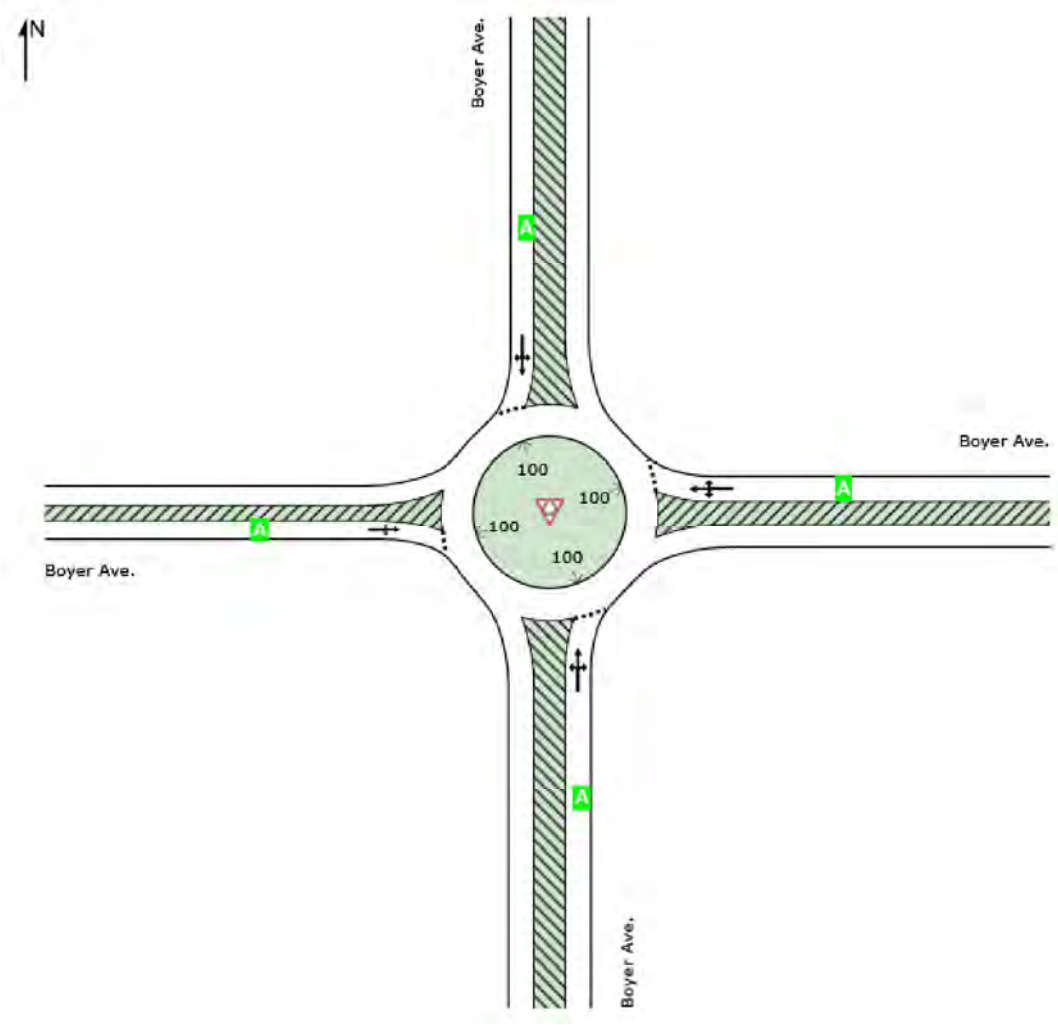
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 4 [Existing Conditions (2020) AM - Larch St. - Boyer Ave.]

Larch/Boyer roundabout
2020 Weekend AM Peak Hour
Site Category: (None)
Roundabout

	Approaches				Intersection
	South	East	North	West	
LOS	A	A	A	A	A



Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Intersection	
Int Delay, s/veh	5.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	78	117	115	64	69	114
Future Vol, veh/h	78	117	115	64	69	114
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	75	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	78	78	78	78	78	78
Heavy Vehicles, %	5	5	11	11	4	4
Mvmt Flow	100	150	147	82	88	146

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	250	0	551	175
Stage 1	-	-	-	-	175	-
Stage 2	-	-	-	-	376	-
Critical Hdwy	-	-	4.21	-	6.44	6.24
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	-	-	2.299	-	3.536	3.336
Pot Cap-1 Maneuver	-	-	1265	-	492	863
Stage 1	-	-	-	-	851	-
Stage 2	-	-	-	-	690	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1265	-	432	863
Mov Cap-2 Maneuver	-	-	-	-	432	-
Stage 1	-	-	-	-	747	-
Stage 2	-	-	-	-	690	-

Approach	EB	WB	NB
HCM Control Delay, s	0	5.3	12.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	432	863	-	-	1265	-
HCM Lane V/C Ratio	0.205	0.169	-	-	0.117	-
HCM Control Delay (s)	15.5	10	-	-	8.2	0
HCM Lane LOS	C	B	-	-	A	A
HCM 95th %tile Q(veh)	0.8	0.6	-	-	0.4	-

Intersection	
Int Delay, s/veh	2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	38	34	274	56	44	274
Future Vol, veh/h	38	34	274	56	44	274
Conflicting Peds, #/hr	1	1	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	0	0	3	3	3	3
Mvmt Flow	47	42	338	69	54	338

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	821	375	0	0	408	0
Stage 1	374	-	-	-	-	-
Stage 2	447	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.13	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.227	-
Pot Cap-1 Maneuver	347	676	-	-	1145	-
Stage 1	700	-	-	-	-	-
Stage 2	649	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	326	675	-	-	1144	-
Mov Cap-2 Maneuver	326	-	-	-	-	-
Stage 1	659	-	-	-	-	-
Stage 2	648	-	-	-	-	-

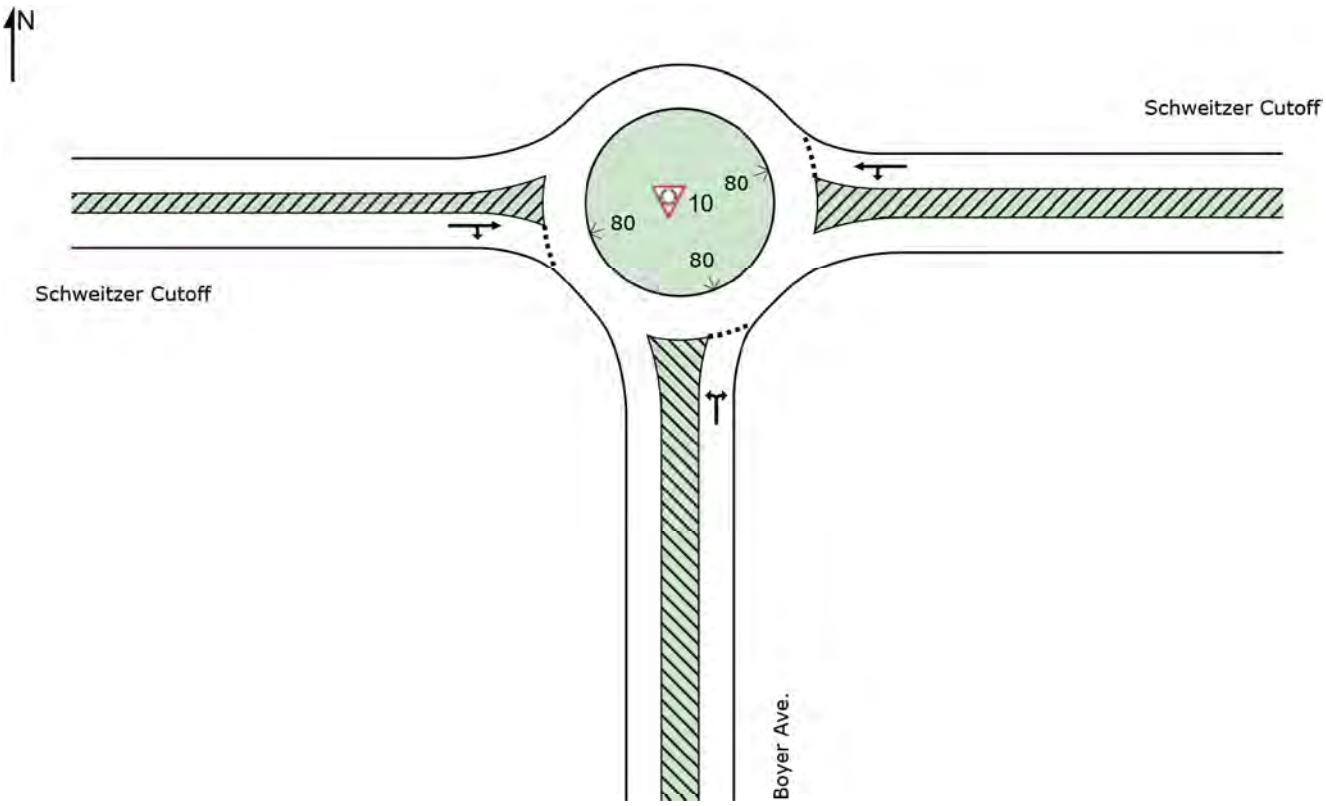
Approach	WB	NB	SB
HCM Control Delay, s	15.5	0	1.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	431	1144	-
HCM Lane V/C Ratio	-	-	0.206	0.047	-
HCM Control Delay (s)	-	-	15.5	8.3	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	0.8	0.1	-

SITE LAYOUT

Site: 10 [Existing Conditions (2020) AM - Schweitzer Cutoff. - Boyer Ave.]

Schweitzer/Boyer roundabout
2020 AM Peak Hour
Site Category: (None)
Roundabout



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Organisation: DAVID EVANS & ASSOCIATES INC | Created: Monday, April 20, 2020 10:49:59 AM
Project: P:\K\KMEP00000001\0600INFO\TT\Synchro\Phase_3_TIA\Sidra\Schweitzer_Boyer_Base..sip8

MOVEMENT SUMMARY

Site: 10 [Existing Conditions (2020) AM - Schweitzer Cutoff. - Boyer Ave.]

Schweitzer/Boyer roundabout
2020 AM Peak Hour
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: Boyer Ave.												
3	L2	81	0.0	0.237	1.9	LOS A	1.3	32.1	0.32	0.21	0.32	16.7
18	R2	218	0.0	0.237	0.6	LOS A	1.3	32.1	0.32	0.21	0.32	15.8
Approach		299	0.0	0.237	1.0	LOS A	1.3	32.1	0.32	0.21	0.32	16.0
East: Schweitzer Cutoff												
1	L2	257	3.0	0.393	1.7	LOS A	2.5	63.8	0.28	0.20	0.28	16.7
6	T1	247	3.0	0.393	0.5	LOS A	2.5	63.8	0.28	0.20	0.28	15.8
Approach		504	3.0	0.393	1.1	LOS A	2.5	63.8	0.28	0.20	0.28	16.2
West: Schweitzer Cutoff												
2	T1	142	2.0	0.162	1.1	LOS A	0.8	20.3	0.40	0.24	0.40	15.8
12	R2	43	2.0	0.162	1.1	LOS A	0.8	20.3	0.40	0.24	0.40	15.8
Approach		184	2.0	0.162	1.1	LOS A	0.8	20.3	0.40	0.24	0.40	15.8
All Vehicles		987	1.9	0.393	1.1	LOS A	2.5	63.8	0.32	0.21	0.32	16.1

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

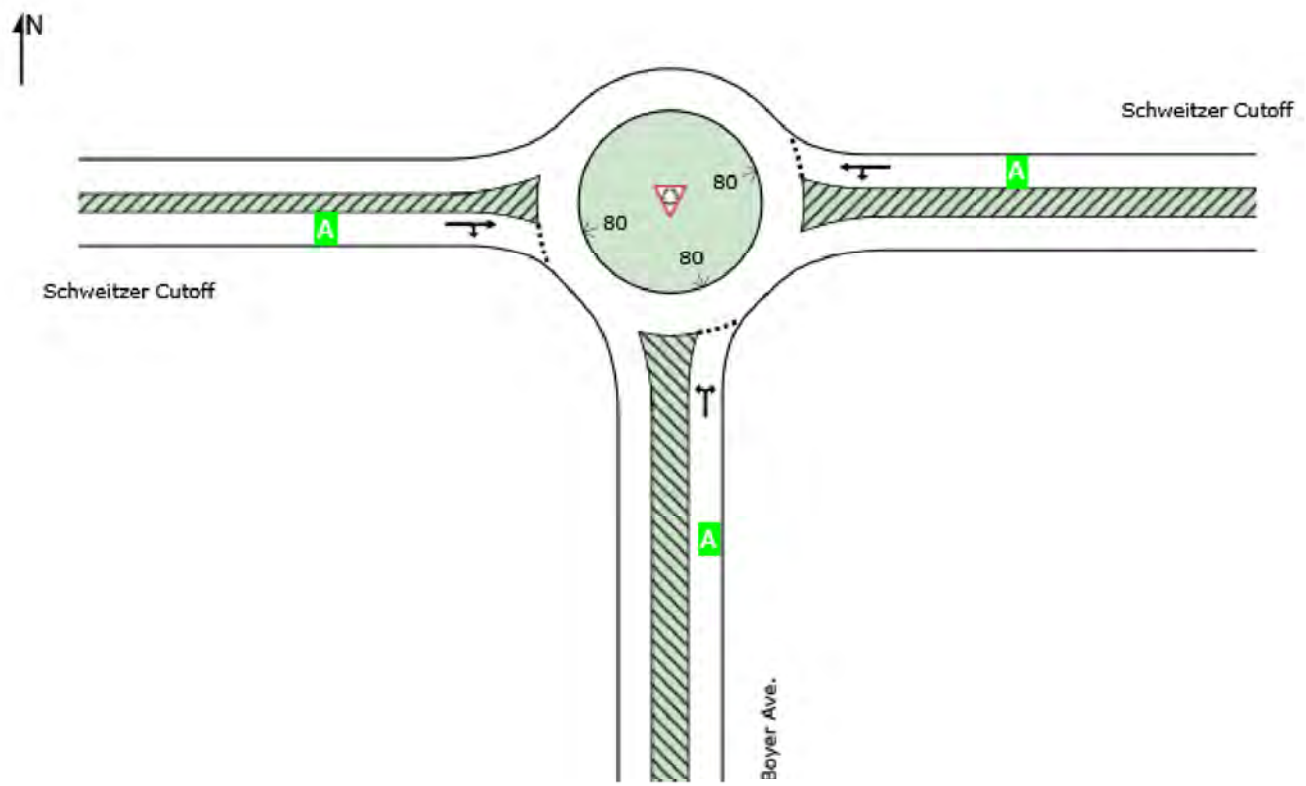
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 10 [Existing Conditions (2020) AM - Schweitzer Cutoff. - Boyer Ave.]

Schweitzer/Boyer roundabout
2020 AM Peak Hour
Site Category: (None)
Roundabout

	Approaches			Intersection
	South	East	West	
LOS	A	A	A	A



Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

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Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	4	2	3	207	235	12
Future Vol, veh/h	4	2	3	207	235	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	50	0	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	0	0	1	1	2	2
Mvmt Flow	5	2	4	249	283	14

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	547	290	297	0	-	0
Stage 1	290	-	-	-	-	-
Stage 2	257	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.11	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.209	-	-	-
Pot Cap-1 Maneuver	502	754	1270	-	-	-
Stage 1	764	-	-	-	-	-
Stage 2	791	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	500	754	1270	-	-	-
Mov Cap-2 Maneuver	500	-	-	-	-	-
Stage 1	762	-	-	-	-	-
Stage 2	791	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.5	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1270	-	500	754	-	-
HCM Lane V/C Ratio	0.003	-	0.01	0.003	-	-
HCM Control Delay (s)	7.8	-	12.3	9.8	-	-
HCM Lane LOS	A	-	B	A	-	-
HCM 95th %tile Q(veh)	0	-	0	0	-	-

Existing Conditions – Weekday PM Peak Hour

Intersection	
Intersection Delay, s/veh	9.1
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	72	73	39	145	114	18
Future Vol, veh/h	72	73	39	145	114	18
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	97	99	53	196	154	24
Number of Lanes	1	1	1	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	2
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	2	0
HCM Control Delay	9	8.9	9.5
HCM LOS	A	A	A

Lane	NBLn1	WBLn1	WBLn2	SBLn1
Vol Left, %	0%	100%	0%	86%
Vol Thru, %	21%	0%	0%	14%
Vol Right, %	79%	0%	100%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	184	72	73	132
LT Vol	0	72	0	114
Through Vol	39	0	0	18
RT Vol	145	0	73	0
Lane Flow Rate	249	97	99	178
Geometry Grp	2	7	7	2
Degree of Util (X)	0.289	0.162	0.131	0.242
Departure Headway (Hd)	4.186	5.979	4.769	4.875
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	858	598	748	735
Service Time	2.219	3.733	2.523	2.914
HCM Lane V/C Ratio	0.29	0.162	0.132	0.242
HCM Control Delay	8.9	9.9	8.2	9.5
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	1.2	0.6	0.4	0.9

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	1	0	11	0	7	0	333	9	3	254	0
Future Vol, veh/h	2	1	0	11	0	7	0	333	9	3	254	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	1	0	12	0	8	0	358	10	3	273	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	646	647	273	643	642	363	273	0	0	368	0	0
Stage 1	279	279	-	363	363	-	-	-	-	-	-	-
Stage 2	367	368	-	280	279	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	385	390	766	386	392	682	1290	-	-	1191	-	-
Stage 1	728	680	-	656	625	-	-	-	-	-	-	-
Stage 2	653	621	-	727	680	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	380	389	766	384	391	682	1290	-	-	1191	-	-
Mov Cap-2 Maneuver	380	389	-	384	391	-	-	-	-	-	-	-
Stage 1	728	678	-	656	625	-	-	-	-	-	-	-
Stage 2	646	621	-	724	678	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14.5	13.1	0	0.1
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1290	-	-	383	463	1191	-	-
HCM Lane V/C Ratio	-	-	-	0.008	0.042	0.003	-	-
HCM Control Delay (s)	0	-	-	14.5	13.1	8	0	-
HCM Lane LOS	A	-	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-	-

Intersection	
Int Delay, s/veh	6.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	145	1	114	1	0	3	86	174	2	4	173	133
Future Vol, veh/h	145	1	114	1	0	3	86	174	2	4	173	133
Conflicting Peds, #/hr	0	0	0	5	0	5	0	0	5	5	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	90	-	-	-	256	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	159	1	125	1	0	3	95	191	2	4	190	146

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	660	659	268	726	731	202	336	0	0	198	0	0
Stage 1	271	271	-	387	387	-	-	-	-	-	-	-
Stage 2	389	388	-	339	344	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	376	384	771	340	349	839	1223	-	-	1375	-	-
Stage 1	735	685	-	637	610	-	-	-	-	-	-	-
Stage 2	635	609	-	676	637	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	350	351	768	264	319	832	1223	-	-	1369	-	-
Mov Cap-2 Maneuver	350	351	-	264	319	-	-	-	-	-	-	-
Stage 1	678	682	-	585	560	-	-	-	-	-	-	-
Stage 2	581	559	-	560	634	-	-	-	-	-	-	-

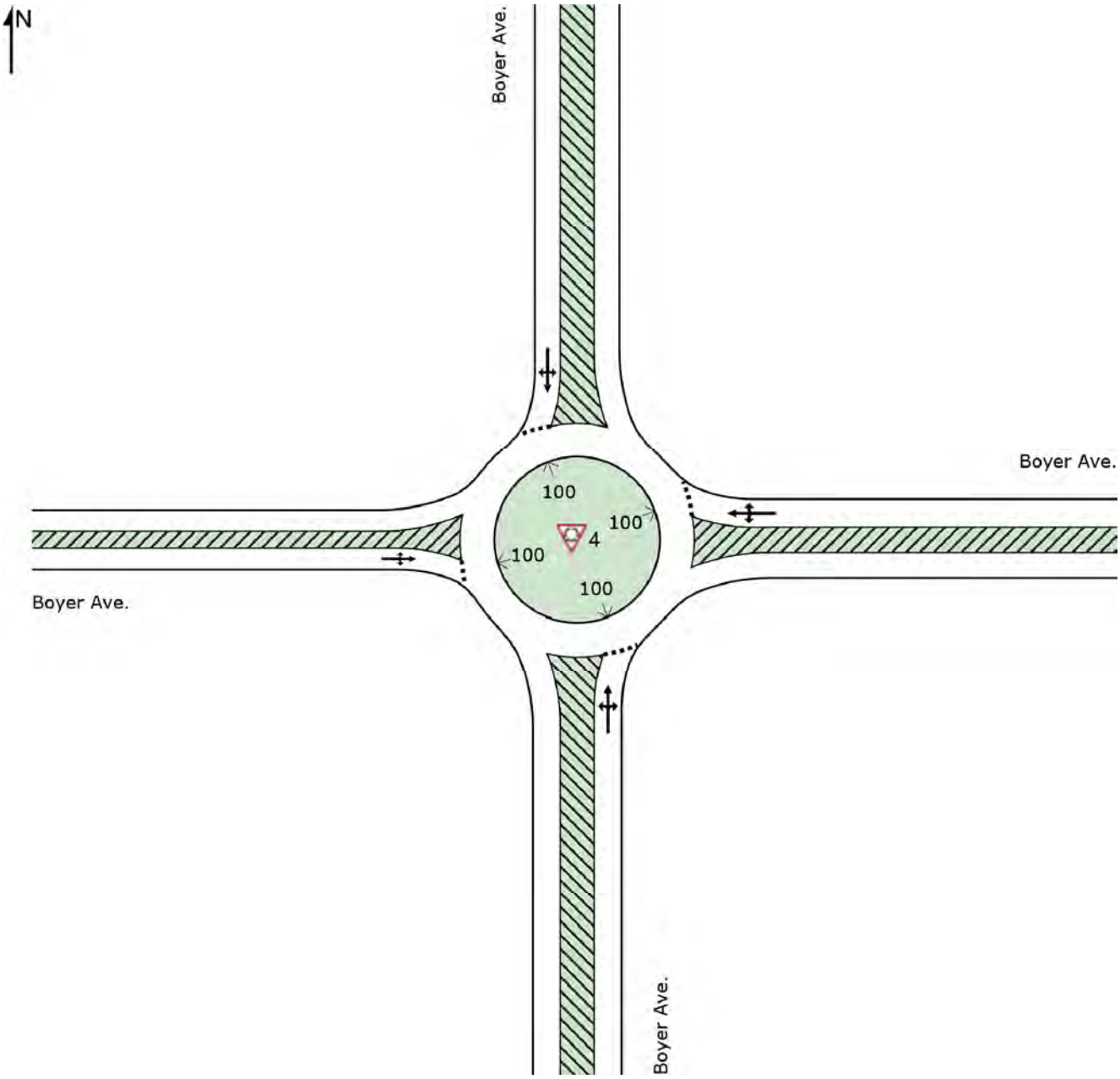
Approach	EB	WB	NB	SB
HCM Control Delay, s	17.9	11.7	2.7	0.1
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1223	-	-	350	768	541	1369	-	-
HCM Lane V/C Ratio	0.077	-	-	0.455	0.163	0.008	0.003	-	-
HCM Control Delay (s)	8.2	-	-	23.6	10.6	11.7	7.6	0	-
HCM Lane LOS	A	-	-	C	B	B	A	A	-
HCM 95th %tile Q(veh)	0.3	-	-	2.3	0.6	0	0	-	-

SITE LAYOUT

Site: 4 [Existing Conditions (2019) PM - Larch St. - Boyer Ave.]

Larch/Boyer roundabout
2019 PM Peak Hour
Site Category: (None)
Roundabout



MOVEMENT SUMMARY

Site: 4 [Existing Conditions (2019) PM - Larch St. - Boyer Ave.]

Larch/Boyer roundabout
2019 PM Peak Hour
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: Boyer Ave.												
3	L2	7	1.0	0.316	1.9	LOS A	2.0	50.7	0.49	0.31	0.49	16.9
8	T1	214	1.0	0.316	1.4	LOS A	2.0	50.7	0.49	0.31	0.49	15.7
18	R2	148	1.0	0.316	1.4	LOS A	2.0	50.7	0.49	0.31	0.49	15.7
Approach		369	1.0	0.316	1.5	LOS A	2.0	50.7	0.49	0.31	0.49	15.8
East: Boyer Ave.												
1	L2	106	1.0	0.311	1.9	LOS A	2.0	51.0	0.50	0.32	0.50	16.8
6	T1	109	1.0	0.311	1.4	LOS A	2.0	51.0	0.50	0.32	0.50	15.7
16	R2	145	1.0	0.311	1.4	LOS A	2.0	51.0	0.50	0.32	0.50	15.7
Approach		360	1.0	0.311	1.5	LOS A	2.0	51.0	0.50	0.32	0.50	16.0
North: Boyer Ave.												
7	L2	148	1.0	0.317	1.9	LOS A	2.2	55.3	0.51	0.32	0.51	16.8
4	T1	202	1.0	0.317	1.4	LOS A	2.2	55.3	0.51	0.32	0.51	15.7
14	R2	18	1.0	0.317	1.4	LOS A	2.2	55.3	0.51	0.32	0.51	15.7
Approach		368	1.0	0.317	1.6	LOS A	2.2	55.3	0.51	0.32	0.51	16.1
West: Boyer Ave.												
5	L2	23	1.0	0.116	3.4	LOS A	0.7	18.6	0.64	0.48	0.64	16.7
2	T1	78	1.0	0.116	2.9	LOS A	0.7	18.6	0.64	0.48	0.64	15.6
12	R2	5	1.0	0.116	2.9	LOS A	0.7	18.6	0.64	0.48	0.64	15.6
Approach		106	1.0	0.116	3.0	LOS A	0.7	18.6	0.64	0.48	0.64	15.9
All Vehicles		1203	1.0	0.317	1.7	LOS A	2.2	55.3	0.51	0.33	0.51	16.0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

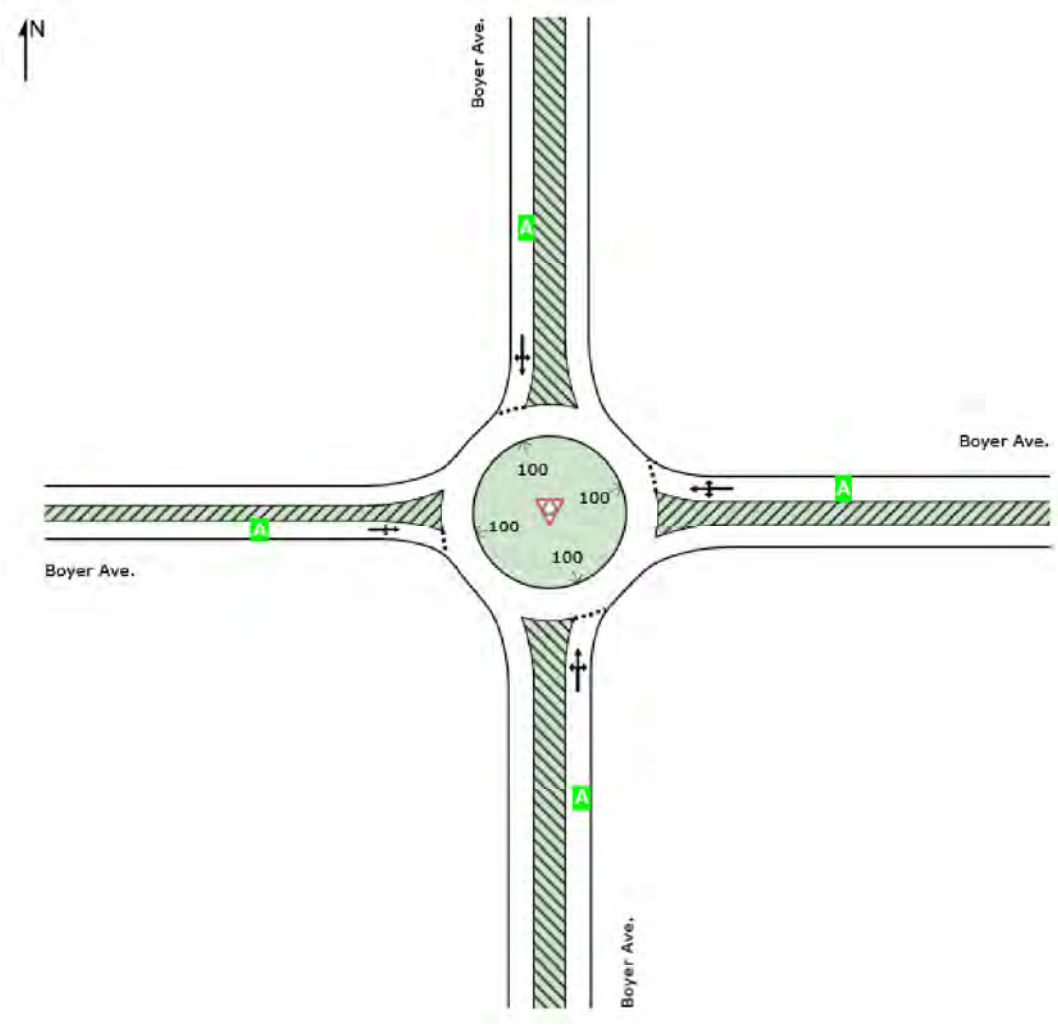
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 4 [Existing Conditions (2019) PM - Larch St. - Boyer Ave.]

Larch/Boyer roundabout
2019 PM Peak Hour
Site Category: (None)
Roundabout

	Approaches				Intersection
	South	East	North	West	
LOS	A	A	A	A	A



Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	123	237	144	241	184	102	187	399	163	115	324	82
Future Volume (veh/h)	123	237	144	241	184	102	187	399	163	115	324	82
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	132	255	155	259	198	110	201	429	175	124	348	88
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	512	1125	501	993	709	377	564	1414	630	504	1414	630
Arrive On Green	0.32	0.32	0.32	0.32	0.32	0.32	0.40	0.40	0.40	0.40	0.40	0.40
Sat Flow, veh/h	1054	3497	1558	1861	2205	1172	937	3497	1559	803	3497	1559
Grp Volume(v), veh/h	132	255	155	259	155	153	201	429	175	124	348	88
Grp Sat Flow(s),veh/h/ln	1054	1749	1558	931	1749	1628	937	1749	1559	803	1749	1559
Q Serve(g_s), s	3.1	1.6	2.2	3.5	1.9	2.1	5.3	2.4	2.2	3.6	1.9	1.0
Cycle Q Clear(g_c), s	5.2	1.6	2.2	5.0	1.9	2.1	7.2	2.4	2.2	6.1	1.9	1.0
Prop In Lane	1.00		1.00	1.00		0.72	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	512	1125	501	993	562	524	564	1414	630	504	1414	630
V/C Ratio(X)	0.26	0.23	0.31	0.26	0.28	0.29	0.36	0.30	0.28	0.25	0.25	0.14
Avail Cap(c_a), veh/h	750	1917	854	1414	959	893	699	1917	854	620	1917	854
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	9.4	7.2	7.5	9.1	7.4	7.4	8.1	5.9	5.8	8.0	5.8	5.5
Incr Delay (d2), s/veh	0.3	0.1	0.3	0.1	0.3	0.3	0.4	0.1	0.2	0.3	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.4	0.5	0.5	0.5	0.5	0.7	0.5	0.4	0.4	0.4	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.6	7.3	7.8	9.2	7.6	7.7	8.5	6.0	6.1	8.2	5.8	5.6
LnGrp LOS	A	A	A	A	A	A	A	A	A	A	A	A
Approach Vol, veh/h		542			567			805			560	
Approach Delay, s/veh		8.0			8.4			6.7			6.3	
Approach LOS		A			A			A			A	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	15.8	13.4	15.8	13.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	16.0	16.0	16.0	16.0
Max Q Clear Time (g_c+I1), s	9.2	7.2	8.1	7.0
Green Ext Time (p_c), s	2.6	1.9	2.1	2.3

Intersection Summary	
HCM 6th Ctrl Delay	7.3
HCM 6th LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	231	24	118	12	59	109	98	533	4	26	539	221
Future Volume (veh/h)	231	24	118	12	59	109	98	533	4	26	539	221
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	248	26	127	13	63	117	105	573	4	28	580	238
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	351	53	261	33	159	162	265	744	5	428	694	284
Arrive On Green	0.20	0.20	0.20	0.10	0.10	0.10	0.09	0.20	0.20	0.16	0.28	0.28
Sat Flow, veh/h	1795	274	1336	320	1549	1575	1795	3646	25	1795	2471	1012
Grp Volume(v), veh/h	248	0	153	76	0	117	105	281	296	28	420	398
Grp Sat Flow(s),veh/h/ln	1795	0	1610	1869	0	1575	1795	1791	1881	1795	1791	1692
Q Serve(g_s), s	8.8	0.0	5.8	2.6	0.0	4.9	0.0	10.1	10.1	0.0	15.0	15.1
Cycle Q Clear(g_c), s	8.8	0.0	5.8	2.6	0.0	4.9	0.0	10.1	10.1	0.0	15.0	15.1
Prop In Lane	1.00		0.83	0.17		1.00	1.00		0.01	1.00		0.60
Lane Grp Cap(c), veh/h	351	0	314	192	0	162	265	365	384	428	503	475
V/C Ratio(X)	0.71	0.00	0.49	0.40	0.00	0.72	0.40	0.77	0.77	0.07	0.84	0.84
Avail Cap(c_a), veh/h	892	0	800	252	0	212	290	769	807	428	772	729
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.6	0.0	24.4	28.6	0.0	29.7	28.3	25.7	25.7	22.8	23.1	23.1
Incr Delay (d2), s/veh	1.0	0.0	0.4	0.5	0.0	4.9	0.4	1.3	1.2	0.0	2.8	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	0.0	2.1	1.1	0.0	2.0	1.5	4.2	4.4	0.4	6.3	6.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.6	0.0	24.8	29.1	0.0	34.5	28.7	27.0	26.9	22.8	25.9	26.2
LnGrp LOS	C	A	C	C	A	C	C	C	C	C	C	C
Approach Vol, veh/h		401			193			682			846	
Approach Delay, s/veh		25.9			32.4			27.2			25.9	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	16.4	19.6		19.4	11.2	24.8		12.8
Change Period (Y+Rc), s	* 5.2	* 5.7		* 6.1	* 5.2	* 5.6		5.8
Max Green Setting (Gmax), s	* 7	* 29		* 34	* 7	* 29		9.2
Max Q Clear Time (g_c+I1), s	12.0	12.1		10.8	2.0	17.1		6.9
Green Ext Time (p_c), s	0.0	1.2		0.4	0.1	1.8		0.1

Intersection Summary	
HCM 6th Ctrl Delay	26.9
HCM 6th LOS	C

Notes

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

Intersection	
Int Delay, s/veh	6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	86	130	136	85	75	155
Future Vol, veh/h	86	130	136	85	75	155
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	75	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	105	159	166	104	91	189

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	264	0	621	185
Stage 1	-	-	-	-	185	-
Stage 2	-	-	-	-	436	-
Critical Hdwy	-	-	4.11	-	6.41	6.21
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	-	-	2.209	-	3.509	3.309
Pot Cap-1 Maneuver	-	-	1306	-	453	860
Stage 1	-	-	-	-	849	-
Stage 2	-	-	-	-	654	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1306	-	392	860
Mov Cap-2 Maneuver	-	-	-	-	392	-
Stage 1	-	-	-	-	734	-
Stage 2	-	-	-	-	654	-

Approach	EB	WB	NB
HCM Control Delay, s	0	5	12.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	392	860	-	-	1306	-
HCM Lane V/C Ratio	0.233	0.22	-	-	0.127	-
HCM Control Delay (s)	17	10.4	-	-	8.2	0
HCM Lane LOS	C	B	-	-	A	A
HCM 95th %tile Q(veh)	0.9	0.8	-	-	0.4	-

Intersection	
Int Delay, s/veh	2.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	72	38	303	65	36	306
Future Vol, veh/h	72	38	303	65	36	306
Conflicting Peds, #/hr	1	1	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	80	42	337	72	40	340

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	795	375	0	0	410	0
Stage 1	374	-	-	-	-	-
Stage 2	421	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	357	671	-	-	1149	-
Stage 1	696	-	-	-	-	-
Stage 2	662	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	341	670	-	-	1148	-
Mov Cap-2 Maneuver	341	-	-	-	-	-
Stage 1	665	-	-	-	-	-
Stage 2	661	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	17.4	0	0.9
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	411	1148	-
HCM Lane V/C Ratio	-	-	0.297	0.035	-
HCM Control Delay (s)	-	-	17.4	8.2	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	1.2	0.1	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	133	345	0	63	345	1	66	122	28	76	118	112
Future Volume (veh/h)	133	345	0	63	345	1	66	122	28	76	118	112
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	0.98		0.96	0.97		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	145	375	0	68	375	1	72	133	30	83	128	122
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	443	472	0	470	469	1	253	346	78	330	204	194
Arrive On Green	0.17	0.25	0.00	0.18	0.25	0.25	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	1795	1885	0	1795	1879	5	1114	1475	333	1197	867	826
Grp Volume(v), veh/h	145	375	0	68	0	376	72	0	163	83	0	250
Grp Sat Flow(s),veh/h/ln	1795	1885	0	1795	0	1884	1114	0	1808	1197	0	1693
Q Serve(g_s), s	3.8	9.6	0.0	0.0	0.0	9.7	3.2	0.0	3.9	3.2	0.0	6.8
Cycle Q Clear(g_c), s	3.8	9.6	0.0	0.0	0.0	9.7	10.1	0.0	3.9	7.2	0.0	6.8
Prop In Lane	1.00		0.00	1.00		0.00	1.00		0.18	1.00		0.49
Lane Grp Cap(c), veh/h	443	472	0	470	0	470	253	0	424	330	0	398
V/C Ratio(X)	0.33	0.79	0.00	0.14	0.00	0.80	0.28	0.00	0.38	0.25	0.00	0.63
Avail Cap(c_a), veh/h	487	897	0	487	0	897	302	0	504	382	0	472
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.3	18.1	0.0	17.2	0.0	18.2	22.3	0.0	16.6	19.6	0.0	17.7
Incr Delay (d2), s/veh	0.2	1.2	0.0	0.1	0.0	1.2	0.2	0.0	0.2	0.1	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	3.8	0.0	0.6	0.0	3.9	0.8	0.0	1.5	0.8	0.0	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.5	19.3	0.0	17.3	0.0	19.4	22.5	0.0	16.8	19.8	0.0	18.8
LnGrp LOS	B	B	A	B	A	B	C	A	B	B	A	B
Approach Vol, veh/h		520			444			235			333	
Approach Delay, s/veh		19.3			19.1			18.6			19.0	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	15.6	18.3		17.7	15.0	19.0		17.7
Change Period (Y+Rc), s	6.1	* 5.4		* 5.6	* 6.2	* 6.1		* 5.6
Max Green Setting (Gmax), s	10.0	* 25		* 14	* 10	* 25		* 14
Max Q Clear Time (g_c+I1), s	2.0	11.6		9.2	5.8	11.7		12.1
Green Ext Time (p_c), s	0.1	0.7		0.4	0.1	0.7		0.1

Intersection Summary	
HCM 6th Ctrl Delay	19.1
HCM 6th LOS	B

Notes

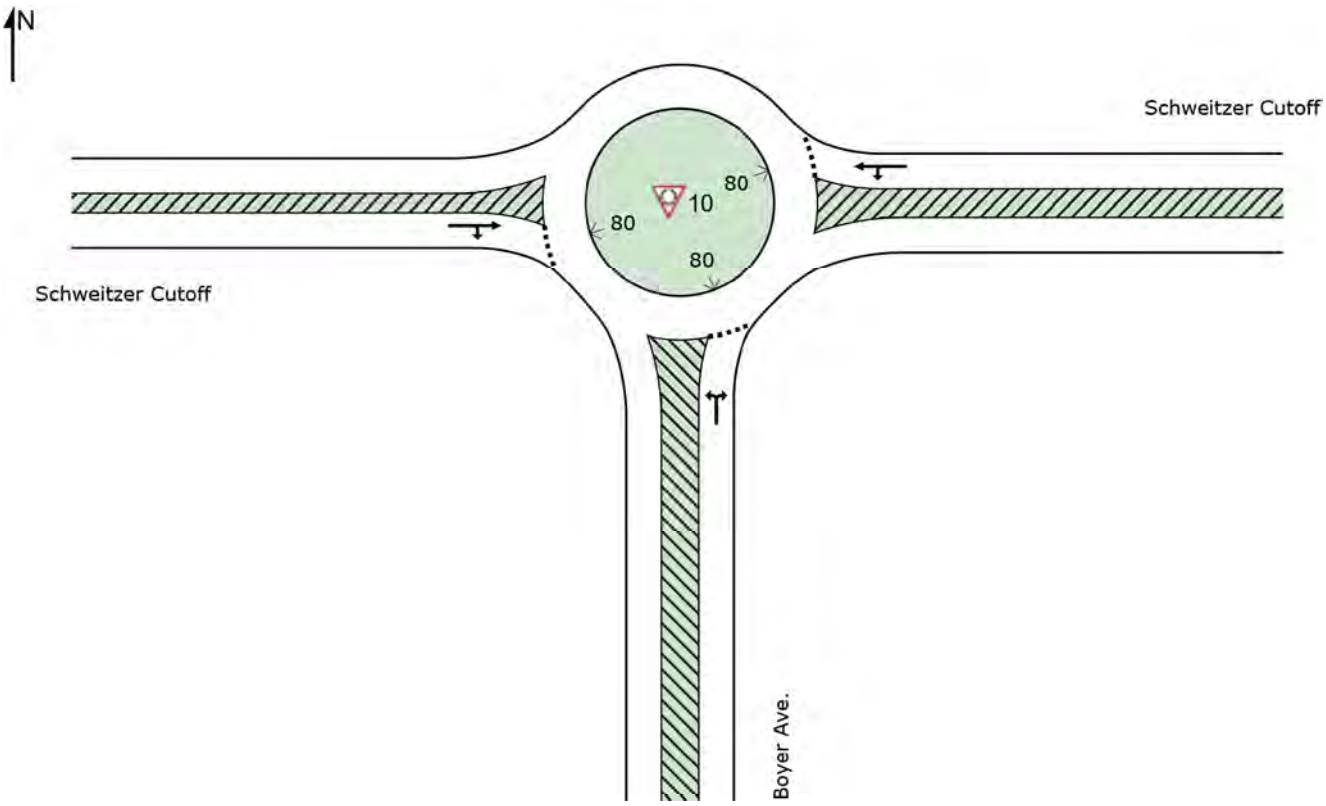
User approved pedestrian interval to be less than phase max green.

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

SITE LAYOUT

Site: 10 [Existing Conditions (2019) PM - Schweitzer Cutoff. - Boyer Ave.]

Schweitzer/Boyer roundabout
2019 PM Peak Hour
Site Category: (None)
Roundabout



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Organisation: DAVID EVANS & ASSOCIATES INC | Created: Monday, April 20, 2020 10:39:44 AM
Project: P:\K\KMEP00000001\0600INFO\TT\Synchro\Phase_3_TIA\Sidra\Schweitzer_Boyer_Base..sip8

MOVEMENT SUMMARY

Site: 10 [Existing Conditions (2019) PM - Schweitzer Cutoff. - Boyer Ave.]

Schweitzer/Boyer roundabout
2019 PM Peak Hour
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: Boyer Ave.												
3	L2	39	1.0	0.339	2.5	LOS A	2.0	51.5	0.48	0.34	0.48	16.7
18	R2	348	1.0	0.339	1.3	LOS A	2.0	51.5	0.48	0.34	0.48	15.8
Approach		387	1.0	0.339	1.5	LOS A	2.0	51.5	0.48	0.34	0.48	15.8
East: Schweitzer Cutoff												
1	L2	254	7.0	0.304	1.4	LOS A	1.8	48.6	0.19	0.18	0.19	16.7
6	T1	131	7.0	0.304	0.2	LOS A	1.8	48.6	0.19	0.18	0.19	15.8
Approach		385	7.0	0.304	1.0	LOS A	1.8	48.6	0.19	0.18	0.19	16.4
West: Schweitzer Cutoff												
2	T1	259	1.0	0.273	1.3	LOS A	1.5	36.5	0.44	0.27	0.44	15.8
12	R2	54	1.0	0.273	1.3	LOS A	1.5	36.5	0.44	0.27	0.44	15.8
Approach		313	1.0	0.273	1.3	LOS A	1.5	36.5	0.44	0.27	0.44	15.8
All Vehicles		1085	3.1	0.339	1.3	LOS A	2.0	51.5	0.36	0.26	0.36	16.0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

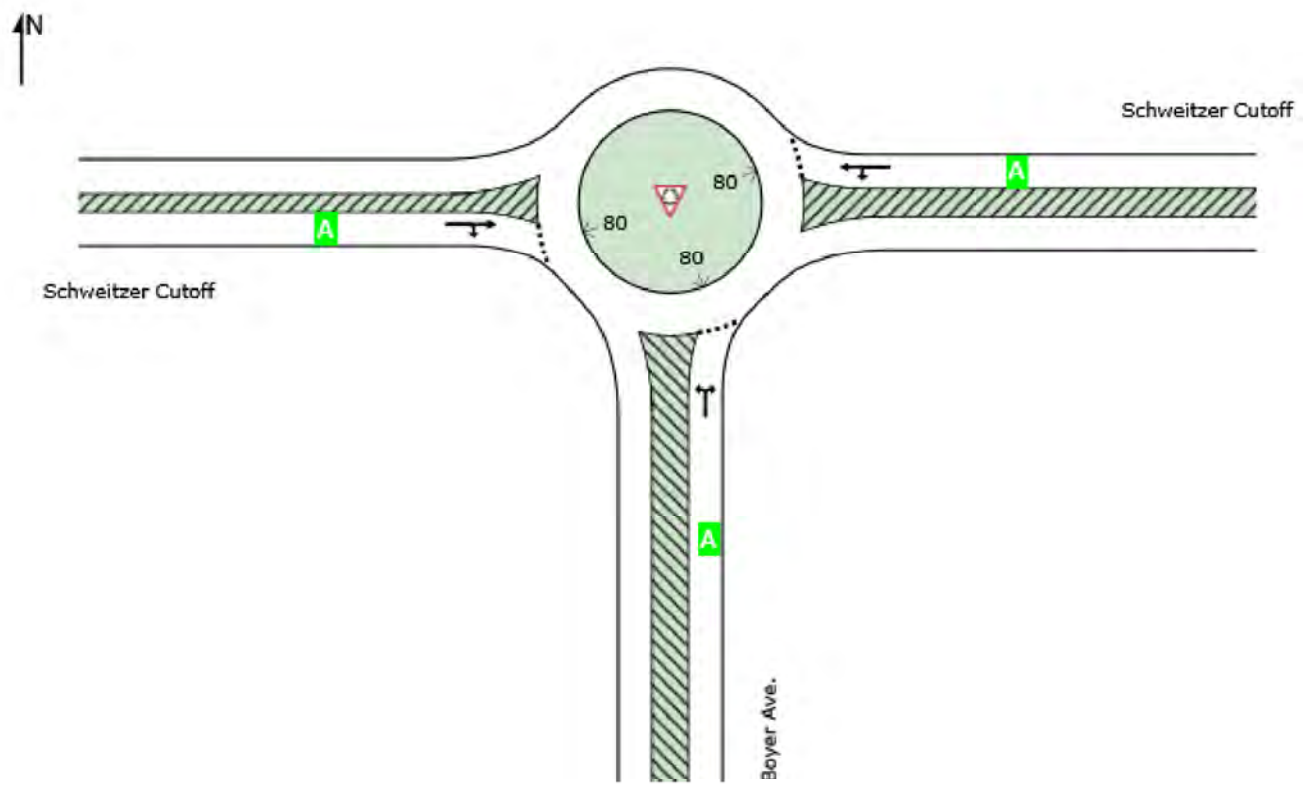
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 10 [Existing Conditions (2019) PM - Schweitzer Cutoff. - Boyer Ave.]

Schweitzer/Boyer roundabout
2019 PM Peak Hour
Site Category: (None)
Roundabout

	Approaches			Intersection
	South	East	West	
LOS	A	A	A	A



Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	11	3	1	280	254	10
Future Vol, veh/h	11	3	1	280	254	10
Conflicting Peds, #/hr	1	1	1	0	0	2
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	50	0	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	0	0	2	2	5	5
Mvmt Flow	12	3	1	308	279	11

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	598	288	292	0	-	0
Stage 1	287	-	-	-	-	-
Stage 2	311	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.12	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.218	-	-	-
Pot Cap-1 Maneuver	468	756	1270	-	-	-
Stage 1	766	-	-	-	-	-
Stage 2	748	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	466	754	1268	-	-	-
Mov Cap-2 Maneuver	466	-	-	-	-	-
Stage 1	764	-	-	-	-	-
Stage 2	747	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.2	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1268	-	466	754	-	-
HCM Lane V/C Ratio	0.001	-	0.026	0.004	-	-
HCM Control Delay (s)	7.8	-	12.9	9.8	-	-
HCM Lane LOS	A	-	B	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	0	-	-

Future Background (2025) Conditions – Weekday AM Peak Hour

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	1	13	0	6	1	227	7	2	298	5
Future Vol, veh/h	0	0	1	13	0	6	1	227	7	2	298	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	2	2	2
Mvmt Flow	0	0	1	14	0	6	1	239	7	2	314	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	569	569	317	566	568	243	319	0	0	246	0	0
Stage 1	321	321	-	245	245	-	-	-	-	-	-	-
Stage 2	248	248	-	321	323	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.12	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.218	-	-
Pot Cap-1 Maneuver	436	435	728	438	435	801	1252	-	-	1320	-	-
Stage 1	695	655	-	763	707	-	-	-	-	-	-	-
Stage 2	760	705	-	695	654	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	432	434	728	436	434	801	1252	-	-	1320	-	-
Mov Cap-2 Maneuver	432	434	-	436	434	-	-	-	-	-	-	-
Stage 1	694	654	-	762	706	-	-	-	-	-	-	-
Stage 2	753	704	-	693	653	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10	12.4	0	0.1
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1252	-	-	728	509	1320	-	-
HCM Lane V/C Ratio	0.001	-	-	0.001	0.039	0.002	-	-
HCM Control Delay (s)	7.9	0	-	10	12.4	7.7	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-	-

Intersection	
Int Delay, s/veh	4.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	118	0	102	1	0	0	64	173	0	2	135	160
Future Vol, veh/h	118	0	102	1	0	0	64	173	0	2	135	160
Conflicting Peds, #/hr	0	0	0	4	0	4	0	0	4	4	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	90	-	-	-	256	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	3	3	3	0	0	0	9	9	9	2	2	2
Mvmt Flow	124	0	107	1	0	0	67	182	0	2	142	168

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	550	-	230	608	634	190	310	0	0	186	0	0
Stage 1	230	-	-	320	320	-	-	-	-	-	-	-
Stage 2	320	-	-	288	314	-	-	-	-	-	-	-
Critical Hdwy	7.13	-	6.23	7.1	6.5	6.2	4.19	-	-	4.12	-	-
Critical Hdwy Stg 1	6.13	-	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	-	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	-	3.327	3.5	4	3.3	2.281	-	-	2.218	-	-
Pot Cap-1 Maneuver	444	0	807	411	399	857	1212	-	-	1388	-	-
Stage 1	771	0	-	696	656	-	-	-	-	-	-	-
Stage 2	690	0	-	724	660	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	423	-	804	338	375	851	1212	-	-	1383	-	-
Mov Cap-2 Maneuver	423	-	-	338	375	-	-	-	-	-	-	-
Stage 1	729	-	-	656	618	-	-	-	-	-	-	-
Stage 2	650	-	-	624	659	-	-	-	-	-	-	-

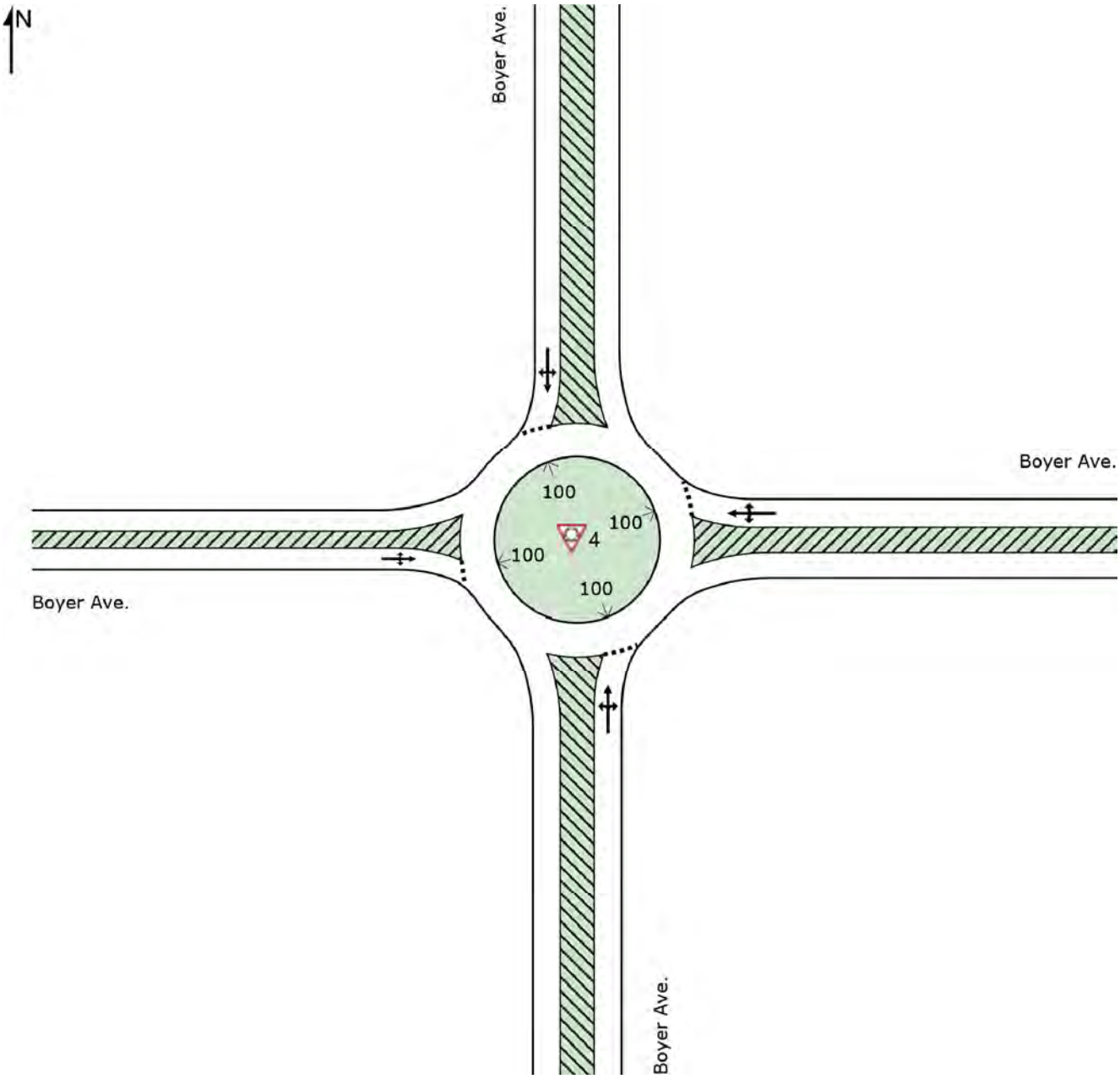
Approach	EB	WB	NB	SB
HCM Control Delay, s	13.8	15.7	2.2	0.1
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1212	-	-	423	804	338	1383	-	-
HCM Lane V/C Ratio	0.056	-	-	0.294	0.134	0.003	0.002	-	-
HCM Control Delay (s)	8.1	-	-	17	10.2	15.7	7.6	0	-
HCM Lane LOS	A	-	-	C	B	C	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	1.2	0.5	0	0	-	-

SITE LAYOUT

Site: 4 [Background Conditions (2025) PM - Larch St. - Boyer Ave.]

Larch/Boyer roundabout
2025 Background PM Peak Hour
Site Category: (None)
Roundabout



MOVEMENT SUMMARY

Site: 4 [Background Conditions (2025) PM - Larch St. - Boyer Ave.]

Larch/Boyer roundabout
2025 Background PM Peak Hour
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: Boyer Ave.												
3	L2	8	1.0	0.389	2.3	LOS A	2.6	66.7	0.57	0.39	0.57	16.8
8	T1	252	1.0	0.389	1.8	LOS A	2.6	66.7	0.57	0.39	0.57	15.7
18	R2	175	1.0	0.389	1.8	LOS A	2.6	66.7	0.57	0.39	0.57	15.7
Approach		435	1.0	0.389	1.9	LOS A	2.6	66.7	0.57	0.39	0.57	15.7
East: Boyer Ave.												
1	L2	126	1.0	0.383	2.2	LOS A	2.7	67.5	0.58	0.40	0.58	16.8
6	T1	129	1.0	0.383	1.8	LOS A	2.7	67.5	0.58	0.40	0.58	15.7
16	R2	171	1.0	0.383	1.8	LOS A	2.7	67.5	0.58	0.40	0.58	15.7
Approach		426	1.0	0.383	1.9	LOS A	2.7	67.5	0.58	0.40	0.58	16.0
North: Boyer Ave.												
7	L2	175	1.0	0.390	2.3	LOS A	2.9	73.0	0.59	0.40	0.59	16.8
4	T1	239	1.0	0.390	1.8	LOS A	2.9	73.0	0.59	0.40	0.59	15.7
14	R2	21	1.0	0.390	1.8	LOS A	2.9	73.0	0.59	0.40	0.59	15.7
Approach		434	1.0	0.390	2.0	LOS A	2.9	73.0	0.59	0.40	0.59	16.1
West: Boyer Ave.												
5	L2	27	1.0	0.150	4.1	LOS A	1.0	25.1	0.71	0.56	0.71	16.7
2	T1	93	1.0	0.150	3.6	LOS A	1.0	25.1	0.71	0.56	0.71	15.6
12	R2	6	1.0	0.150	3.6	LOS A	1.0	25.1	0.71	0.56	0.71	15.6
Approach		126	1.0	0.150	3.7	LOS A	1.0	25.1	0.71	0.56	0.71	15.8
All Vehicles		1422	1.0	0.390	2.1	LOS A	2.9	73.0	0.59	0.41	0.59	15.9

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

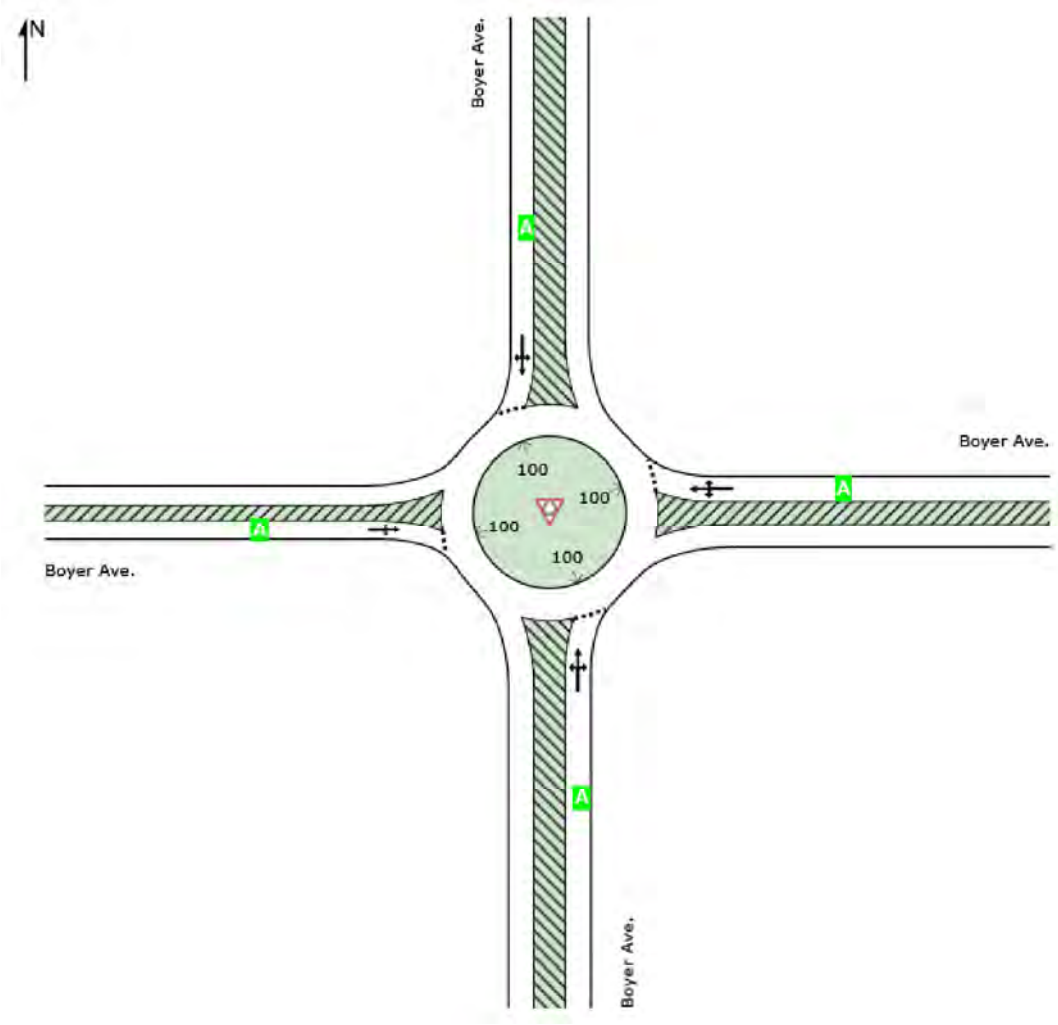
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 4 [Background Conditions (2025) PM - Larch St. - Boyer Ave.]

Larch/Boyer roundabout
2025 Background PM Peak Hour
Site Category: (None)
Roundabout

	Approaches				Intersection
	South	East	North	West	
LOS	A	A	A	A	A



Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Intersection	
Int Delay, s/veh	5.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	92	138	136	76	82	135
Future Vol, veh/h	92	138	136	76	82	135
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	75	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	5	5	11	11	4	4
Mvmt Flow	97	145	143	80	86	142

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	242	0	536	170
Stage 1	-	-	-	-	170	-
Stage 2	-	-	-	-	366	-
Critical Hdwy	-	-	4.21	-	6.44	6.24
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	-	-	2.299	-	3.536	3.336
Pot Cap-1 Maneuver	-	-	1273	-	502	869
Stage 1	-	-	-	-	855	-
Stage 2	-	-	-	-	697	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1273	-	443	869
Mov Cap-2 Maneuver	-	-	-	-	443	-
Stage 1	-	-	-	-	754	-
Stage 2	-	-	-	-	697	-

Approach	EB	WB	NB
HCM Control Delay, s	0	5.3	11.9
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	443	869	-	-	1273	-
HCM Lane V/C Ratio	0.195	0.164	-	-	0.112	-
HCM Control Delay (s)	15.1	10	-	-	8.2	0
HCM Lane LOS	C	B	-	-	A	A
HCM 95th %tile Q(veh)	0.7	0.6	-	-	0.4	-

Intersection	
Int Delay, s/veh	2.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	45	40	324	66	52	324
Future Vol, veh/h	45	40	324	66	52	324
Conflicting Peds, #/hr	1	1	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	3	3	3	3
Mvmt Flow	47	42	341	69	55	341

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	829	378	0	0	411	0
Stage 1	377	-	-	-	-	-
Stage 2	452	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.13	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.227	-
Pot Cap-1 Maneuver	343	673	-	-	1142	-
Stage 1	698	-	-	-	-	-
Stage 2	645	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	322	672	-	-	1141	-
Mov Cap-2 Maneuver	322	-	-	-	-	-
Stage 1	656	-	-	-	-	-
Stage 2	644	-	-	-	-	-

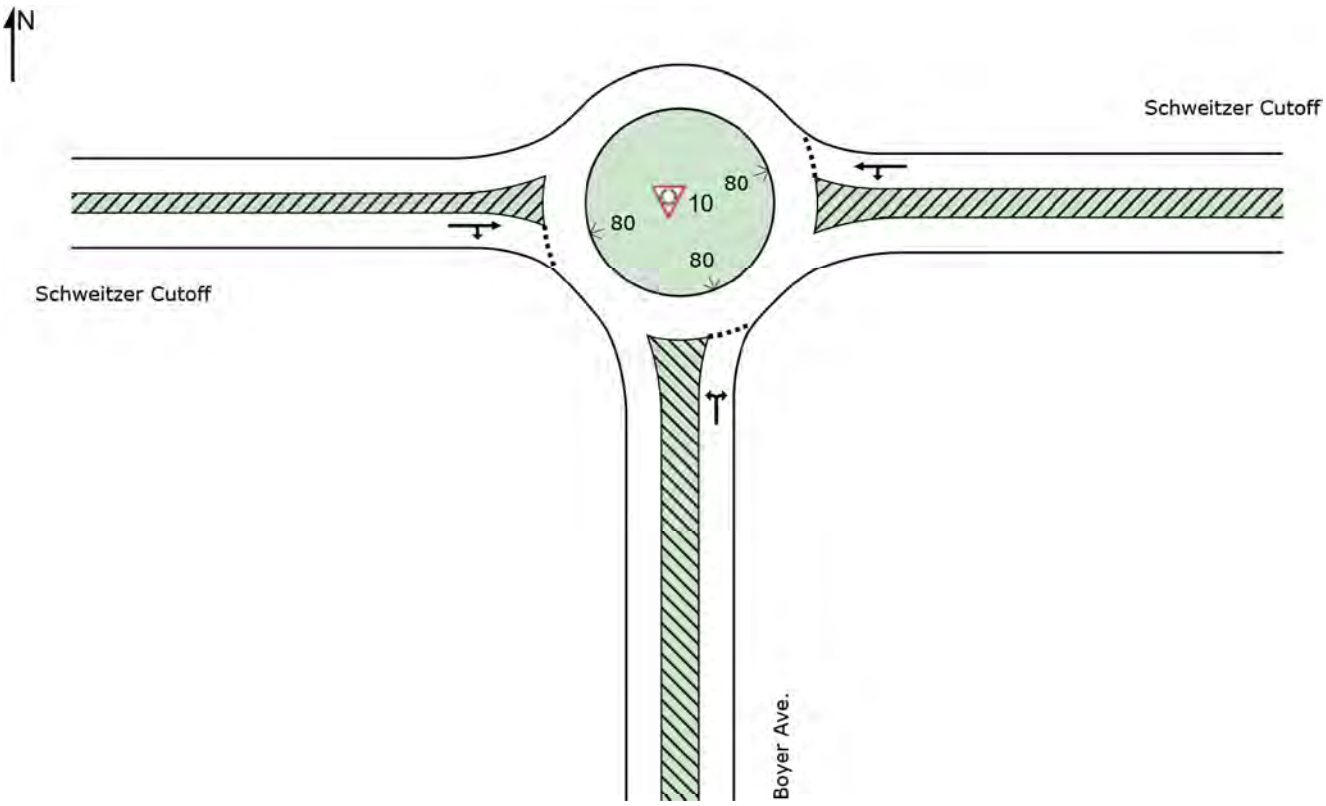
Approach	WB	NB	SB
HCM Control Delay, s	15.7	0	1.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	427	1141	-
HCM Lane V/C Ratio	-	-	0.21	0.048	-
HCM Control Delay (s)	-	-	15.7	8.3	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	0.8	0.2	-

SITE LAYOUT

Site: 10 [Background Conditions (2025) AM - Schweitzer Cutoff. - Boyer Ave.]

Schweitzer/Boyer roundabout
2025 Background AM Peak Hour
Site Category: (None)
Roundabout



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Organisation: DAVID EVANS & ASSOCIATES INC | Created: Tuesday, April 28, 2020 11:58:59 AM
Project: P:\K\KMEP00000001\0600INFO\TT\Synchro\Phase_3_TIA\Sidra\Schweitzer_Boyer_Base..sip8

MOVEMENT SUMMARY

Site: 10 [Background Conditions (2025) AM - Schweitzer Cutoff. - Boyer Ave.]

Schweitzer/Boyer roundabout
2025 Background AM Peak Hour
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: Boyer Ave.												
3	L2	77	0.0	0.228	1.9	LOS A	1.2	30.6	0.33	0.21	0.33	16.7
18	R2	209	0.0	0.228	0.7	LOS A	1.2	30.6	0.33	0.21	0.33	15.8
Approach		286	0.0	0.228	1.0	LOS A	1.2	30.6	0.33	0.21	0.33	16.0
East: Schweitzer Cutoff												
1	L2	246	3.0	0.381	1.7	LOS A	2.4	61.1	0.27	0.19	0.27	16.7
6	T1	243	3.0	0.381	0.4	LOS A	2.4	61.1	0.27	0.19	0.27	15.8
Approach		489	3.0	0.381	1.1	LOS A	2.4	61.1	0.27	0.19	0.27	16.2
West: Schweitzer Cutoff												
2	T1	148	2.0	0.165	1.1	LOS A	0.8	20.7	0.39	0.23	0.39	15.8
12	R2	41	2.0	0.165	1.1	LOS A	0.8	20.7	0.39	0.23	0.39	15.8
Approach		189	2.0	0.165	1.1	LOS A	0.8	20.7	0.39	0.23	0.39	15.8
All Vehicles		965	1.9	0.381	1.0	LOS A	2.4	61.1	0.31	0.20	0.31	16.1

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

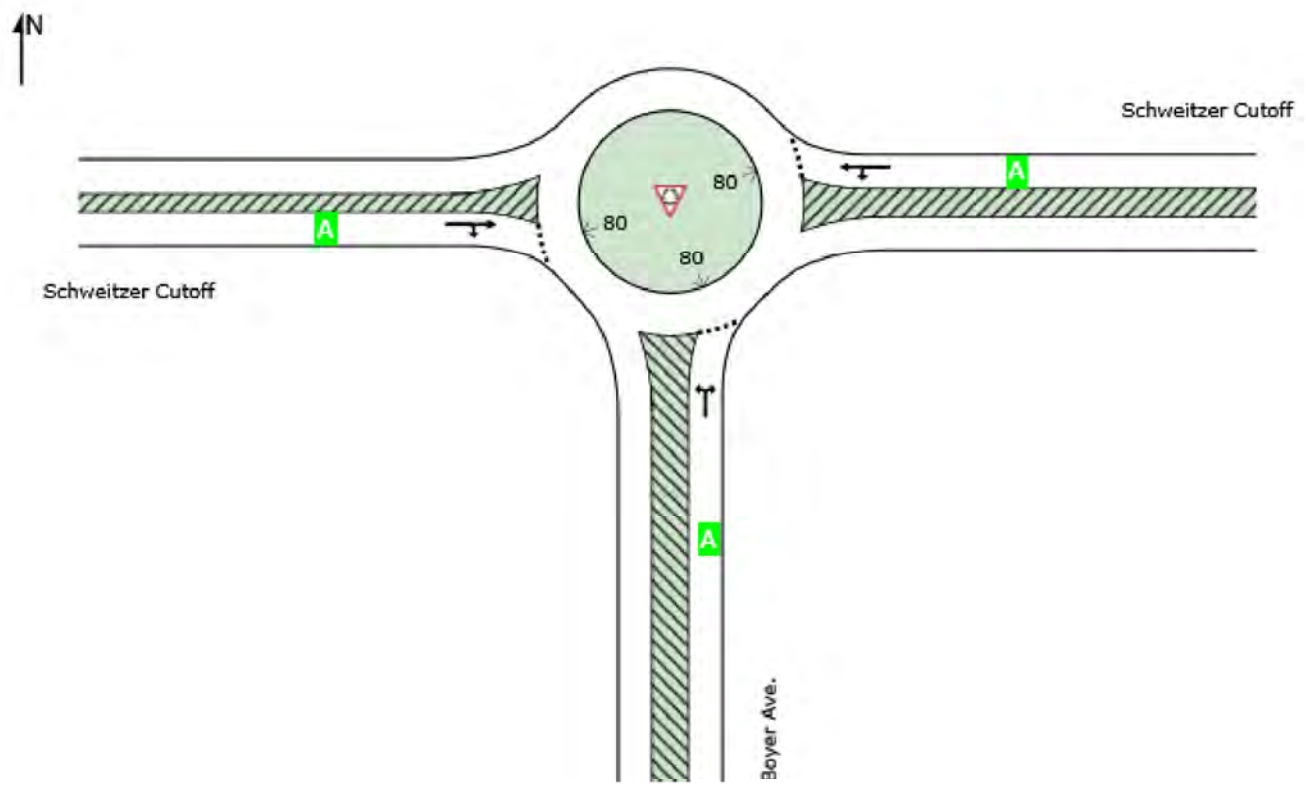
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 10 [Background Conditions (2025) AM - Schweitzer Cutoff. - Boyer Ave.]

Schweitzer/Boyer roundabout
2025 Background AM Peak Hour
Site Category: (None)
Roundabout

	Approaches			Intersection
	South	East	West	
LOS	A	A	A	A



Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	2	4	287	295	14
Future Vol, veh/h	5	2	4	287	295	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	50	0	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	1	1	2	2
Mvmt Flow	5	2	4	302	311	15

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	629	319	326	0	-	0
Stage 1	319	-	-	-	-	-
Stage 2	310	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.11	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.209	-	-	-
Pot Cap-1 Maneuver	449	726	1239	-	-	-
Stage 1	741	-	-	-	-	-
Stage 2	748	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	448	726	1239	-	-	-
Mov Cap-2 Maneuver	448	-	-	-	-	-
Stage 1	739	-	-	-	-	-
Stage 2	748	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.2	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1239	-	448	726	-	-
HCM Lane V/C Ratio	0.003	-	0.012	0.003	-	-
HCM Control Delay (s)	7.9	-	13.1	10	-	-
HCM Lane LOS	A	-	B	B	-	-
HCM 95th %tile Q(veh)	0	-	0	0	-	-

Future Background (2025) Conditions – Weekday PM Peak Hour

Intersection	
Intersection Delay, s/veh	9
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	98	86	46	179	135	21
Future Vol, veh/h	98	86	46	179	135	21
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	103	91	48	188	142	22
Number of Lanes	1	1	1	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	2
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	2	0
HCM Control Delay	9.1	8.8	9.3
HCM LOS	A	A	A

Lane	NBLn1	WBLn1	WBLn2	SBLn1
Vol Left, %	0%	100%	0%	87%
Vol Thru, %	20%	0%	0%	13%
Vol Right, %	80%	0%	100%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	225	98	86	156
LT Vol	0	98	0	135
Through Vol	46	0	0	21
RT Vol	179	0	86	0
Lane Flow Rate	237	103	91	164
Geometry Grp	2	7	7	2
Degree of Util (X)	0.274	0.17	0.118	0.222
Departure Headway (Hd)	4.158	5.919	4.711	4.856
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	864	605	758	739
Service Time	2.187	3.67	2.461	2.892
HCM Lane V/C Ratio	0.274	0.17	0.12	0.222
HCM Control Delay	8.8	9.9	8.1	9.3
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	1.1	0.6	0.4	0.8

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	1	0	13	0	8	0	400	11	4	302	0
Future Vol, veh/h	2	1	0	13	0	8	0	400	11	4	302	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	1	0	14	0	8	0	421	12	4	318	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	757	759	318	754	753	427	318	0	0	433	0	0
Stage 1	326	326	-	427	427	-	-	-	-	-	-	-
Stage 2	431	433	-	327	326	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	324	336	723	326	339	628	1242	-	-	1127	-	-
Stage 1	687	648	-	606	585	-	-	-	-	-	-	-
Stage 2	603	582	-	686	648	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	319	335	723	324	338	628	1242	-	-	1127	-	-
Mov Cap-2 Maneuver	319	335	-	324	338	-	-	-	-	-	-	-
Stage 1	687	645	-	606	585	-	-	-	-	-	-	-
Stage 2	595	582	-	682	645	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16.2	14.6	0	0.1
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1242	-	-	324	397	1127	-	-
HCM Lane V/C Ratio	-	-	-	0.01	0.056	0.004	-	-
HCM Control Delay (s)	0	-	-	16.2	14.6	8.2	0	-
HCM Lane LOS	A	-	-	C	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.2	0	-	-

Intersection	
Int Delay, s/veh	9.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	171	1	136	1	0	4	105	212	2	5	207	157
Future Vol, veh/h	171	1	136	1	0	4	105	212	2	5	207	157
Conflicting Peds, #/hr	0	0	0	5	0	5	0	0	5	5	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	90	-	-	-	256	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	188	1	149	1	0	4	115	233	2	5	227	173

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	795	794	319	873	879	244	400	0	0	240	0	0
Stage 1	324	324	-	469	469	-	-	-	-	-	-	-
Stage 2	471	470	-	404	410	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	305	321	722	271	286	795	1159	-	-	1327	-	-
Stage 1	688	650	-	575	561	-	-	-	-	-	-	-
Stage 2	573	560	-	623	595	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	278	287	719	195	255	788	1159	-	-	1321	-	-
Mov Cap-2 Maneuver	278	287	-	195	255	-	-	-	-	-	-	-
Stage 1	620	647	-	516	503	-	-	-	-	-	-	-
Stage 2	511	502	-	488	592	-	-	-	-	-	-	-

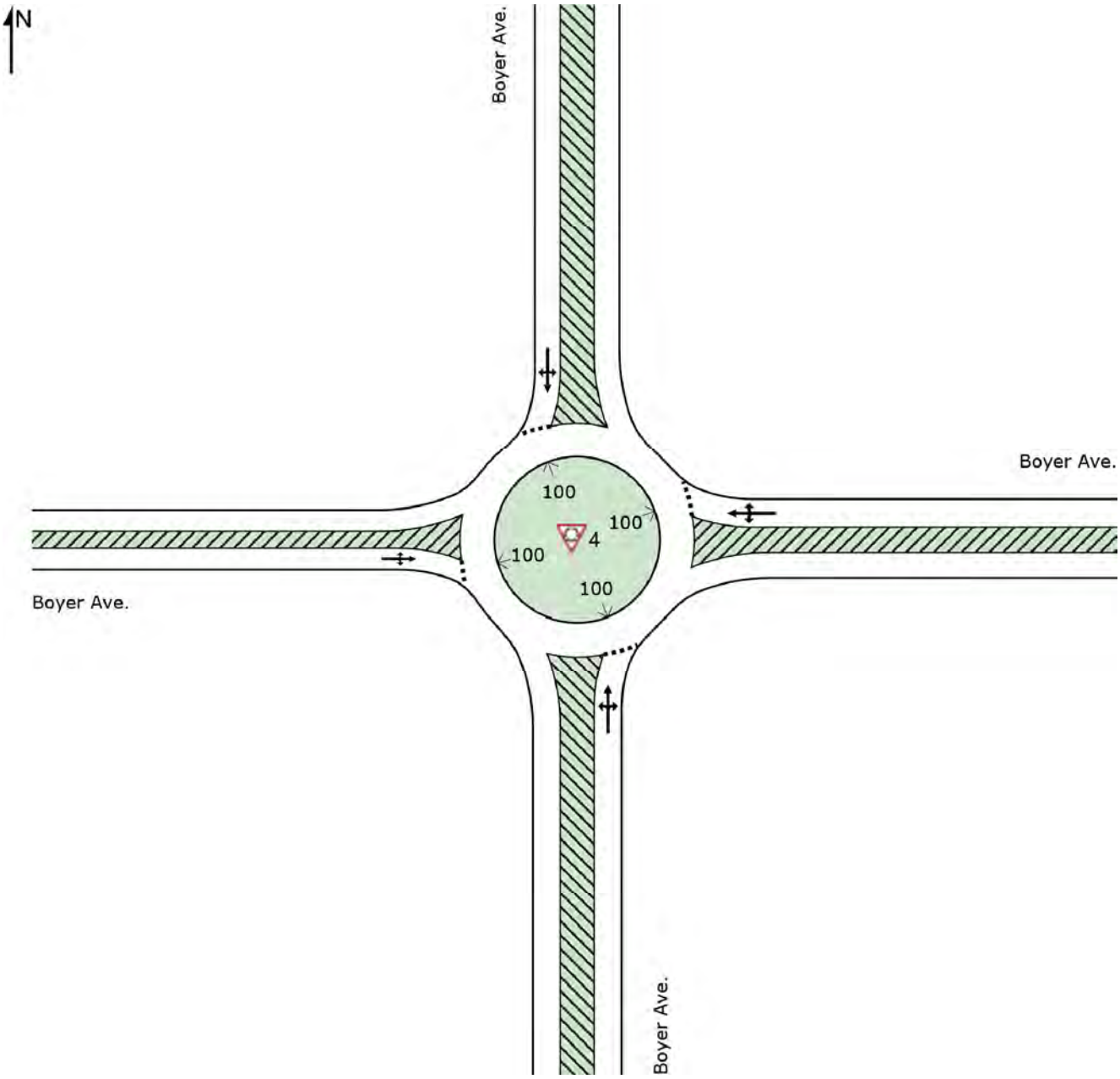
Approach	EB	WB	NB	SB
HCM Control Delay, s	28	12.4	2.8	0.1
HCM LOS	D	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1159	-	-	278	719	490	1321	-	-
HCM Lane V/C Ratio	0.1	-	-	0.676	0.208	0.011	0.004	-	-
HCM Control Delay (s)	8.4	-	-	41.2	11.3	12.4	7.7	0	-
HCM Lane LOS	A	-	-	E	B	B	A	A	-
HCM 95th %tile Q(veh)	0.3	-	-	4.5	0.8	0	0	-	-

SITE LAYOUT

Site: 4 [Background Conditions (2025) PM - Larch St. - Boyer Ave.]

Larch/Boyer roundabout
2025 Background PM Peak Hour
Site Category: (None)
Roundabout



MOVEMENT SUMMARY

Site: 4 [Background Conditions (2025) PM - Larch St. - Boyer Ave.]

Larch/Boyer roundabout
2025 Background PM Peak Hour
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: Boyer Ave.												
3	L2	8	1.0	0.394	2.3	LOS A	2.7	68.2	0.57	0.40	0.57	16.8
8	T1	252	1.0	0.394	1.9	LOS A	2.7	68.2	0.57	0.40	0.57	15.7
18	R2	180	1.0	0.394	1.9	LOS A	2.7	68.2	0.57	0.40	0.57	15.7
Approach		441	1.0	0.394	1.9	LOS A	2.7	68.2	0.57	0.40	0.57	15.7
East: Boyer Ave.												
1	L2	140	1.0	0.402	2.3	LOS A	2.9	72.1	0.59	0.41	0.59	16.8
6	T1	132	1.0	0.402	1.8	LOS A	2.9	72.1	0.59	0.41	0.59	15.7
16	R2	175	1.0	0.402	1.8	LOS A	2.9	72.1	0.59	0.41	0.59	15.7
Approach		447	1.0	0.402	2.0	LOS A	2.9	72.1	0.59	0.41	0.59	16.0
North: Boyer Ave.												
7	L2	176	1.0	0.397	2.4	LOS A	3.0	74.6	0.61	0.42	0.61	16.7
4	T1	239	1.0	0.397	1.9	LOS A	3.0	74.6	0.61	0.42	0.61	15.7
14	R2	21	1.0	0.397	1.9	LOS A	3.0	74.6	0.61	0.42	0.61	15.7
Approach		435	1.0	0.397	2.1	LOS A	3.0	74.6	0.61	0.42	0.61	16.1
West: Boyer Ave.												
5	L2	27	1.0	0.153	4.2	LOS A	1.0	25.8	0.72	0.57	0.72	16.7
2	T1	94	1.0	0.153	3.8	LOS A	1.0	25.8	0.72	0.57	0.72	15.6
12	R2	6	1.0	0.153	3.8	LOS A	1.0	25.8	0.72	0.57	0.72	15.6
Approach		127	1.0	0.153	3.9	LOS A	1.0	25.8	0.72	0.57	0.72	15.8
All Vehicles		1450	1.0	0.402	2.2	LOS A	3.0	74.6	0.60	0.43	0.60	15.9

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

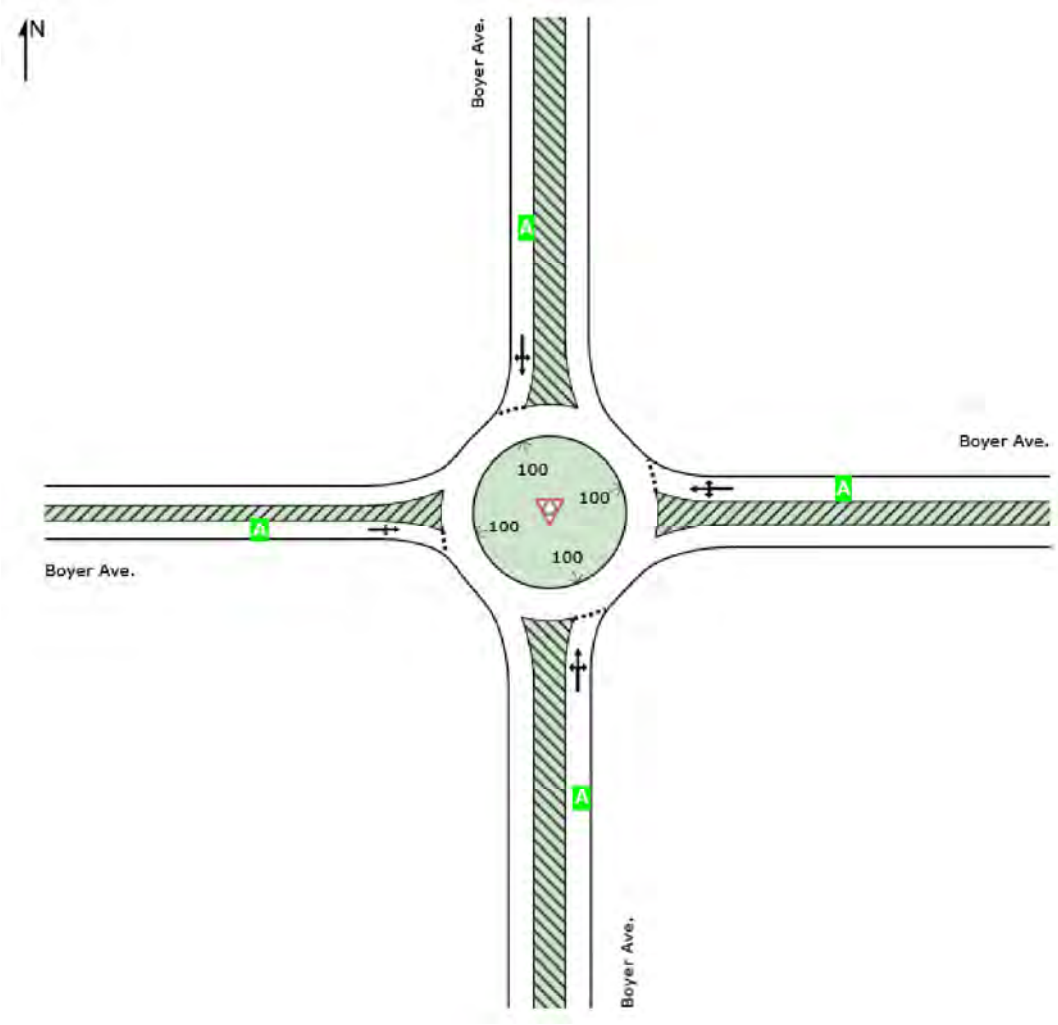
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 4 [Background Conditions (2025) PM - Larch St. - Boyer Ave.]

Larch/Boyer roundabout
2025 Background PM Peak Hour
Site Category: (None)
Roundabout

	Approaches				Intersection
	South	East	North	West	
LOS	A	A	A	A	A



Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	145	280	170	285	217	121	221	472	193	136	383	97
Future Volume (veh/h)	145	280	170	285	217	121	221	472	193	136	383	97
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	153	295	179	300	228	127	233	497	203	143	403	102
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	476	1188	529	916	746	400	520	1480	660	454	1480	660
Arrive On Green	0.34	0.34	0.34	0.34	0.34	0.34	0.42	0.42	0.42	0.42	0.42	0.42
Sat Flow, veh/h	1009	3497	1559	1755	2198	1179	880	3497	1559	734	3497	1559
Grp Volume(v), veh/h	153	295	179	300	180	175	233	497	203	143	403	102
Grp Sat Flow(s),veh/h/ln	1009	1749	1559	878	1749	1627	880	1749	1559	734	1749	1559
Q Serve(g_s), s	4.5	2.1	2.9	5.0	2.6	2.7	7.9	3.2	2.9	5.5	2.5	1.4
Cycle Q Clear(g_c), s	7.2	2.1	2.9	7.1	2.6	2.7	10.5	3.2	2.9	8.7	2.5	1.4
Prop In Lane	1.00		1.00	1.00		0.72	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	476	1188	529	916	594	553	520	1480	660	454	1480	660
V/C Ratio(X)	0.32	0.25	0.34	0.33	0.30	0.32	0.45	0.34	0.31	0.31	0.27	0.15
Avail Cap(c_a), veh/h	612	1659	739	1153	829	772	565	1659	739	492	1659	739
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	10.9	8.0	8.3	10.6	8.2	8.2	9.8	6.5	6.5	9.5	6.3	6.0
Incr Delay (d2), s/veh	0.4	0.1	0.4	0.2	0.3	0.3	0.6	0.1	0.3	0.4	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.5	0.7	0.7	0.7	0.7	1.1	0.8	0.6	0.7	0.6	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.3	8.1	8.7	10.8	8.5	8.6	10.4	6.7	6.7	9.9	6.4	6.1
LnGrp LOS	B	A	A	B	A	A	B	A	A	A	A	A
Approach Vol, veh/h		627			655			933			648	
Approach Delay, s/veh		9.1			9.6			7.6			7.1	
Approach LOS		A			A			A			A	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	18.3	15.5	18.3	15.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	16.0	16.0	16.0	16.0
Max Q Clear Time (g_c+I1), s	12.5	9.2	10.7	9.1
Green Ext Time (p_c), s	1.8	1.9	1.9	2.3

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	293	28	156	14	70	129	122	630	5	31	637	269
Future Volume (veh/h)	293	28	156	14	70	129	122	630	5	31	637	269
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	308	29	164	15	74	136	128	663	5	33	671	283
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	389	52	296	35	170	173	238	806	6	408	752	317
Arrive On Green	0.22	0.22	0.22	0.11	0.11	0.11	0.08	0.22	0.22	0.17	0.31	0.31
Sat Flow, veh/h	1795	242	1366	315	1554	1575	1795	3644	27	1795	2448	1032
Grp Volume(v), veh/h	308	0	193	89	0	136	128	326	342	33	491	463
Grp Sat Flow(s),veh/h/ln	1795	0	1607	1869	0	1575	1795	1791	1880	1795	1791	1689
Q Serve(g_s), s	13.0	0.0	8.5	3.6	0.0	6.7	1.3	13.8	13.8	0.0	20.9	20.9
Cycle Q Clear(g_c), s	13.0	0.0	8.5	3.6	0.0	6.7	1.3	13.8	13.8	0.0	20.9	20.9
Prop In Lane	1.00		0.85	0.17		1.00	1.00		0.01	1.00		0.61
Lane Grp Cap(c), veh/h	389	0	348	205	0	173	238	396	416	408	550	519
V/C Ratio(X)	0.79	0.00	0.55	0.43	0.00	0.79	0.54	0.82	0.82	0.08	0.89	0.89
Avail Cap(c_a), veh/h	762	0	682	215	0	181	247	657	690	408	659	622
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.6	0.0	27.9	33.3	0.0	34.7	33.8	29.6	29.6	27.2	26.4	26.4
Incr Delay (d2), s/veh	1.4	0.0	0.5	0.5	0.0	17.7	1.0	1.7	1.6	0.0	11.6	12.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.5	0.0	3.2	1.6	0.0	3.4	2.3	5.9	6.2	0.5	10.2	9.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.0	0.0	28.4	33.8	0.0	52.3	34.7	31.3	31.2	27.2	38.0	38.6
LnGrp LOS	C	A	C	C	A	D	C	C	C	C	D	D
Approach Vol, veh/h		501			225			796			987	
Approach Delay, s/veh		30.0			45.0			31.8			37.9	
Approach LOS		C			D			C			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	18.6	23.4		23.4	11.8	30.1		14.5
Change Period (Y+Rc), s	* 5.2	* 5.7		* 6.1	* 5.2	* 5.6		5.8
Max Green Setting (Gmax), s	* 7	* 29		* 34	* 7	* 29		9.2
Max Q Clear Time (g_c+I1), s	12.0	15.8		15.0	3.3	22.9		8.7
Green Ext Time (p_c), s	0.0	1.3		0.5	0.1	1.6		0.0

Intersection Summary	
HCM 6th Ctrl Delay	35.0
HCM 6th LOS	D

Notes

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

Intersection	
Int Delay, s/veh	6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	102	154	161	100	89	183
Future Vol, veh/h	102	154	161	100	89	183
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	75	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	107	162	169	105	94	193

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	269	0	631	188
Stage 1	-	-	-	-	188	-
Stage 2	-	-	-	-	443	-
Critical Hdwy	-	-	4.11	-	6.41	6.21
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	-	-	2.209	-	3.509	3.309
Pot Cap-1 Maneuver	-	-	1300	-	447	857
Stage 1	-	-	-	-	846	-
Stage 2	-	-	-	-	649	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1300	-	385	857
Mov Cap-2 Maneuver	-	-	-	-	385	-
Stage 1	-	-	-	-	729	-
Stage 2	-	-	-	-	649	-

Approach	EB	WB	NB
HCM Control Delay, s	0	5	12.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	385	857	-	-	1300	-
HCM Lane V/C Ratio	0.243	0.225	-	-	0.13	-
HCM Control Delay (s)	17.3	10.4	-	-	8.2	0
HCM Lane LOS	C	B	-	-	A	A
HCM 95th %tile Q(veh)	0.9	0.9	-	-	0.4	-

Intersection	
Int Delay, s/veh	3.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	85	45	358	77	43	362
Future Vol, veh/h	85	45	358	77	43	362
Conflicting Peds, #/hr	1	1	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	89	47	377	81	45	381

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	891	420	0	0	459	0
Stage 1	419	-	-	-	-	-
Stage 2	472	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	313	633	-	-	1102	-
Stage 1	664	-	-	-	-	-
Stage 2	628	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	296	632	-	-	1101	-
Mov Cap-2 Maneuver	296	-	-	-	-	-
Stage 1	629	-	-	-	-	-
Stage 2	627	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	20.8	0	0.9
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	363	1101	-
HCM Lane V/C Ratio	-	-	0.377	0.041	-
HCM Control Delay (s)	-	-	20.8	8.4	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	1.7	0.1	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	158	408	0	74	408	1	78	145	33	90	143	136
Future Volume (veh/h)	158	408	0	74	408	1	78	145	33	90	143	136
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	0.98		0.96	0.97		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	166	429	0	78	429	1	82	153	35	95	151	143
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	419	510	0	443	507	1	230	372	85	322	220	209
Arrive On Green	0.16	0.27	0.00	0.18	0.27	0.27	0.25	0.25	0.25	0.25	0.25	0.25
Sat Flow, veh/h	1795	1885	0	1795	1880	4	1074	1472	337	1174	871	825
Grp Volume(v), veh/h	166	429	0	78	0	430	82	0	188	95	0	294
Grp Sat Flow(s),veh/h/ln	1795	1885	0	1795	0	1884	1074	0	1808	1174	0	1697
Q Serve(g_s), s	4.7	12.2	0.0	0.0	0.0	12.3	4.3	0.0	4.9	4.2	0.0	8.9
Cycle Q Clear(g_c), s	4.7	12.2	0.0	0.0	0.0	12.3	13.2	0.0	4.9	9.1	0.0	8.9
Prop In Lane	1.00		0.00	1.00		0.00	1.00		0.19	1.00		0.49
Lane Grp Cap(c), veh/h	419	510	0	443	0	508	230	0	457	322	0	429
V/C Ratio(X)	0.40	0.84	0.00	0.18	0.00	0.85	0.36	0.00	0.41	0.30	0.00	0.69
Avail Cap(c_a), veh/h	442	815	0	443	0	814	230	0	457	322	0	429
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	20.3	19.6	0.0	19.3	0.0	19.7	25.2	0.0	17.7	21.5	0.0	19.2
Incr Delay (d2), s/veh	0.2	2.3	0.0	0.1	0.0	2.5	0.3	0.0	0.2	0.2	0.0	3.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	5.1	0.0	0.8	0.0	5.2	1.0	0.0	1.9	1.1	0.0	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.5	22.0	0.0	19.4	0.0	22.2	25.5	0.0	17.9	21.7	0.0	23.0
LnGrp LOS	C	C	A	B	A	C	C	A	B	C	A	C
Approach Vol, veh/h		595			508			270			389	
Approach Delay, s/veh		21.5			21.7			20.2			22.7	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	16.1	20.8		20.0	15.5	21.5		20.0
Change Period (Y+Rc), s	6.1	* 5.4		* 5.6	* 6.2	* 6.1		* 5.6
Max Green Setting (Gmax), s	10.0	* 25		* 14	* 10	* 25		* 14
Max Q Clear Time (g_c+I1), s	2.0	14.2		11.1	6.7	14.3		15.2
Green Ext Time (p_c), s	0.1	0.8		0.4	0.1	0.8		0.0

Intersection Summary	
HCM 6th Ctrl Delay	21.6
HCM 6th LOS	C

Notes

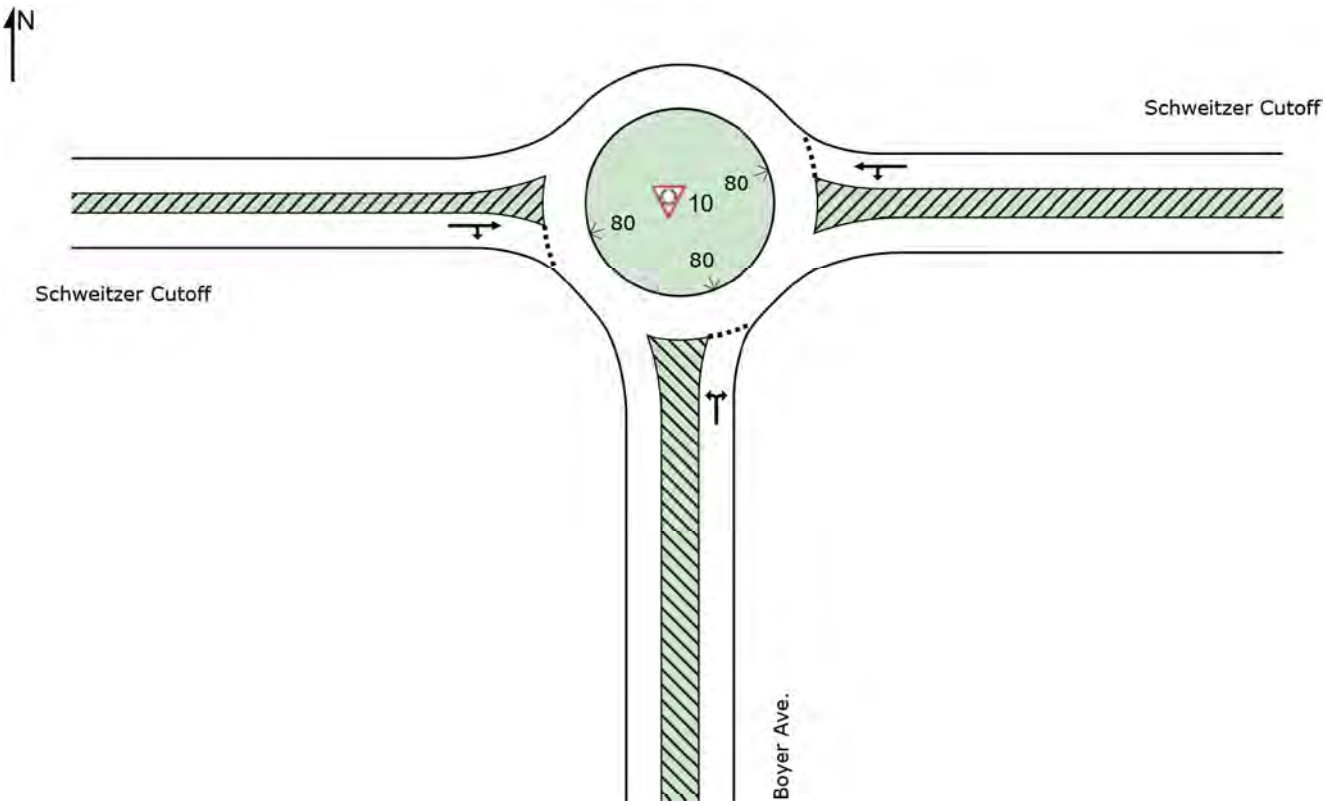
User approved pedestrian interval to be less than phase max green.

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

SITE LAYOUT

Site: 10 [Background Conditions (2025) PM - Schweitzer Cutoff. - Boyer Ave.]

Schweitzer/Boyer roundabout
2025 Background PM Peak Hour
Site Category: (None)
Roundabout



SIDRA INTERSECTION 8.0 | Copyright © 2000-2018 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: DAVID EVANS & ASSOCIATES INC | Created: Tuesday, April 28, 2020 1:29:56 PM
Project: P:\K\KMEP00000001\0600INFO\TT\Synchro\Phase_3_TIA\Sidra\Schweitzer_Boyer_Base..sip8

MOVEMENT SUMMARY

Site: 10 [Background Conditions (2025) PM - Schweitzer Cutoff. - Boyer Ave.]

Schweitzer/Boyer roundabout
2025 Background PM Peak Hour
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: Boyer Ave.												
3	L2	48	1.0	0.417	2.9	LOS A	2.7	68.7	0.57	0.44	0.57	16.6
18	R2	406	1.0	0.417	1.7	LOS A	2.7	68.7	0.57	0.44	0.57	15.7
Approach		455	1.0	0.417	1.9	LOS A	2.7	68.7	0.57	0.44	0.57	15.8
East: Schweitzer Cutoff												
1	L2	301	7.0	0.375	1.5	LOS A	2.5	66.8	0.23	0.19	0.23	16.7
6	T1	169	7.0	0.375	0.3	LOS A	2.5	66.8	0.23	0.19	0.23	15.8
Approach		470	7.0	0.375	1.1	LOS A	2.5	66.8	0.23	0.19	0.23	16.4
West: Schweitzer Cutoff												
2	T1	308	1.0	0.336	1.7	LOS A	1.9	48.5	0.50	0.34	0.50	15.7
12	R2	63	1.0	0.336	1.7	LOS A	1.9	48.5	0.50	0.34	0.50	15.7
Approach		372	1.0	0.336	1.7	LOS A	1.9	48.5	0.50	0.34	0.50	15.7
All Vehicles		1296	3.2	0.417	1.5	LOS A	2.7	68.7	0.43	0.32	0.43	16.0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

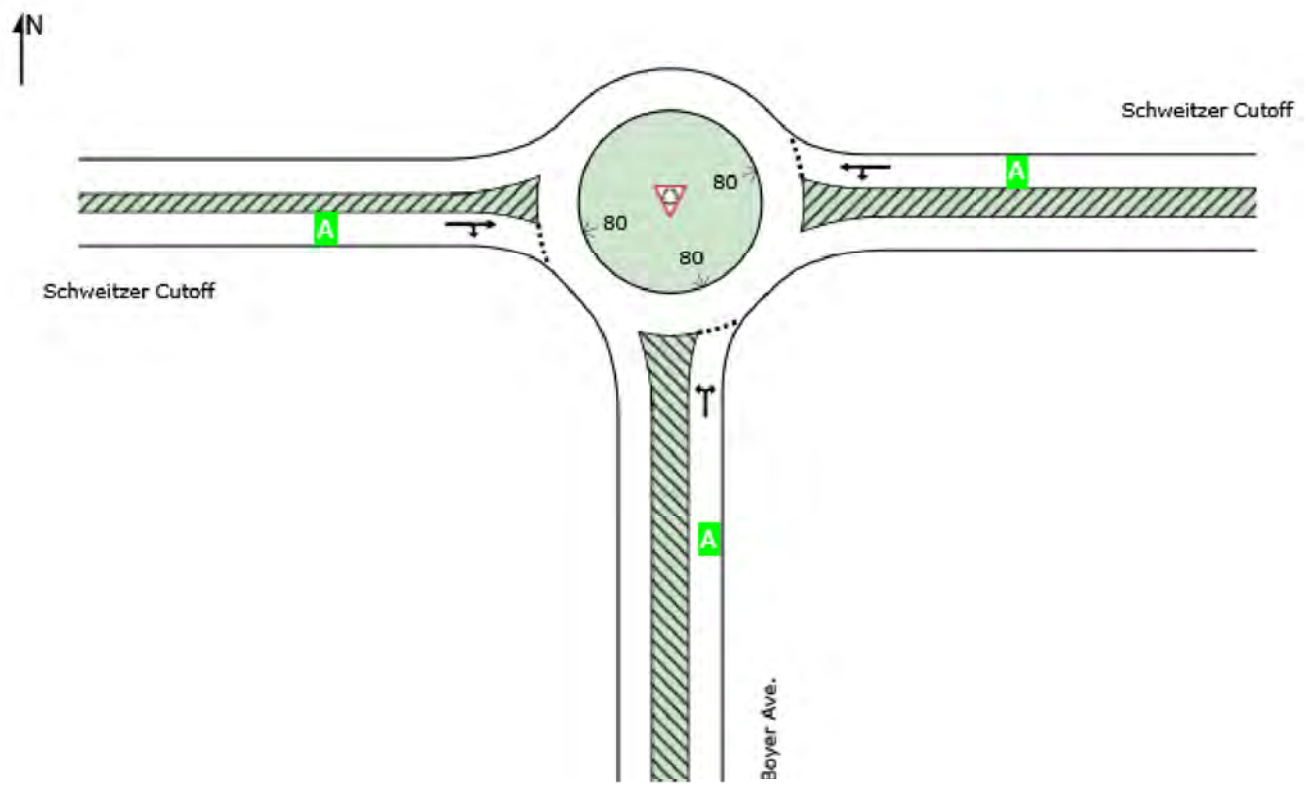
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 10 [Background Conditions (2025) PM - Schweitzer Cutoff. - Boyer Ave.]

Schweitzer/Boyer roundabout
2025 Background PM Peak Hour
Site Category: (None)
Roundabout

	Approaches			Intersection
	South	East	West	
LOS	A	A	A	A



Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	13	4	1	382	365	12
Future Vol, veh/h	13	4	1	382	365	12
Conflicting Peds, #/hr	2	1	1	0	0	2
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	50	0	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	2	2	5	5
Mvmt Flow	14	4	1	402	384	13

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	799	394	399	0	-	0
Stage 1	393	-	-	-	-	-
Stage 2	406	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.12	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.218	-	-	-
Pot Cap-1 Maneuver	357	659	1160	-	-	-
Stage 1	686	-	-	-	-	-
Stage 2	677	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	355	657	1158	-	-	-
Mov Cap-2 Maneuver	355	-	-	-	-	-
Stage 1	684	-	-	-	-	-
Stage 2	676	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.3	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1158	-	355	657	-	-
HCM Lane V/C Ratio	0.001	-	0.039	0.006	-	-
HCM Control Delay (s)	8.1	-	15.5	10.5	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	0	-	-

Future Background (2030) Conditions – Weekday AM Peak Hour

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	1	15	0	7	1	268	8	3	352	6
Future Vol, veh/h	0	0	1	15	0	7	1	268	8	3	352	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	2	2	2
Mvmt Flow	0	0	1	16	0	7	1	282	8	3	371	6

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	672	672	374	669	671	286	377	0	0	290	0	0
Stage 1	380	380	-	288	288	-	-	-	-	-	-	-
Stage 2	292	292	-	381	383	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.12	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.218	-	-
Pot Cap-1 Maneuver	372	380	677	374	380	758	1193	-	-	1272	-	-
Stage 1	646	617	-	724	677	-	-	-	-	-	-	-
Stage 2	720	675	-	645	616	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	367	378	677	372	378	758	1193	-	-	1272	-	-
Mov Cap-2 Maneuver	367	378	-	372	378	-	-	-	-	-	-	-
Stage 1	645	615	-	723	676	-	-	-	-	-	-	-
Stage 2	712	674	-	642	614	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.3	13.6	0	0.1
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1193	-	-	677	444	1272	-	-
HCM Lane V/C Ratio	0.001	-	-	0.002	0.052	0.002	-	-
HCM Control Delay (s)	8	0	-	10.3	13.6	7.8	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.2	0	-	-

Intersection	
Int Delay, s/veh	5.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	140	0	120	1	0	0	75	204	0	3	159	189
Future Vol, veh/h	140	0	120	1	0	0	75	204	0	3	159	189
Conflicting Peds, #/hr	0	0	0	4	0	4	0	0	4	4	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	90	-	-	-	256	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	3	3	3	0	0	0	9	9	9	2	2	2
Mvmt Flow	147	0	126	1	0	0	79	215	0	3	167	199

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	650	-	271	717	749	223	366	0	0	219	0	0
Stage 1	273	-	-	377	377	-	-	-	-	-	-	-
Stage 2	377	-	-	340	372	-	-	-	-	-	-	-
Critical Hdwy	7.13	-	6.23	7.1	6.5	6.2	4.19	-	-	4.12	-	-
Critical Hdwy Stg 1	6.13	-	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	-	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	-	3.327	3.5	4	3.3	2.281	-	-	2.218	-	-
Pot Cap-1 Maneuver	381	0	765	347	343	822	1155	-	-	1350	-	-
Stage 1	731	0	-	649	619	-	-	-	-	-	-	-
Stage 2	642	0	-	679	622	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	359	-	762	272	318	817	1155	-	-	1346	-	-
Mov Cap-2 Maneuver	359	-	-	272	318	-	-	-	-	-	-	-
Stage 1	681	-	-	602	575	-	-	-	-	-	-	-
Stage 2	596	-	-	563	620	-	-	-	-	-	-	-

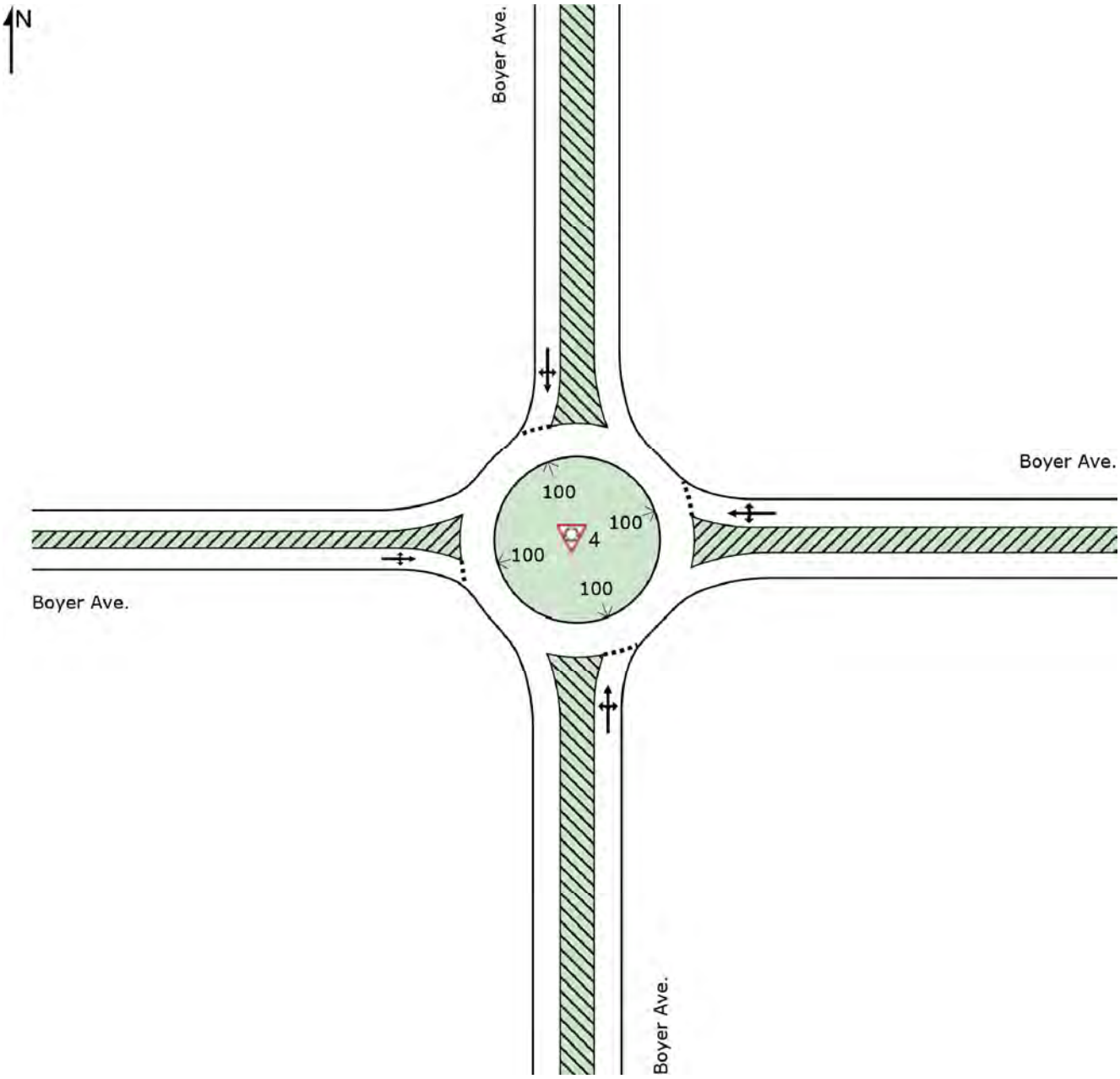
Approach	EB	WB	NB	SB
HCM Control Delay, s	16.7	18.3	2.2	0.1
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1155	-	-	359	762	272	1346	-	-
HCM Lane V/C Ratio	0.068	-	-	0.41	0.166	0.004	0.002	-	-
HCM Control Delay (s)	8.3	-	-	21.8	10.7	18.3	7.7	0	-
HCM Lane LOS	A	-	-	C	B	C	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	1.9	0.6	0	0	-	-

SITE LAYOUT

Site: 4 [Background Conditions (2030) AM - Larch St. - Boyer Ave.]

Larch/Boyer roundabout
2030 Background AM Peak Hour
Site Category: (None)
Roundabout



MOVEMENT SUMMARY

Site: 4 [Background Conditions (2030) AM - Larch St. - Boyer Ave.]

Larch/Boyer roundabout
2030 Background AM Peak Hour
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: Boyer Ave.												
3	L2	3	7.0	0.380	2.8	LOS A	2.5	66.7	0.61	0.48	0.61	16.8
8	T1	243	7.0	0.380	2.3	LOS A	2.5	66.7	0.61	0.48	0.61	15.7
18	R2	136	7.0	0.380	2.3	LOS A	2.5	66.7	0.61	0.48	0.61	15.7
Approach		382	7.0	0.380	2.3	LOS A	2.5	66.7	0.61	0.48	0.61	15.7
East: Boyer Ave.												
1	L2	84	2.0	0.319	2.2	LOS A	2.1	54.0	0.56	0.39	0.56	16.8
6	T1	99	2.0	0.319	1.7	LOS A	2.1	54.0	0.56	0.39	0.56	15.7
16	R2	166	2.0	0.319	1.7	LOS A	2.1	54.0	0.56	0.39	0.56	15.7
Approach		349	2.0	0.319	1.8	LOS A	2.1	54.0	0.56	0.39	0.56	16.0
North: Boyer Ave.												
7	L2	160	3.0	0.336	1.7	LOS A	2.4	61.8	0.49	0.29	0.49	16.8
4	T1	219	3.0	0.336	1.3	LOS A	2.4	61.8	0.49	0.29	0.49	15.7
14	R2	14	3.0	0.336	1.3	LOS A	2.4	61.8	0.49	0.29	0.49	15.7
Approach		393	3.0	0.336	1.5	LOS A	2.4	61.8	0.49	0.29	0.49	16.1
West: Boyer Ave.												
5	L2	33	2.0	0.212	3.8	LOS A	1.4	36.4	0.69	0.55	0.69	16.7
2	T1	145	2.0	0.212	3.3	LOS A	1.4	36.4	0.69	0.55	0.69	15.6
12	R2	12	2.0	0.212	3.3	LOS A	1.4	36.4	0.69	0.55	0.69	15.6
Approach		189	2.0	0.212	3.4	LOS A	1.4	36.4	0.69	0.55	0.69	15.8
All Vehicles		1314	3.8	0.380	2.1	LOS A	2.5	66.7	0.57	0.41	0.57	15.9

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

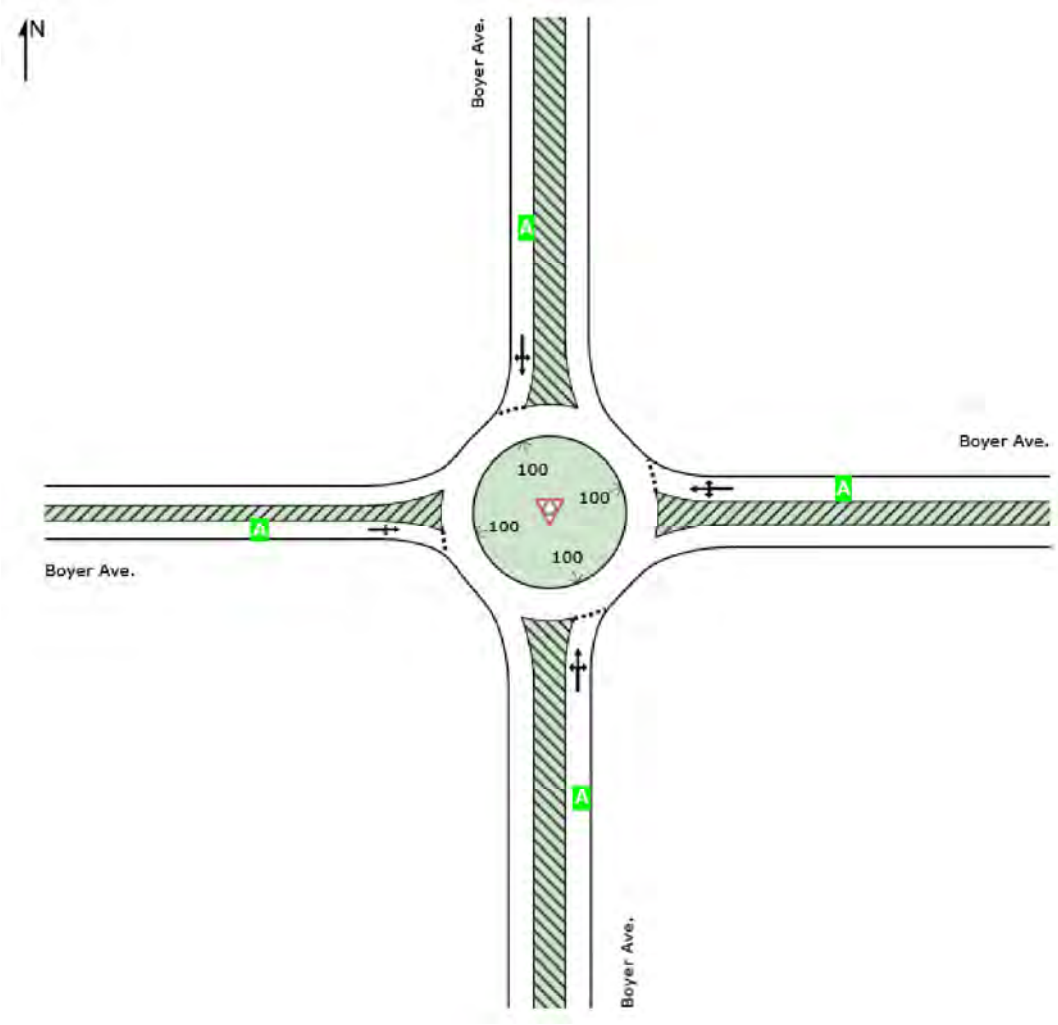
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 4 [Background Conditions (2030) AM - Larch St. - Boyer Ave.]

Larch/Boyer roundabout
2030 Background AM Peak Hour
Site Category: (None)
Roundabout

	Approaches				Intersection
	South	East	North	West	
LOS	A	A	A	A	A



Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Intersection	
Int Delay, s/veh	6.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	109	163	161	89	96	159
Future Vol, veh/h	109	163	161	89	96	159
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	75	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	5	5	11	11	4	4
Mvmt Flow	115	172	169	94	101	167

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	287	0	633	201
Stage 1	-	-	-	-	201	-
Stage 2	-	-	-	-	432	-
Critical Hdwy	-	-	4.21	-	6.44	6.24
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	-	-	2.299	-	3.536	3.336
Pot Cap-1 Maneuver	-	-	1225	-	441	835
Stage 1	-	-	-	-	828	-
Stage 2	-	-	-	-	650	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1225	-	377	835
Mov Cap-2 Maneuver	-	-	-	-	377	-
Stage 1	-	-	-	-	707	-
Stage 2	-	-	-	-	650	-

Approach	EB	WB	NB
HCM Control Delay, s	0	5.4	13.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	377	835	-	-	1225	-
HCM Lane V/C Ratio	0.268	0.2	-	-	0.138	-
HCM Control Delay (s)	18	10.4	-	-	8.4	0
HCM Lane LOS	C	B	-	-	A	A
HCM 95th %tile Q(veh)	1.1	0.7	-	-	0.5	-

Intersection	
Int Delay, s/veh	2.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	53	47	383	78	61	383
Future Vol, veh/h	53	47	383	78	61	383
Conflicting Peds, #/hr	1	1	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	3	3	3	3
Mvmt Flow	56	49	403	82	64	403

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	977	446	0	0	486	0
Stage 1	445	-	-	-	-	-
Stage 2	532	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.13	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.227	-
Pot Cap-1 Maneuver	281	617	-	-	1072	-
Stage 1	650	-	-	-	-	-
Stage 2	593	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	259	616	-	-	1071	-
Mov Cap-2 Maneuver	259	-	-	-	-	-
Stage 1	599	-	-	-	-	-
Stage 2	592	-	-	-	-	-

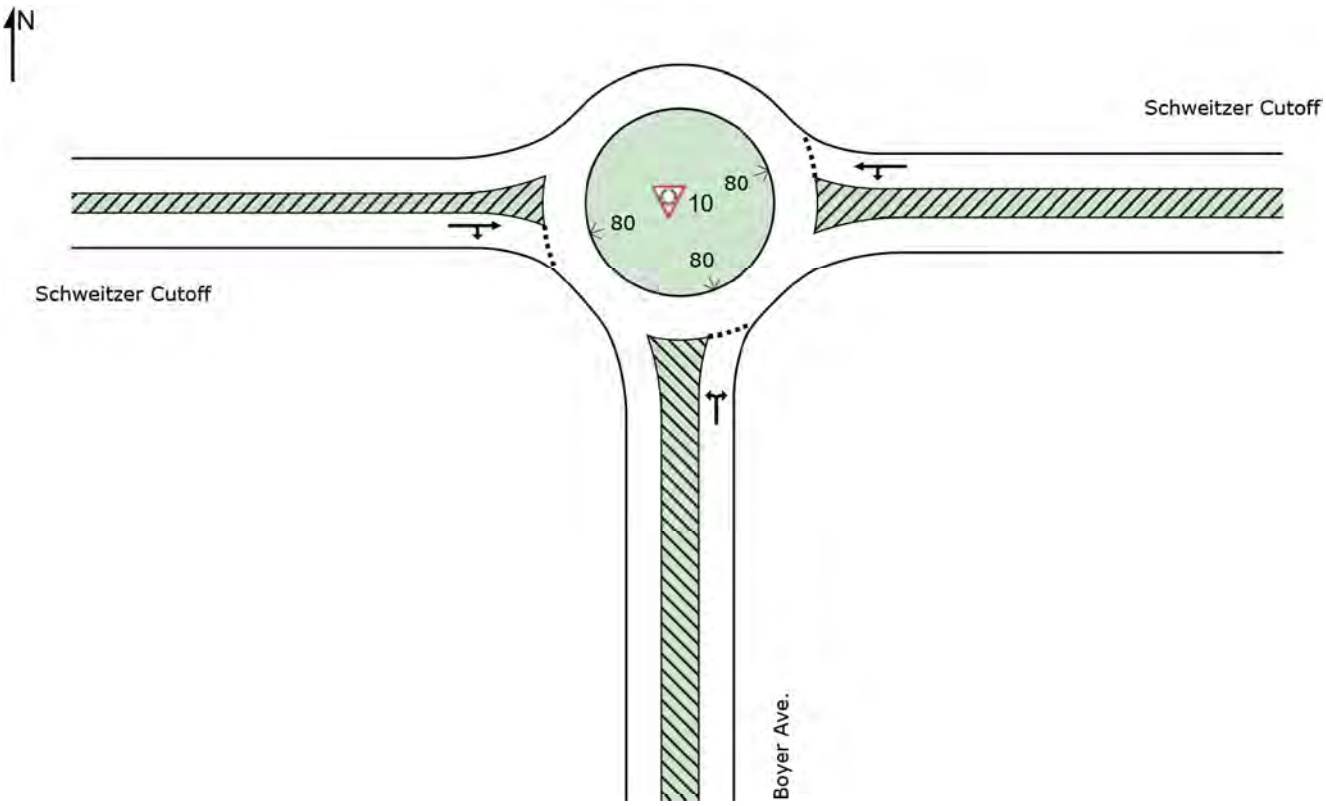
Approach	WB	NB	SB
HCM Control Delay, s	19.3	0	1.2
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	356	1071	-
HCM Lane V/C Ratio	-	-	0.296	0.06	-
HCM Control Delay (s)	-	-	19.3	8.6	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	1.2	0.2	-

SITE LAYOUT

Site: 10 [Background Conditions (2030) AM - Schweitzer Cutoff. - Boyer Ave.]

Schweitzer/Boyer roundabout
2030 Background AM Peak Hour
Site Category: (None)
Roundabout



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MOVEMENT SUMMARY

Site: 10 [Background Conditions (2030) AM - Schweitzer Cutoff. - Boyer Ave.]

Schweitzer/Boyer roundabout
2030 Background AM Peak Hour
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: Boyer Ave.												
3	L2	92	0.0	0.277	2.0	LOS A	1.6	39.5	0.38	0.25	0.38	16.7
18	R2	247	0.0	0.277	0.8	LOS A	1.6	39.5	0.38	0.25	0.38	15.8
Approach		339	0.0	0.277	1.1	LOS A	1.6	39.5	0.38	0.25	0.38	16.0
East: Schweitzer Cutoff												
1	L2	292	3.0	0.456	1.8	LOS A	3.2	81.8	0.33	0.22	0.33	16.7
6	T1	285	3.0	0.456	0.6	LOS A	3.2	81.8	0.33	0.22	0.33	15.8
Approach		577	3.0	0.456	1.2	LOS A	3.2	81.8	0.33	0.22	0.33	16.2
West: Schweitzer Cutoff												
2	T1	173	2.0	0.200	1.3	LOS A	1.0	26.5	0.45	0.28	0.45	15.8
12	R2	48	2.0	0.200	1.3	LOS A	1.0	26.5	0.45	0.28	0.45	15.8
Approach		221	2.0	0.200	1.3	LOS A	1.0	26.5	0.45	0.28	0.45	15.8
All Vehicles		1137	1.9	0.456	1.2	LOS A	3.2	81.8	0.37	0.24	0.37	16.1

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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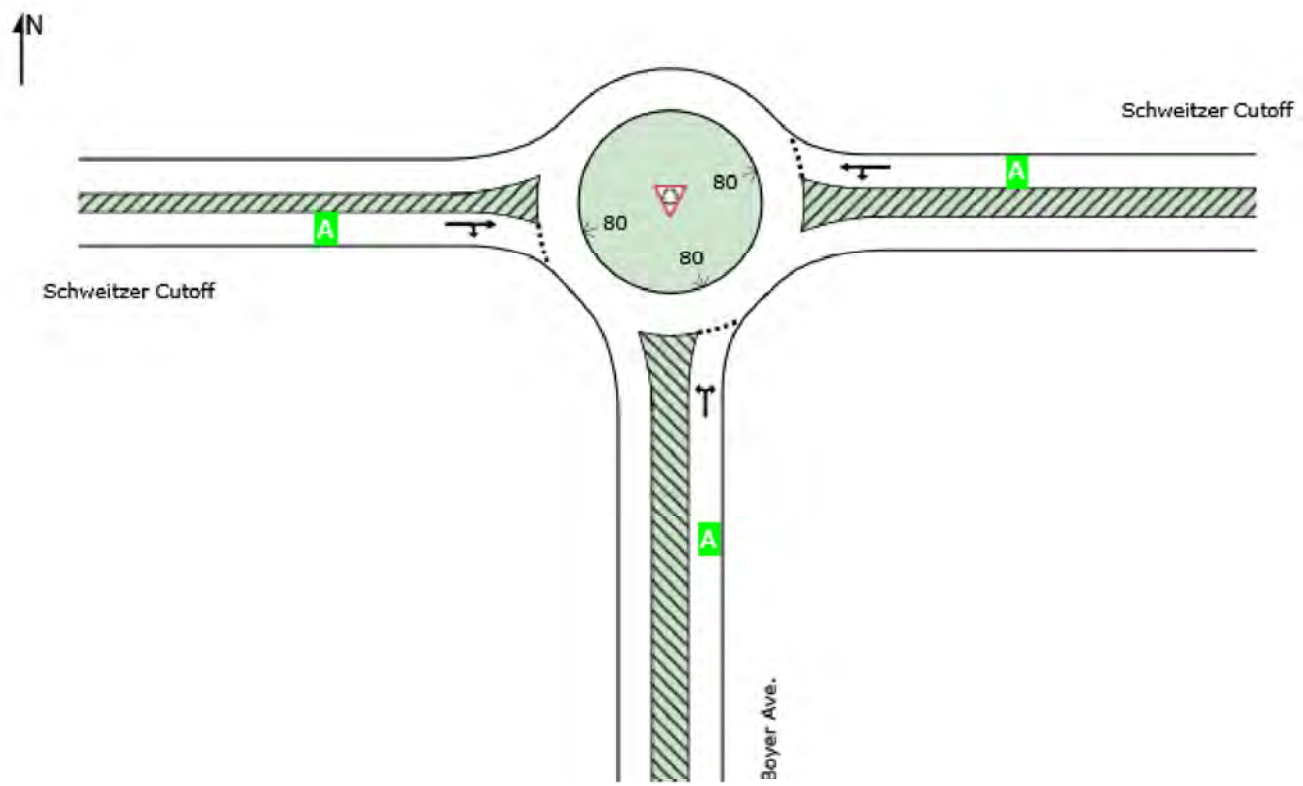
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 10 [Background Conditions (2030) AM - Schweitzer Cutoff. - Boyer Ave.]

Schweitzer/Boyer roundabout
2030 Background AM Peak Hour
Site Category: (None)
Roundabout

	Approaches			Intersection
	South	East	West	
LOS	A	A	A	A



Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	6	3	4	310	348	17
Future Vol, veh/h	6	3	4	310	348	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	50	0	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	1	1	2	2
Mvmt Flow	6	3	4	326	366	18

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	709	375	384	0	-	0
Stage 1	375	-	-	-	-	-
Stage 2	334	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.11	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.209	-	-	-
Pot Cap-1 Maneuver	404	676	1180	-	-	-
Stage 1	699	-	-	-	-	-
Stage 2	730	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	403	676	1180	-	-	-
Mov Cap-2 Maneuver	403	-	-	-	-	-
Stage 1	697	-	-	-	-	-
Stage 2	730	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.9	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1180	-	403	676	-	-
HCM Lane V/C Ratio	0.004	-	0.016	0.005	-	-
HCM Control Delay (s)	8.1	-	14.1	10.4	-	-
HCM Lane LOS	A	-	B	B	-	-
HCM 95th %tile Q(veh)	0	-	0	0	-	-

Future Background (2030) Conditions – Weekday PM Peak Hour

Intersection	
Intersection Delay, s/veh	9.6
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	114	102	54	211	159	25
Future Vol, veh/h	114	102	54	211	159	25
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	120	107	57	222	167	26
Number of Lanes	1	1	1	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	2
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	2	0
HCM Control Delay	9.5	9.5	9.9
HCM LOS	A	A	A

Lane	NBLn1	WBLn1	WBLn2	SBLn1
Vol Left, %	0%	100%	0%	86%
Vol Thru, %	20%	0%	0%	14%
Vol Right, %	80%	0%	100%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	265	114	102	184
LT Vol	0	114	0	159
Through Vol	54	0	0	25
RT Vol	211	0	102	0
Lane Flow Rate	279	120	107	194
Geometry Grp	2	7	7	2
Degree of Util (X)	0.333	0.203	0.145	0.269
Departure Headway (Hd)	4.293	6.088	4.878	5.003
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	834	587	729	715
Service Time	2.336	3.859	2.648	3.054
HCM Lane V/C Ratio	0.335	0.204	0.147	0.271
HCM Control Delay	9.5	10.4	8.5	9.9
HCM Lane LOS	A	B	A	A
HCM 95th-tile Q	1.5	0.8	0.5	1.1

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	1	0	15	0	10	0	471	13	4	357	0
Future Vol, veh/h	3	1	0	15	0	10	0	471	13	4	357	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	1	0	16	0	11	0	496	14	4	376	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	893	894	376	888	887	503	376	0	0	510	0	0
Stage 1	384	384	-	503	503	-	-	-	-	-	-	-
Stage 2	509	510	-	385	384	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	262	280	670	264	283	569	1182	-	-	1055	-	-
Stage 1	639	611	-	551	541	-	-	-	-	-	-	-
Stage 2	547	538	-	638	611	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	256	279	670	262	282	569	1182	-	-	1055	-	-
Mov Cap-2 Maneuver	256	279	-	262	282	-	-	-	-	-	-	-
Stage 1	639	608	-	551	541	-	-	-	-	-	-	-
Stage 2	537	538	-	634	608	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	19	16.7	0	0.1
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1182	-	-	261	334	1055	-	-
HCM Lane V/C Ratio	-	-	-	0.016	0.079	0.004	-	-
HCM Control Delay (s)	0	-	-	19	16.7	8.4	0	-
HCM Lane LOS	A	-	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.3	0	-	-

Intersection	
Int Delay, s/veh	16.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	203	1	161	1	0	4	123	250	3	6	244	186
Future Vol, veh/h	203	1	161	1	0	4	123	250	3	6	244	186
Conflicting Peds, #/hr	0	0	0	5	0	5	0	0	5	5	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	90	-	-	-	256	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	214	1	169	1	0	4	129	263	3	6	257	196

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	897	896	360	985	993	275	453	0	0	271	0	0
Stage 1	367	367	-	528	528	-	-	-	-	-	-	-
Stage 2	530	529	-	457	465	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	261	280	684	227	245	764	1108	-	-	1292	-	-
Stage 1	653	622	-	534	528	-	-	-	-	-	-	-
Stage 2	533	527	-	583	563	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	234	245	681	153	214	758	1108	-	-	1287	-	-
Mov Cap-2 Maneuver	234	245	-	153	214	-	-	-	-	-	-	-
Stage 1	577	618	-	470	465	-	-	-	-	-	-	-
Stage 2	466	464	-	433	560	-	-	-	-	-	-	-

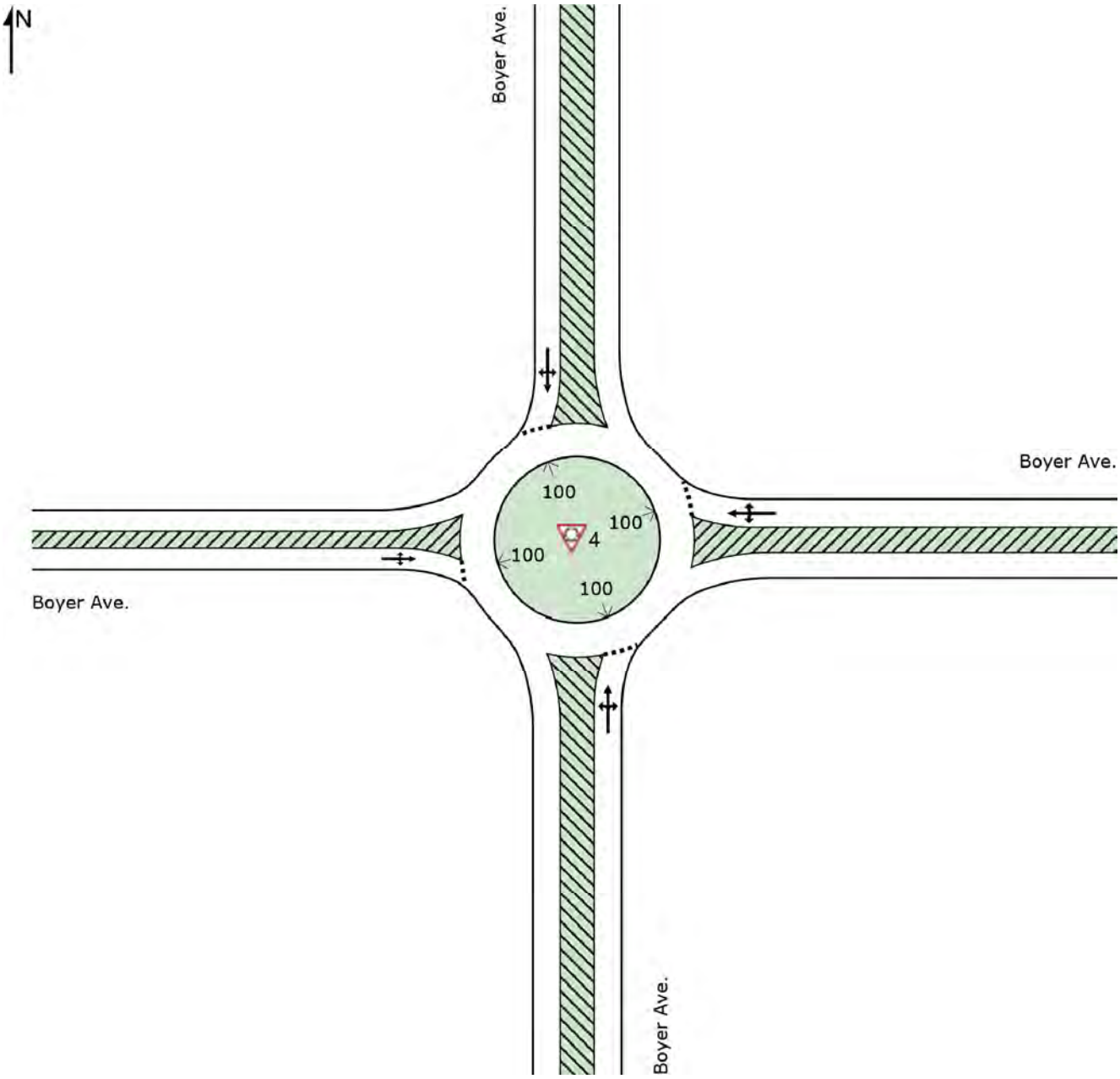
Approach	EB	WB	NB	SB
HCM Control Delay, s	51.4	13.6	2.8	0.1
HCM LOS	F	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1108	-	-	234	681	423	1287	-	-
HCM Lane V/C Ratio	0.117	-	-	0.913	0.249	0.012	0.005	-	-
HCM Control Delay (s)	8.7	-	-	82.7	12	13.6	7.8	0	-
HCM Lane LOS	A	-	-	F	B	B	A	A	-
HCM 95th %tile Q(veh)	0.4	-	-	7.8	1	0	0	-	-

SITE LAYOUT

Site: 4 [Background Conditions (2030) PM - Larch St. - Boyer Ave.]

Larch/Boyer roundabout
2030 Background PM Peak Hour
Site Category: (None)
Roundabout



MOVEMENT SUMMARY

Site: 4 [Background Conditions (2030) PM - Larch St. - Boyer Ave.]

Larch/Boyer roundabout
2030 Background PM Peak Hour
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: Boyer Ave.												
3	L2	10	1.0	0.488	2.9	LOS A	3.7	92.2	0.67	0.51	0.67	16.7
8	T1	298	1.0	0.488	2.4	LOS A	3.7	92.2	0.67	0.51	0.67	15.6
18	R2	211	1.0	0.488	2.4	LOS A	3.7	92.2	0.67	0.51	0.67	15.6
Approach		520	1.0	0.488	2.5	LOS A	3.7	92.2	0.67	0.51	0.67	15.7
East: Boyer Ave.												
1	L2	163	1.0	0.495	2.8	LOS A	3.9	97.7	0.69	0.53	0.69	16.7
6	T1	156	1.0	0.495	2.4	LOS A	3.9	97.7	0.69	0.53	0.69	15.6
16	R2	205	1.0	0.495	2.4	LOS A	3.9	97.7	0.69	0.53	0.69	15.6
Approach		524	1.0	0.495	2.5	LOS A	3.9	97.7	0.69	0.53	0.69	16.0
North: Boyer Ave.												
7	L2	208	1.0	0.494	3.0	LOS A	4.0	102.0	0.71	0.54	0.71	16.7
4	T1	282	1.0	0.494	2.5	LOS A	4.0	102.0	0.71	0.54	0.71	15.6
14	R2	25	1.0	0.494	2.5	LOS A	4.0	102.0	0.71	0.54	0.71	15.6
Approach		516	1.0	0.494	2.7	LOS A	4.0	102.0	0.71	0.54	0.71	16.0
West: Boyer Ave.												
5	L2	32	1.0	0.203	5.3	LOS A	1.4	36.2	0.80	0.68	0.80	16.5
2	T1	110	1.0	0.203	4.8	LOS A	1.4	36.2	0.80	0.68	0.80	15.5
12	R2	7	1.0	0.203	4.8	LOS A	1.4	36.2	0.80	0.68	0.80	15.5
Approach		150	1.0	0.203	4.9	LOS A	1.4	36.2	0.80	0.68	0.80	15.7
All Vehicles		1709	1.0	0.495	2.8	LOS A	4.0	102.0	0.70	0.54	0.70	15.9

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

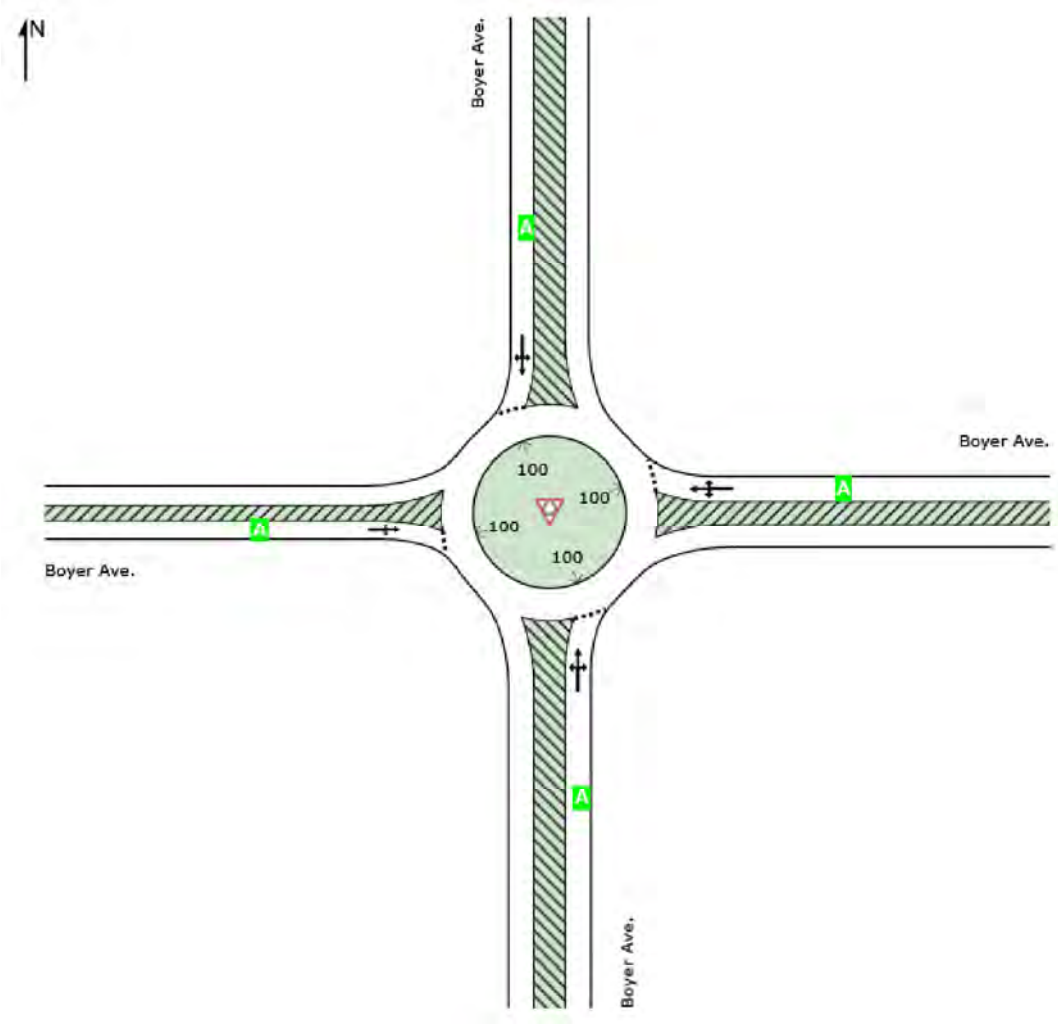
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 4 [Background Conditions (2030) PM - Larch St. - Boyer Ave.]

Larch/Boyer roundabout
2030 Background PM Peak Hour
Site Category: (None)
Roundabout

	Approaches				Intersection
	South	East	North	West	
LOS	A	A	A	A	A



Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	172	331	201	337	257	142	261	557	228	161	453	115
Future Volume (veh/h)	172	331	201	337	257	142	261	557	228	161	453	115
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	181	348	212	355	271	149	275	586	240	169	477	121
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	452	1286	573	862	810	432	456	1474	657	389	1474	657
Arrive On Green	0.37	0.37	0.37	0.37	0.37	0.37	0.42	0.42	0.42	0.42	0.42	0.42
Sat Flow, veh/h	951	3497	1559	1621	2202	1175	807	3497	1559	653	3497	1559
Grp Volume(v), veh/h	181	348	212	355	214	206	275	586	240	169	477	121
Grp Sat Flow(s),veh/h/ln	951	1749	1559	811	1749	1628	807	1749	1559	653	1749	1559
Q Serve(g_s), s	6.5	2.7	3.8	7.5	3.3	3.5	12.5	4.4	4.0	9.2	3.5	1.8
Cycle Q Clear(g_c), s	9.9	2.7	3.8	10.1	3.3	3.5	16.0	4.4	4.0	13.6	3.5	1.8
Prop In Lane	1.00		1.00	1.00		0.72	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	452	1286	573	862	643	599	456	1474	657	389	1474	657
V/C Ratio(X)	0.40	0.27	0.37	0.41	0.33	0.34	0.60	0.40	0.37	0.43	0.32	0.18
Avail Cap(c_a), veh/h	503	1474	657	949	737	686	456	1474	657	389	1474	657
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.3	8.4	8.8	12.0	8.6	8.7	12.9	7.6	7.5	12.4	7.4	6.9
Incr Delay (d2), s/veh	0.6	0.1	0.4	0.3	0.3	0.3	2.2	0.2	0.3	0.8	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.7	1.0	1.1	1.0	0.9	2.0	1.2	1.0	1.1	0.9	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.9	8.5	9.2	12.3	8.9	9.0	15.1	7.8	7.8	13.1	7.5	7.0
LnGrp LOS	B	A	A	B	A	A	B	A	A	B	A	A
Approach Vol, veh/h		741			775			1101			767	
Approach Delay, s/veh		9.8			10.5			9.6			8.7	
Approach LOS		A			B			A			A	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	20.0	18.0	20.0	18.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	16.0	16.0	16.0	16.0
Max Q Clear Time (g_c+I1), s	18.0	11.9	15.6	12.1
Green Ext Time (p_c), s	0.0	1.5	0.2	1.8

Intersection Summary	
HCM 6th Ctrl Delay	9.6
HCM 6th LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	343	34	181	17	82	152	143	745	6	36	753	316
Future Volume (veh/h)	343	34	181	17	82	152	143	745	6	36	753	316
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	361	36	191	18	86	160	151	784	6	38	793	333
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	424	60	320	33	159	162	218	902	7	377	809	339
Arrive On Green	0.24	0.24	0.24	0.10	0.10	0.10	0.08	0.25	0.25	0.16	0.33	0.33
Sat Flow, veh/h	1795	256	1356	323	1546	1575	1795	3643	28	1795	2453	1028
Grp Volume(v), veh/h	361	0	227	104	0	160	151	385	405	38	578	548
Grp Sat Flow(s),veh/h/ln	1795	0	1612	1869	0	1575	1795	1791	1880	1795	1791	1691
Q Serve(g_s), s	17.1	0.0	11.2	4.7	0.0	9.0	3.2	18.4	18.4	0.0	28.5	28.6
Cycle Q Clear(g_c), s	17.1	0.0	11.2	4.7	0.0	9.0	3.2	18.4	18.4	0.0	28.5	28.6
Prop In Lane	1.00		0.84	0.17		1.00	1.00		0.01	1.00		0.61
Lane Grp Cap(c), veh/h	424	0	381	193	0	162	218	443	465	377	590	557
V/C Ratio(X)	0.85	0.00	0.60	0.54	0.00	0.99	0.69	0.87	0.87	0.10	0.98	0.98
Avail Cap(c_a), veh/h	682	0	613	193	0	162	222	588	618	377	590	557
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.6	0.0	30.3	38.0	0.0	39.9	38.7	32.2	32.2	31.4	29.6	29.6
Incr Delay (d2), s/veh	3.1	0.0	0.6	1.7	0.0	65.8	7.3	8.6	8.3	0.0	31.8	33.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.6	0.0	4.3	2.2	0.0	6.4	3.6	8.8	9.2	0.7	17.0	16.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.7	0.0	30.8	39.7	0.0	105.8	45.9	40.8	40.4	31.4	61.4	63.1
LnGrp LOS	D	A	C	D	A	F	D	D	D	C	E	E
Approach Vol, veh/h		588			264			941			1164	
Approach Delay, s/veh		33.8			79.7			41.5			61.2	
Approach LOS		C			E			D			E	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	19.3	27.8		27.2	12.0	35.0		15.0
Change Period (Y+Rc), s	* 5.2	* 5.7		* 6.1	* 5.2	* 5.6		5.8
Max Green Setting (Gmax), s	* 7	* 29		* 34	* 7	* 29		9.2
Max Q Clear Time (g_c+I1), s	12.6	20.4		19.1	5.2	30.6		11.0
Green Ext Time (p_c), s	0.0	1.4		0.6	0.1	0.0		0.0

Intersection Summary	
HCM 6th Ctrl Delay	51.1
HCM 6th LOS	D

Notes

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

Intersection	
Int Delay, s/veh	6.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	120	182	190	119	105	217
Future Vol, veh/h	120	182	190	119	105	217
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	75	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	126	192	200	125	111	228

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	318	0	747	222
Stage 1	-	-	-	-	222	-
Stage 2	-	-	-	-	525	-
Critical Hdwy	-	-	4.11	-	6.41	6.21
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	-	-	2.209	-	3.509	3.309
Pot Cap-1 Maneuver	-	-	1248	-	382	820
Stage 1	-	-	-	-	817	-
Stage 2	-	-	-	-	595	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1248	-	316	820
Mov Cap-2 Maneuver	-	-	-	-	316	-
Stage 1	-	-	-	-	676	-
Stage 2	-	-	-	-	595	-

Approach	EB	WB	NB
HCM Control Delay, s	0	5.2	14.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	316	820	-	-	1248	-
HCM Lane V/C Ratio	0.35	0.279	-	-	0.16	-
HCM Control Delay (s)	22.4	11.1	-	-	8.4	0
HCM Lane LOS	C	B	-	-	A	A
HCM 95th %tile Q(veh)	1.5	1.1	-	-	0.6	-

Intersection	
Int Delay, s/veh	4.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	101	53	423	91	50	427
Future Vol, veh/h	101	53	423	91	50	427
Conflicting Peds, #/hr	1	1	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	106	56	445	96	53	449

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1050	495	0	0	542	0
Stage 1	494	-	-	-	-	-
Stage 2	556	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	252	575	-	-	1027	-
Stage 1	613	-	-	-	-	-
Stage 2	574	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	234	574	-	-	1026	-
Mov Cap-2 Maneuver	234	-	-	-	-	-
Stage 1	570	-	-	-	-	-
Stage 2	573	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	31.3	0	0.9
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	294	1026	-
HCM Lane V/C Ratio	-	-	0.551	0.051	-
HCM Control Delay (s)	-	-	31.3	8.7	0
HCM Lane LOS	-	-	D	A	A
HCM 95th %tile Q(veh)	-	-	3.1	0.2	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	187	482	0	88	482	1	92	172	39	106	168	160
Future Volume (veh/h)	187	482	0	88	482	1	92	172	39	106	168	160
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	0.94		0.96	0.98		0.96	0.98		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	197	507	0	93	507	1	97	181	41	112	177	168
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	407	573	0	436	571	1	165	353	80	271	208	197
Arrive On Green	0.16	0.30	0.00	0.17	0.30	0.30	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	1795	1885	0	1795	1881	4	1028	1474	334	1140	869	825
Grp Volume(v), veh/h	197	507	0	93	0	508	97	0	222	112	0	345
Grp Sat Flow(s),veh/h/ln	1795	1885	0	1795	0	1884	1028	0	1808	1140	0	1694
Q Serve(g_s), s	5.7	15.4	0.0	0.0	0.0	15.5	2.7	0.0	6.4	5.7	0.0	11.7
Cycle Q Clear(g_c), s	5.7	15.4	0.0	0.0	0.0	15.5	14.4	0.0	6.4	12.1	0.0	11.7
Prop In Lane	1.00		0.00	1.00		0.00	1.00		0.18	1.00		0.49
Lane Grp Cap(c), veh/h	407	573	0	436	0	572	165	0	432	271	0	405
V/C Ratio(X)	0.48	0.88	0.00	0.21	0.00	0.89	0.59	0.00	0.51	0.41	0.00	0.85
Avail Cap(c_a), veh/h	418	770	0	436	0	770	165	0	432	271	0	405
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	20.0	19.9	0.0	20.6	0.0	20.0	29.5	0.0	19.9	25.1	0.0	21.9
Incr Delay (d2), s/veh	0.3	7.8	0.0	0.1	0.0	8.1	3.6	0.0	0.5	0.4	0.0	15.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	7.3	0.0	1.0	0.0	7.4	1.5	0.0	2.5	1.5	0.0	6.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.3	27.7	0.0	20.7	0.0	28.0	33.1	0.0	20.3	25.5	0.0	37.0
LnGrp LOS	C	C	A	C	A	C	C	A	C	C	A	D
Approach Vol, veh/h		704			601			319			457	
Approach Delay, s/veh		25.7			26.9			24.2			34.1	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	16.5	23.7		20.0	15.8	24.4		20.0
Change Period (Y+Rc), s	6.1	* 5.4		* 5.6	* 6.2	* 6.1		* 5.6
Max Green Setting (Gmax), s	10.0	* 25		* 14	* 10	* 25		* 14
Max Q Clear Time (g_c+I1), s	2.0	17.4		14.1	7.7	17.5		16.4
Green Ext Time (p_c), s	0.1	0.8		0.1	0.1	0.8		0.0

Intersection Summary	
HCM 6th Ctrl Delay	27.7
HCM 6th LOS	C

Notes

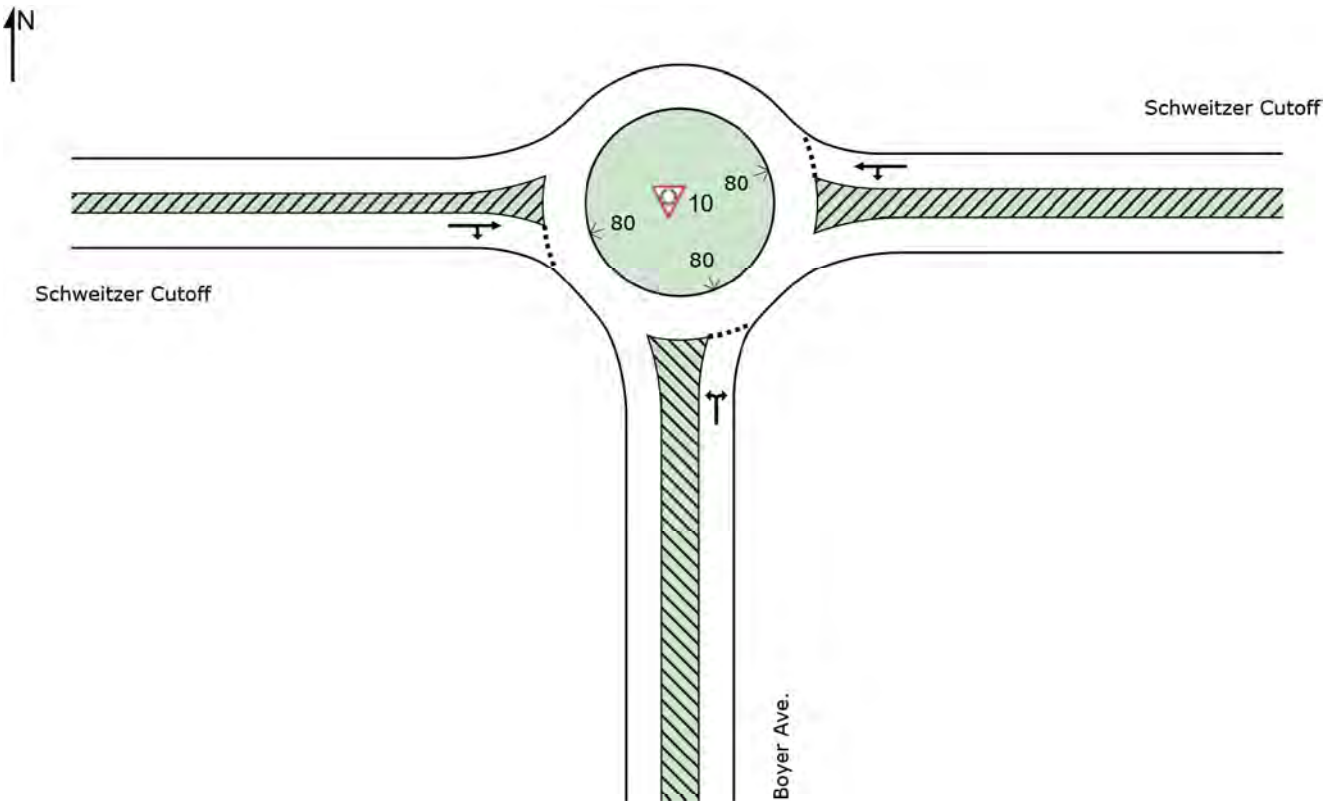
User approved pedestrian interval to be less than phase max green.

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

SITE LAYOUT

Site: 10 [Background Conditions (2030) PM - Schweitzer Cutoff. - Boyer Ave.]

Schweitzer/Boyer roundabout
2030 Background PM Peak Hour
Site Category: (None)
Roundabout



SIDRA INTERSECTION 8.0 | Copyright © 2000-2018 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: DAVID EVANS & ASSOCIATES INC | Created: Tuesday, April 28, 2020 1:48:06 PM
Project: P:\K\KMEP00000001\0600INFO\TT\Synchro\Phase_3_TIA\Sidra\Schweitzer_Boyer_Base..sip8

MOVEMENT SUMMARY

Site: 10 [Background Conditions (2030) PM - Schweitzer Cutoff. - Boyer Ave.]

Schweitzer/Boyer roundabout
2030 Background PM Peak Hour
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: Boyer Ave.												
3	L2	57	1.0	0.515	3.6	LOS A	3.8	96.7	0.67	0.57	0.68	16.6
18	R2	480	1.0	0.515	2.4	LOS A	3.8	96.7	0.67	0.57	0.68	15.7
Approach		537	1.0	0.515	2.5	LOS A	3.8	96.7	0.67	0.57	0.68	15.8
East: Schweitzer Cutoff												
1	L2	356	7.0	0.445	1.6	LOS A	3.4	89.4	0.29	0.21	0.29	16.7
6	T1	197	7.0	0.445	0.4	LOS A	3.4	89.4	0.29	0.21	0.29	15.8
Approach		553	7.0	0.445	1.2	LOS A	3.4	89.4	0.29	0.21	0.29	16.3
West: Schweitzer Cutoff												
2	T1	363	1.0	0.414	2.1	LOS A	2.6	65.0	0.59	0.44	0.59	15.7
12	R2	75	1.0	0.414	2.1	LOS A	2.6	65.0	0.59	0.44	0.59	15.7
Approach		438	1.0	0.414	2.1	LOS A	2.6	65.0	0.59	0.44	0.59	15.7
All Vehicles		1527	3.2	0.515	1.9	LOS A	3.8	96.7	0.51	0.40	0.51	15.9

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

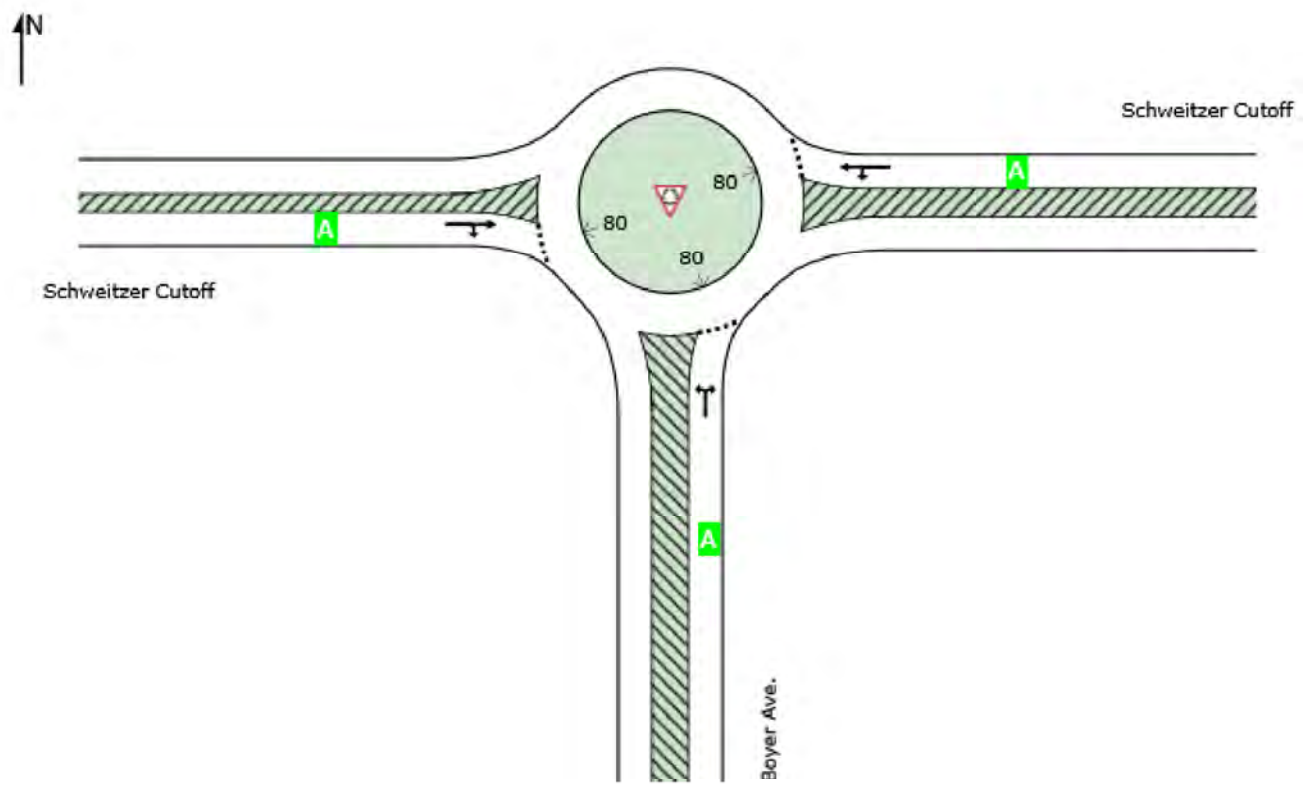
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 10 [Background Conditions (2030) PM - Schweitzer Cutoff. - Boyer Ave.]

Schweitzer/Boyer roundabout
2030 Background PM Peak Hour
Site Category: (None)
Roundabout

	Approaches			Intersection
	South	East	West	
LOS	A	A	A	A



Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	15	4	1	452	432	14
Future Vol, veh/h	15	4	1	452	432	14
Conflicting Peds, #/hr	2	1	1	0	0	2
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	50	0	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	2	2	5	5
Mvmt Flow	16	4	1	476	455	15

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	945	466	472	0	-	0
Stage 1	465	-	-	-	-	-
Stage 2	480	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.12	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.218	-	-	-
Pot Cap-1 Maneuver	293	601	1090	-	-	-
Stage 1	636	-	-	-	-	-
Stage 2	627	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	292	599	1088	-	-	-
Mov Cap-2 Maneuver	292	-	-	-	-	-
Stage 1	634	-	-	-	-	-
Stage 2	626	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1088	-	292	599	-	-
HCM Lane V/C Ratio	0.001	-	0.054	0.007	-	-
HCM Control Delay (s)	8.3	-	18	11.1	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	0	-	-

Future Background (2025) plus Project Conditions – Weekday AM Peak Hour

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	1	51	0	18	1	262	20	7	329	5
Future Vol, veh/h	0	0	1	51	0	18	1	262	20	7	329	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	1	54	0	19	1	276	21	7	346	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	661	662	349	652	654	287	351	0	0	297	0	0
Stage 1	363	363	-	289	289	-	-	-	-	-	-	-
Stage 2	298	299	-	363	365	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	376	382	694	381	386	752	1208	-	-	1264	-	-
Stage 1	656	625	-	719	673	-	-	-	-	-	-	-
Stage 2	711	666	-	656	623	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	364	379	694	378	383	752	1208	-	-	1264	-	-
Mov Cap-2 Maneuver	364	379	-	378	383	-	-	-	-	-	-	-
Stage 1	655	621	-	718	672	-	-	-	-	-	-	-
Stage 2	692	665	-	650	619	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.2	15	0	0.2
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1208	-	-	694	434	1264	-	-
HCM Lane V/C Ratio	0.001	-	-	0.002	0.167	0.006	-	-
HCM Control Delay (s)	8	0	-	10.2	15	7.9	0	-
HCM Lane LOS	A	A	-	B	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.6	0	-	-

Intersection	
Int Delay, s/veh	5.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	146	0	102	1	0	0	64	250	0	2	239	198
Future Vol, veh/h	146	0	102	1	0	0	64	250	0	2	239	198
Conflicting Peds, #/hr	0	0	0	5	0	5	0	0	5	5	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	90	-	-	-	256	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	154	0	107	1	0	0	67	263	0	2	252	208

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	762	-	361	821	866	273	460	0	0	268	0	0
Stage 1	360	-	-	402	402	-	-	-	-	-	-	-
Stage 2	402	-	-	419	464	-	-	-	-	-	-	-
Critical Hdwy	7.12	-	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	-	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	-	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	-	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	322	0	684	293	291	766	1101	-	-	1296	-	-
Stage 1	658	0	-	625	600	-	-	-	-	-	-	-
Stage 2	625	0	-	612	564	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	305	-	681	233	272	760	1101	-	-	1291	-	-
Mov Cap-2 Maneuver	305	-	-	233	272	-	-	-	-	-	-	-
Stage 1	618	-	-	584	561	-	-	-	-	-	-	-
Stage 2	585	-	-	512	563	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	21.2	20.5	1.7	0
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1101	-	-	305	681	233	1291	-	-
HCM Lane V/C Ratio	0.061	-	-	0.504	0.158	0.005	0.002	-	-
HCM Control Delay (s)	8.5	-	-	28.2	11.3	20.5	7.8	0	-
HCM Lane LOS	A	-	-	D	B	C	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	2.7	0.6	0	0	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	146	0	102	1	0	0	64	250	0	2	239	198
Future Volume (veh/h)	146	0	102	1	0	0	64	250	0	2	239	198
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.97	1.00		1.00	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1900	1900	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	154	0	107	1	0	0	67	263	0	2	252	208
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	0	0	0	2	2	2	2	2	2
Cap, veh/h	442	0	208	211	5	0	412	767	0	556	335	276
Arrive On Green	0.13	0.00	0.13	0.00	0.00	0.00	0.05	0.41	0.00	0.00	0.36	0.36
Sat Flow, veh/h	1774	0	1543	1810	1900	0	1774	1863	0	1774	931	769
Grp Volume(v), veh/h	154	0	107	1	0	0	67	263	0	2	0	460
Grp Sat Flow(s),veh/h/ln	1774	0	1543	1810	1900	0	1774	1863	0	1774	0	1700
Q Serve(g_s), s	2.7	0.0	2.3	0.0	0.0	0.0	0.8	3.4	0.0	0.0	0.0	8.4
Cycle Q Clear(g_c), s	2.7	0.0	2.3	0.0	0.0	0.0	0.8	3.4	0.0	0.0	0.0	8.4
Prop In Lane	1.00		1.00	1.00		0.00	1.00		0.00	1.00		0.45
Lane Grp Cap(c), veh/h	442	0	208	211	5	0	412	767	0	556	0	611
V/C Ratio(X)	0.35	0.00	0.51	0.00	0.00	0.00	0.16	0.34	0.00	0.00	0.00	0.75
Avail Cap(c_a), veh/h	1005	0	1216	410	855	0	565	1992	0	751	0	1770
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	12.8	0.0	14.3	17.6	0.0	0.0	7.4	7.2	0.0	7.3	0.0	10.0
Incr Delay (d2), s/veh	0.5	0.0	2.0	0.0	0.0	0.0	0.2	0.3	0.0	0.0	0.0	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	1.1	0.0	0.0	0.0	0.4	1.8	0.0	0.0	0.0	4.2
LnGrp Delay(d),s/veh	13.2	0.0	16.3	17.6	0.0	0.0	7.6	7.4	0.0	7.3	0.0	11.9
LnGrp LOS	B		B	B			A	A		A		B
Approach Vol, veh/h		261			1			330			462	
Approach Delay, s/veh		14.5			17.6			7.5			11.9	
Approach LOS		B			B			A			B	

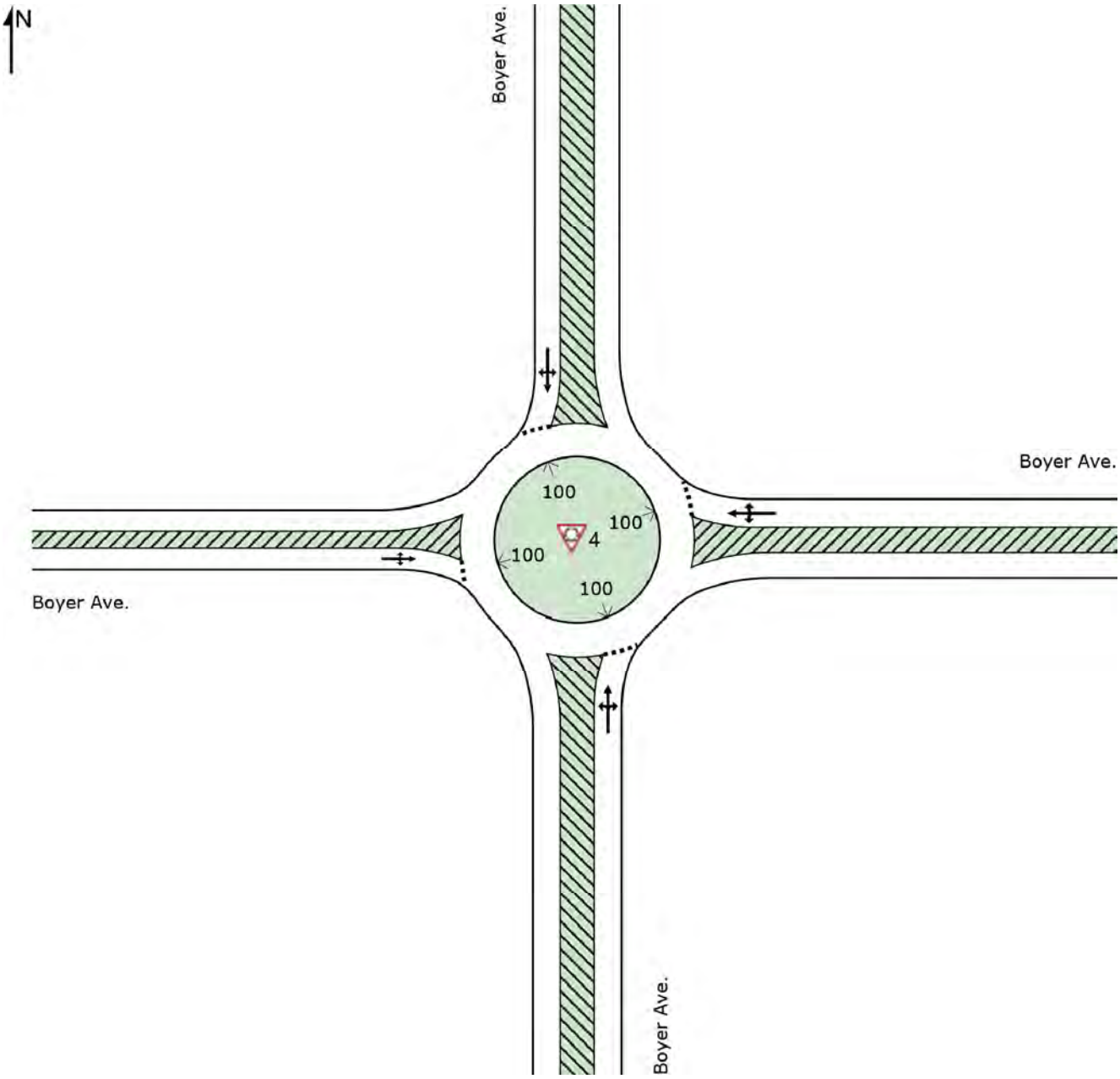
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.1	18.6	4.0	8.8	5.9	16.8	8.7	4.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	38.0	4.0	28.0	5.0	37.0	16.0	16.0
Max Q Clear Time (g_c+I1), s	2.0	5.4	2.0	4.3	2.8	10.4	4.7	0.0
Green Ext Time (p_c), s	0.0	1.0	0.0	0.6	0.0	2.2	0.4	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	11.1
HCM 2010 LOS	B

SITE LAYOUT

Site: 4 [Background plus Project Conditions (2025) AM - Larch St. - Boyer Ave.]

Larch/Boyer roundabout
2025 Background plus Project AM Peak Hour
Site Category: (None)
Roundabout



MOVEMENT SUMMARY

Site: 4 [Background plus Project Conditions (2025) AM - Larch St. - Boyer Ave.]

Larch/Boyer roundabout
2025 Background plus Project AM Peak Hour
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: Boyer Ave.												
3	L2	2	7.0	0.352	2.8	LOS A	2.3	60.2	0.60	0.47	0.60	16.8
8	T1	235	7.0	0.352	2.3	LOS A	2.3	60.2	0.60	0.47	0.60	15.7
18	R2	115	7.0	0.352	2.3	LOS A	2.3	60.2	0.60	0.47	0.60	15.7
Approach		352	7.0	0.352	2.3	LOS A	2.3	60.2	0.60	0.47	0.60	15.7
East: Boyer Ave.												
1	L2	71	2.0	0.292	2.2	LOS A	1.9	47.7	0.55	0.40	0.55	16.8
6	T1	83	2.0	0.292	1.8	LOS A	1.9	47.7	0.55	0.40	0.55	15.7
16	R2	163	2.0	0.292	1.8	LOS A	1.9	47.7	0.55	0.40	0.55	15.7
Approach		317	2.0	0.292	1.9	LOS A	1.9	47.7	0.55	0.40	0.55	15.9
North: Boyer Ave.												
7	L2	165	3.0	0.368	1.6	LOS A	2.8	70.6	0.47	0.26	0.47	16.8
4	T1	225	3.0	0.368	1.1	LOS A	2.8	70.6	0.47	0.26	0.47	15.7
14	R2	52	3.0	0.368	1.1	LOS A	2.8	70.6	0.47	0.26	0.47	15.7
Approach		442	3.0	0.368	1.3	LOS A	2.8	70.6	0.47	0.26	0.47	16.1
West: Boyer Ave.												
5	L2	57	2.0	0.212	3.8	LOS A	1.4	36.2	0.68	0.55	0.68	16.7
2	T1	123	2.0	0.212	3.3	LOS A	1.4	36.2	0.68	0.55	0.68	15.6
12	R2	9	2.0	0.212	3.3	LOS A	1.4	36.2	0.68	0.55	0.68	15.6
Approach		189	2.0	0.212	3.4	LOS A	1.4	36.2	0.68	0.55	0.68	15.9
All Vehicles		1300	3.7	0.368	2.0	LOS A	2.8	70.6	0.56	0.39	0.56	15.9

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

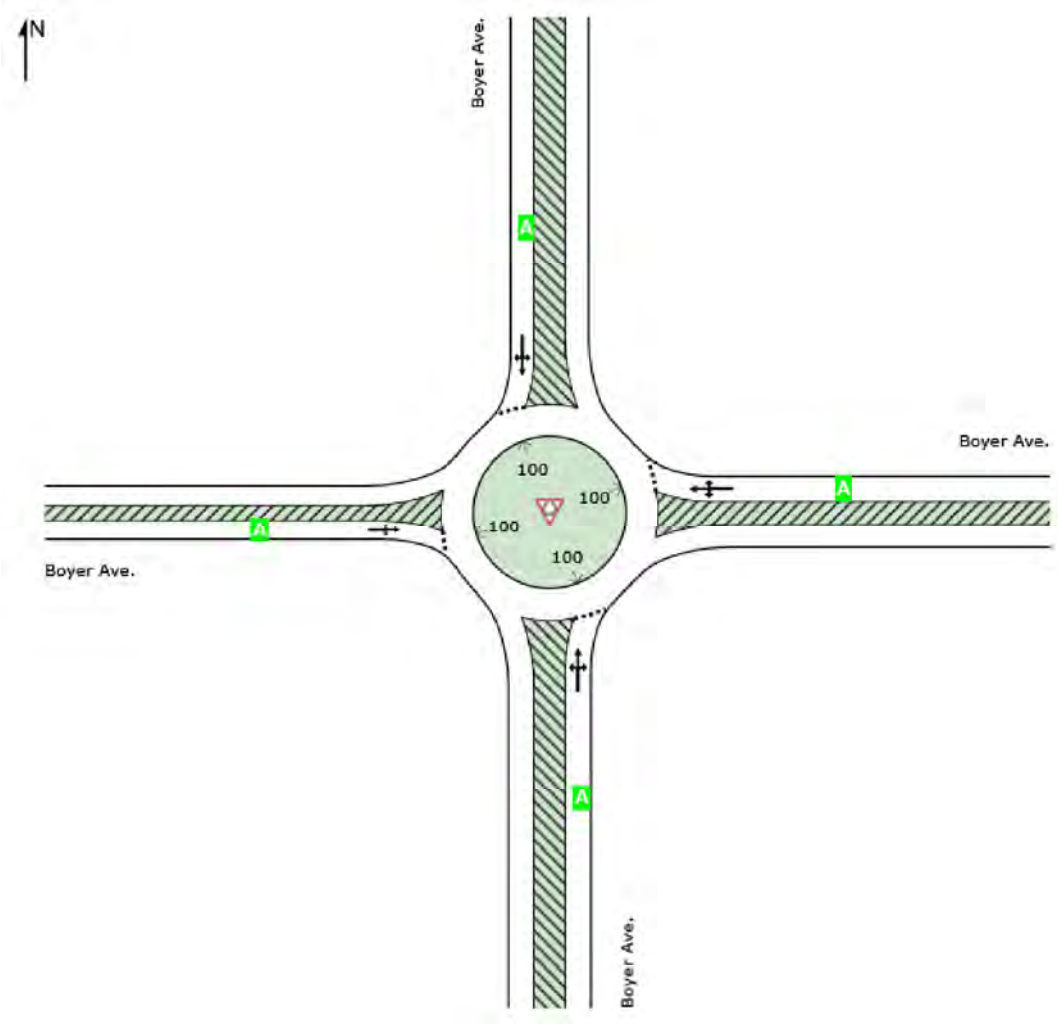
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 4 [Background plus Project Conditions (2025) AM - Larch St. - Boyer Ave.]

Larch/Boyer roundabout
2025 Background plus Project AM Peak Hour
Site Category: (None)
Roundabout

	Approaches				Intersection
	South	East	North	West	
LOS	A	A	A	A	A



Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Intersection	
Int Delay, s/veh	6.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	92	138	174	76	82	163
Future Vol, veh/h	92	138	174	76	82	163
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	75	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	97	145	183	80	86	172

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	242	0	616	170
Stage 1	-	-	-	-	170	-
Stage 2	-	-	-	-	446	-
Critical Hdwy	-	-	4.11	-	6.41	6.21
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	-	-	2.209	-	3.509	3.309
Pot Cap-1 Maneuver	-	-	1330	-	456	876
Stage 1	-	-	-	-	862	-
Stage 2	-	-	-	-	647	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1330	-	390	876
Mov Cap-2 Maneuver	-	-	-	-	390	-
Stage 1	-	-	-	-	738	-
Stage 2	-	-	-	-	647	-

Approach	EB	WB	NB
HCM Control Delay, s	0	5.7	12.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	390	876	-	-	1330	-
HCM Lane V/C Ratio	0.221	0.196	-	-	0.138	-
HCM Control Delay (s)	16.8	10.1	-	-	8.1	0
HCM Lane LOS	C	B	-	-	A	A
HCM 95th %tile Q(veh)	0.8	0.7	-	-	0.5	-

Intersection	
Int Delay, s/veh	3.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	83	40	352	94	52	362
Future Vol, veh/h	83	40	352	94	52	362
Conflicting Peds, #/hr	1	1	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	87	42	371	99	55	381

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	914	423	0	0	471	0
Stage 1	422	-	-	-	-	-
Stage 2	492	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	303	631	-	-	1091	-
Stage 1	662	-	-	-	-	-
Stage 2	615	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	283	630	-	-	1090	-
Mov Cap-2 Maneuver	283	-	-	-	-	-
Stage 1	619	-	-	-	-	-
Stage 2	614	-	-	-	-	-

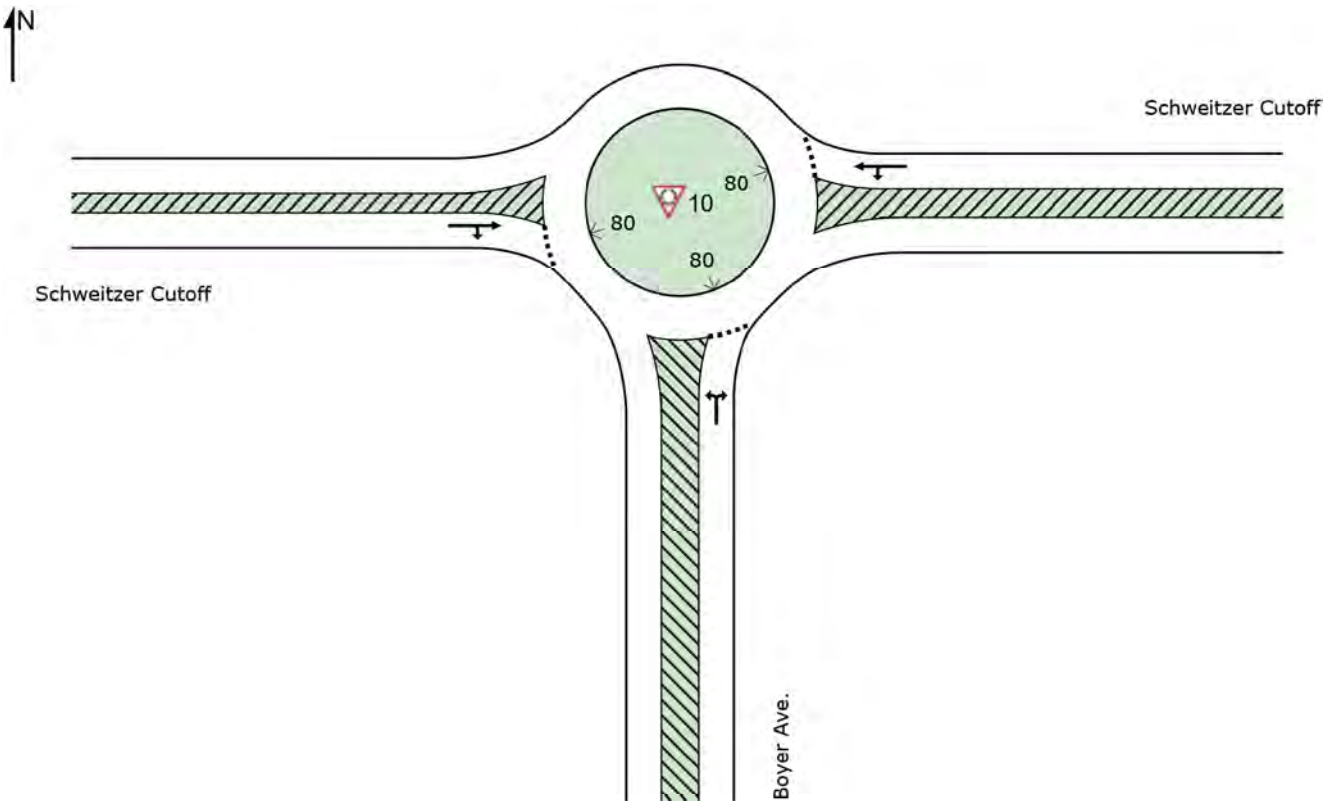
Approach	WB	NB	SB
HCM Control Delay, s	21.6	0	1.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	345	1090	-
HCM Lane V/C Ratio	-	-	0.375	0.05	-
HCM Control Delay (s)	-	-	21.6	8.5	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	1.7	0.2	-

SITE LAYOUT

Site: 10 [Background plus Project Conditions (2025) AM - Schweitzer Cutoff. - Boyer Ave.]

Schweitzer/Boyer roundabout
2025 Background plus Project AM Peak Hour
Site Category: (None)
Roundabout



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Project: P:\K\KMEP00000001\0600INFO\TT\Synchro\Phase_3_TIA\Sidra\Schweitzer_Boyer_Base..sip8

MOVEMENT SUMMARY

Site: 10 [Background plus Project Conditions (2025) AM - Schweitzer Cutoff. - Boyer Ave.]

Schweitzer/Boyer roundabout
2025 Background plus Project AM Peak Hour
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: Boyer Ave.												
3	L2	97	0.0	0.268	1.9	LOS A	1.5	37.6	0.34	0.22	0.34	16.7
18	R2	239	0.0	0.268	0.7	LOS A	1.5	37.6	0.34	0.22	0.34	15.8
Approach		336	0.0	0.268	1.1	LOS A	1.5	37.6	0.34	0.22	0.34	16.1
East: Schweitzer Cutoff												
1	L2	268	3.0	0.404	1.8	LOS A	2.6	66.5	0.32	0.22	0.32	16.7
6	T1	243	3.0	0.404	0.6	LOS A	2.6	66.5	0.32	0.22	0.32	15.8
Approach		512	3.0	0.404	1.2	LOS A	2.6	66.5	0.32	0.22	0.32	16.2
West: Schweitzer Cutoff												
2	T1	148	2.0	0.181	1.2	LOS A	0.9	23.3	0.42	0.26	0.42	15.8
12	R2	56	2.0	0.181	1.2	LOS A	0.9	23.3	0.42	0.26	0.42	15.8
Approach		204	2.0	0.181	1.2	LOS A	0.9	23.3	0.42	0.26	0.42	15.8
All Vehicles		1052	1.8	0.404	1.2	LOS A	2.6	66.5	0.34	0.23	0.34	16.1

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

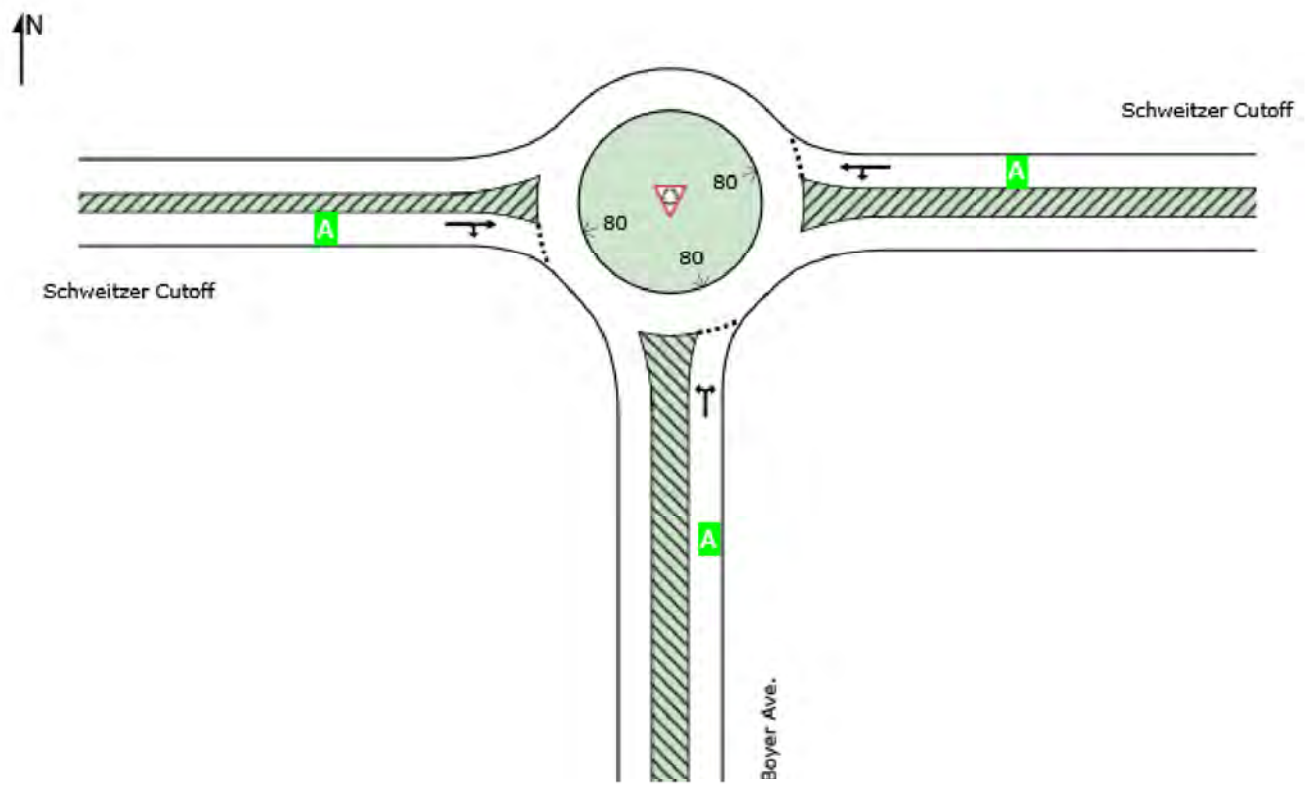
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 10 [Background plus Project Conditions (2025) AM - Schweitzer Cutoff. - Boyer Ave.]

Schweitzer/Boyer roundabout
2025 Background plus Project AM Peak Hour
Site Category: (None)
Roundabout

	Approaches			Intersection
	South	East	West	
LOS	A	A	A	A



Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Intersection	
Int Delay, s/veh	4.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	6	11	0	18	0	33	0	0	0	0	0
Future Vol, veh/h	0	6	11	0	18	0	33	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	6	12	0	19	0	35	0	0	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	19	0	0	18	0	0	31	31	12	31	37	19
Stage 1	-	-	-	-	-	-	12	12	-	19	19	-
Stage 2	-	-	-	-	-	-	19	19	-	12	18	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1597	-	-	1599	-	-	977	862	1069	977	855	1059
Stage 1	-	-	-	-	-	-	1009	886	-	1000	880	-
Stage 2	-	-	-	-	-	-	1000	880	-	1009	880	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1597	-	-	1599	-	-	977	862	1069	977	855	1059
Mov Cap-2 Maneuver	-	-	-	-	-	-	977	862	-	977	855	-
Stage 1	-	-	-	-	-	-	1009	886	-	1000	880	-
Stage 2	-	-	-	-	-	-	1000	880	-	1009	880	-

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

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	977	1597	-	-	1599	-	-	-
HCM Lane V/C Ratio	0.036	-	-	-	-	-	-	-
HCM Control Delay (s)	8.8	0	-	-	0	-	-	0
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	-

Intersection	
Int Delay, s/veh	6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1	6	0	0	18	0
Future Vol, veh/h	1	6	0	0	18	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	6	0	0	19	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	7	0	5	4
Stage 1	-	-	-	-	4	-
Stage 2	-	-	-	-	1	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1614	-	1017	1080
Stage 1	-	-	-	-	1019	-
Stage 2	-	-	-	-	1022	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1614	-	1017	1080
Mov Cap-2 Maneuver	-	-	-	-	1017	-
Stage 1	-	-	-	-	1019	-
Stage 2	-	-	-	-	1022	-

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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1017	-	-	1614	-
HCM Lane V/C Ratio	0.019	-	-	-	-
HCM Control Delay (s)	8.6	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	0.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	18	8	331	6	2	376
Future Vol, veh/h	18	8	331	6	2	376
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	19	8	348	6	2	396

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	751	351	0	0	354	0
Stage 1	351	-	-	-	-	-
Stage 2	400	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	378	692	-	-	1205	-
Stage 1	713	-	-	-	-	-
Stage 2	677	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	377	692	-	-	1205	-
Mov Cap-2 Maneuver	377	-	-	-	-	-
Stage 1	712	-	-	-	-	-
Stage 2	677	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.6	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	377	692	1205	-
HCM Lane V/C Ratio	-	-	0.05	0.012	0.002	-
HCM Control Delay (s)	-	-	15.1	10.3	8	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	0	-

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	0	2	86	0	27	4	305	87	29	351	14
Future Vol, veh/h	5	0	2	86	0	27	4	305	87	29	351	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	65	-	-	100	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	2	0	2	2	2	1	1	2	2	2	2
Mvmt Flow	5	0	2	91	0	28	4	321	92	31	369	15

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	828	860	377	815	821	367	384	0	0	413	0	0
Stage 1	439	439	-	375	375	-	-	-	-	-	-	-
Stage 2	389	421	-	440	446	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.52	6.2	7.12	6.52	6.22	4.11	-	-	4.12	-	-
Critical Hdwy Stg 1	6.1	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4.018	3.3	3.518	4.018	3.318	2.209	-	-	2.218	-	-
Pot Cap-1 Maneuver	293	294	674	296	309	678	1180	-	-	1146	-	-
Stage 1	601	578	-	646	617	-	-	-	-	-	-	-
Stage 2	639	589	-	596	574	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	274	285	674	288	300	678	1180	-	-	1146	-	-
Mov Cap-2 Maneuver	274	285	-	288	300	-	-	-	-	-	-	-
Stage 1	599	562	-	644	615	-	-	-	-	-	-	-
Stage 2	610	587	-	578	559	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16.1	20.1	0.1	0.6
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1180	-	-	274	674	288	678	1146	-	-
HCM Lane V/C Ratio	0.004	-	-	0.019	0.003	0.314	0.042	0.027	-	-
HCM Control Delay (s)	8.1	-	-	18.4	10.4	23.1	10.5	8.2	-	-
HCM Lane LOS	A	-	-	C	B	C	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	1.3	0.1	0.1	-	-

Future Background (2025) plus Project Conditions – Weekday PM Peak Hour

Intersection	
Intersection Delay, s/veh	9.2
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	98	98	46	179	152	21
Future Vol, veh/h	98	98	46	179	152	21
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	103	103	48	188	160	22
Number of Lanes	1	1	1	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	2
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	2	0
HCM Control Delay	9.2	8.9	9.5
HCM LOS	A	A	A

Lane	NBLn1	WBLn1	WBLn2	SBLn1
Vol Left, %	0%	100%	0%	88%
Vol Thru, %	20%	0%	0%	12%
Vol Right, %	80%	0%	100%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	225	98	98	173
LT Vol	0	98	0	152
Through Vol	46	0	0	21
RT Vol	179	0	98	0
Lane Flow Rate	237	103	103	182
Geometry Grp	2	7	7	2
Degree of Util (X)	0.277	0.171	0.136	0.247
Departure Headway (Hd)	4.211	5.966	4.757	4.892
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	853	599	750	732
Service Time	2.244	3.72	2.51	2.93
HCM Lane V/C Ratio	0.278	0.172	0.137	0.249
HCM Control Delay	8.9	10	8.3	9.5
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	1.1	0.6	0.5	1

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	1	0	33	0	22	0	440	45	26	355	0
Future Vol, veh/h	2	1	0	33	0	22	0	440	45	26	355	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	1	0	35	0	23	0	463	47	27	374	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	926	938	374	916	915	487	374	0	0	510	0	0
Stage 1	428	428	-	487	487	-	-	-	-	-	-	-
Stage 2	498	510	-	429	428	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	249	264	672	253	273	581	1184	-	-	1055	-	-
Stage 1	605	585	-	562	550	-	-	-	-	-	-	-
Stage 2	554	538	-	604	585	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	233	256	672	246	264	581	1184	-	-	1055	-	-
Mov Cap-2 Maneuver	233	256	-	246	264	-	-	-	-	-	-	-
Stage 1	605	566	-	562	550	-	-	-	-	-	-	-
Stage 2	532	538	-	584	566	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	20.2	18.7	0	0.6
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1184	-	-	240	320	1055	-	-
HCM Lane V/C Ratio	-	-	-	0.013	0.181	0.026	-	-
HCM Control Delay (s)	0	-	-	20.2	18.7	8.5	0	-
HCM Lane LOS	A	-	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.7	0.1	-	-

Intersection	
Int Delay, s/veh	18.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	189	1	136	1	0	4	105	299	2	5	266	169
Future Vol, veh/h	189	1	136	1	0	4	105	299	2	5	266	169
Conflicting Peds, #/hr	0	0	0	5	0	5	0	0	5	5	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	90	-	-	-	256	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	208	1	149	1	0	4	115	329	2	5	292	186

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	962	961	390	1040	1053	340	478	0	0	336	0	0
Stage 1	395	395	-	565	565	-	-	-	-	-	-	-
Stage 2	567	566	-	475	488	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	235	256	658	208	226	702	1084	-	-	1223	-	-
Stage 1	630	605	-	510	508	-	-	-	-	-	-	-
Stage 2	508	507	-	570	550	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	213	227	655	145	200	696	1084	-	-	1218	-	-
Mov Cap-2 Maneuver	213	227	-	145	200	-	-	-	-	-	-	-
Stage 1	563	601	-	454	452	-	-	-	-	-	-	-
Stage 2	449	451	-	435	547	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	64.7	14.2	2.3	0.1
HCM LOS	F	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1084	-	-	213	655	395	1218	-	-
HCM Lane V/C Ratio	0.106	-	-	0.975	0.228	0.014	0.005	-	-
HCM Control Delay (s)	8.7	-	-	102.6	12.1	14.2	8	0	-
HCM Lane LOS	A	-	-	F	B	B	A	A	-
HCM 95th %tile Q(veh)	0.4	-	-	8.5	0.9	0	0	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	189	1	136	1	0	4	105	299	2	5	266	169
Future Volume (veh/h)	189	1	136	1	0	4	105	299	2	5	266	169
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.98	1.00		0.97	1.00		0.99	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1900	1900	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	199	1	143	1	0	4	111	315	2	5	280	178
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	0	0	0	2	2	2	2	2	2
Cap, veh/h	538	2	354	276	0	134	373	736	5	463	354	225
Arrive On Green	0.15	0.23	0.23	0.00	0.00	0.09	0.07	0.40	0.40	0.01	0.34	0.34
Sat Flow, veh/h	1774	11	1538	1810	0	1571	1774	1849	12	1774	1052	669
Grp Volume(v), veh/h	199	0	144	1	0	4	111	0	317	5	0	458
Grp Sat Flow(s),veh/h/ln	1774	0	1548	1810	0	1571	1774	0	1861	1774	0	1721
Q Serve(g_s), s	4.0	0.0	3.5	0.0	0.0	0.1	1.7	0.0	5.4	0.1	0.0	10.6
Cycle Q Clear(g_c), s	4.0	0.0	3.5	0.0	0.0	0.1	1.7	0.0	5.4	0.1	0.0	10.6
Prop In Lane	1.00		0.99	1.00		1.00	1.00		0.01	1.00		0.39
Lane Grp Cap(c), veh/h	538	0	357	276	0	134	373	0	741	463	0	578
V/C Ratio(X)	0.37	0.00	0.40	0.00	0.00	0.03	0.30	0.00	0.43	0.01	0.00	0.79
Avail Cap(c_a), veh/h	926	0	989	437	0	573	455	0	1613	616	0	1452
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.0	0.0	14.3	18.3	0.0	18.4	9.5	0.0	9.6	9.6	0.0	13.2
Incr Delay (d2), s/veh	0.4	0.0	0.7	0.0	0.0	0.1	0.4	0.0	0.4	0.0	0.0	2.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.0	1.6	0.0	0.0	0.0	0.8	0.0	2.8	0.0	0.0	5.4
LnGrp Delay(d),s/veh	13.4	0.0	15.1	18.3	0.0	18.5	9.9	0.0	10.0	9.6	0.0	15.7
LnGrp LOS	B		B	B		B	A		A	A		B
Approach Vol, veh/h		343			5			428			463	
Approach Delay, s/veh		14.1			18.4			10.0			15.6	
Approach LOS		B			B			A			B	

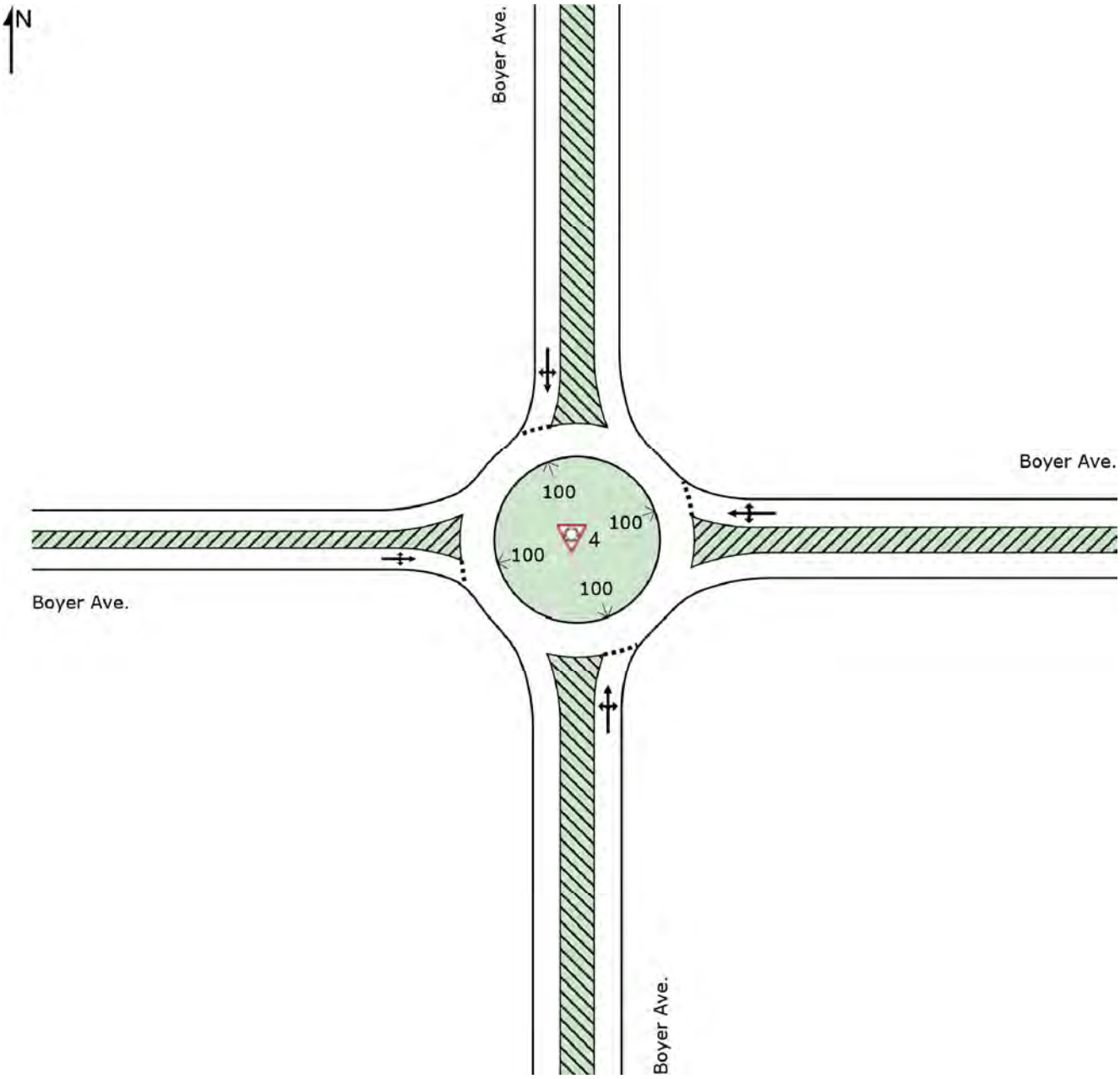
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.2	21.5	4.0	14.1	7.0	18.7	10.4	7.7
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	38.0	4.0	28.0	5.0	37.0	16.0	16.0
Max Q Clear Time (g_c+I1), s	2.1	7.4	2.0	5.5	3.7	12.6	6.0	2.1
Green Ext Time (p_c), s	0.0	1.3	0.0	0.8	0.0	2.1	0.5	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	13.2
HCM 2010 LOS	B

SITE LAYOUT

Site: 4 [Background plus Project Conditions (2025) PM - Larch St. - Boyer Ave.]

Larch/Boyer roundabout
2025 Background plus Project PM Peak Hour
Site Category: (None)
Roundabout



MOVEMENT SUMMARY

Site: 4 [Background plus Project Conditions (2025) PM - Larch St. - Boyer Ave.]

Larch/Boyer roundabout
2025 Background plus Project PM Peak Hour
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: Boyer Ave.												
3	L2	8	1.0	0.426	2.7	LOS A	3.0	75.6	0.62	0.46	0.62	16.8
8	T1	271	1.0	0.426	2.2	LOS A	3.0	75.6	0.62	0.46	0.62	15.7
18	R2	180	1.0	0.426	2.2	LOS A	3.0	75.6	0.62	0.46	0.62	15.7
Approach		459	1.0	0.426	2.2	LOS A	3.0	75.6	0.62	0.46	0.62	15.7
East: Boyer Ave.												
1	L2	140	1.0	0.447	2.6	LOS A	3.3	83.5	0.64	0.48	0.64	16.7
6	T1	132	1.0	0.447	2.1	LOS A	3.3	83.5	0.64	0.48	0.64	15.7
16	R2	210	1.0	0.447	2.1	LOS A	3.3	83.5	0.64	0.48	0.64	15.7
Approach		482	1.0	0.447	2.3	LOS A	3.3	83.5	0.64	0.48	0.64	16.0
North: Boyer Ave.												
7	L2	201	1.0	0.444	2.5	LOS A	3.5	88.0	0.64	0.45	0.64	16.7
4	T1	251	1.0	0.444	2.0	LOS A	3.5	88.0	0.64	0.45	0.64	15.6
14	R2	33	1.0	0.444	2.0	LOS A	3.5	88.0	0.64	0.45	0.64	15.6
Approach		485	1.0	0.444	2.2	LOS A	3.5	88.0	0.64	0.45	0.64	16.1
West: Boyer Ave.												
5	L2	45	1.0	0.182	4.6	LOS A	1.3	31.6	0.75	0.62	0.75	16.6
2	T1	94	1.0	0.182	4.2	LOS A	1.3	31.6	0.75	0.62	0.75	15.5
12	R2	6	1.0	0.182	4.2	LOS A	1.3	31.6	0.75	0.62	0.75	15.5
Approach		145	1.0	0.182	4.3	LOS A	1.3	31.6	0.75	0.62	0.75	15.8
All Vehicles		1572	1.0	0.447	2.4	LOS A	3.5	88.0	0.65	0.48	0.65	15.9

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

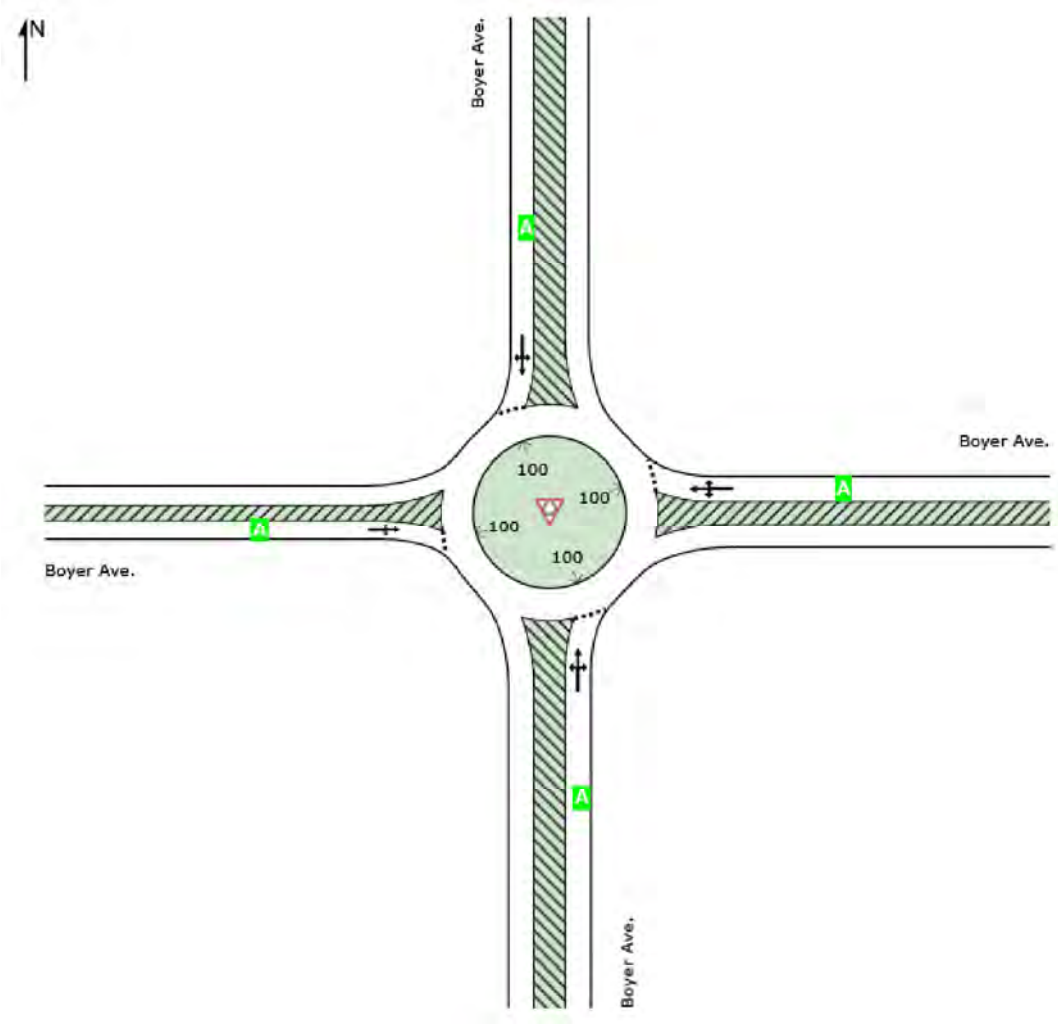
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 4 [Background plus Project Conditions (2025) PM - Larch St. - Boyer Ave.]

Larch/Boyer roundabout
2025 Background plus Project PM Peak Hour
Site Category: (None)
Roundabout

	Approaches				Intersection
	South	East	North	West	
LOS	A	A	A	A	A



Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	151	292	188	285	235	121	247	472	193	136	383	106
Future Volume (veh/h)	151	292	188	285	235	121	247	472	193	136	383	106
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	159	307	198	300	247	127	260	497	203	143	403	112
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	459	1191	531	881	770	383	517	1512	674	453	1512	674
Arrive On Green	0.34	0.34	0.34	0.34	0.34	0.34	0.43	0.43	0.43	0.43	0.43	0.43
Sat Flow, veh/h	992	3497	1559	1706	2261	1125	871	3497	1559	734	3497	1559
Grp Volume(v), veh/h	159	307	198	300	189	185	260	497	203	143	403	112
Grp Sat Flow(s),veh/h/ln	992	1749	1559	853	1749	1637	871	1749	1559	734	1749	1559
Q Serve(g_s), s	5.0	2.2	3.4	5.4	2.8	3.0	9.6	3.3	3.0	5.6	2.6	1.5
Cycle Q Clear(g_c), s	8.0	2.2	3.4	7.7	2.8	3.0	12.2	3.3	3.0	9.0	2.6	1.5
Prop In Lane	1.00		1.00	1.00		0.69	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	459	1191	531	881	596	558	517	1512	674	453	1512	674
V/C Ratio(X)	0.35	0.26	0.37	0.34	0.32	0.33	0.50	0.33	0.30	0.32	0.27	0.17
Avail Cap(c_a), veh/h	572	1589	708	1075	794	744	536	1589	708	469	1589	708
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.6	8.4	8.8	11.2	8.6	8.6	10.3	6.6	6.5	9.6	6.4	6.1
Incr Delay (d2), s/veh	0.4	0.1	0.4	0.2	0.3	0.3	0.8	0.1	0.2	0.4	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.6	0.9	0.8	0.8	0.8	1.4	0.8	0.7	0.7	0.6	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.0	8.5	9.2	11.4	8.9	9.0	11.1	6.7	6.8	10.0	6.5	6.2
LnGrp LOS	B	A	A	B	A	A	B	A	A	A	A	A
Approach Vol, veh/h		664			674			960			658	
Approach Delay, s/veh		9.6			10.0			7.9			7.2	
Approach LOS		A			B			A			A	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	19.2	16.0	19.2	16.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	16.0	16.0	16.0	16.0
Max Q Clear Time (g_c+I1), s	14.2	10.0	11.0	9.7
Green Ext Time (p_c), s	1.0	1.8	1.8	2.3

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	299	28	174	14	70	129	148	630	5	31	637	277
Future Volume (veh/h)	299	28	174	14	70	129	148	630	5	31	637	277
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	315	29	183	15	74	136	156	663	5	33	671	292
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	394	48	304	34	170	172	239	803	6	412	747	325
Arrive On Green	0.22	0.22	0.22	0.11	0.11	0.11	0.08	0.22	0.22	0.17	0.31	0.31
Sat Flow, veh/h	1795	219	1385	315	1554	1575	1795	3644	27	1795	2422	1054
Grp Volume(v), veh/h	315	0	212	89	0	136	156	326	342	33	496	467
Grp Sat Flow(s),veh/h/ln	1795	0	1604	1869	0	1575	1795	1791	1880	1795	1791	1685
Q Serve(g_s), s	13.5	0.0	9.7	3.6	0.0	6.8	2.7	14.1	14.1	0.0	21.5	21.5
Cycle Q Clear(g_c), s	13.5	0.0	9.7	3.6	0.0	6.8	2.7	14.1	14.1	0.0	21.5	21.5
Prop In Lane	1.00		0.86	0.17		1.00	1.00		0.01	1.00		0.63
Lane Grp Cap(c), veh/h	394	0	352	204	0	172	239	395	414	412	553	520
V/C Ratio(X)	0.80	0.00	0.60	0.44	0.00	0.79	0.65	0.83	0.83	0.08	0.90	0.90
Avail Cap(c_a), veh/h	749	0	670	212	0	178	243	646	678	412	648	610
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.0	0.0	28.5	33.8	0.0	35.3	34.6	30.2	30.2	27.5	26.9	26.9
Incr Delay (d2), s/veh	1.4	0.0	0.6	0.5	0.0	18.7	4.7	1.9	1.8	0.0	12.7	13.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.8	0.0	3.7	1.6	0.0	3.4	3.2	6.1	6.4	0.5	10.7	10.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.5	0.0	29.1	34.4	0.0	53.9	39.3	32.0	32.0	27.5	39.6	40.2
LnGrp LOS	C	A	C	C	A	D	D	C	C	C	D	D
Approach Vol, veh/h		527			225			824			996	
Approach Delay, s/veh		30.5			46.2			33.4			39.5	
Approach LOS		C			D			C			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	19.1	23.6		23.9	12.0	30.7		14.7
Change Period (Y+Rc), s	* 5.2	* 5.7		* 6.1	* 5.2	* 5.6		5.8
Max Green Setting (Gmax), s	* 7	* 29		* 34	* 7	* 29		9.2
Max Q Clear Time (g_c+I1), s	12.0	16.1		15.5	4.7	23.5		8.8
Green Ext Time (p_c), s	0.0	1.3		0.5	0.1	1.5		0.0

Intersection Summary	
HCM 6th Ctrl Delay	36.3
HCM 6th LOS	D

Notes

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

Intersection	
Int Delay, s/veh	6.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	102	154	173	100	89	201
Future Vol, veh/h	102	154	173	100	89	201
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	75	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	107	162	182	105	94	212

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	269	0	657	188
Stage 1	-	-	-	-	188	-
Stage 2	-	-	-	-	469	-
Critical Hdwy	-	-	4.11	-	6.41	6.21
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	-	-	2.209	-	3.509	3.309
Pot Cap-1 Maneuver	-	-	1300	-	431	857
Stage 1	-	-	-	-	846	-
Stage 2	-	-	-	-	632	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1300	-	367	857
Mov Cap-2 Maneuver	-	-	-	-	367	-
Stage 1	-	-	-	-	720	-
Stage 2	-	-	-	-	632	-

Approach	EB	WB	NB
HCM Control Delay, s	0	5.2	12.9
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	367	857	-	-	1300	-
HCM Lane V/C Ratio	0.255	0.247	-	-	0.14	-
HCM Control Delay (s)	18.1	10.6	-	-	8.2	0
HCM Lane LOS	C	B	-	-	A	A
HCM 95th %tile Q(veh)	1	1	-	-	0.5	-

Intersection	
Int Delay, s/veh	3.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	91	54	358	86	48	362
Future Vol, veh/h	91	54	358	86	48	362
Conflicting Peds, #/hr	1	1	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	96	57	377	91	51	381

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	908	425	0	0	469	0
Stage 1	424	-	-	-	-	-
Stage 2	484	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	306	629	-	-	1093	-
Stage 1	660	-	-	-	-	-
Stage 2	620	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	287	628	-	-	1092	-
Mov Cap-2 Maneuver	287	-	-	-	-	-
Stage 1	620	-	-	-	-	-
Stage 2	619	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	22.2	0	1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	360	1092	-
HCM Lane V/C Ratio	-	-	0.424	0.046	-
HCM Control Delay (s)	-	-	22.2	8.5	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	2	0.1	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	176	408	0	74	408	1	78	145	33	90	143	147
Future Volume (veh/h)	176	408	0	74	408	1	78	145	33	90	143	147
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	0.98		0.96	0.97		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	185	429	0	78	429	1	82	153	35	95	151	155
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	423	509	0	447	506	1	218	371	85	320	210	216
Arrive On Green	0.17	0.27	0.00	0.18	0.27	0.27	0.25	0.25	0.25	0.25	0.25	0.25
Sat Flow, veh/h	1795	1885	0	1795	1880	4	1063	1472	337	1174	834	856
Grp Volume(v), veh/h	185	429	0	78	0	430	82	0	188	95	0	306
Grp Sat Flow(s),veh/h/ln	1795	1885	0	1795	0	1884	1063	0	1808	1174	0	1689
Q Serve(g_s), s	5.3	12.3	0.0	0.0	0.0	12.4	4.4	0.0	5.0	4.2	0.0	9.5
Cycle Q Clear(g_c), s	5.3	12.3	0.0	0.0	0.0	12.4	13.8	0.0	5.0	9.2	0.0	9.5
Prop In Lane	1.00		0.00	1.00		0.00	1.00		0.19	1.00		0.51
Lane Grp Cap(c), veh/h	423	509	0	447	0	508	218	0	455	320	0	425
V/C Ratio(X)	0.44	0.84	0.00	0.17	0.00	0.85	0.38	0.00	0.41	0.30	0.00	0.72
Avail Cap(c_a), veh/h	440	811	0	447	0	811	218	0	455	320	0	425
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	20.6	19.7	0.0	19.3	0.0	19.8	25.9	0.0	17.9	21.7	0.0	19.5
Incr Delay (d2), s/veh	0.3	2.4	0.0	0.1	0.0	2.6	0.4	0.0	0.2	0.2	0.0	5.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	5.2	0.0	0.8	0.0	5.2	1.1	0.0	1.9	1.1	0.0	4.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.9	22.1	0.0	19.3	0.0	22.3	26.3	0.0	18.1	21.9	0.0	24.6
LnGrp LOS	C	C	A	B	A	C	C	A	B	C	A	C
Approach Vol, veh/h		614			508			270			401	
Approach Delay, s/veh		21.8			21.9			20.6			23.9	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	16.3	20.9		20.0	15.7	21.5		20.0
Change Period (Y+Rc), s	6.1	* 5.4		* 5.6	* 6.2	* 6.1		* 5.6
Max Green Setting (Gmax), s	10.0	* 25		* 14	* 10	* 25		* 14
Max Q Clear Time (g_c+I1), s	2.0	14.3		11.5	7.3	14.4		15.8
Green Ext Time (p_c), s	0.1	0.8		0.4	0.1	0.8		0.0

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

Notes

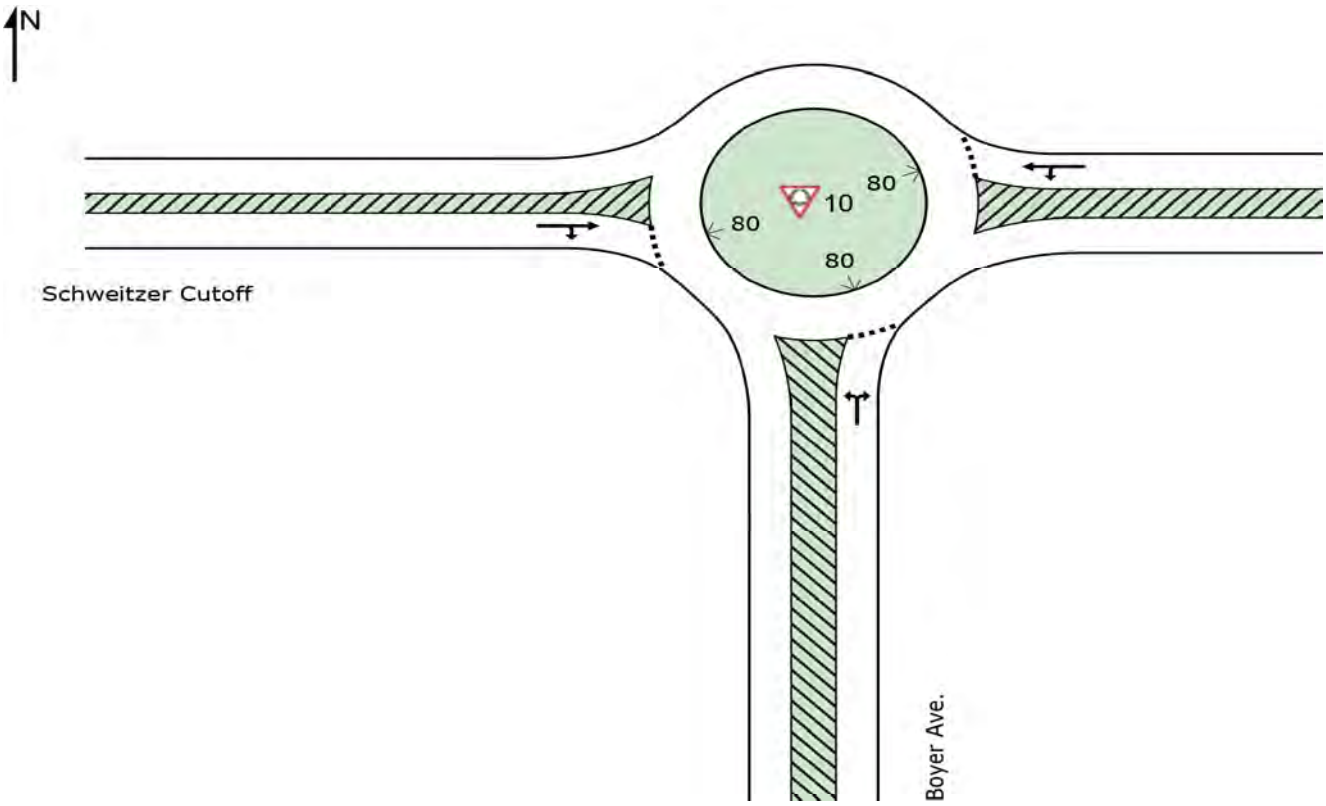
User approved pedestrian interval to be less than phase max green.

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

SITE LAYOUT

Site: 10 [Background plus Project Conditions (2025) PM - Schweitzer Cutoff. - Boyer Ave.]

Schweitzer/Boyer roundabout
2025 Background plus Project PM Peak Hour
Site Category: (None)
Roundabout



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Organisation: DAVID EVANS & ASSOCIATES INC | Created: Tuesday, April 28, 2020 3:12:11 PM
Project: P:\K\KMEP00000001\0600INFO\TT\Synchro\Phase_3_TIA\Sidra\Schweitzer_Boyer_Base..sip8

MOVEMENT SUMMARY

Site: 10 [Background plus Project Conditions (2025) PM - Schweitzer Cutoff. - Boyer Ave.]

Schweitzer/Boyer roundabout
2025 Background plus Project PM Peak Hour
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: Boyer Ave.												
3	L2	61	1.0	0.465	3.0	LOS A	3.2	81.2	0.60	0.46	0.60	16.6
18	R2	444	1.0	0.465	1.8	LOS A	3.2	81.2	0.60	0.46	0.60	15.7
Approach		505	1.0	0.465	2.0	LOS A	3.2	81.2	0.60	0.46	0.60	15.8
East: Schweitzer Cutoff												
1	L2	349	7.0	0.416	1.6	LOS A	3.0	78.2	0.28	0.22	0.28	16.7
6	T1	165	7.0	0.416	0.4	LOS A	3.0	78.2	0.28	0.22	0.28	15.8
Approach		515	7.0	0.416	1.2	LOS A	3.0	78.2	0.28	0.22	0.28	16.4
West: Schweitzer Cutoff												
2	T1	308	1.0	0.367	2.0	LOS A	2.2	55.2	0.56	0.41	0.56	15.7
12	R2	82	1.0	0.367	2.0	LOS A	2.2	55.2	0.56	0.41	0.56	15.7
Approach		391	1.0	0.367	2.0	LOS A	2.2	55.2	0.56	0.41	0.56	15.7
All Vehicles		1411	3.2	0.465	1.7	LOS A	3.2	81.2	0.47	0.36	0.47	16.0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

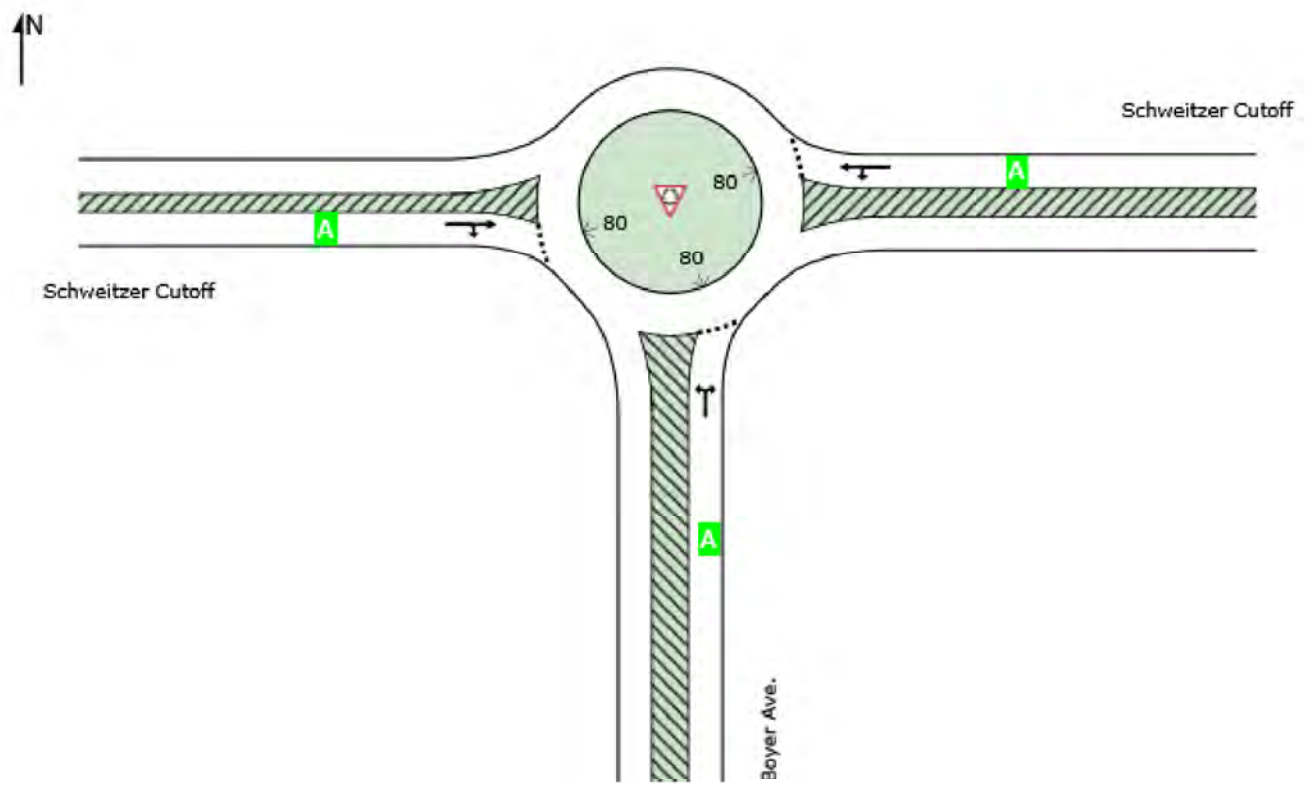
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 10 [Background plus Project Conditions (2025) PM - Schweitzer Cutoff. - Boyer Ave.]

Schweitzer/Boyer roundabout
2025 Background plus Project PM Peak Hour
Site Category: (None)
Roundabout

	Approaches			Intersection
	South	East	West	
LOS	A	A	A	A



Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	20	37	0	14	0	22	0	0	0	0	0
Future Vol, veh/h	0	20	37	0	14	0	22	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	21	39	0	15	0	23	0	0	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	15	0	0	60	0	0	56	56	41	56	75	15
Stage 1	-	-	-	-	-	-	41	41	-	15	15	-
Stage 2	-	-	-	-	-	-	15	15	-	41	60	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1603	-	-	1544	-	-	941	835	1030	941	815	1065
Stage 1	-	-	-	-	-	-	974	861	-	1005	883	-
Stage 2	-	-	-	-	-	-	1005	883	-	974	845	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1603	-	-	1544	-	-	941	835	1030	941	815	1065
Mov Cap-2 Maneuver	-	-	-	-	-	-	941	835	-	941	815	-
Stage 1	-	-	-	-	-	-	974	861	-	1005	883	-
Stage 2	-	-	-	-	-	-	1005	883	-	974	845	-

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

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	941	1603	-	-	1544	-	-	-
HCM Lane V/C Ratio	0.025	-	-	-	-	-	-	-
HCM Control Delay (s)	8.9	0	-	-	0	-	-	0
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	-

Intersection	
Int Delay, s/veh	3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	20	0	2	12	0
Future Vol, veh/h	0	20	0	2	12	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	21	0	2	13	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	21	0	13	11
Stage 1	-	-	-	-	11	-
Stage 2	-	-	-	-	2	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1595	-	1006	1070
Stage 1	-	-	-	-	1012	-
Stage 2	-	-	-	-	1021	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1595	-	1006	1070
Mov Cap-2 Maneuver	-	-	-	-	1006	-
Stage 1	-	-	-	-	1012	-
Stage 2	-	-	-	-	1021	-

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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1006	-	-	1595	-
HCM Lane V/C Ratio	0.013	-	-	-	-
HCM Control Delay (s)	8.6	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	8	461	16	14	436
Future Vol, veh/h	10	8	461	16	14	436
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	8	485	17	15	459

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	983	494	0	0	502	0
Stage 1	494	-	-	-	-	-
Stage 2	489	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	276	575	-	-	1062	-
Stage 1	613	-	-	-	-	-
Stage 2	616	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	272	575	-	-	1062	-
Mov Cap-2 Maneuver	272	-	-	-	-	-
Stage 1	604	-	-	-	-	-
Stage 2	616	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.5	0	0.3
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	272	575	1062	-
HCM Lane V/C Ratio	-	-	0.039	0.015	0.014	-
HCM Control Delay (s)	-	-	18.8	11.4	8.4	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	0	-

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	13	0	4	52	0	32	1	415	63	40	382	12
Future Vol, veh/h	13	0	4	52	0	32	1	415	63	40	382	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	65	-	-	100	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	14	0	4	55	0	34	1	437	66	42	402	13

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	982	998	409	967	971	470	415	0	0	503	0	0
Stage 1	493	493	-	472	472	-	-	-	-	-	-	-
Stage 2	489	505	-	495	499	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	228	244	642	234	253	594	1144	-	-	1061	-	-
Stage 1	558	547	-	573	559	-	-	-	-	-	-	-
Stage 2	561	540	-	556	544	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	208	234	642	225	243	594	1144	-	-	1061	-	-
Mov Cap-2 Maneuver	208	234	-	225	243	-	-	-	-	-	-	-
Stage 1	557	525	-	572	558	-	-	-	-	-	-	-
Stage 2	529	539	-	530	522	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	20.5	20.5	0	0.8
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1144	-	-	208	642	225	594	1061	-	-
HCM Lane V/C Ratio	0.001	-	-	0.066	0.007	0.243	0.057	0.04	-	-
HCM Control Delay (s)	8.2	-	-	23.5	10.6	26.1	11.4	8.5	-	-
HCM Lane LOS	A	-	-	C	B	D	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0	0.9	0.2	0.1	-	-

Future Background (2030) plus Project Conditions – Weekday AM Peak Hour

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	1	53	0	19	1	303	21	7	383	6
Future Vol, veh/h	0	0	1	53	0	19	1	303	21	7	383	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	1	56	0	20	1	319	22	7	403	6

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	762	763	406	753	755	330	409	0	0	341	0	0
Stage 1	420	420	-	332	332	-	-	-	-	-	-	-
Stage 2	342	343	-	421	423	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	322	334	645	326	338	712	1150	-	-	1218	-	-
Stage 1	611	589	-	681	644	-	-	-	-	-	-	-
Stage 2	673	637	-	610	588	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	311	331	645	323	335	712	1150	-	-	1218	-	-
Mov Cap-2 Maneuver	311	331	-	323	335	-	-	-	-	-	-	-
Stage 1	610	585	-	680	643	-	-	-	-	-	-	-
Stage 2	653	636	-	605	584	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.6	16.9	0	0.1
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1150	-	-	645	377	1218	-	-
HCM Lane V/C Ratio	0.001	-	-	0.002	0.201	0.006	-	-
HCM Control Delay (s)	8.1	0	-	10.6	16.9	8	0	-
HCM Lane LOS	A	A	-	B	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.7	0	-	-

Intersection	
Int Delay, s/veh	8.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	168	0	120	1	0	0	75	282	0	3	264	227
Future Vol, veh/h	168	0	120	1	0	0	75	282	0	3	264	227
Conflicting Peds, #/hr	0	0	0	5	0	5	0	0	5	5	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	90	-	-	-	256	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	177	0	126	1	0	0	79	297	0	3	278	239

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	864	-	403	932	983	307	517	0	0	302	0	0
Stage 1	404	-	-	460	460	-	-	-	-	-	-	-
Stage 2	460	-	-	472	523	-	-	-	-	-	-	-
Critical Hdwy	7.12	-	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	-	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	-	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	-	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	274	0	647	247	249	733	1049	-	-	1259	-	-
Stage 1	623	0	-	581	566	-	-	-	-	-	-	-
Stage 2	581	0	-	573	530	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	256	-	644	185	229	727	1049	-	-	1254	-	-
Mov Cap-2 Maneuver	256	-	-	185	229	-	-	-	-	-	-	-
Stage 1	576	-	-	535	521	-	-	-	-	-	-	-
Stage 2	535	-	-	457	528	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	31.5	24.6	1.8	0
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1049	-	-	256	644	185	1254	-	-
HCM Lane V/C Ratio	0.075	-	-	0.691	0.196	0.006	0.003	-	-
HCM Control Delay (s)	8.7	-	-	45.5	11.9	24.6	7.9	0	-
HCM Lane LOS	A	-	-	E	B	C	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	4.6	0.7	0	0	-	-

HCM 2010 Signalized Intersection Summary
3: Boyer Avenue & Baldy Mountain Rd

05/04/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	168	0	120	1	0	0	75	282	0	3	264	227
Future Volume (veh/h)	168	0	120	1	0	0	75	282	0	3	264	227
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.97	1.00		1.00	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1900	1900	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	177	0	126	1	0	0	79	297	0	3	278	239
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	0	0	0	2	2	2	2	2	2
Cap, veh/h	445	0	227	192	5	0	390	821	0	549	351	302
Arrive On Green	0.15	0.00	0.15	0.00	0.00	0.00	0.06	0.44	0.00	0.00	0.38	0.38
Sat Flow, veh/h	1774	0	1544	1810	1900	0	1774	1863	0	1774	913	785
Grp Volume(v), veh/h	177	0	126	1	0	0	79	297	0	3	0	517
Grp Sat Flow(s),veh/h/ln	1774	0	1544	1810	1900	0	1774	1863	0	1774	0	1697
Q Serve(g_s), s	3.5	0.0	3.0	0.0	0.0	0.0	1.0	4.2	0.0	0.0	0.0	10.6
Cycle Q Clear(g_c), s	3.5	0.0	3.0	0.0	0.0	0.0	1.0	4.2	0.0	0.0	0.0	10.6
Prop In Lane	1.00		1.00	1.00		0.00	1.00		0.00	1.00		0.46
Lane Grp Cap(c), veh/h	445	0	227	192	5	0	390	821	0	549	0	653
V/C Ratio(X)	0.40	0.00	0.56	0.01	0.00	0.00	0.20	0.36	0.00	0.01	0.00	0.79
Avail Cap(c_a), veh/h	911	0	1103	372	776	0	512	1806	0	724	0	1602
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.0	0.0	15.5	19.4	0.0	0.0	7.9	7.3	0.0	7.4	0.0	10.7
Incr Delay (d2), s/veh	0.6	0.0	2.1	0.0	0.0	0.0	0.3	0.3	0.0	0.0	0.0	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	0.0	1.4	0.0	0.0	0.0	0.5	2.1	0.0	0.0	0.0	5.3
LnGrp Delay(d),s/veh	14.6	0.0	17.7	19.4	0.0	0.0	8.1	7.6	0.0	7.4	0.0	12.9
LnGrp LOS	B		B	B			A	A		A		B
Approach Vol, veh/h		303			1			376			520	
Approach Delay, s/veh		15.9			19.4			7.7			12.8	
Approach LOS		B			B			A			B	

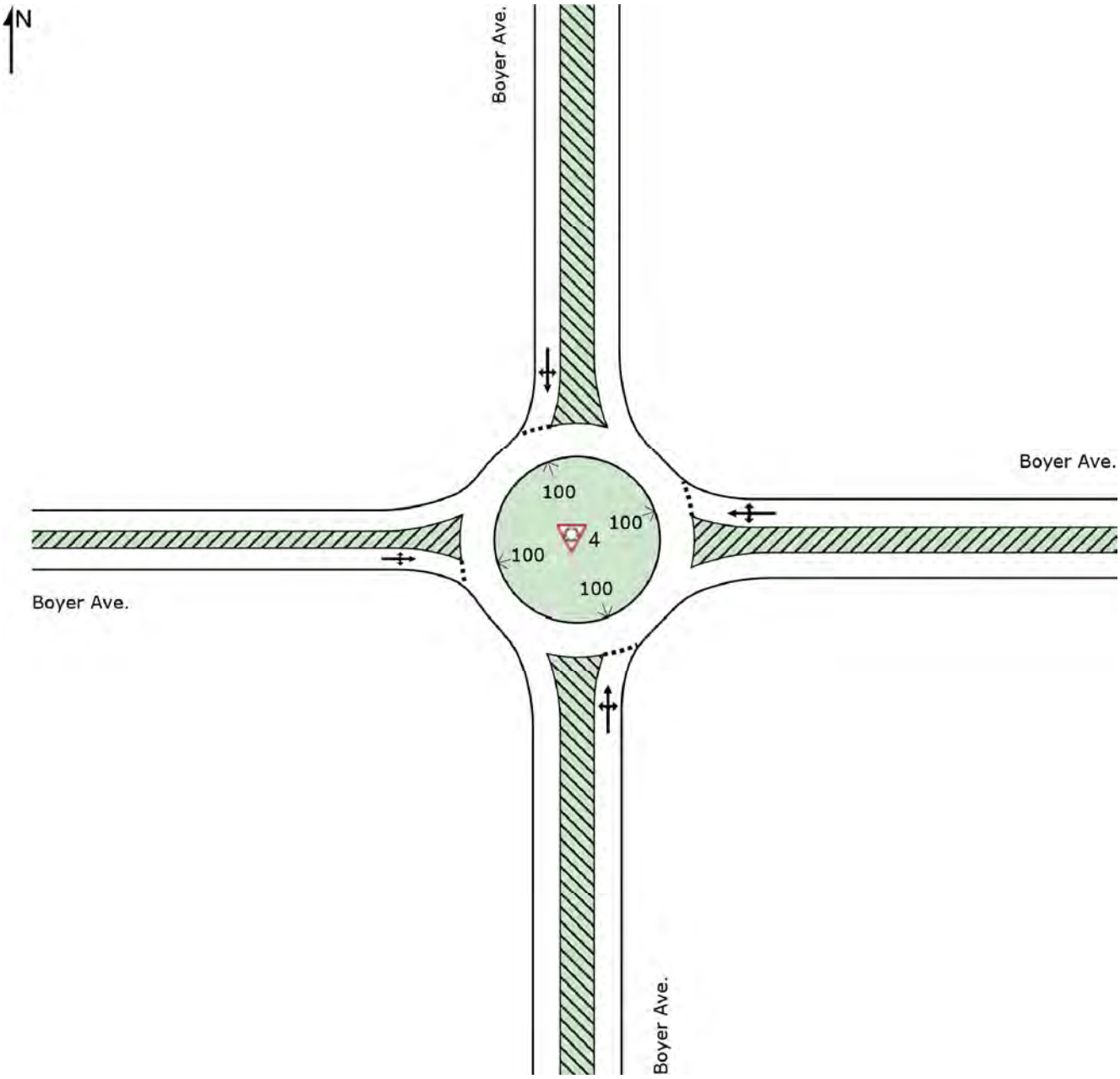
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.1	21.3	4.0	9.8	6.3	19.1	9.7	4.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	38.0	4.0	28.0	5.0	37.0	16.0	16.0
Max Q Clear Time (g_c+I1), s	2.0	6.2	2.0	5.0	3.0	12.6	5.5	0.0
Green Ext Time (p_c), s	0.0	1.2	0.0	0.7	0.0	2.5	0.4	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	12.0
HCM 2010 LOS	B

SITE LAYOUT

Site: 4 [Background plus Project Conditions (2030) AM - Larch St. - Boyer Ave.]

Larch/Boyer roundabout
2030 Background plus Project AM Peak Hour
Site Category: (None)
Roundabout



MOVEMENT SUMMARY

Site: 4 [Background plus Project Conditions (2030) AM - Larch St. - Boyer Ave.]

Larch/Boyer roundabout
2030 Background plus Project AM Peak Hour
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: Boyer Ave.												
3	L2	3	7.0	0.432	3.4	LOS A	3.0	79.1	0.68	0.56	0.68	16.7
8	T1	273	7.0	0.432	2.9	LOS A	3.0	79.1	0.68	0.56	0.68	15.6
18	R2	136	7.0	0.432	2.9	LOS A	3.0	79.1	0.68	0.56	0.68	15.6
Approach		412	7.0	0.432	2.9	LOS A	3.0	79.1	0.68	0.56	0.68	15.6
East: Boyer Ave.												
1	L2	84	2.0	0.358	2.6	LOS A	2.5	62.5	0.62	0.48	0.62	16.8
6	T1	99	2.0	0.358	2.2	LOS A	2.5	62.5	0.62	0.48	0.62	15.7
16	R2	188	2.0	0.358	2.2	LOS A	2.5	62.5	0.62	0.48	0.62	15.7
Approach		372	2.0	0.358	2.3	LOS A	2.5	62.5	0.62	0.48	0.62	15.9
North: Boyer Ave.												
7	L2	191	3.0	0.433	1.9	LOS A	3.5	88.7	0.55	0.33	0.55	16.8
4	T1	259	3.0	0.433	1.4	LOS A	3.5	88.7	0.55	0.33	0.55	15.7
14	R2	54	3.0	0.433	1.4	LOS A	3.5	88.7	0.55	0.33	0.55	15.7
Approach		503	3.0	0.433	1.6	LOS A	3.5	88.7	0.55	0.33	0.55	16.1
West: Boyer Ave.												
5	L2	62	2.0	0.265	4.5	LOS A	1.9	47.5	0.75	0.64	0.75	16.6
2	T1	145	2.0	0.265	4.1	LOS A	1.9	47.5	0.75	0.64	0.75	15.5
12	R2	12	2.0	0.265	4.1	LOS A	1.9	47.5	0.75	0.64	0.75	15.5
Approach		219	2.0	0.265	4.2	LOS A	1.9	47.5	0.75	0.64	0.75	15.8
All Vehicles		1505	3.7	0.433	2.5	LOS A	3.5	88.7	0.63	0.47	0.63	15.9

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

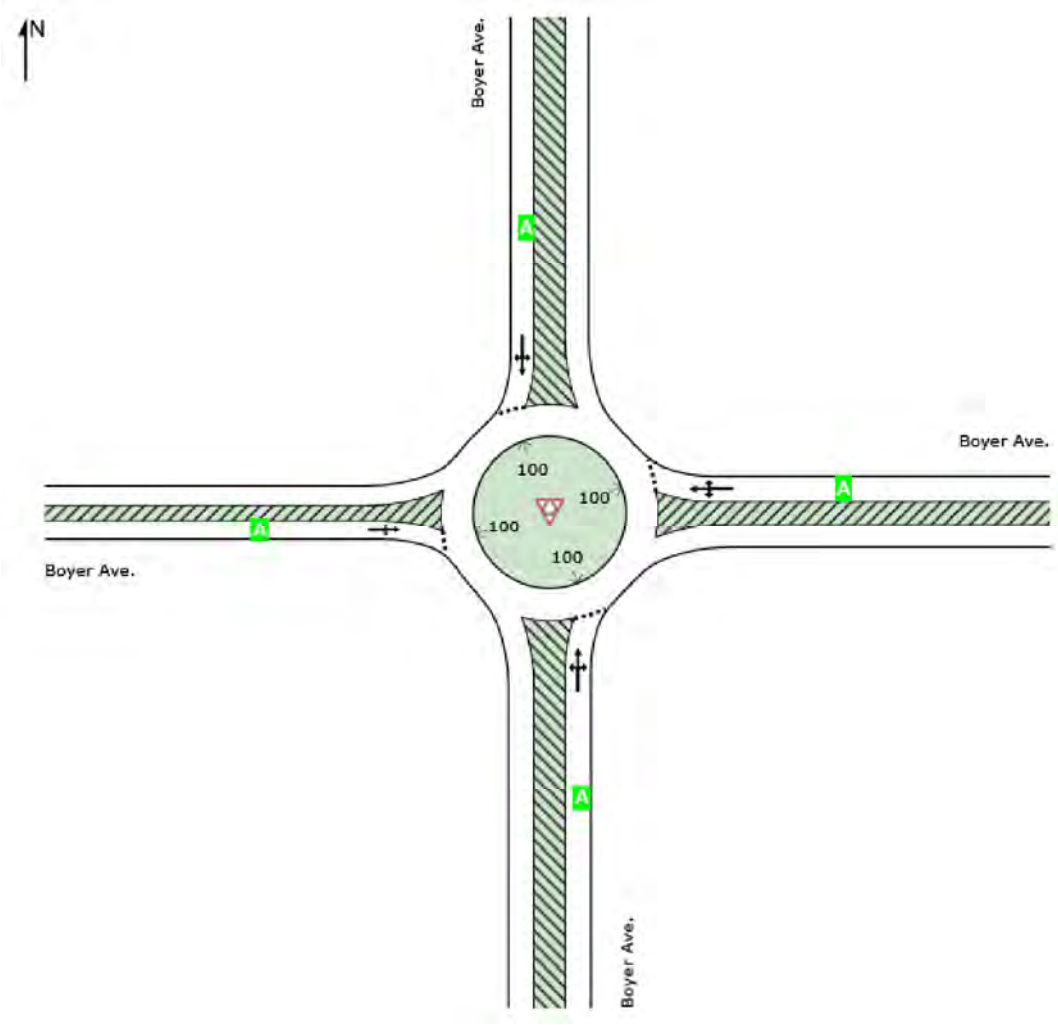
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 4 [Background plus Project Conditions (2030) AM - Larch St. - Boyer Ave.]

Larch/Boyer roundabout
2030 Background plus Project AM Peak Hour
Site Category: (None)
Roundabout

	Approaches				Intersection
	South	East	North	West	
LOS	A	A	A	A	A



Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Intersection	
Int Delay, s/veh	6.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	109	163	199	89	96	187
Future Vol, veh/h	109	163	199	89	96	187
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	75	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	115	172	209	94	101	197

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	287	0	713	201
Stage 1	-	-	-	-	201	-
Stage 2	-	-	-	-	512	-
Critical Hdwy	-	-	4.11	-	6.41	6.21
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	-	-	2.209	-	3.509	3.309
Pot Cap-1 Maneuver	-	-	1281	-	400	842
Stage 1	-	-	-	-	835	-
Stage 2	-	-	-	-	604	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1281	-	331	842
Mov Cap-2 Maneuver	-	-	-	-	331	-
Stage 1	-	-	-	-	691	-
Stage 2	-	-	-	-	604	-

Approach	EB	WB	NB
HCM Control Delay, s	0	5.8	14
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	331	842	-	-	1281	-
HCM Lane V/C Ratio	0.305	0.234	-	-	0.164	-
HCM Control Delay (s)	20.6	10.6	-	-	8.4	0
HCM Lane LOS	C	B	-	-	A	A
HCM 95th %tile Q(veh)	1.3	0.9	-	-	0.6	-

Intersection	
Int Delay, s/veh	4.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	91	47	411	106	61	421
Future Vol, veh/h	91	47	411	106	61	421
Conflicting Peds, #/hr	1	1	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	96	49	433	112	64	443

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1062	491	0	0	546	0
Stage 1	490	-	-	-	-	-
Stage 2	572	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	247	578	-	-	1023	-
Stage 1	616	-	-	-	-	-
Stage 2	565	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	226	577	-	-	1022	-
Mov Cap-2 Maneuver	226	-	-	-	-	-
Stage 1	564	-	-	-	-	-
Stage 2	564	-	-	-	-	-

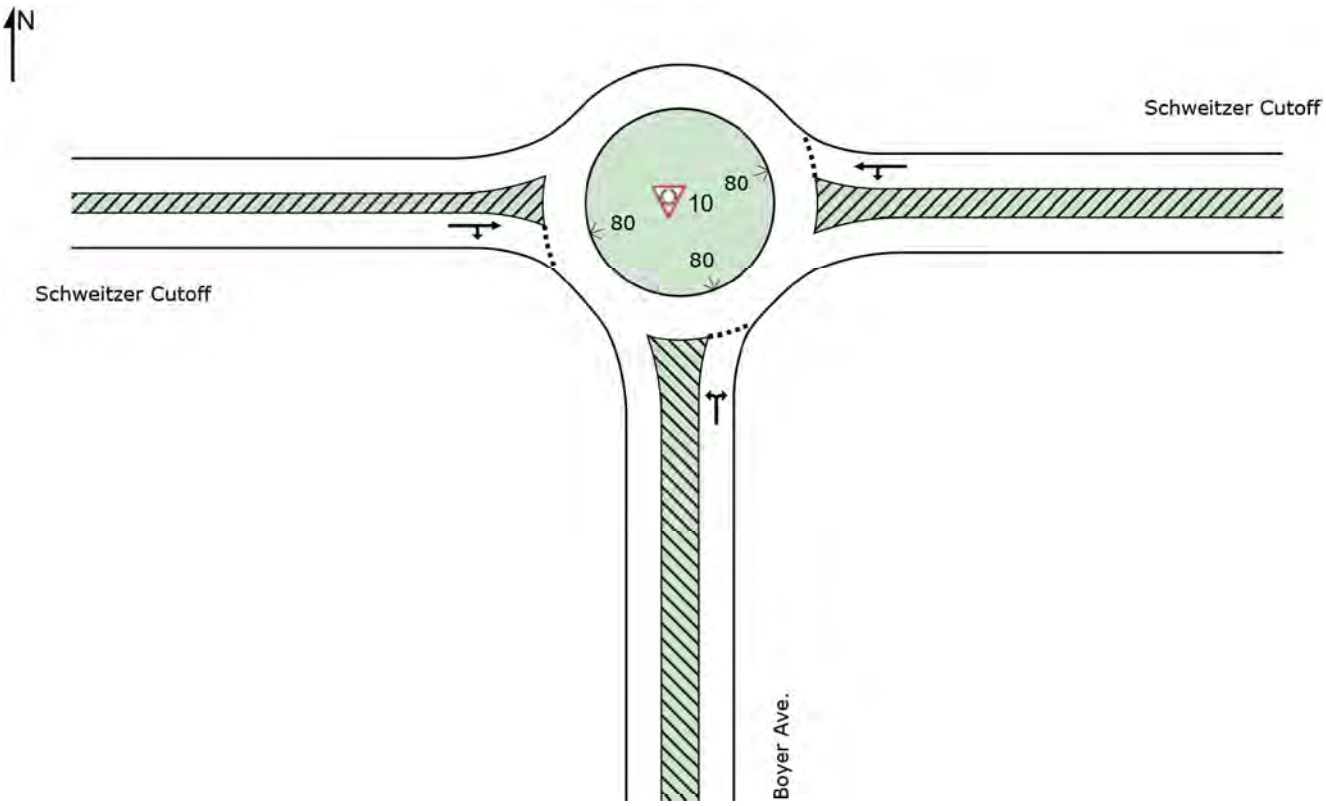
Approach	WB	NB	SB
HCM Control Delay, s	30.1	0	1.1
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	285	1022	-
HCM Lane V/C Ratio	-	-	0.51	0.063	-
HCM Control Delay (s)	-	-	30.1	8.8	0
HCM Lane LOS	-	-	D	A	A
HCM 95th %tile Q(veh)	-	-	2.7	0.2	-

SITE LAYOUT

Site: 10 [Background plus Project Conditions (2030) AM - Schweitzer Cutoff. - Boyer Ave.]

Schweitzer/Boyer roundabout
2030 Background plus Project AM Peak Hour
Site Category: (None)
Roundabout



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Organisation: DAVID EVANS & ASSOCIATES INC | Created: Tuesday, April 28, 2020 12:37:01 PM
Project: P:\K\KMEP00000001\0600INFO\TT\Synchro\Phase_3_TIA\Sidra\Schweitzer_Boyer_Base..sip8

MOVEMENT SUMMARY

Site: 10 [Background plus Project Conditions (2030) AM - Schweitzer Cutoff. - Boyer Ave.]

Schweitzer/Boyer roundabout
2030 Background plus Project AM Peak Hour
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: Boyer Ave.												
3	L2	112	0.0	0.317	2.1	LOS A	1.9	47.5	0.40	0.26	0.40	16.7
18	R2	277	0.0	0.317	0.9	LOS A	1.9	47.5	0.40	0.26	0.40	15.8
Approach		388	0.0	0.317	1.2	LOS A	1.9	47.5	0.40	0.26	0.40	16.0
East: Schweitzer Cutoff												
1	L2	314	3.0	0.481	2.0	LOS A	3.5	88.8	0.38	0.25	0.38	16.6
6	T1	285	3.0	0.481	0.7	LOS A	3.5	88.8	0.38	0.25	0.38	15.7
Approach		599	3.0	0.481	1.4	LOS A	3.5	88.8	0.38	0.25	0.38	16.2
West: Schweitzer Cutoff												
2	T1	173	2.0	0.217	1.5	LOS A	1.2	29.7	0.48	0.31	0.48	15.7
12	R2	63	2.0	0.217	1.5	LOS A	1.2	29.7	0.48	0.31	0.48	15.7
Approach		236	2.0	0.217	1.5	LOS A	1.2	29.7	0.48	0.31	0.48	15.7
All Vehicles		1223	1.9	0.481	1.3	LOS A	3.5	88.8	0.40	0.27	0.40	16.1

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

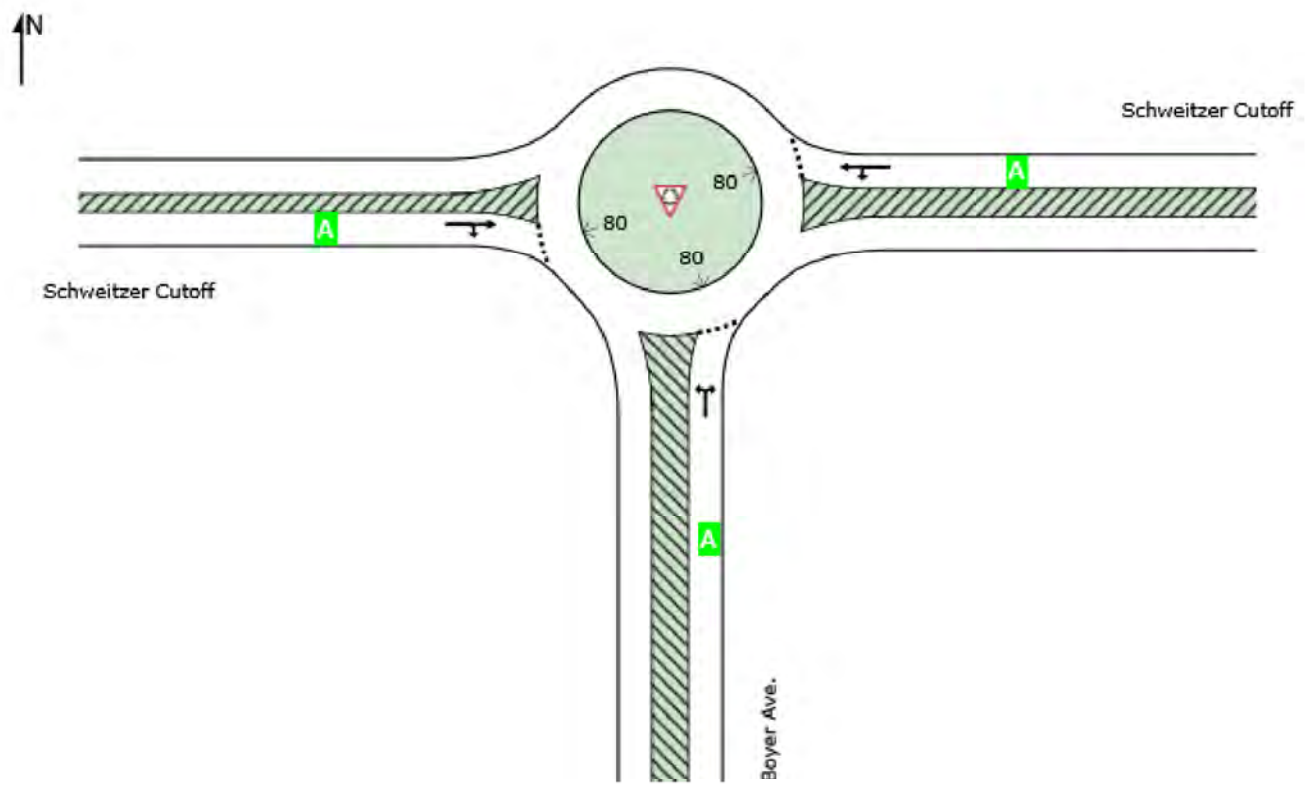
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 10 [Background plus Project Conditions (2030) AM - Schweitzer Cutoff. - Boyer Ave.]

Schweitzer/Boyer roundabout
2030 Background plus Project AM Peak Hour
Site Category: (None)
Roundabout

	Approaches			Intersection
	South	East	West	
LOS	A	A	A	A



Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Intersection	
Int Delay, s/veh	4.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	6	11	0	18	0	33	0	0	0	0	0
Future Vol, veh/h	0	6	11	0	18	0	33	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	6	12	0	19	0	35	0	0	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	19	0	0	18	0	0	31	31	12	31	37	19
Stage 1	-	-	-	-	-	-	12	12	-	19	19	-
Stage 2	-	-	-	-	-	-	19	19	-	12	18	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1597	-	-	1599	-	-	977	862	1069	977	855	1059
Stage 1	-	-	-	-	-	-	1009	886	-	1000	880	-
Stage 2	-	-	-	-	-	-	1000	880	-	1009	880	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1597	-	-	1599	-	-	977	862	1069	977	855	1059
Mov Cap-2 Maneuver	-	-	-	-	-	-	977	862	-	977	855	-
Stage 1	-	-	-	-	-	-	1009	886	-	1000	880	-
Stage 2	-	-	-	-	-	-	1000	880	-	1009	880	-

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

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	977	1597	-	-	1599	-	-	-
HCM Lane V/C Ratio	0.036	-	-	-	-	-	-	-
HCM Control Delay (s)	8.8	0	-	-	0	-	-	0
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	-

Intersection	
Int Delay, s/veh	6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1	6	0	0	18	0
Future Vol, veh/h	1	6	0	0	18	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	6	0	0	19	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	7	0	5	4
Stage 1	-	-	-	-	4	-
Stage 2	-	-	-	-	1	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1614	-	1017	1080
Stage 1	-	-	-	-	1019	-
Stage 2	-	-	-	-	1022	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1614	-	1017	1080
Mov Cap-2 Maneuver	-	-	-	-	1017	-
Stage 1	-	-	-	-	1019	-
Stage 2	-	-	-	-	1022	-

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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1017	-	-	1614	-
HCM Lane V/C Ratio	0.019	-	-	-	-
HCM Control Delay (s)	8.6	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	0.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	18	8	386	6	2	431
Future Vol, veh/h	18	8	386	6	2	431
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	19	8	406	6	2	454

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	867	409	0	0	412	0
Stage 1	409	-	-	-	-	-
Stage 2	458	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	323	642	-	-	1147	-
Stage 1	671	-	-	-	-	-
Stage 2	637	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	322	642	-	-	1147	-
Mov Cap-2 Maneuver	322	-	-	-	-	-
Stage 1	670	-	-	-	-	-
Stage 2	637	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	322	642	1147	-
HCM Lane V/C Ratio	-	-	0.059	0.013	0.002	-
HCM Control Delay (s)	-	-	16.9	10.7	8.1	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	0	-

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	0	3	86	0	27	4	359	87	29	405	17
Future Vol, veh/h	6	0	3	86	0	27	4	359	87	29	405	17
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	65	-	-	100	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	2	0	2	2	2	1	1	2	2	2	2
Mvmt Flow	6	0	3	91	0	28	4	378	92	31	426	18

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	943	975	435	931	938	424	444	0	0	470	0	0
Stage 1	497	497	-	432	432	-	-	-	-	-	-	-
Stage 2	446	478	-	499	506	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.52	6.2	7.12	6.52	6.22	4.11	-	-	4.12	-	-
Critical Hdwy Stg 1	6.1	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4.018	3.3	3.518	4.018	3.318	2.209	-	-	2.218	-	-
Pot Cap-1 Maneuver	245	251	625	247	264	630	1121	-	-	1092	-	-
Stage 1	559	545	-	602	582	-	-	-	-	-	-	-
Stage 2	595	556	-	554	540	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	228	243	625	240	256	630	1121	-	-	1092	-	-
Mov Cap-2 Maneuver	228	243	-	240	256	-	-	-	-	-	-	-
Stage 1	557	530	-	600	580	-	-	-	-	-	-	-
Stage 2	566	554	-	536	525	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	17.7	24.5	0.1	0.5
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1121	-	-	228	625	240	630	1092	-	-
HCM Lane V/C Ratio	0.004	-	-	0.028	0.005	0.377	0.045	0.028	-	-
HCM Control Delay (s)	8.2	-	-	21.2	10.8	28.8	11	8.4	-	-
HCM Lane LOS	A	-	-	C	B	D	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	1.7	0.1	0.1	-	-

Future Background (2030) plus Project Conditions – Weekday PM Peak Hour

Intersection	
Intersection Delay, s/veh	9.8
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	114	114	54	211	177	25
Future Vol, veh/h	114	114	54	211	177	25
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	120	120	57	222	186	26
Number of Lanes	1	1	1	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	2
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	2	0
HCM Control Delay	9.6	9.6	10.2
HCM LOS	A	A	B

Lane	NBLn1	WBLn1	WBLn2	SBLn1
Vol Left, %	0%	100%	0%	88%
Vol Thru, %	20%	0%	0%	12%
Vol Right, %	80%	0%	100%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	265	114	114	202
LT Vol	0	114	0	177
Through Vol	54	0	0	25
RT Vol	211	0	114	0
Lane Flow Rate	279	120	120	213
Geometry Grp	2	7	7	2
Degree of Util (X)	0.337	0.205	0.164	0.298
Departure Headway (Hd)	4.349	6.141	4.93	5.039
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	823	581	721	710
Service Time	2.399	3.917	2.705	3.096
HCM Lane V/C Ratio	0.339	0.207	0.166	0.3
HCM Control Delay	9.6	10.5	8.7	10.2
HCM Lane LOS	A	B	A	B
HCM 95th-tile Q	1.5	0.8	0.6	1.2

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	1	0	36	0	23	0	512	47	27	410	0
Future Vol, veh/h	3	1	0	36	0	23	0	512	47	27	410	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	1	0	38	0	24	0	539	49	28	432	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1064	1076	432	1053	1052	564	432	0	0	588	0	0
Stage 1	488	488	-	564	564	-	-	-	-	-	-	-
Stage 2	576	588	-	489	488	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	201	219	624	204	227	525	1128	-	-	987	-	-
Stage 1	561	550	-	510	508	-	-	-	-	-	-	-
Stage 2	503	496	-	561	550	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	186	211	624	197	219	525	1128	-	-	987	-	-
Mov Cap-2 Maneuver	186	211	-	197	219	-	-	-	-	-	-	-
Stage 1	561	530	-	510	508	-	-	-	-	-	-	-
Stage 2	480	496	-	539	530	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	24.2	23.1	0	0.5
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1128	-	-	192	260	987	-	-
HCM Lane V/C Ratio	-	-	-	0.022	0.239	0.029	-	-
HCM Control Delay (s)	0	-	-	24.2	23.1	8.8	0	-
HCM Lane LOS	A	-	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.9	0.1	-	-

Intersection	
Int Delay, s/veh	36.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	220	1	161	1	0	4	123	337	3	6	303	198
Future Vol, veh/h	220	1	161	1	0	4	123	337	3	6	303	198
Conflicting Peds, #/hr	0	0	0	5	0	5	0	0	5	5	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	90	-	-	-	256	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	232	1	169	1	0	4	129	355	3	6	319	208

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1057	1056	428	1145	1159	367	527	0	0	363	0	0
Stage 1	435	435	-	620	620	-	-	-	-	-	-	-
Stage 2	622	621	-	525	539	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	~ 203	225	627	177	196	678	1040	-	-	1196	-	-
Stage 1	600	580	-	476	480	-	-	-	-	-	-	-
Stage 2	474	479	-	536	522	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 181	195	624	115	170	672	1040	-	-	1191	-	-
Mov Cap-2 Maneuver	~ 181	195	-	115	170	-	-	-	-	-	-	-
Stage 1	526	576	-	415	419	-	-	-	-	-	-	-
Stage 2	411	418	-	385	518	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	127.8	15.7	2.4	0.1
HCM LOS	F	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1040	-	-	181	624	341	1191	-	-
HCM Lane V/C Ratio	0.124	-	-	1.279	0.272	0.015	0.005	-	-
HCM Control Delay (s)	9	-	-	211.9	12.9	15.7	8	0	-
HCM Lane LOS	A	-	-	F	B	C	A	A	-
HCM 95th %tile Q(veh)	0.4	-	-	13	1.1	0	0	-	-

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	220	1	161	1	0	4	123	337	3	6	303	198
Future Volume (veh/h)	220	1	161	1	0	4	123	337	3	6	303	198
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.98	1.00		0.97	1.00		0.99	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1900	1900	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	232	1	169	1	0	4	129	355	3	6	319	208
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	0	0	0	2	2	2	2	2	2
Cap, veh/h	537	2	369	249	0	128	345	795	7	456	383	250
Arrive On Green	0.16	0.24	0.24	0.00	0.00	0.08	0.07	0.43	0.43	0.01	0.37	0.37
Sat Flow, veh/h	1774	9	1539	1810	0	1566	1774	1844	16	1774	1041	679
Grp Volume(v), veh/h	232	0	170	1	0	4	129	0	358	6	0	527
Grp Sat Flow(s),veh/h/ln	1774	0	1548	1810	0	1566	1774	0	1860	1774	0	1719
Q Serve(g_s), s	5.4	0.0	4.7	0.0	0.0	0.1	2.1	0.0	6.7	0.1	0.0	13.9
Cycle Q Clear(g_c), s	5.4	0.0	4.7	0.0	0.0	0.1	2.1	0.0	6.7	0.1	0.0	13.9
Prop In Lane	1.00		0.99	1.00		1.00	1.00		0.01	1.00		0.39
Lane Grp Cap(c), veh/h	537	0	371	249	0	128	345	0	802	456	0	633
V/C Ratio(X)	0.43	0.00	0.46	0.00	0.00	0.03	0.37	0.00	0.45	0.01	0.00	0.83
Avail Cap(c_a), veh/h	825	0	871	391	0	504	401	0	1421	588	0	1279
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.8	0.0	16.1	20.9	0.0	21.0	10.5	0.0	10.0	9.9	0.0	14.3
Incr Delay (d2), s/veh	0.6	0.0	0.9	0.0	0.0	0.1	0.7	0.0	0.4	0.0	0.0	2.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	0.0	2.1	0.0	0.0	0.1	1.1	0.0	3.5	0.0	0.0	7.0
LnGrp Delay(d),s/veh	15.4	0.0	17.0	20.9	0.0	21.1	11.1	0.0	10.4	9.9	0.0	17.2
LnGrp LOS	B		B	C		C	B		B	A		B
Approach Vol, veh/h		402			5			487			533	
Approach Delay, s/veh		16.1			21.1			10.6			17.2	
Approach LOS		B			C			B			B	

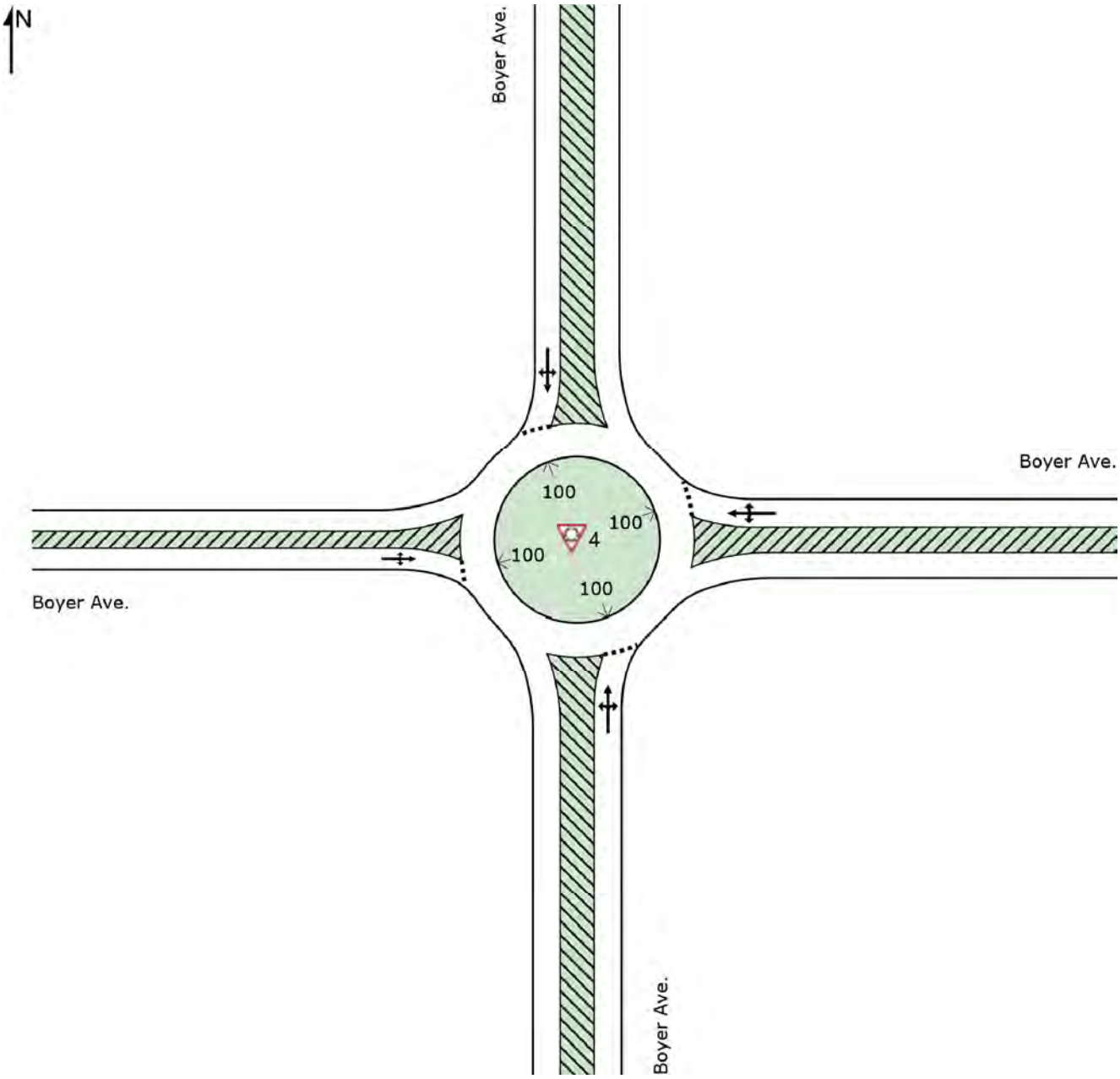
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.3	25.4	4.1	15.9	7.4	22.3	11.9	8.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	38.0	4.0	28.0	5.0	37.0	16.0	16.0
Max Q Clear Time (g_c+I1), s	2.1	8.7	2.0	6.7	4.1	15.9	7.4	2.1
Green Ext Time (p_c), s	0.0	1.5	0.0	1.0	0.0	2.4	0.6	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	14.6
HCM 2010 LOS	B

SITE LAYOUT

Site: 4 [Background plus Project Conditions (2030) PM - Larch St. - Boyer Ave.]

Larch/Boyer roundabout
2030 Background plus Project PM Peak Hour
Site Category: (None)
Roundabout



MOVEMENT SUMMARY

Site: 4 [Background plus Project Conditions (2030) PM - Larch St. - Boyer Ave.]

Larch/Boyer roundabout
2030 Background plus Project PM Peak Hour
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: Boyer Ave.												
3	L2	10	1.0	0.524	3.5	LOS A	4.2	106.3	0.72	0.62	0.75	16.7
8	T1	317	1.0	0.524	3.1	LOS A	4.2	106.3	0.72	0.62	0.75	15.6
18	R2	211	1.0	0.524	3.1	LOS A	4.2	106.3	0.72	0.62	0.75	15.6
Approach		539	1.0	0.524	3.1	LOS A	4.2	106.3	0.72	0.62	0.75	15.6
East: Boyer Ave.												
1	L2	163	1.0	0.549	3.6	LOS A	4.8	119.7	0.75	0.66	0.79	16.7
6	T1	156	1.0	0.549	3.1	LOS A	4.8	119.7	0.75	0.66	0.79	15.6
16	R2	242	1.0	0.549	3.1	LOS A	4.8	119.7	0.75	0.66	0.79	15.6
Approach		560	1.0	0.549	3.3	LOS A	4.8	119.7	0.75	0.66	0.79	15.9
North: Boyer Ave.												
7	L2	232	1.0	0.545	3.2	LOS A	4.8	120.9	0.75	0.59	0.76	16.7
4	T1	295	1.0	0.545	2.7	LOS A	4.8	120.9	0.75	0.59	0.76	15.6
14	R2	38	1.0	0.545	2.7	LOS A	4.8	120.9	0.75	0.59	0.76	15.6
Approach		565	1.0	0.545	2.9	LOS A	4.8	120.9	0.75	0.59	0.76	16.0
West: Boyer Ave.												
5	L2	50	1.0	0.240	5.7	LOS A	1.7	43.8	0.83	0.73	0.83	16.5
2	T1	110	1.0	0.240	5.3	LOS A	1.7	43.8	0.83	0.73	0.83	15.4
12	R2	7	1.0	0.240	5.3	LOS A	1.7	43.8	0.83	0.73	0.83	15.4
Approach		168	1.0	0.240	5.4	LOS A	1.7	43.8	0.83	0.73	0.83	15.7
All Vehicles		1831	1.0	0.549	3.3	LOS A	4.8	120.9	0.75	0.63	0.77	15.8

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

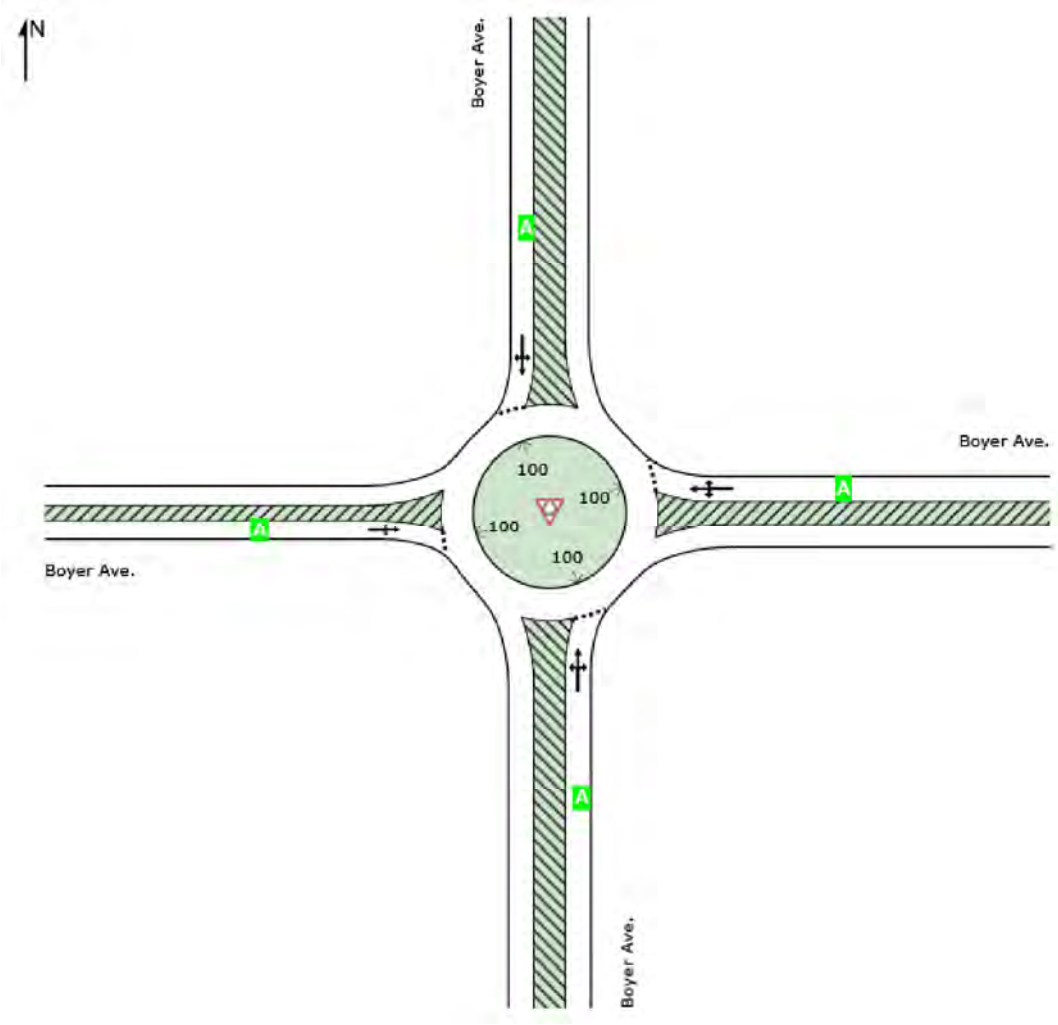
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 4 [Background plus Project Conditions (2030) PM - Larch St. - Boyer Ave.]

Larch/Boyer roundabout
2030 Background plus Project PM Peak Hour
Site Category: (None)
Roundabout

	Approaches				Intersection
	South	East	North	West	
LOS	A	A	A	A	A



Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	178	343	219	337	274	142	287	557	228	161	453	123
Future Volume (veh/h)	178	343	219	337	274	142	287	557	228	161	453	123
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	187	361	231	355	288	149	302	586	240	169	477	129
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	448	1304	581	850	839	423	449	1462	652	385	1462	652
Arrive On Green	0.37	0.37	0.37	0.37	0.37	0.37	0.42	0.42	0.42	0.42	0.42	0.42
Sat Flow, veh/h	936	3497	1559	1574	2251	1134	801	3497	1559	653	3497	1559
Grp Volume(v), veh/h	187	361	231	355	222	215	302	586	240	169	477	129
Grp Sat Flow(s),veh/h/ln	936	1749	1559	787	1749	1636	801	1749	1559	653	1749	1559
Q Serve(g_s), s	6.9	2.8	4.2	7.8	3.5	3.6	12.5	4.5	4.1	9.3	3.5	2.0
Cycle Q Clear(g_c), s	10.5	2.8	4.2	10.6	3.5	3.6	16.0	4.5	4.1	13.8	3.5	2.0
Prop In Lane	1.00		1.00	1.00		0.69	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	448	1304	581	850	652	610	449	1462	652	385	1462	652
V/C Ratio(X)	0.42	0.28	0.40	0.42	0.34	0.35	0.67	0.40	0.37	0.44	0.33	0.20
Avail Cap(c_a), veh/h	491	1462	652	921	731	684	449	1462	652	385	1462	652
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.5	8.4	8.8	12.1	8.6	8.7	13.7	7.8	7.7	12.6	7.5	7.1
Incr Delay (d2), s/veh	0.6	0.1	0.4	0.3	0.3	0.3	3.9	0.2	0.3	0.8	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.8	1.1	1.1	1.0	1.0	2.6	1.2	1.0	1.1	0.9	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.1	8.5	9.3	12.4	8.9	9.0	17.6	8.0	8.0	13.4	7.6	7.2
LnGrp LOS	B	A	A	B	A	A	B	A	A	B	A	A
Approach Vol, veh/h		779			792			1128			775	
Approach Delay, s/veh		9.8			10.5			10.6			8.8	
Approach LOS		A			B			B			A	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	20.0	18.3	20.0	18.3
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	16.0	16.0	16.0	16.0
Max Q Clear Time (g_c+I1), s	18.0	12.5	15.8	12.6
Green Ext Time (p_c), s	0.0	1.4	0.1	1.7

Intersection Summary	
HCM 6th Ctrl Delay	10.0
HCM 6th LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	348	34	199	17	82	152	169	745	6	36	753	325
Future Volume (veh/h)	348	34	199	17	82	152	169	745	6	36	753	325
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	366	36	209	18	86	160	178	784	6	38	793	342
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	428	56	327	33	159	162	219	901	7	375	798	343
Arrive On Green	0.24	0.24	0.24	0.10	0.10	0.10	0.08	0.25	0.25	0.16	0.33	0.33
Sat Flow, veh/h	1795	236	1373	323	1546	1575	1795	3643	28	1795	2432	1047
Grp Volume(v), veh/h	366	0	245	104	0	160	178	385	405	38	584	551
Grp Sat Flow(s),veh/h/ln	1795	0	1609	1869	0	1575	1795	1791	1880	1795	1791	1687
Q Serve(g_s), s	17.5	0.0	12.3	4.7	0.0	9.1	4.6	18.5	18.5	0.0	29.1	29.2
Cycle Q Clear(g_c), s	17.5	0.0	12.3	4.7	0.0	9.1	4.6	18.5	18.5	0.0	29.1	29.2
Prop In Lane	1.00		0.85	0.17		1.00	1.00		0.01	1.00		0.62
Lane Grp Cap(c), veh/h	428	0	384	192	0	162	219	443	465	375	588	554
V/C Ratio(X)	0.85	0.00	0.64	0.54	0.00	0.99	0.81	0.87	0.87	0.10	0.99	1.00
Avail Cap(c_a), veh/h	679	0	609	192	0	162	221	586	615	375	588	554
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.6	0.0	30.6	38.2	0.0	40.1	39.2	32.3	32.3	31.6	30.0	30.0
Incr Delay (d2), s/veh	3.5	0.0	0.7	1.7	0.0	67.3	18.8	8.8	8.4	0.0	35.2	37.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.8	0.0	4.7	2.2	0.0	6.5	4.9	8.9	9.3	0.7	17.7	17.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.2	0.0	31.3	39.9	0.0	107.4	58.0	41.1	40.8	31.6	65.2	67.1
LnGrp LOS	D	A	C	D	A	F	E	D	D	C	E	E
Approach Vol, veh/h		611			264			968			1173	
Approach Delay, s/veh		34.2			80.8			44.1			65.0	
Approach LOS		C			F			D			E	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	19.3	27.9		27.5	12.1	35.0		15.0
Change Period (Y+Rc), s	* 5.2	* 5.7		* 6.1	* 5.2	* 5.6		5.8
Max Green Setting (Gmax), s	* 7	* 29		* 34	* 7	* 29		9.2
Max Q Clear Time (g_c+I1), s	12.6	20.5		19.5	6.6	31.2		11.1
Green Ext Time (p_c), s	0.0	1.4		0.6	0.0	0.0		0.0

Intersection Summary	
HCM 6th Ctrl Delay	53.4
HCM 6th LOS	D

Notes

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

Intersection	
Int Delay, s/veh	7.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	120	182	202	119	105	234
Future Vol, veh/h	120	182	202	119	105	234
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	75	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	126	192	213	125	111	246

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	318	0	773	222
Stage 1	-	-	-	-	222	-
Stage 2	-	-	-	-	551	-
Critical Hdwy	-	-	4.11	-	6.41	6.21
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	-	-	2.209	-	3.509	3.309
Pot Cap-1 Maneuver	-	-	1248	-	369	820
Stage 1	-	-	-	-	817	-
Stage 2	-	-	-	-	579	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1248	-	301	820
Mov Cap-2 Maneuver	-	-	-	-	301	-
Stage 1	-	-	-	-	667	-
Stage 2	-	-	-	-	579	-

Approach	EB	WB	NB
HCM Control Delay, s	0	5.3	15.1
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	301	820	-	-	1248	-
HCM Lane V/C Ratio	0.367	0.3	-	-	0.17	-
HCM Control Delay (s)	23.7	11.3	-	-	8.5	0
HCM Lane LOS	C	B	-	-	A	A
HCM 95th %tile Q(veh)	1.6	1.3	-	-	0.6	-

Intersection	
Int Delay, s/veh	5.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	106	62	423	100	56	427
Future Vol, veh/h	106	62	423	100	56	427
Conflicting Peds, #/hr	1	1	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	112	65	445	105	59	449

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1067	500	0	0	551	0
Stage 1	499	-	-	-	-	-
Stage 2	568	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	246	571	-	-	1019	-
Stage 1	610	-	-	-	-	-
Stage 2	567	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	227	570	-	-	1018	-
Mov Cap-2 Maneuver	227	-	-	-	-	-
Stage 1	562	-	-	-	-	-
Stage 2	566	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	34.6	0	1
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	292	1018	-
HCM Lane V/C Ratio	-	-	0.606	0.058	-
HCM Control Delay (s)	-	-	34.6	8.8	0
HCM Lane LOS	-	-	D	A	A
HCM 95th %tile Q(veh)	-	-	3.7	0.2	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	204	482	0	88	482	1	92	172	39	106	168	172
Future Volume (veh/h)	204	482	0	88	482	1	92	172	39	106	168	172
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	0.93		0.96	0.99		0.96	0.98		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	215	507	0	93	507	1	97	181	41	112	177	181
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	409	573	0	438	571	1	154	352	80	270	199	204
Arrive On Green	0.16	0.30	0.00	0.17	0.30	0.30	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	1795	1885	0	1795	1881	4	1017	1474	334	1140	834	853
Grp Volume(v), veh/h	215	507	0	93	0	508	97	0	222	112	0	358
Grp Sat Flow(s),veh/h/ln	1795	1885	0	1795	0	1884	1017	0	1808	1140	0	1688
Q Serve(g_s), s	6.3	15.5	0.0	0.0	0.0	15.5	2.0	0.0	6.4	5.7	0.0	12.4
Cycle Q Clear(g_c), s	6.3	15.5	0.0	0.0	0.0	15.5	14.4	0.0	6.4	12.1	0.0	12.4
Prop In Lane	1.00		0.00	1.00		0.00	1.00		0.18	1.00		0.51
Lane Grp Cap(c), veh/h	409	573	0	438	0	572	154	0	431	270	0	403
V/C Ratio(X)	0.53	0.89	0.00	0.21	0.00	0.89	0.63	0.00	0.51	0.41	0.00	0.89
Avail Cap(c_a), veh/h	417	769	0	438	0	768	154	0	431	270	0	403
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	20.3	20.0	0.0	20.6	0.0	20.0	29.8	0.0	19.9	25.2	0.0	22.2
Incr Delay (d2), s/veh	0.5	7.9	0.0	0.1	0.0	8.1	6.2	0.0	0.5	0.4	0.0	20.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	7.4	0.0	1.0	0.0	7.4	1.6	0.0	2.6	1.5	0.0	6.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.8	27.9	0.0	20.7	0.0	28.2	36.1	0.0	20.4	25.6	0.0	42.4
LnGrp LOS	C	C	A	C	A	C	D	A	C	C	A	D
Approach Vol, veh/h		722			601			319			470	
Approach Delay, s/veh		25.8			27.0			25.2			38.4	
Approach LOS		C			C			C			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	16.6	23.7		20.0	15.9	24.4		20.0
Change Period (Y+Rc), s	6.1	* 5.4		* 5.6	* 6.2	* 6.1		* 5.6
Max Green Setting (Gmax), s	10.0	* 25		* 14	* 10	* 25		* 14
Max Q Clear Time (g_c+I1), s	2.0	17.5		14.4	8.3	17.5		16.4
Green Ext Time (p_c), s	0.1	0.8		0.0	0.1	0.8		0.0

Intersection Summary	
HCM 6th Ctrl Delay	28.8
HCM 6th LOS	C

Notes

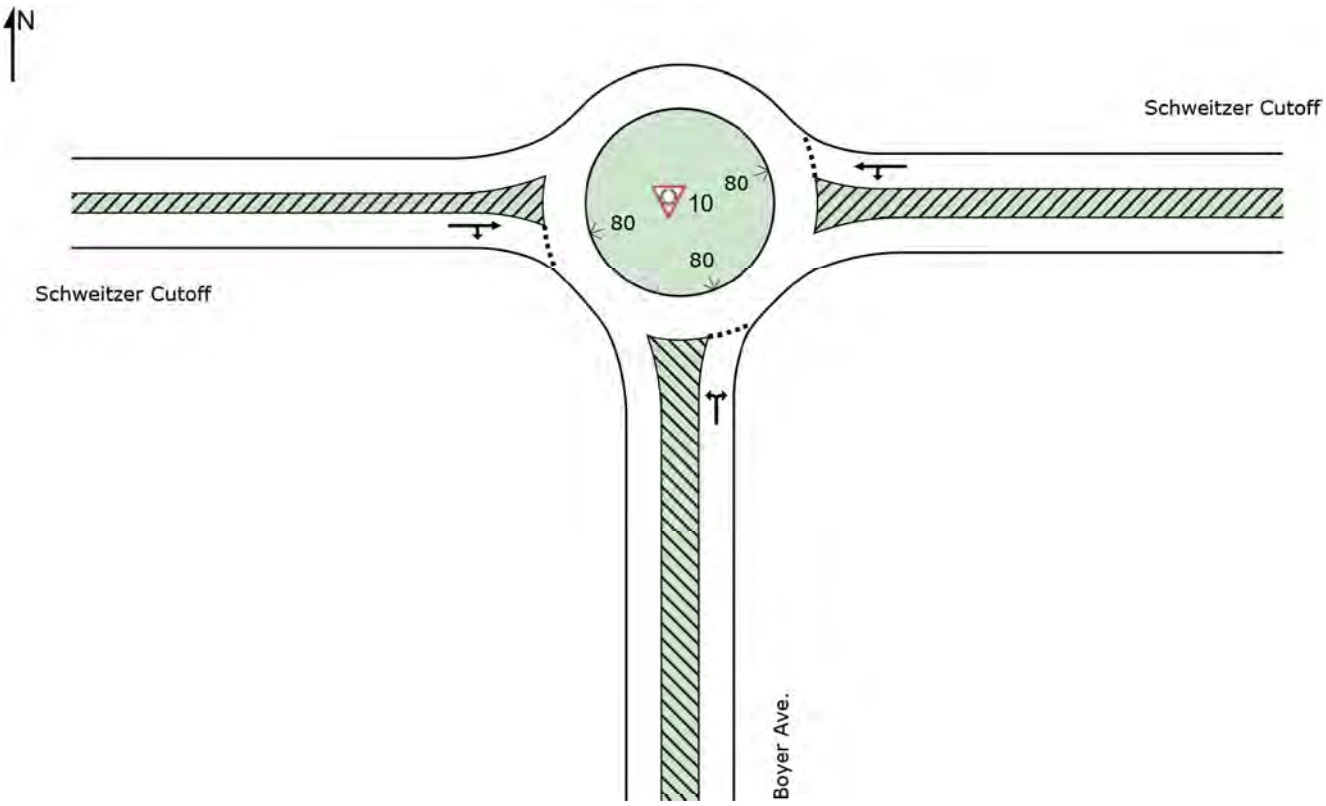
User approved pedestrian interval to be less than phase max green.

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

SITE LAYOUT

Site: 10 [Background plus Project Conditions (2030) PM - Schweitzer Cutoff. - Boyer Ave.]

Schweitzer/Boyer roundabout
2030 Background plus Project PM Peak Hour
Site Category: (None)
Roundabout



SIDRA INTERSECTION 8.0 | Copyright © 2000-2018 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: DAVID EVANS & ASSOCIATES INC | Created: Tuesday, April 28, 2020 4:25:29 PM
Project: P:\K\KMEP00000001\0600INFO\TT\Synchro\Phase_3_TIA\Sidra\Schweitzer_Boyer_Base..sip8

MOVEMENT SUMMARY

Site: 10 [Background plus Project Conditions (2030) PM - Schweitzer Cutoff. - Boyer Ave.]

Schweitzer/Boyer roundabout
2030 Background plus Project PM Peak Hour
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: Boyer Ave.												
3	L2	68	1.0	0.564	4.1	LOS A	4.7	118.9	0.71	0.63	0.75	16.6
18	R2	517	1.0	0.564	2.8	LOS A	4.7	118.9	0.71	0.63	0.75	15.7
Approach		585	1.0	0.564	3.0	LOS A	4.7	118.9	0.71	0.63	0.75	15.8
East: Schweitzer Cutoff												
1	L2	403	7.0	0.485	1.7	LOS A	3.9	103.4	0.34	0.24	0.34	16.6
6	T1	193	7.0	0.485	0.5	LOS A	3.9	103.4	0.34	0.24	0.34	15.7
Approach		596	7.0	0.485	1.3	LOS A	3.9	103.4	0.34	0.24	0.34	16.3
West: Schweitzer Cutoff												
2	T1	363	1.0	0.449	2.5	LOS A	2.9	73.8	0.64	0.52	0.64	15.7
12	R2	94	1.0	0.449	2.5	LOS A	2.9	73.8	0.64	0.52	0.64	15.7
Approach		457	1.0	0.449	2.5	LOS A	2.9	73.8	0.64	0.52	0.64	15.7
All Vehicles		1638	3.2	0.564	2.3	LOS A	4.7	118.9	0.56	0.46	0.57	15.9

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

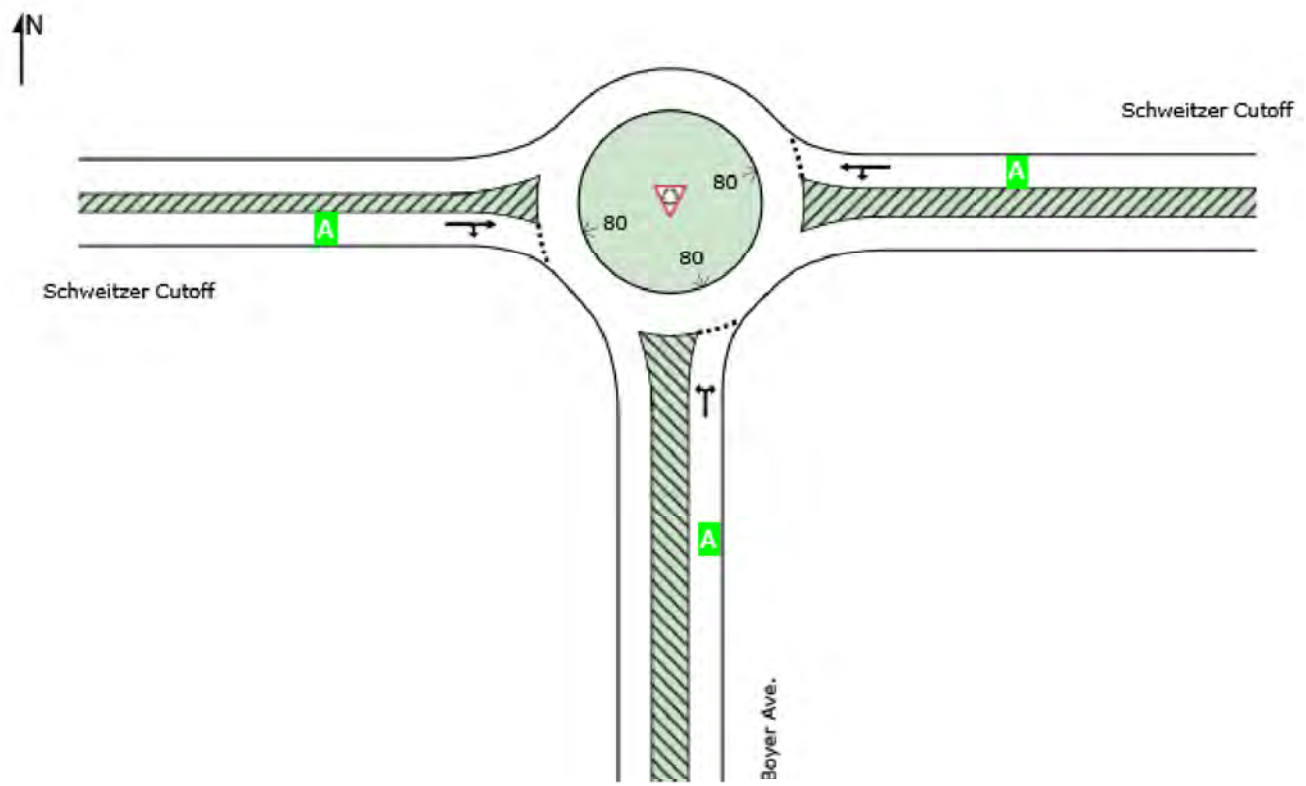
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 10 [Background plus Project Conditions (2030) PM - Schweitzer Cutoff. - Boyer Ave.]

Schweitzer/Boyer roundabout
2030 Background plus Project PM Peak Hour
Site Category: (None)
Roundabout

	Approaches			Intersection
	South	East	West	
LOS	A	A	A	A



Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	20	37	0	14	0	22	0	0	0	0	0
Future Vol, veh/h	0	20	37	0	14	0	22	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	21	39	0	15	0	23	0	0	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	15	0	0	60	0	0	56	56	41	56	75	15
Stage 1	-	-	-	-	-	-	41	41	-	15	15	-
Stage 2	-	-	-	-	-	-	15	15	-	41	60	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1603	-	-	1544	-	-	941	835	1030	941	815	1065
Stage 1	-	-	-	-	-	-	974	861	-	1005	883	-
Stage 2	-	-	-	-	-	-	1005	883	-	974	845	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1603	-	-	1544	-	-	941	835	1030	941	815	1065
Mov Cap-2 Maneuver	-	-	-	-	-	-	941	835	-	941	815	-
Stage 1	-	-	-	-	-	-	974	861	-	1005	883	-
Stage 2	-	-	-	-	-	-	1005	883	-	974	845	-

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

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	941	1603	-	-	1544	-	-	-
HCM Lane V/C Ratio	0.025	-	-	-	-	-	-	-
HCM Control Delay (s)	8.9	0	-	-	0	-	-	0
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	-

Intersection	
Int Delay, s/veh	3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	20	0	2	12	0
Future Vol, veh/h	0	20	0	2	12	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	21	0	2	13	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	21	0	13	11
Stage 1	-	-	-	-	11	-
Stage 2	-	-	-	-	2	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1595	-	1006	1070
Stage 1	-	-	-	-	1012	-
Stage 2	-	-	-	-	1021	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1595	-	1006	1070
Mov Cap-2 Maneuver	-	-	-	-	1006	-
Stage 1	-	-	-	-	1012	-
Stage 2	-	-	-	-	1021	-

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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1006	-	-	1595	-
HCM Lane V/C Ratio	0.013	-	-	-	-
HCM Control Delay (s)	8.6	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	8	511	16	14	483
Future Vol, veh/h	10	8	511	16	14	483
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	8	538	17	15	508

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1085	547	0	0	555	0
Stage 1	547	-	-	-	-	-
Stage 2	538	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	240	537	-	-	1015	-
Stage 1	580	-	-	-	-	-
Stage 2	585	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	236	537	-	-	1015	-
Mov Cap-2 Maneuver	236	-	-	-	-	-
Stage 1	571	-	-	-	-	-
Stage 2	585	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.9	0	0.2
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	236	537	1015	-
HCM Lane V/C Ratio	-	-	0.045	0.016	0.015	-
HCM Control Delay (s)	-	-	21	11.8	8.6	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	0	-

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	0	4	52	0	32	1	480	63	40	439	14
Future Vol, veh/h	15	0	4	52	0	32	1	480	63	40	439	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	65	-	-	100	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	0	4	55	0	34	1	505	66	42	462	15

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1111	1127	470	1096	1101	538	477	0	0	571	0	0
Stage 1	554	554	-	540	540	-	-	-	-	-	-	-
Stage 2	557	573	-	556	561	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	186	205	594	191	212	543	1085	-	-	1002	-	-
Stage 1	517	514	-	526	521	-	-	-	-	-	-	-
Stage 2	515	504	-	515	510	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	169	196	594	183	203	543	1085	-	-	1002	-	-
Mov Cap-2 Maneuver	169	196	-	183	203	-	-	-	-	-	-	-
Stage 1	516	492	-	525	520	-	-	-	-	-	-	-
Stage 2	483	503	-	490	489	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	24.8	25	0	0.7
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1085	-	-	169	594	183	543	1002	-	-
HCM Lane V/C Ratio	0.001	-	-	0.093	0.007	0.299	0.062	0.042	-	-
HCM Control Delay (s)	8.3	-	-	28.5	11.1	32.9	12.1	8.8	-	-
HCM Lane LOS	A	-	-	D	B	D	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0	1.2	0.2	0.1	-	-