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Paint Brush Hills Filing 13E
PCD File No: SF 189
Traffic Impact Analysis
(LSC #184670)
September 28, 2018

Traffic Engineer's Statement

This traffic report and supporting information were prepared under my responsible charge and they comport with the standard of care. So far as is consistent with the standard of care, said report was prepared in general conformance with the criteria established by the County for traffic reports.

Developer's Statement

I, the Developer, have read and will comply with all commitments made on my behalf within this report.

_____ _____

Date

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September 28, 2018

Mr. Jeff Mark
The Landhuis Company
212 North Wahsatch Avenue, Suite 301
Colorado Springs, CO 80903

RE: Paint Brush Hills Filing 13E
PCD File No: SF 189
El Paso County, Colorado
Traffic Impact Analysis
LSC #184630

Dear Mr. Mark:

In response to your request, LSC Transportation Consultants, Inc. has prepared this traffic impact analysis for the proposed Paint Brush Hills Filing 13E residential development in El Paso County, Colorado. As shown in Figure 1, the site is located northwest of the north Londonderry Drive/ Towner Avenue intersection in unincorporated El Paso County.

REPORT CONTENTS

This report is being prepared as part of a submittal to El Paso County. It identifies the traffic impacts of this development. The report contains the following:

- Existing street conditions.
- Projections of short-term (2023) and long-term (2040) baseline/background traffic volumes.
- The projected average weekday and peak-hour vehicle-trips to be generated by the site.
- The assignment of the site's projected traffic volumes to the key area streets and intersections for the short and long term and the resulting total traffic volumes for the short and long term.
- The resulting traffic impacts including level of service analysis at key intersections and average daily traffic volumes on key street sections in the vicinity of the site.
- Recommended classification for all subdivision streets.
- Recommended lane configuration for the site access points to Londonderry Drive.

PREVIOUS TRAFFIC IMPACT STUDIES

LSC has completed the following traffic studies for Paint Brush Hills (previously Falcon Hills):

- **Falcon Hills Traffic Impact Study -** April 8, 2004: This study included analysis of all of the vacant areas west of Meridian Road and north of Stapleton Drive. Since completion of that report, Falcon Middle School has been completed on the parcel shown as "Falcon High School" in the 2004 report. An elementary school will be constructed in this area; however, it will be placed just north of Falcon Middle School rather than northwest of the north Londonderry Drive/Towner intersection. The key tables and figures from that report have been attached for reference.

- **Paint Brush Hills Filing 13A -** May 14, 2014: The 17 single-family homes in Filing 13A located south of Londonderry Drive and east of Towner Avenue have all been constructed since completion of this report.

- **Paint Brush Hills Filing 13B** - March 26, 2014: This report assumed lots for 21 single-family homes to be located north of Londonderry Drive and west of Towner Avenue. This is the same number of units as assumed for this area in the 2004 overall study. Some of the lots in this filing are currently under construction but none are currently occupied.

- **Scenic View at Paint Brush Hills** - April 7, 2014: This report assumed lots for 90 single-family homes northeast of the intersection of Stapleton Drive and Towner Avenue. Since completion of that report all of the homes have been built in the Scenic View development.

- **Paint Brush Hills Filings 13C-13F** - September 25, 2014: This report was superseded by the Paint Brush Hills Filings 13C and 13D report described below.

- **Paint Brush Hills Filings 13C and 13D** - January 9, 2017: This report assumed lots for 232 single-family homes west of Towner Avenue between the north and south portions of Londonderry Drive. Some of the lots within these filings are currently under construction but none are currently occupied.

- **D-49 Elementary School** - May 30, 2017: This report analyzed an elementary school to be located southeast of the north intersection of Londonderry Drive and Towner Avenue. At buildout the school will support up to 900 students.

- **Paint Brush Hills Filing 14** - July 16, 2018: This report assumed 224 single-family homes north and just west of the currently proposed Paint Brush Hills Filing 13E. This study is currently under review.

Table 1 contains a summary of the land uses assumed for the areas west of Meridian Road and north of Stapleton Drive in the 2004 report and the latest traffic impact study completed by LSC in the area (D-49 Elementary School). Figure 2 shows the site plan and traffic analysis zones (TAZ) assumed in the 2004 study.

LAND USE AND ACCESS

Figure 2 shows the currently existing, approved, and currently proposed developments in the areas west of Meridian Road and north of Stapleton Drive. The currently proposed Paint Brush Hills Filing 13E is located northwest of the north intersection of Londonderry Drive and Towner Avenue. There are existing single-family homes north, west, and south of the site. The currently vacant area west of the site is planned to contain 224 lots for single-family homes to be platted as Paint Brush Hills Filing 14.

Filing 13E is planned to contain 258 single-family homes. Access for the 58 lots west of the power lines is proposed to Londonderry Drive via an extension of Keating Drive north of Rockingham Drive and via a new full-movement access to Londonderry Drive aligning with Devoncove Drive. Access for the 101 lots located east of the power lines is proposed to two full-movement access points to Londonderry Drive aligning with Beckham Street and about 302 feet west of Towner Avenue (749 feet east of Beckham Street). Additional access is proposed via Asbee Street on the north end of the development. The site plan is shown in Figure 3.

In the 2004 overall TIA the portion of Paint Brush Hills Filing 13 west of the power lines was included as part of TAZ 11 and the portion east of the power lines was included as TAZ 12. As shown in Table 1, the currently proposed plan for this filing includes about 114 more lots in the TAZ 11 area than was assumed in the 2004 overall TIA; however, all of the additional lots will be located in the west portion of this TAZ that are included in Paint Brush Hills Filing 14. The lots shown in the currently proposed Filing 13E are generally consistent with those assumed in the 2004 overall TIA. The 2004 overall TIA included 93 lots for single-family homes and an elementary school in TAZ 12. The school site is now located southeast of the north intersection of Towner Avenue and Londonderry Drive and the newly constructed Bennett Ranch Elementary School is now open. The currently proposed plan includes eight more single-family homes than shown in the 2004 TIA. Including other changes to the residential land uses within Paint Brush Hills made since completion of the 2004 report, the total number of dwelling units within the entire study area represents an increase of 14 dwelling units.

Changes have also been made to the commercial and educational land uses within the Paint Brush Hills development. The 2004 study included 8.8 acres on the north end of Towner Avenue that were assumed to be developed as a “shopping center” with 85,000 square feet of floor space. A 2.2-acre portion of this area is now included in the D-49 elementary school site and it is now thought that the remaining six acres will most likely be developed with a lower intensity land use such as a church with a daycare. The 2004 study assumed a high school with about 700 students and an elementary school with 500 students. Since completion of that study, Falcon Middle School was relocated to the former Falcon High School campus. The middle school current enrollment is about 900 students. The new Bennett Ranch Elementary School is planned to serve up to 900 students.

Sight Distance

Figure 4 shows the sight distance analysis for the three new intersections with Londonderry Drive. Based on the design speed of 40 miles per hour the required intersection sight distance at the new access points is 445 feet and the required stopping sight distance for westbound traffic on Londonderry Drive is 305 feet. As shown on the figure there is adequate sight distance for the intersections that align with Devoncove Drive and Beckham Street. The required intersection sight distance line of sight for the access 302 feet west of Tonwer Avenue extends beyond Towner Avenue. Vehicles approaching this intersection following a northbound left-turn from Towner Avenue will be traveling at a slower speed than 35 mph when seen by motorist at the access.

Pedestrian and Bicycle Route Analysis

Figure 5 shows a pedestrian and bicycle route analysis for the school. There are currently no sidewalks adjacent to Londonderry Drive. Sidewalks may need to be constructed on the north side of Londonderry Drive from Rockingham Drive to the school crossing for Bennett Ranch Elementary School just west of Tottenham Court. A designated school pedestrian crossing should be added on the west leg of the Londonderry/Towner intersection or the west leg of the east site access to Lodonderry.

ROADWAY AND TRAFFIC CONDITIONS

Area Roadways

The area roadways in the site's vicinity are shown on Figures 1 and are described below.

- **Londonderry Drive** is a two-lane Urban Residential Collector that currently extends west from Eastonville Road to Towner Avenue and then loops to the south to intersect Towner Avenue again about one-half mile to the south. The posted speed limit adjacent to the site is 35 miles per hour (mph).

- **Meridian Road** extends north from South Blaney Road to County Line Road. Meridian Road is shown as a four-lane Minor Arterial south of Rex Road and north of Stapleton Drive and a two-lane Minor Arterial north of Rex Road on the *El Paso County Major Transportation Corridors Plan (MTCP)* and *El Paso County Corridor Preservation Plan (CPP)*. Meridian has been upgraded to four lanes between Stapleton and Indian Paint Trail with a PPRTA project.

- **Stapleton Drive** is classified as a four-lane Urban Principal Arterial on the El Paso County MTCP. However, Stapleton Drive in the vicinity of the site is a two-lane roadway. Stapleton Drive extends east from just west of Towner Drive across US Highway 24 to Curtis Road. Longer-term plans show Stapleton extended west to connect with Briargate.

- **Towner Avenue** is a 40-foot-wide Urban Residential Collector street (within Paint Brush Hills) that extends south from Londonderry Drive to just south of Woodmen Hills Drive. The posted speed limit is 35 miles per hour.

Existing Traffic

Figure 6 shows the recent traffic volumes at the intersections of Londonderry Drive and Towner Avenue (north and south) and Stapleton Drive and Towner Avenue. These traffic volumes are based on traffic counts conducted by LSC in May and September 2018. The traffic count reports are attached.

Existing Levels of Service

Level of service (LOS) is a quantitative measure of the level of congestion or delay at an intersection. Level of service is indicated on a scale from "A" to "F." LOS A represents control delay of less than 10 seconds for unsignalized and signalized intersections. LOS F represents control delay of more than 50 seconds for unsignalized intersections and more than 80 seconds for signalized intersections. Table 2 shows the level of service delay ranges.

Table 2

Intersection Levels of Service Delay Ranges

Level of Service	Signalized Intersections		Unsignalized Intersections
	Average Control Delay (seconds per vehicle)	V/C[1]	Average Control Delay (seconds per vehicle)[2]
A	10.0 sec or less	less than 0.60	10.0 sec or less
B	10.1-20.0 sec	0.60-0.69	10.1-15.0 sec
C	20.1-35.0 sec	0.70-0.79	15.1-25.0 sec
D	35.1-55.0 sec	0.80-0.89	25.1-35.0 sec
E	55.1-80.0 sec	0.90-0.99	35.1-50.0 sec
F	80.1 sec or more	1.00 and greater	50.1 sec or more

(1) Source: *Transportation Research Circular 212*
(2) For unsignalized intersections if V/C ratio is greater than 1.0 the level of service is LOS F regardless of the projected average control delay per vehicle.

The intersections of Londonderry Drive and Towner Avenue (north and south intersections) and Stapleton Drive and Towner Avenue were analyzed to determine the existing levels of service using the unsignalized method of analysis procedures outlined in the *Highway Capacity Manual, 6th Edition* by the Transportation Research Board. Figure 6 shows the level of service analysis results. As shown on the figure, all movements these intersections are level of service C or better during the peak hours. The level of service (LOS) reports are attached.

TRIP GENERATION

The site-generated vehicle-trips were estimated using the nationally published trip generation rates from *Trip Generation, 10th Edition, 2017* by the Institute of Transportation Engineers (ITE).

Table 3 shows a comparison of the trip generation estimates for the portion of the Paint Brush Hills development served by Londonderry Drive from the *Falcon Hills Traffic Impact Analysis* by LSC dated April 8, 2004, a trip generation estimate for those same areas assumed in the *D-49 Elementary School Traffic Impact Analysis* by LSC dated May 30, 2017 and an estimate based on the existing, approved, currently proposed and future land uses for this area. As shown on the table the current trip generation estimate is much lower than the estimate assumed in the *Falcon Hills Traffic Impact Analysis*. The largest differences are due to the land use assumptions for the commercial parcel located southwest of the Towner/Londonderry (north) intersection. The current trip generation estimate shows about 935 more vehicles per day than the estimate assumed in the D49 Elementary School report. This increase is due to a currently proposed increase in the number of lots for Filing 14 located just west of the site.

Table 4 shows the trip generation estimate for Filing 13 E only. As shown on Table 4, Filing 13E is expected to generate about 1,492 vehicle-trips on the average weekday, with about half entering and half exiting the site during a 24-hour period. During the morning peak hour, which generally occurs for one hour between 6:30 and 8:30 a.m., about 29 vehicles would enter and 88 vehicles would exit the site. During the afternoon peak hour, which generally occurs for one hour between 4:15 and 6:15 p.m., about 99 vehicles would enter and 58 vehicles would exit the site.

BACKGROUND TRAFFIC

Background traffic is the traffic estimated to be on the area streets and roadways without consideration of the proposed development. Figure 7 shows the projected background traffic volumes for the short term (2023). These background traffic volumes were based on estimates of traffic projected to be generated (or currently generated) by Paint Brush Hills Filing 4 through Filing 13D, Scenic View at Paint Brush Hills, Falcon Middle School, and the recently opened D49 elementary school. The short-term background volumes do not include traffic projected to be generated by Paint Brush Hills Filing 14 located just west of the site. The traffic volumes for the developments not yet built out were taken from their respective traffic studies completed by LSC. The short-term scenario assumes Stapleton Drive not yet extended west from its current terminus.

Figure 8 shows the projected 2040 background traffic volumes. These volumes assume buildout of the Paint Brush Hills development. The volumes assume about 20 percent of the traffic estimated to be generated by Paint Brush Hills Filing 14 will utilize the Filing 13E streets to access the intersection of Devoncove/Londonderry. The 2040 background traffic volumes also assume Stapleton Drive has been extended west. Although future background volumes are often estimated using growth rates, this method is not applicable for this study. Only traffic generated by uses within the Paint Brush Hills development are anticipated to use Towner Drive north of

Stapleton Drive and Londonderry Drive west of Towner Drive. Future traffic using these streets was estimated by first adjusting the existing traffic volumes to reroute them to new paths following the extension of Stapleton Drive to the east and second adding estimates of future traffic to be generated by buildout of parcels within Paint Brush Hills. Estimates of future traffic has been based on the trip generation estimate shown in Table 3. A growth factor is also not able to be applied to Stapleton Drive as it currently terminates at Towner Avenue. Through traffic on Stapleton Drive has been estimated by LSC based on traffic studies completed in the area and the current *Major Transportation Corridors Plan*.

DIRECTIONAL DISTRIBUTION

The directional distribution of the site-generated traffic volumes on the area roadways is an important factor in determining the site's traffic impacts. Figure 9 shows the short-term and long-term external directional distribution estimates for the site-generated traffic volumes. The estimates have been based on the following factors: the site's location with respect to the nearby employment, commercial, schools, and activity centers and the balance of the Falcon and Colorado Springs metropolitan area; the site's proposed land use; the site's proposed access points; and the phasing of the existing and future roadway system serving the site. The long-term distribution takes into account the extension of Stapleton west to Briargate Parkway.

SITE-GENERATED TRAFFIC

Figures 10 and 11 show the projected short-term and long-term site-generated traffic volumes, respectively. The site-generated traffic volumes were calculated by applying the directional distribution percentages (from Figure 9) to the trip generation estimates from Table 4.

TOTAL TRAFFIC

Figure 12 shows the projected short-term total traffic volumes. The short-term total traffic volumes are the sum of the short-term background traffic volumes (from Figure 7) plus the short-term site-generated traffic volumes from Figure 10.

Figure 13 shows the projected 2040 total traffic volumes. The 2040 total traffic volumes are the sum of the 2040 background traffic volumes (from Figure 8) plus the long-term site-generated traffic volumes from Figure 11.

PROJECTED LEVELS OF SERVICE

The key area intersections were analyzed to determine the projected levels of service for the background and total traffic volumes based on the unsignalized method of analysis procedures from the *Highway Capacity Manual, 6th Edition* by the Transportation Research Board. Figures 7, 8, 12, and 13 show the level of service analysis results. The level of service reports are attached.

Towner/Stapleton

The intersection of Towner/Stapleton is currently all-way Stop-sign controlled. All movements at this intersection are projected to operate at LOS B or better during peak hours based on the projected short-term total traffic volumes. By 2040 it was assumed that Stapleton Drive would be extended west as Briargate Parkway and this intersection would become four-way signal controlled. As a signalized intersection all movements are projected to operate at LOS D or better for all movements during the peak hours.

Towner/Londonderry

All movements at the north and south intersections of Towner/Londonderry are projected to operate at LOS D or better during the peak hours based on the projected short-term and 2040 total traffic volumes.

There seems to be a disconnect with the construction drawings. The construction drawings and plat identifies Keating Drive and Asbee as a Residential Collector.

Include Keating Drive and Devoncove Drive in the Area Roadways section (pg 4).

1. Did PBH Filing 11 intend Keating Drive to be a collector road? This results in a collector road that does not seem to connect to a similar or higher road classification.
2. Based on future filing 14 to the west, should Devoncove Drive be constructed as a residential collector?

Londonderry Intersections

All of the site access intersections to Londonderry Drive are projected to operate at LOS B or better for all movements based on the projected short-term and 2040 total traffic volumes as one-way stop sign controlled intersections.

STREET CLASSIFICATIONS

All of the Paint Brush Hills Filing 13E internal streets should be classified as Urban Local.

CONCLUSIONS AND RECOMMENDATIONS

Trip Generation

- Filing 13E is expected to generate about 1,492 vehicle-trips on the average weekday, with about half entering and half exiting the site during a 24-hour period. During the morning peak hour about 29 vehicles would enter and 88 vehicles would exit the site. During the afternoon peak hour about 99 vehicles would enter and 58 vehicles would exit the site.

Street Link Average Daily Traffic (ADT)

- Londonderry Drive and Towner Avenue are both classified as Urban Residential Collector streets. The design ADT for an Urban Residential Collector is 10,000 vehicles per day. As shown in Figure 12 the projected buildout ADT on Londonderry Drive is about 4,015 vehicles per day just west of the north Towner Avenue intersection and 7,960 vehicles per day just east of that intersection. The projected buildout ADT on Towner Avenue is 5,175 just south of the north intersection of Londonderry/Towner and 9,575 vehicles per day just north of Stapleton Drive.

Level of Service

- The intersection of Stapleton/Towner is currently all-way Stop-sign controlled. All movements at this intersection are projected to operate at LOS B or better during peak hours based on the projected short-term total traffic volumes. By 2040 it was assumed that Stapleton Drive would be extended west as Briargate Parkway and this intersection would become a four-way signal controlled. As a signalized intersection all movements are projected to operate at LOS D or better for all movements during the peak hours.

- All movements at the north and south intersections of Towner/Londonderry are projected to operate at LOS D or better during the peak hours based on the projected short-term total traffic volumes.

- The intersections of Rockingham Drive/Londonderry Drive, Devoncove Drive/Londonderry Drive, Beckham Street/Londonderry Drive, and the east site access to Londonderry Drive are projected to operate at LOS B or better for all movements based on the projected short-term and 2040 total traffic volumes as two-way stop-sign-controlled intersections.

Intersection Lane Configurations

- Based on the criteria contained in the *El Paso County Engineering Criteria Manual (ECM)* and the projected short-term and 2040 total traffic volumes, no auxiliary turn lanes would be required on Londonderry Drive approaching the east site access, Beckham Street and Devoncove Drive.

- Based on the criteria contained in the *El Paso County Engineering Criteria Manual (ECM)* and the projected 2040 total traffic volumes, a northbound left-turn lane would be required on Londonderry Drive approaching Rockingham Drive. This lane would not be required based on the short-term total traffic volumes which do not include traffic projected to be generated by Paint Brush Hills Filing 14. Londonderry Drive is currently 40 feet wide in the vicinity of this intersection and could be restriped to provide a northbound left-turn lane, if necessary.

- Based on the criteria contain in the ECM and the projected 2040 total traffic volumes, a southbound right-turn deceleration lane would be required on Londonderry Drive approaching Rockingham Drive based on the projected right-turn volume. However, at this particular location, the westbound through volume is low and is projected to remain low at buildout. Although the ECM does not have a provision for waiving the need for a right-turn deceleration lane when the through traffic is below a certain level, the State of Colorado Highway Access code provides a waiver to right-turn lane requirements when the 20th year predicted volume in the travel lane is below 150 vehicles per hour. As the southbound traffic volume is projected to be only 87 vehicles per hour, LSC recommends that the requirement for a right-turn deceleration lane be waived. The County may require the submittal of a deviation request form. This lane would not be required based on the short-term total traffic volumes, which do not include traffic projected to be generated by Paint Brush Hills Filing 14.

Include an exhibit with the Traffic impact study showing the anticipated reconfiguration of Londonderry Drive to verify if sufficient ROW is available for a southbound right turn deceleration lane. If not the plat may need to provide additional ROW for this future auxiliary lane.

Proposed Subdivision Street Classifications

- All proposed subdivision streets will be classified as Urban Local streets.

County Road Impact Fee

- The applicant will be required to participate in the County Road Impact Fee Program. Assuming this development joins the ten-mil PID, the building permit fee portion is $923 per single-family dwelling unit. The net fee for the proposed 224 lots in Filing 13E would be $145,834.

158 lots per the filing 13E plat.

* * * * *

Please contact me if you have any questions or need further assistance.

Sincerely,

LSC TRANSPORTATION CONSULTANTS, INC.

By: Jeffrey C. Hodsdon, P.E., PTOE
Principal

JCH:KDF:bjwb

Enclosures: Tables 1, 3-4
Figures 1-13
Traffic Count Reports
Level of Service Reports
Key tables and figures from Falcon Hills Traffic Impact Study dated April 8, 2004

Table 1
Paintbrush Hills
Land Use Comparison

Falcon Hills Traffic Impact Analysis April 8, 2004 Scenario 2				D-49 Elementary School Traffic Impact Analysis May 30, 2017				Existing, Approved, Currently Proposed or Future					Change From 2004		From 2017	
Traffic Analysis Zone	**Land Use**	**Quantity**	**Unit**	**Filing Name**	**Land Use**	**Quantity**	**Unit**	**Filing Name**	**Status**	**Land Use**	**Quantity**	**Unit**	**Quantity**	**Unit**	**Quantity**	**Unit**
1	Single-Family Detached Housing	194	DU[1]	Paintbrush Hills Fil 4	Single-Family Detached Housing	164	DU	Paintbrush Hills Fil 4	Built Out	Single-Family Detached Housing	164	DU	1	DU	0	DU
				Paintbrush Hills Fil 5	Single-Family Detached Housing	31	DU	Paintbrush Hills Fil 5	Built Out	Single-Family Detached Housing	31	DU		DU	0	DU
2	Single-Family Detached Housing	303	DU	Paintbrush Hills Fil 6	Single-Family Detached Housing	48	DU	Paintbrush Hills Fil 6	Built Out	Single-Family Detached Housing	48	DU	-2	DU	0	DU
	Single-Family Detached Housing		DU	Paintbrush Hills Fil 7	Single-Family Detached Housing	57	DU	Paintbrush Hills Fil 7	Built Out	Single-Family Detached Housing	57	DU		DU	0	DU
	Single-Family Detached Housing		DU	Paintbrush Hills Fil 8	Single-Family Detached Housing	108	DU	Paintbrush Hills Fil 8	Built Out	Single-Family Detached Housing	108	DU		DU	0	DU
	Single-Family Detached Housing		DU	Paintbrush Hills Fil 9	Single-Family Detached Housing	88	DU	Paintbrush Hills Fil 9	Built Out	Single-Family Detached Housing	88	DU		DU	0	DU
3	High School	706	Students	Falcon Middle School	Middle School	900	Students	Falcon Middle School	Built Out	Middle School	900	Students	- - -		- - -	
4	Single-Family Detached Housing	41	DU	Paintbrush Hills Fil 10 (East)	Single-Family Detached Housing	41	DU	Paintbrush Hills Fil 10 (East)	Built Out	Single-Family Detached Housing	41	DU	0	DU	0	DU
5	Single-Family Detached Housing	181	DU	Paintbrush Hills Fil 10 (West)	Single-Family Detached Housing	49	DU	Paintbrush Hills Fil 10 (West)	Built Out	Single-Family Detached Housing	49	DU	-5	DU	0	DU
			DU	Paintbrush Hills Fil 11	Single-Family Detached Housing	81	DU	Paintbrush Hills Fil 11	Built Out	Single-Family Detached Housing	81	DU		DU	0	DU
			DU	Paintbrush Hills Fil 12	Single-Family Detached Housing	46	DU	Paintbrush Hills Fil 12	Built Out	Single-Family Detached Housing	46	DU		DU	0	DU
6	Apartments	180	DU	Scenic View at Paintbrush Hills	Single-Family Detached Housing	89	DU	Scenic View at Paintbrush Hills	Built Out	Single-Family Detached Housing	89	DU	-91	DU	0	DU
7	Single-Family Detached Housing	13	DU	- - -	- - -	- - -		- - -	- - -	- - -	- - -		-13	DU		DU
8	Shopping Center (8.2 acres)	82	KSF[2]	D-49 Elementary School	Elementary School	900	Students	D-49 Elementary School	Approved	Elementary School	900	Students	- - -		- - -	
				Future	Church with Day Care	6	Acres	Future	Future	Church with Day Care	6	Acres	- - -		- - -	
	Single-Family Detached Housing	33	DU	Paintbrush Hills Fil 13A	Single-Family Detached Housing	17	DU	Paintbrush Hills Fil 13A	Built Out	Single-Family Detached Housing	17	DU	-16	DU	0	DU
9	Single-Family Detached Housing	133	DU	Paintbrush Hills Fil 13B	Single-Family Detached Housing	21	DU	Paintbrush Hills Fil 13B	Under Construction	Single-Family Detached Housing	21	DU	23	DU	0	DU
			DU	Paintbrush Hills Fil 13C	Single-Family Detached Housing	135	DU	Paintbrush Hills Fil 13C	Under Construction	Single-Family Detached Housing	135	DU		DU	0	DU
10	Single-Family Detached Housing	102	DU	Paintbrush Hills Fil 13D	Single-Family Detached Housing	97	DU	Paintbrush Hills Fil 13D	Under Construction	Single-Family Detached Housing	97	DU	-5	DU	0	DU
11	Single-Family Detached Housing	167	DU	Paintbrush Hills Future Filing West	Single-Family Detached Housing	181	DU	Paintbrush Hills Fil 14	Under Review	Single-Family Detached Housing	224	DU	114	DU	100	DU
			DU					Paint Brush Hills Fil 13E	Proposed	Single-Family Detached Housing	57	DU		DU		DU
12	Single-Family Detached Housing	93	DU	Paintbrush Hills Future Filing East	Single-Family Detached Housing	102	DU	Paint Brush Hills Fil 13E	Proposed	Single-Family Detached Housing	101	DU	8	DU	-1	DU
	Elementary School	500	Students										- - -		- - -	
Total																
	Single-Family Detached Housing	1,260	DU		Single-Family Detached Housing	1,355	DU			Single-Family Detached Housing	1,454	DU	194	DU	99	DU
	Apartments	180	DU		Apartments	0	DU			Apartments	0	DU	-180	DU	0	DU
	Total Residential	1,440	DU		Total Residential	1,355	DU			Total Residential	1,454	DU	14	DU	99	DU
	Shopping Center	82	KSF		Shopping Center	0	KSF			Shopping Center	0	KSF	-82	KSF	0	KSF
	Church With Day Care	0	KSF		Church With Day Care	35	KSF			Church With Day Care	35	KSF	35	KSF	0	KSF
	School	1,206	Students		School	1,800	Students			School	1,800	Students	594	Students	0	Students

Notes:
(1) DU = dwelling unit
(2) KSF = thousand square feet of floor area

Source: LSC Transportation Consultants, Inc.

Table 3
Trip Generation Comparison
Paintbrush Hills Filing 14

Land Use Code	Land Use Description	Trip Generation Units	Trip Generation Rates [1] Average Weekday Traffic	Trip Generation Rates [1] Morning Peak Hour In	Trip Generation Rates [1] Morning Peak Hour Out	Trip Generation Rates [1] Afternoon Peak Hour In	Trip Generation Rates [1] Afternoon Peak Hour Out	Total Trips Generated Average Weekday Traffic	Total Trips Generated Morning Peak Hour In	Total Trips Generated Morning Peak Hour Out	Total Trips Generated Afternoon Peak Hour In	Total Trips Generated Afternoon Peak Hour Out
Falcon Hills Traffic Impact Analysis April 8, 2004												
210	Single-Family Detached Housing	1260 DU[2]	9.57	0.19	0.56	0.65	0.36	12,058	236	709	814	458
220	Apartment	180 DU	6.74	0.08	0.43	0.43	0.21	1,213	15	78	78	38
						Total Residential		**13,271**	**251**	**787**	**892**	**496**
820	Shopping Center	82 KSF[3]	73.17	1.06	0.68	3.22	3.49	6,000	87	55	264	286
						Grand Total		**32,543**	**589**	**1,629**	**2,048**	**1,278**
D-49 Elementary School Traffic Impact Analysis May 30, 2017												
210	Single-Family Detached Housing	1355 DU	9.44	0.19	0.56	0.62	0.37	12,791	251	752	845	496
560	Church	30 KSF	6.71	0.20	0.13	0.23	0.28	201	6	4	7	8
565	Day Care Center	5 KSF	74.06	6.46	5.72	5.80	6.54	370	32	29	29	33
								13,363	**289**	**785**	**881**	**537**
Existing, Approved, Currently Proposed or Future												
210	Single-Family Detached Housing	1454 DU	9.44	0.19	0.56	0.62	0.37	13,726	269	807	907	533
560	Church	30 KSF	6.71	0.20	0.13	0.23	0.28	201	6	4	7	8
565	Day Care Center	5 KSF	74.06	6.46	5.72	5.80	6.54	370	32	29	29	33
								14,297	**307**	**840**	**943**	**574**
						Difference From 2004		**-18,245**	**-282**	**-789**	**-1,105**	**-704**
						Difference From 2017		**935**	**18**	**55**	**62**	**36**

Notes:
(1) Source: "*Trip Generation, 10th Edition, 2017*" by the Institute of Transportation Engineers (ITE)
(2) DU = dwelling unit

Source: LSC Transportation Consultants, Inc.

Table 4
Trip Generation Estimate
Paintbrush Hills Filing 13E

Land Use Code	Land Use Description	Trip Generation Units	Trip Generation Rates [1] Average Weekday Traffic	Morning Peak Hour In	Morning Peak Hour Out	Afternoon Peak Hour In	Afternoon Peak Hour Out	Total Trips Generated Average Weekday Traffic	Morning Peak Hour In	Morning Peak Hour Out	Afternoon Peak Hour In	Afternoon Peak Hour Out
210	Single-Family Detached Housing	158 DU[2]	9.44	0.19	0.56	0.62	0.37	1,492	29	88	99	58

Notes:
(1) Source: "*Trip Generation, 10th Edition, 2017*" by the Institute of Transportation Engineers (ITE)
(2) DU = dwelling unit

Source: LSC Transportation Consultants, Inc.

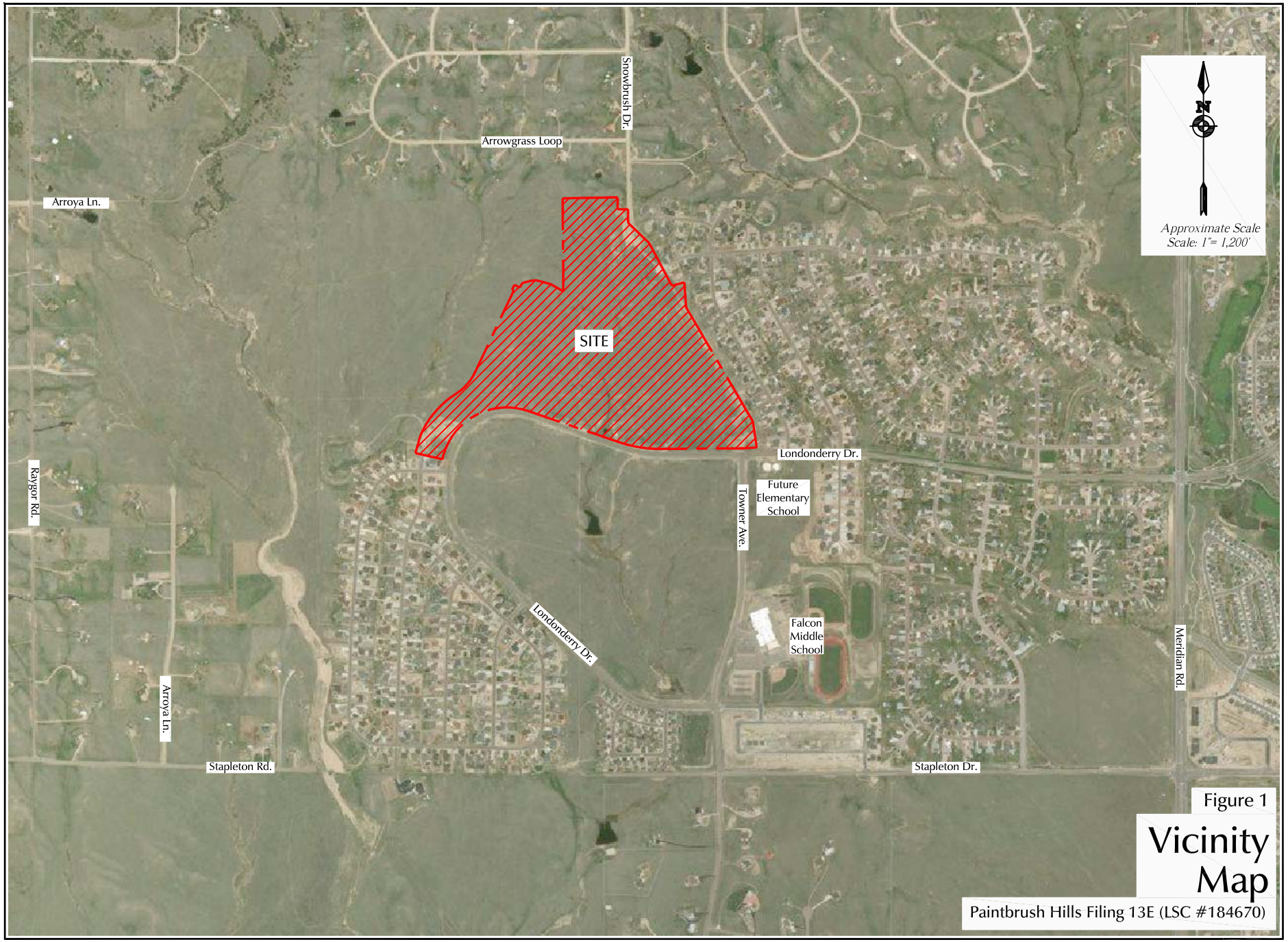


Figure 1

Vicinity Map

Paintbrush Hills Filing 13E (LSC #184670)

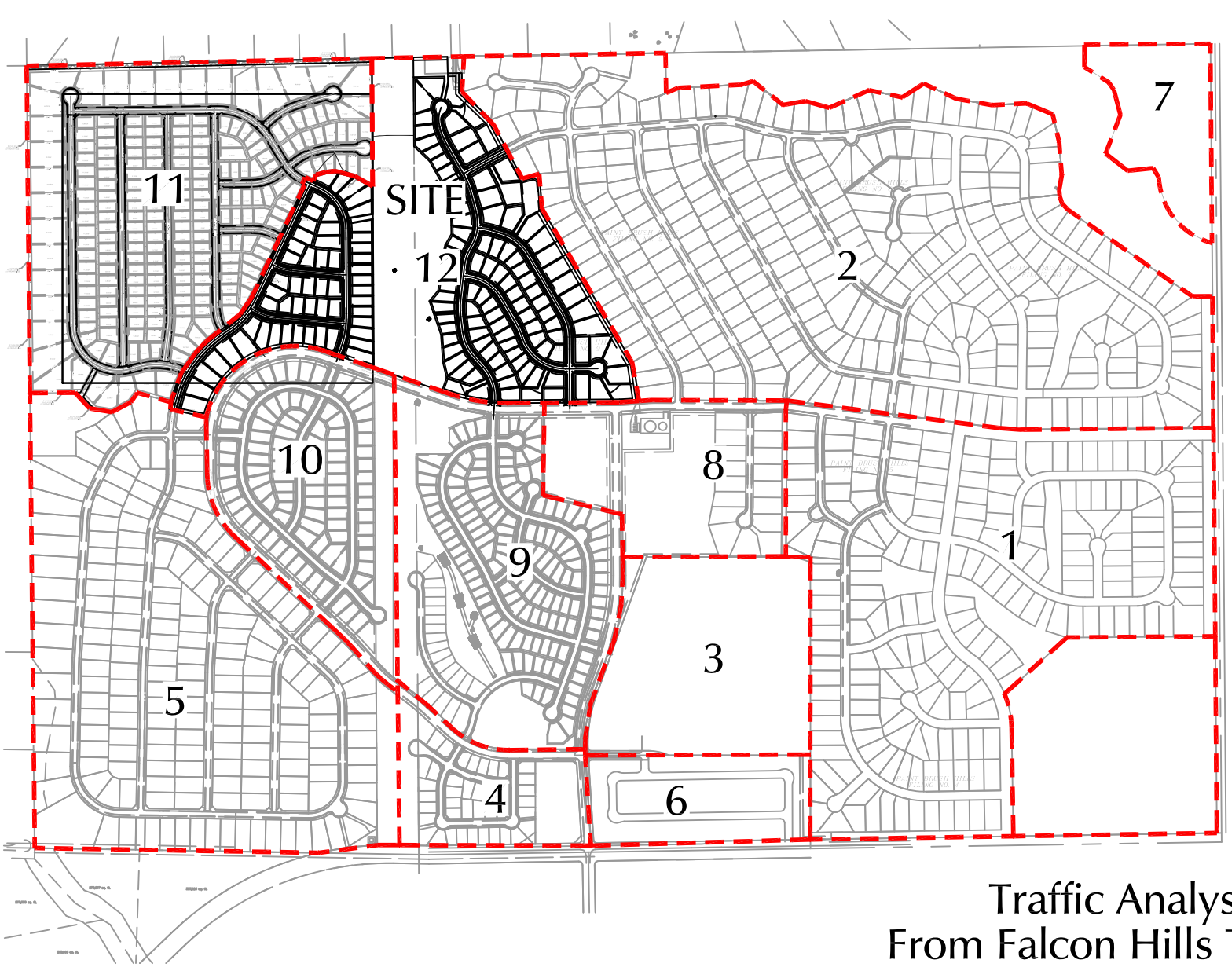


Figure 2

Traffic Analysis Zones From Falcon Hills TIA 2004

Paintbrush Hills Filing 13E (LSC #184670)

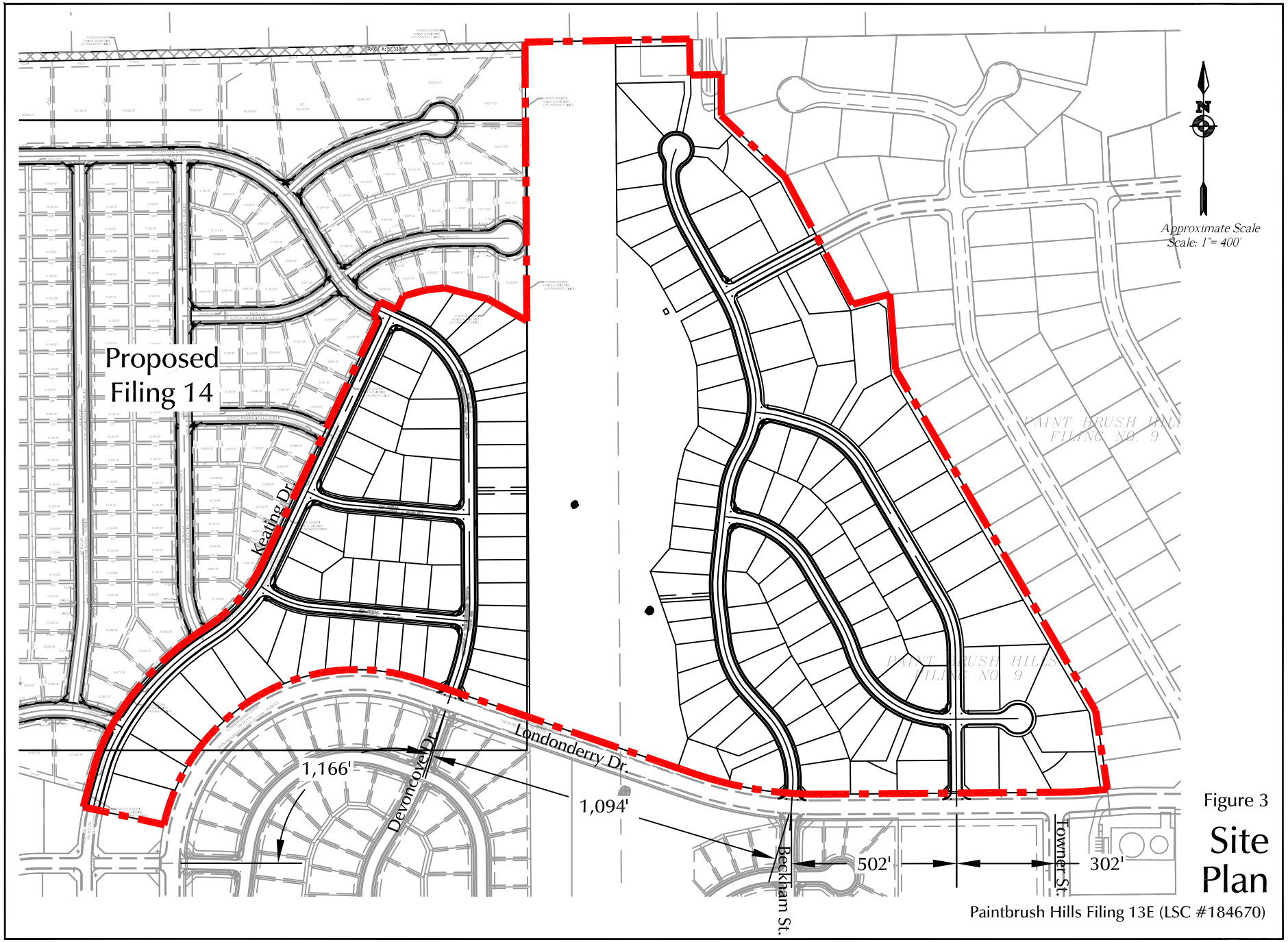


Figure 3

Site Plan

Paintbrush Hills Filing 13E (LSC #184670)

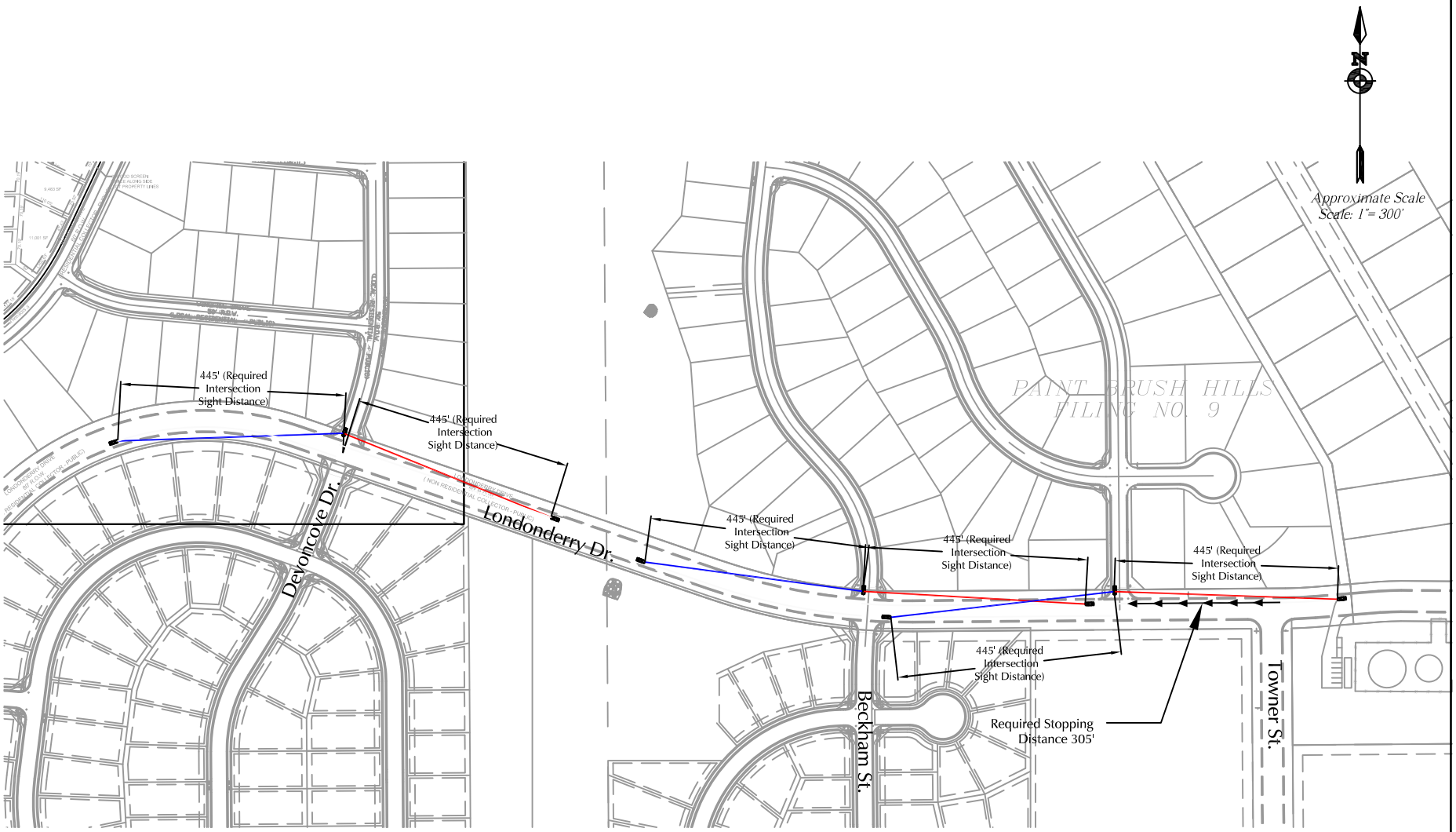
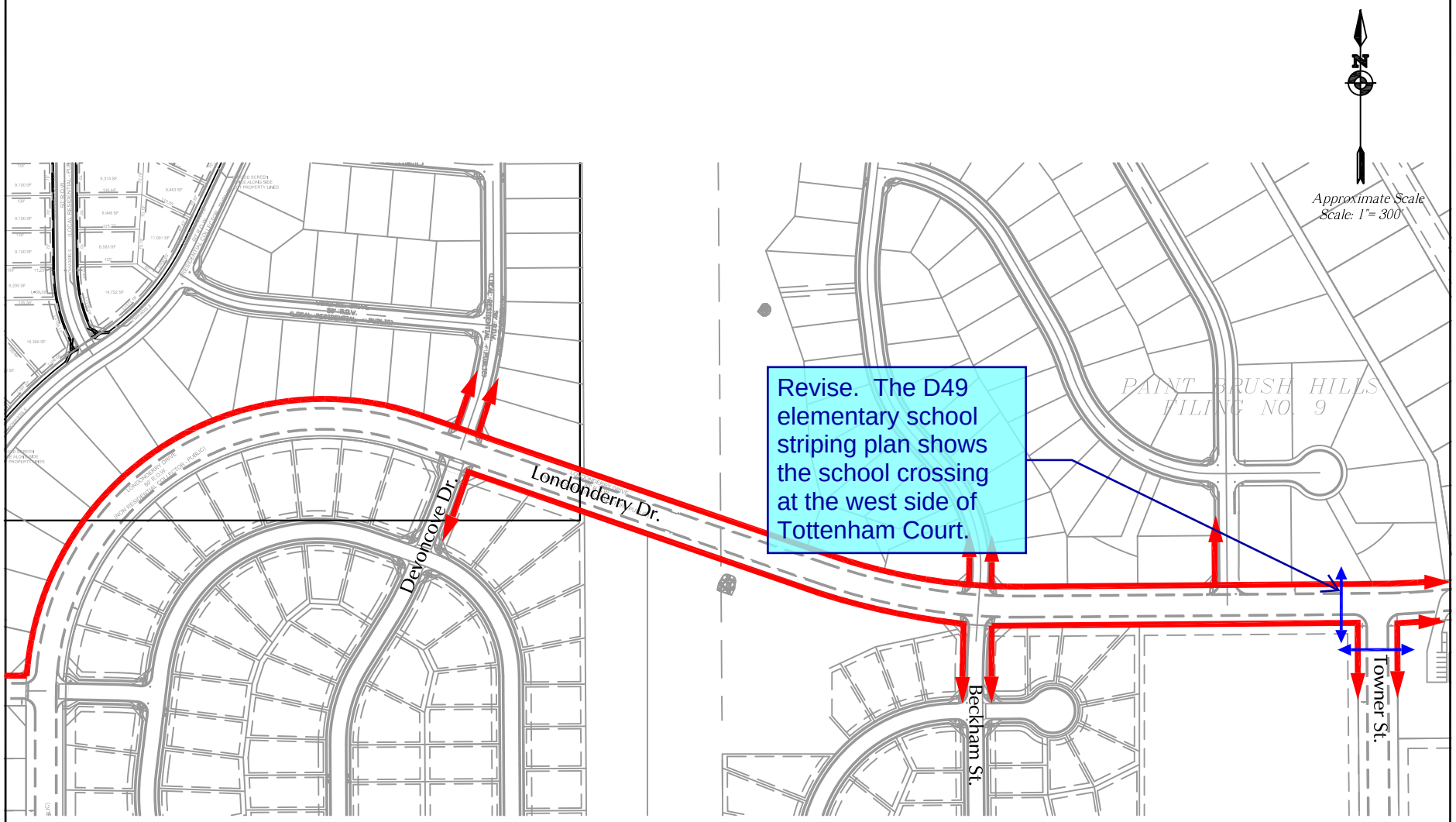


Figure 4

Intersection Sight Distance

Paintbrush Hills Filing 13E (LSC #184670)

Note: Based on 40 mph design speed.



LEGEND:

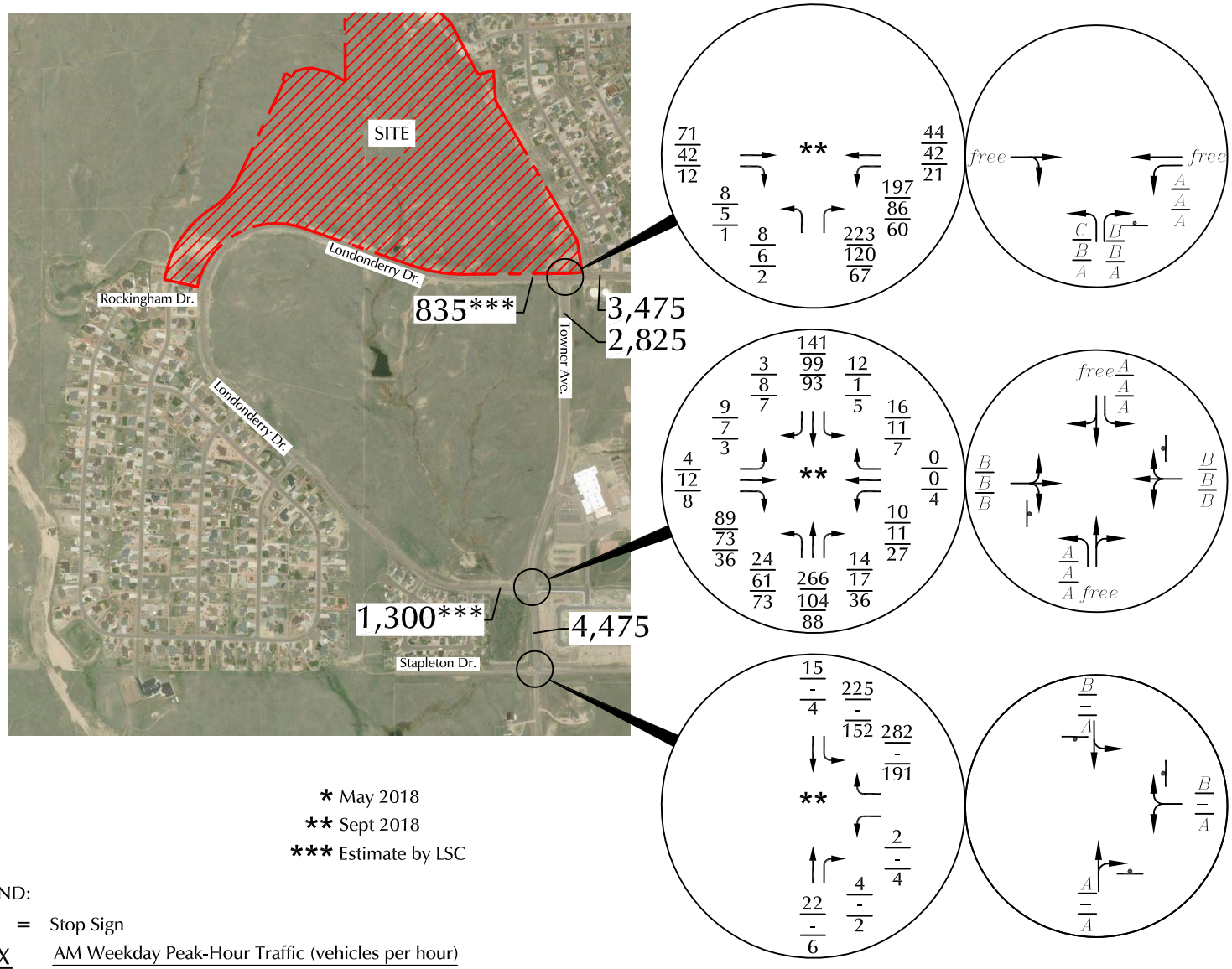
= School Crossing

= School Route

Figure 5

School Pedestrian and Bicycle Routes

Paintbrush Hills Filing 13E (LSC #184670)



* May 2018

** Sept 2018

*** Estimate by LSC

LEGEND:

= Stop Sign

$\frac{XX}{XX}{}_{XX}$ = AM Weekday Peak-Hour Traffic (vehicles per hour) / Midday (2:30-3:30pm) Peak-Hour Traffic (vehicles per hour) / PM Weekday Peak-Hour Traffic (vehicles per hour)

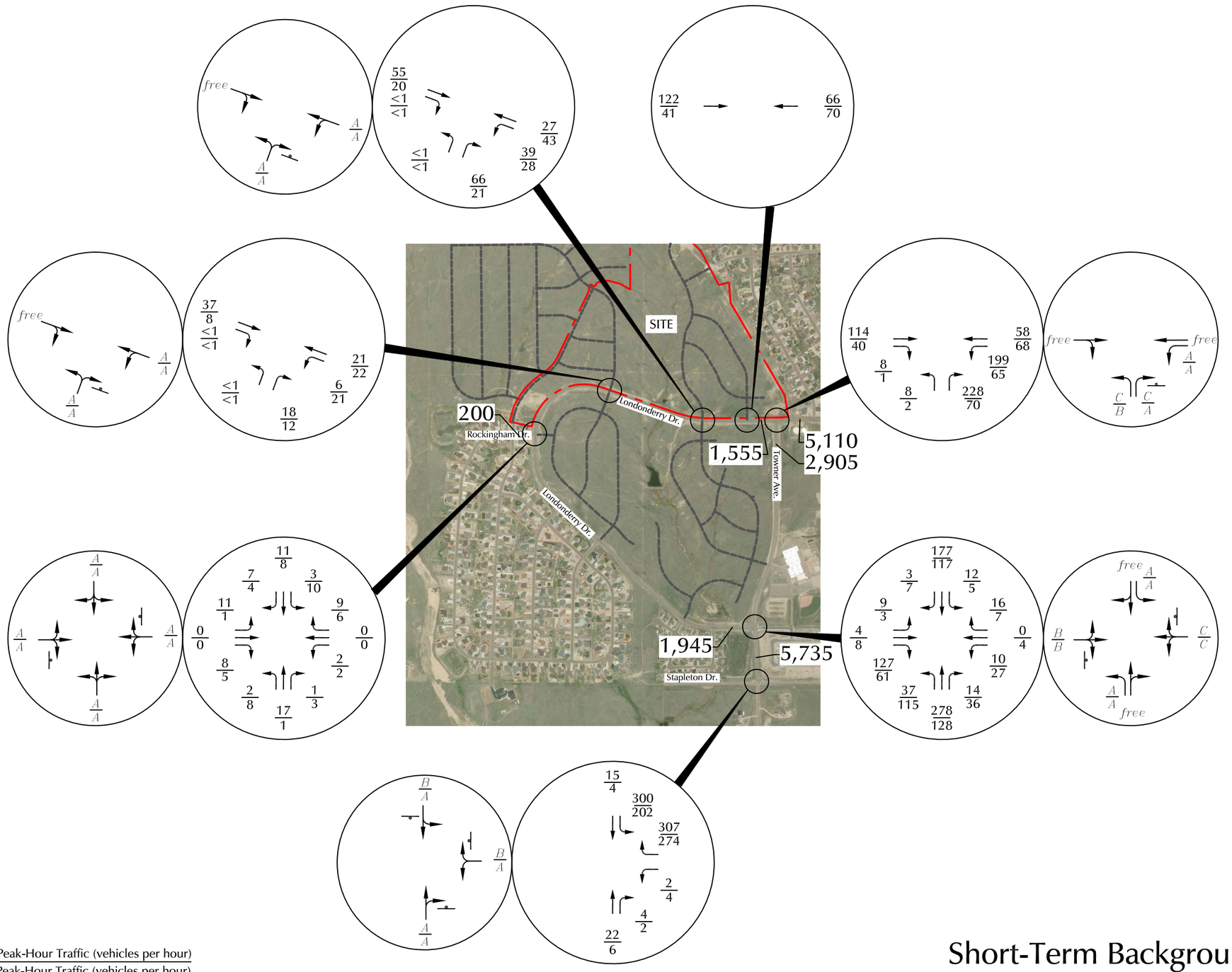
$\frac{A}{A}{}_{C}$ = AM Individual Movement Peak-Hour Level of Service / Midday (2:30-3:30pm) Individual Movement Peak-Hour Level of Service / PM Individual Movement Peak-Hour Level of Service

X,XXX= Annual Average Daily Traffic (vehicles per day)=(CDOT 2016)

Figure 6

Existing Traffic, Lane Geometry, Traffic Control and Level of Service

Paintbrush Hills Filing 14 (LSC #184630)



Approximate Scale
Scale: 1"= 1,200'

LEGEND:

= Stop Sign

XX/XX = AM Weekday Peak-Hour Traffic (vehicles per hour) / PM Weekday Peak-Hour Traffic (vehicles per hour)

A/B = AM Individual Movement Peak-Hour Level of Service / PM Individual Movement Peak-Hour Level of Service

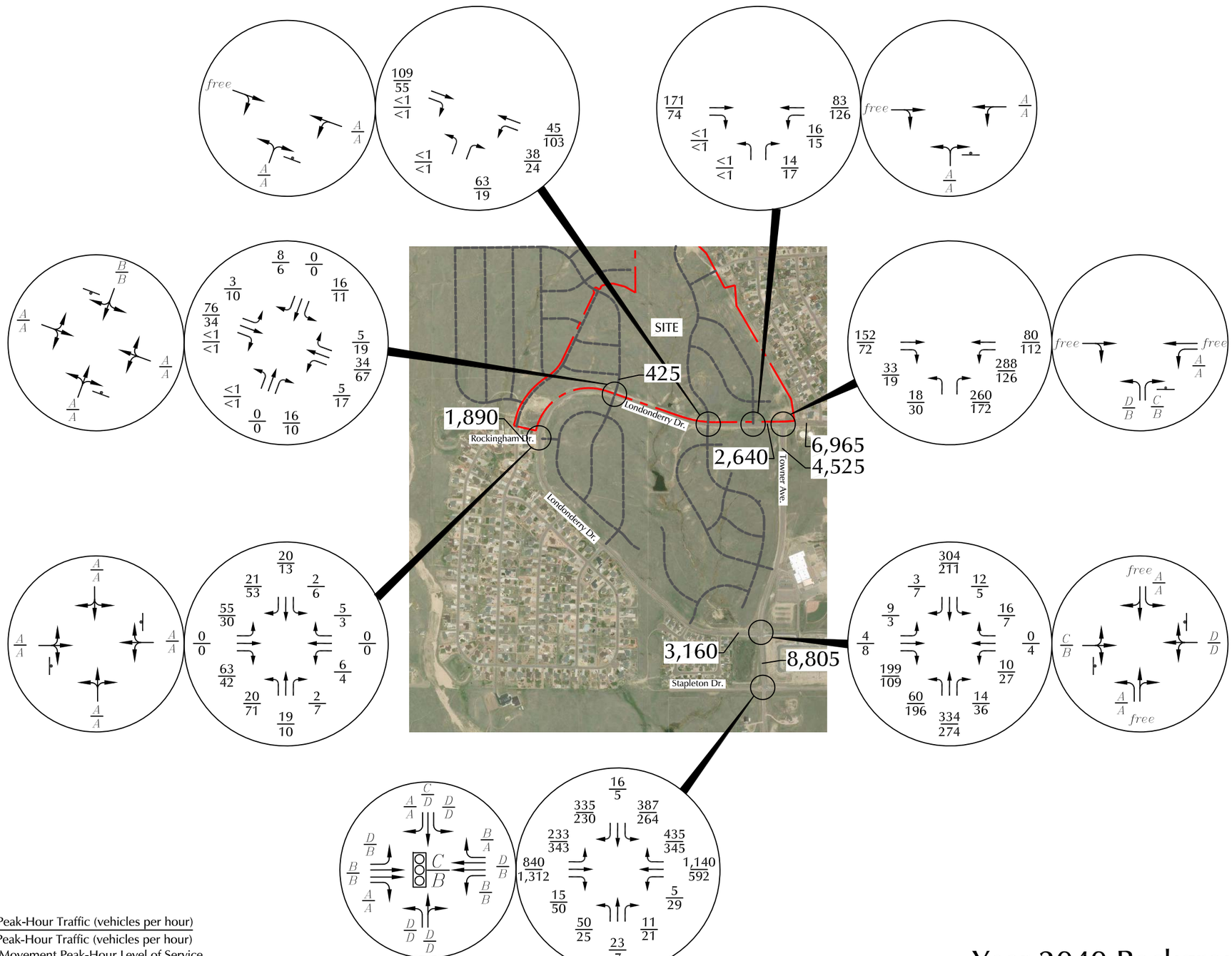
X,XXX= Average Weekday Traffic (vehicles per day)

TRANSPORTATION CONSULTANTS, INC.

Figure 7

Short-Term Background Traffic, Lane Traffic Control and Level of Service

Paintbrush Hills Filing 13E (LSC #184670)



N

Approximate Scale
Scale: 1"= 1,200'

LEGEND:

= Stop Sign

= Traffic Signal

$\frac{XX}{XX}$ = AM Weekday Peak-Hour Traffic (vehicles per hour) / PM Weekday Peak-Hour Traffic (vehicles per hour)

$\frac{A}{B}$ = AM Individual Movement Peak-Hour Level of Service / PM Individual Movement Peak-Hour Level of Service

$\frac{C}{C}$ = AM Entire Intersection Peak-Hour Level of Service / PM Entire Intersection Peak-Hour Level of Service

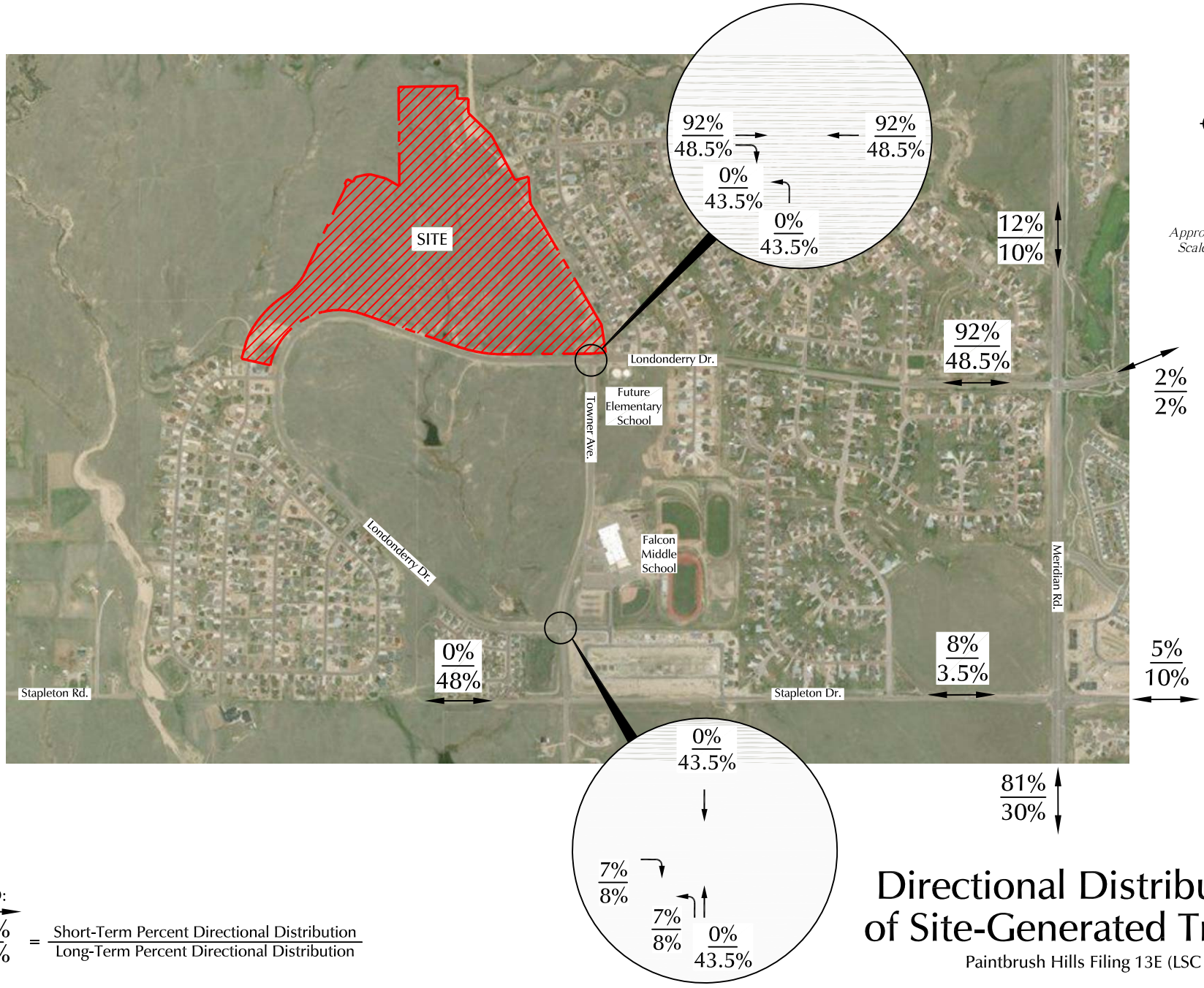
X,XXX= Average Weekday Traffic (vehicles per day)

TRANSPORTATION CONSULTANTS, INC.

Figure 8

Year 2040 Background Traffic, Lane Geometry, Traffic Control and Level of Service

Paintbrush Hills Filing 13E (LSC #184670)



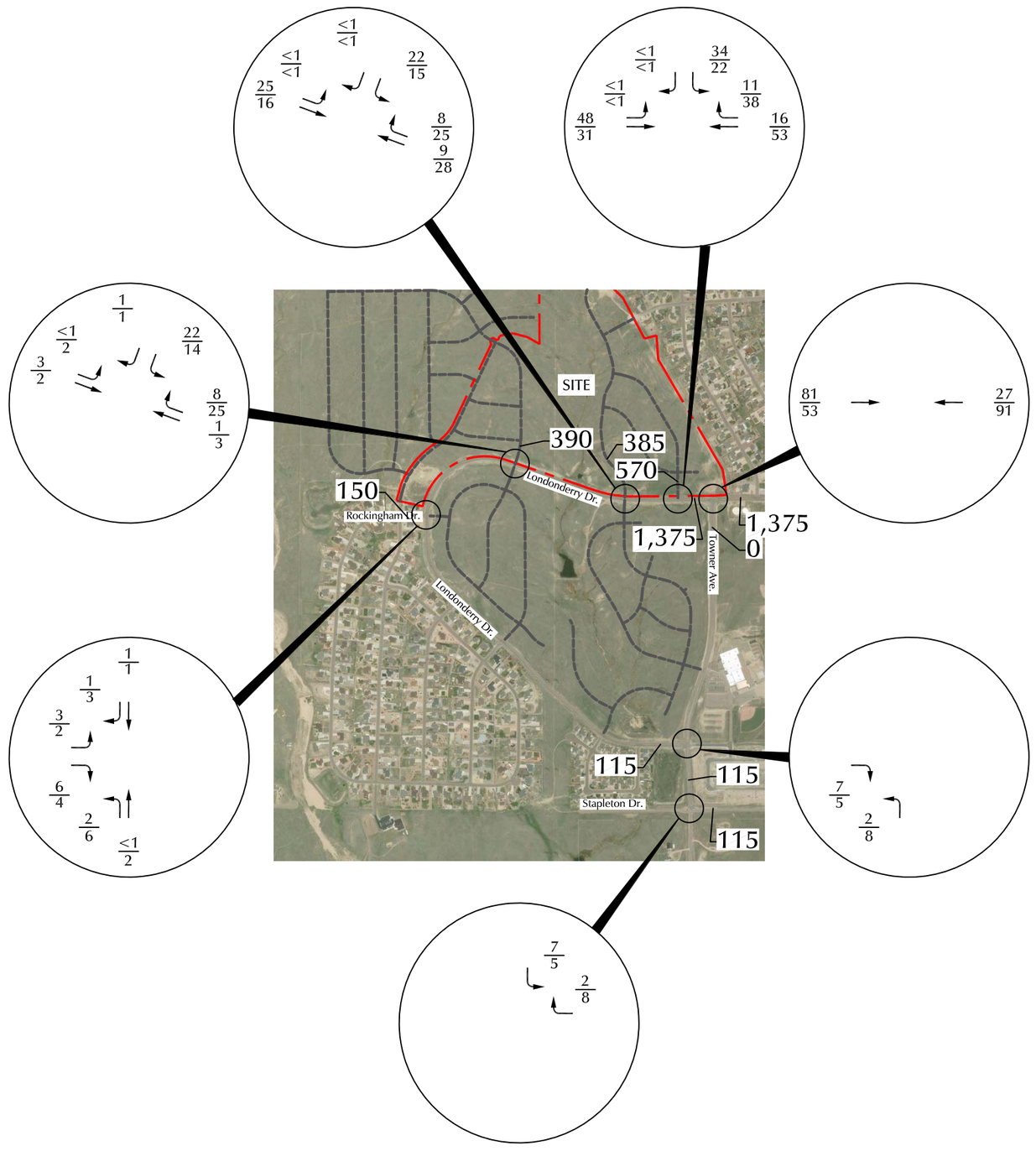
LEGEND:

XX% / XX% = Short-Term Percent Directional Distribution / Long-Term Percent Directional Distribution

Figure 9

Directional Distribution of Site-Generated Traffic

Paintbrush Hills Filing 13E (LSC #184670)



Approximate Scale
Scale: 1"= 1,200'

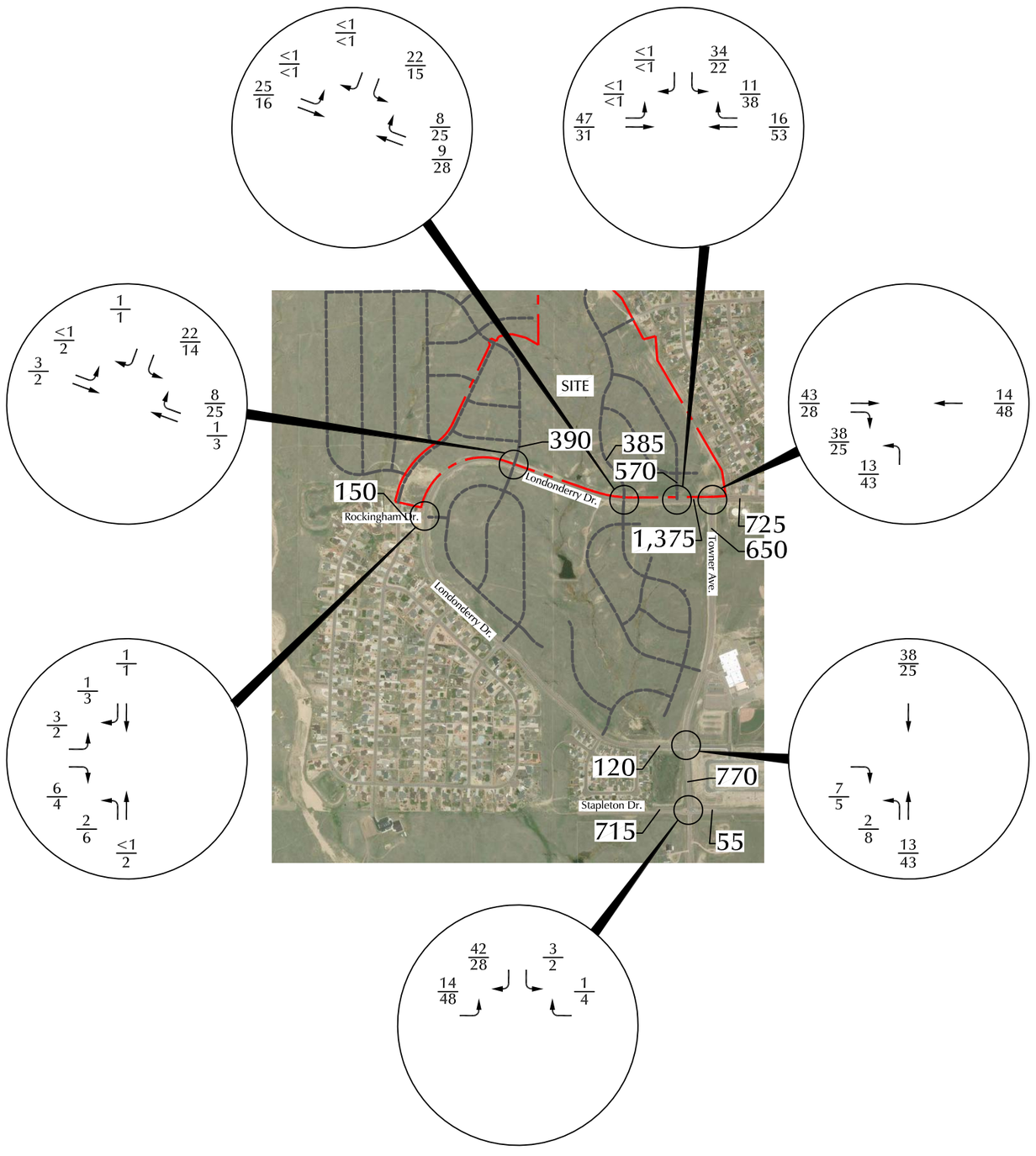
LEGEND:
XX/XX = AM Weekday Peak-Hour Traffic (vehicles per hour) / PM Weekday Peak-Hour Traffic (vehicles per hour)
X,XXX= Average Weekday Traffic (vehicles per day)

LSC TRANSPORTATION CONSULTANTS, INC.

Figure 10

Short-Term Assignment of Site-Generated Traffic

Paintbrush Hills Filing 13E (LSC #184670)



LEGEND:

XX/XX = AM Weekday Peak-Hour Traffic (vehicles per hour) / PM Weekday Peak-Hour Traffic (vehicles per hour)

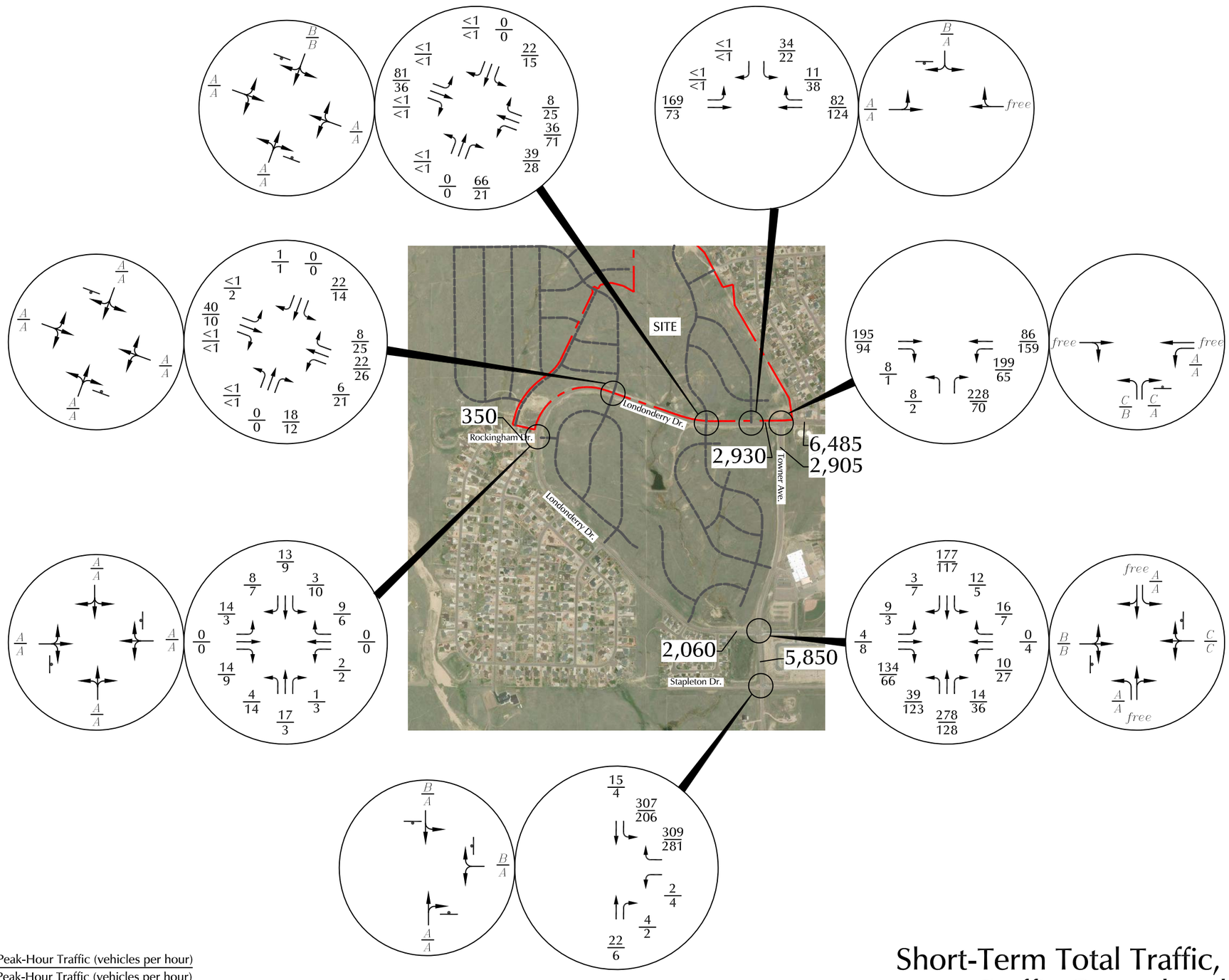
X,XXX= Average Weekday Traffic (vehicles per day)

LSC TRANSPORTATION CONSULTANTS, INC.

Figure 11

Long-Term Assignment of Site-Generated Traffic

Paintbrush Hills Filing 13E (LSC #184670)



LEGEND:

= Stop Sign

XX/XX = AM Weekday Peak-Hour Traffic (vehicles per hour) / PM Weekday Peak-Hour Traffic (vehicles per hour)

A/B = AM Individual Movement Peak-Hour Level of Service / PM Individual Movement Peak-Hour Level of Service

X,XXX= Average Weekday Traffic (vehicles per day)

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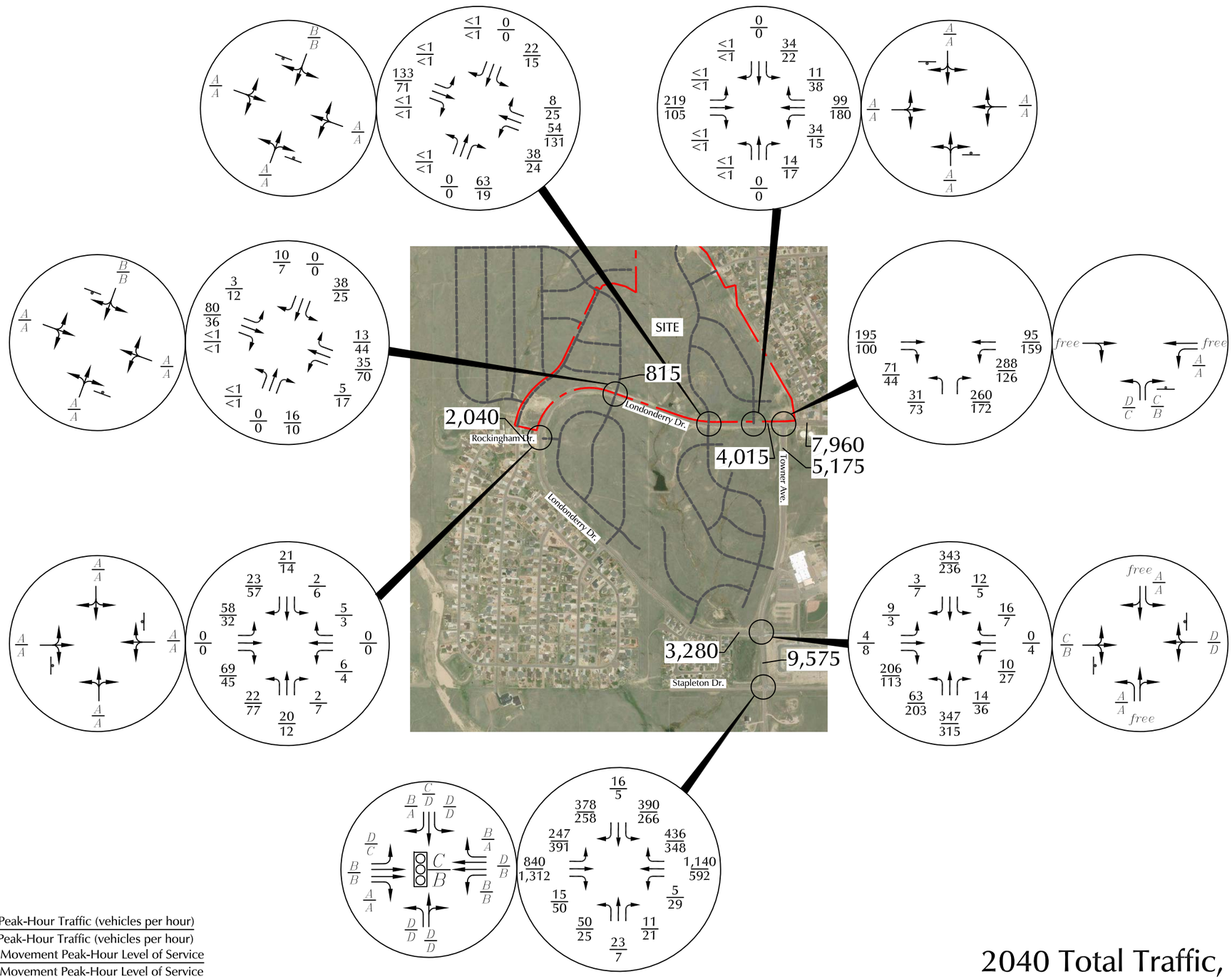
Figure 12

Short-Term Total Traffic, Lane Geometry, Traffic Control and Level of Service

Paintbrush Hills Filing 13E (LSC #184670)



LEGEND:

= Stop Sign

= Traffic Signal

XX/XX = AM Weekday Peak-Hour Traffic (vehicles per hour) / PM Weekday Peak-Hour Traffic (vehicles per hour)

A/B = AM Individual Movement Peak-Hour Level of Service / PM Individual Movement Peak-Hour Level of Service

C/C = AM Entire Intersection Peak-Hour Level of Service / PM Entire Intersection Peak-Hour Level of Service

X,XXX= Average Weekday Traffic (vehicles per day)

LSC TRANSPORTATION CONSULTANTS, INC.

Figure 13

2040 Total Traffic, Lane Geometry, Traffic Control and Level of Service

Paintbrush Hills Filing 13E (LSC #184670)

LSC Transportation Consultants, Inc.

545 E Pikes Peak Ave, Suite 210
Colorado Springs, CO 80905
719-633-2868

File Name : N Towner Av - Londonderry Dr AM 9-18
Site Code : 184630
Start Date : 9/5/2018
Page No : 1

Groups Printed- Unshifted

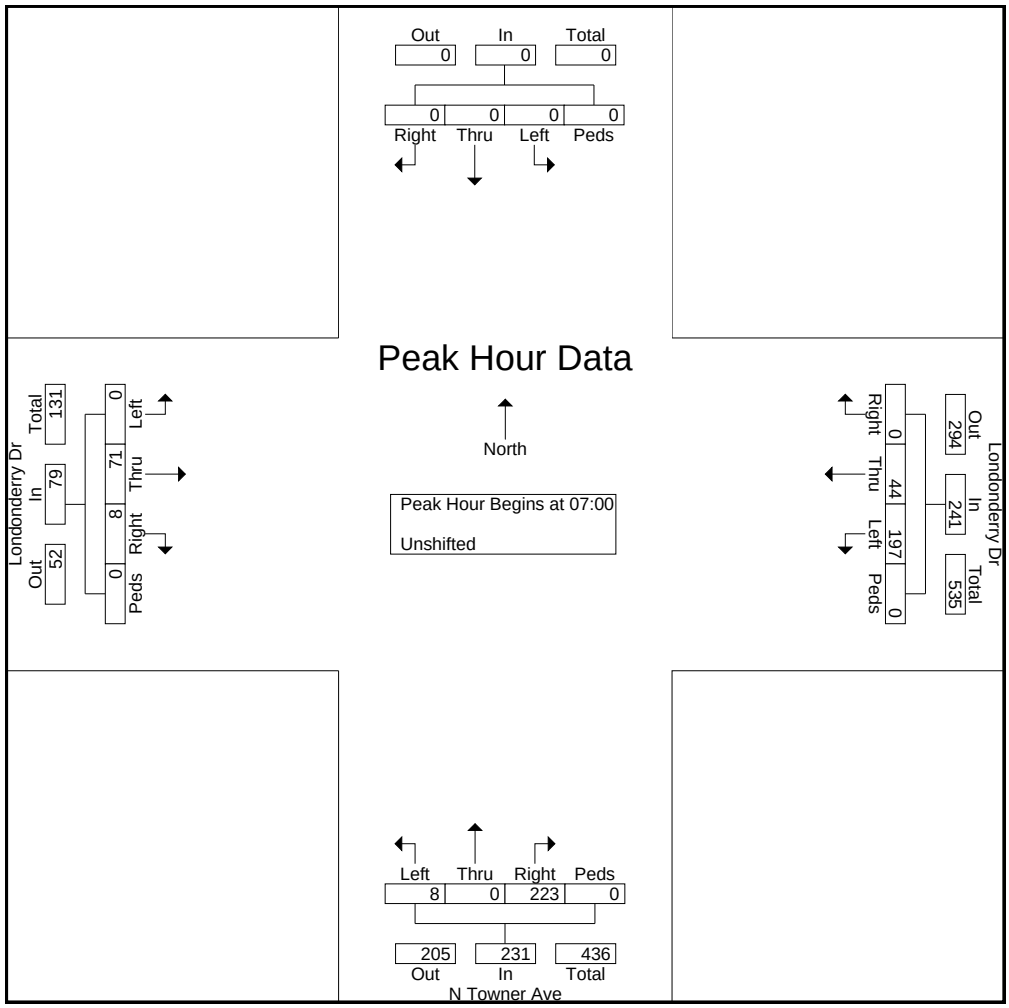
	Southbound				Londonderry Dr Westbound				N Towner Ave Northbound				Londonderry Dr Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
06:45	0	0	0	0	8	2	0	0	2	0	3	0	0	7	0	0	22
Total	0	0	0	0	8	2	0	0	2	0	3	0	0	7	0	0	22
07:00	0	0	0	0	41	9	0	0	1	0	19	0	0	18	3	0	91
07:15	0	0	0	0	77	15	0	0	1	0	53	0	0	9	2	0	157
07:30	0	0	0	0	68	10	0	0	6	0	115	0	0	36	3	0	238
07:45	0	0	0	0	11	10	0	0	0	0	36	0	0	8	0	0	65
Total	0	0	0	0	197	44	0	0	8	0	223	0	0	71	8	0	551
08:00	0	0	0	0	8	4	0	0	1	0	8	0	0	4	0	0	25
08:15	0	0	0	0	10	2	0	0	0	0	11	0	0	6	1	0	30
08:30	0	0	0	0	2	5	0	0	1	0	2	0	0	6	0	0	16
Grand Total	0	0	0	0	225	57	0	0	12	0	247	0	0	94	9	0	644
Apprch %	0	0	0	0	79.8	20.2	0	0	4.6	0	95.4	0	0	91.3	8.7	0	
Total %	0	0	0	0	34.9	8.9	0	0	1.9	0	38.4	0	0	14.6	1.4	0	

LSC Transportation Consultants, Inc.

545 E Pikes Peak Ave, Suite 210
Colorado Springs, CO 80905
719-633-2868

File Name : N Towner Av - Londonderry Dr AM 9-18
Site Code : 184630
Start Date : 9/5/2018
Page No : 2

	Southbound					Londonderry Dr Westbound					N Towner Ave Northbound					Londonderry Dr Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 6:45:00 AM to 8:30:00 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 7:00:00 AM																					
7:00:00 AM	0	0	0	0	0	41	9	0	0	50	1	0	19	0	20	0	18	**3**	0	21	91
7:15:00 AM	0	0	0	0	0	**77**	**15**	0	0	**92**	1	0	53	0	54	0	9	2	0	11	157
7:30:00 AM	0	0	0	0	0	68	10	0	0	78	**6**	0	**115**	0	**121**	0	**36**	3	0	**39**	**238**
7:45:00 AM	0	0	0	0	0	11	10	0	0	21	0	0	36	0	36	0	8	0	0	8	65
Total Volume	0	0	0	0	0	197	44	0	0	241	8	0	223	0	231	0	71	8	0	79	551
% App. Total	0	0	0	0		81.7	18.3	0	0		3.5	0	96.5	0		0	89.9	10.1	0		
PHF	.000	.000	.000	.000	.000	.640	.733	.000	.000	.655	.333	.000	.485	.000	.477	.000	.493	.667	.000	.506	.579



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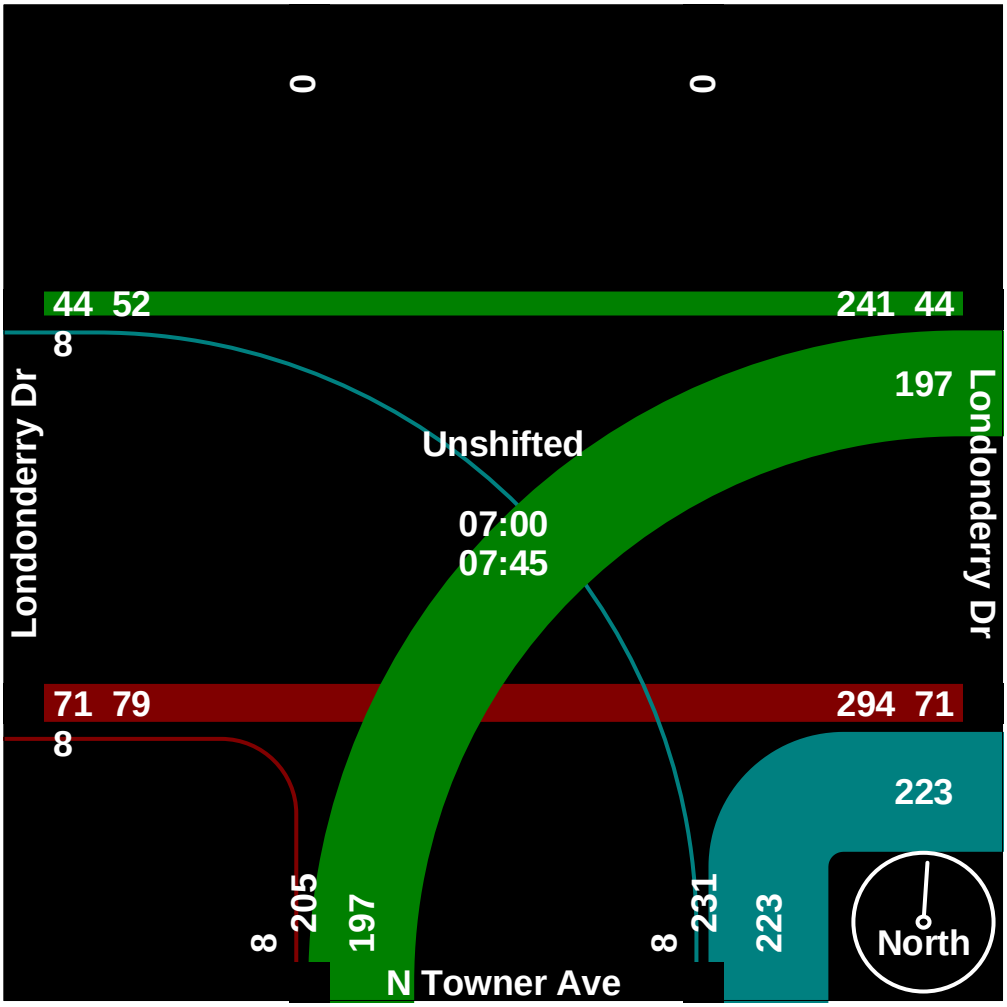
File Name : N Towner Av - Londonderry Dr AM 9-18
Site Code : 184630
Start Date : 9/5/2018
Page No : 3



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545 E Pikes Peak Ave, Suite 210
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719-633-2868

File Name : N Towner Av - Londonderry Dr Mid 9-18
Site Code : 00184630
Start Date : 9/12/2018
Page No : 1

Groups Printed- Unshifted

	Southbound				Londonderry Dr Westbound				N Towner Rd Northbound				Londonderry Dr Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
14:15	0	0	0	0	7	3	0	0	0	0	4	0	0	9	0	0	23
14:30	0	0	0	0	17	2	0	0	1	0	11	0	0	14	0	0	45
14:45	0	0	0	0	37	20	0	0	1	0	13	0	0	9	3	0	83
Total	0	0	0	0	61	25	0	0	2	0	28	0	0	32	3	0	151
15:00	0	0	0	0	20	8	0	0	2	0	76	0	0	13	1	0	120
15:15	0	0	0	0	12	12	0	0	2	0	20	0	0	6	1	0	53
15:30	0	0	0	0	4	6	0	0	0	0	12	0	0	10	1	0	33
15:45	0	0	0	0	17	7	0	0	0	0	9	0	0	2	0	0	35
Total	0	0	0	0	53	33	0	0	4	0	117	0	0	31	3	0	241
Grand Total	0	0	0	0	114	58	0	0	6	0	145	0	0	63	6	0	392
Apprch %	0	0	0	0	66.3	33.7	0	0	4	0	96	0	0	91.3	8.7	0	
Total %	0	0	0	0	29.1	14.8	0	0	1.5	0	37	0	0	16.1	1.5	0	

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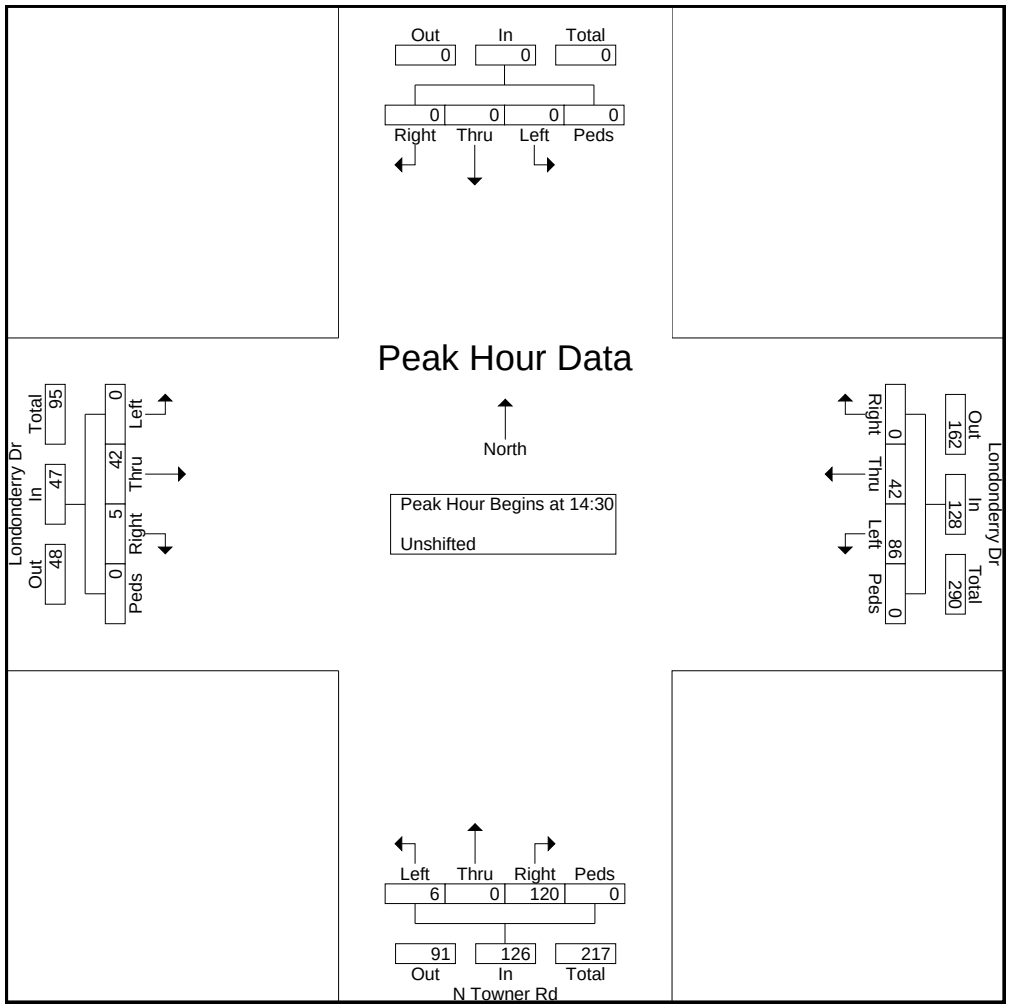
File Name : N Towner Av - Londonderry Dr Mid 9-18
Site Code : 00184630
Start Date : 9/12/2018
Page No : 2

	Southbound					Londonderry Dr Westbound					N Towner Rd Northbound					Londonderry Dr Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 2:15:00 PM to 3:45:00 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 2:30:00 PM																					
2:30:00 PM	0	0	0	0	0	17	2	0	0	19	1	0	11	0	12	0	**14**	0	0	**14**	45
2:45:00 PM	0	0	0	0	0	**37**	**20**	0	0	**57**	1	0	13	0	14	0	9	**3**	0	12	83
3:00:00 PM	0	0	0	0	0	20	8	0	0	28	**2**	0	**76**	0	**78**	0	13	1	0	14	**120**
3:15:00 PM	0	0	0	0	0	12	12	0	0	24	2	0	20	0	22	0	6	1	0	7	53
Total Volume	0	0	0	0	0	86	42	0	0	128	6	0	120	0	126	0	42	5	0	47	301
% App. Total	0	0	0	0		67.2	32.8	0	0		4.8	0	95.2	0		0	89.4	10.6	0		
PHF	.000	.000	.000	.000	.000	.581	.525	.000	.000	.561	.750	.000	.395	.000	.404	.000	.750	.417	.000	.839	.627



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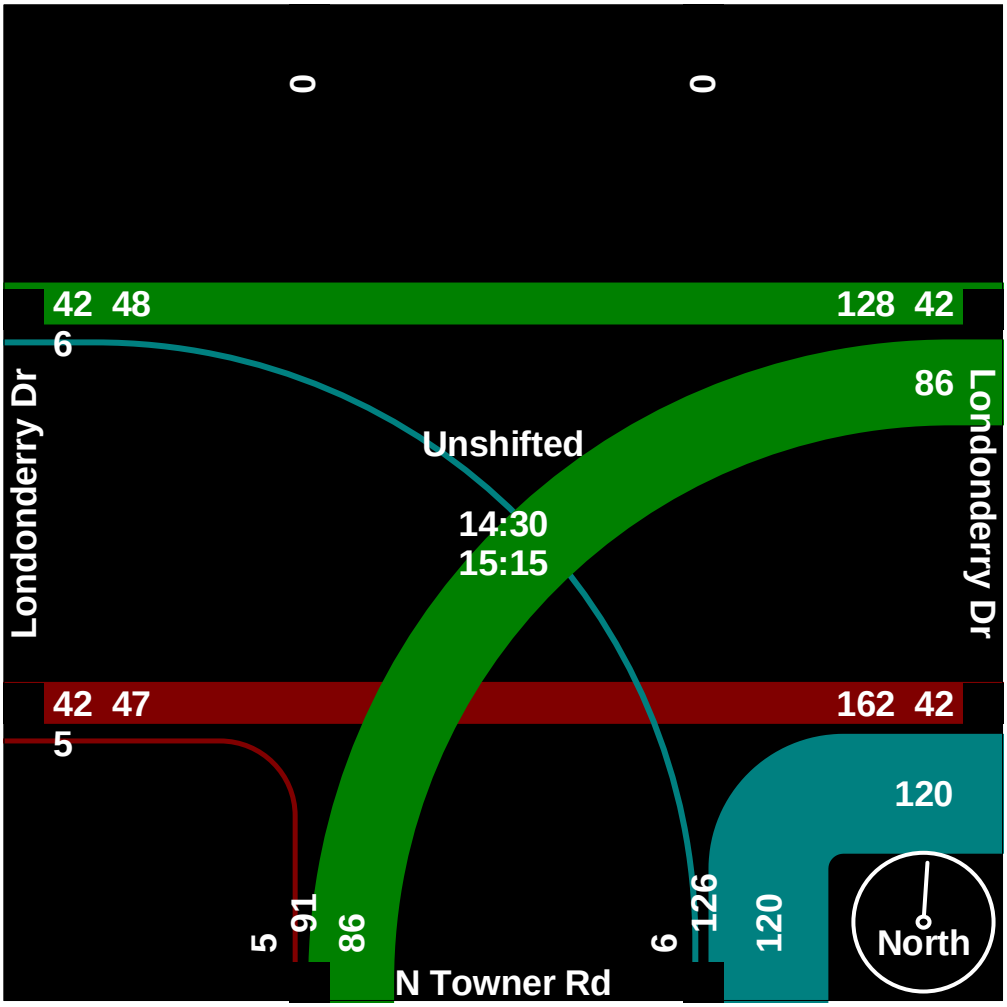
719-633-2868

File Name : N Towner Av - Londonderry Dr Mid 9-18
Site Code : 00184630
Start Date : 9/12/2018
Page No : 3



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719-633-2868

File Name : N Towner Av - Londonderry Dr PM 9-18
Site Code : 00184630
Start Date : 9/11/2018
Page No : 1

Groups Printed- Unshifted

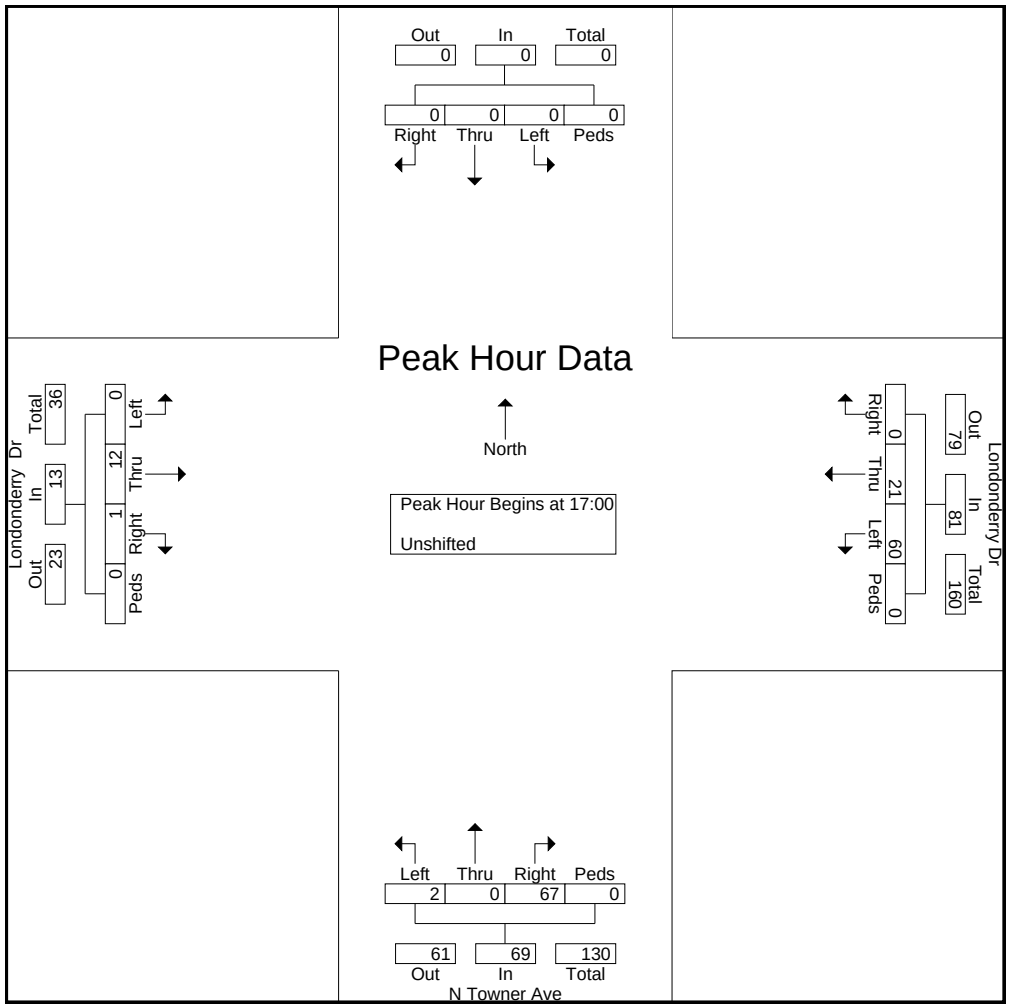
	Southbound				Londonderry Dr Westbound				N Towner Ave Northbound				Londonderry Dr Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
16:30	0	0	0	0	3	3	0	0	0	0	9	0	0	3	0	0	18
16:45	0	0	0	0	12	2	0	0	1	0	7	0	0	4	0	0	26
Total	0	0	0	0	15	5	0	0	1	0	16	0	0	7	0	0	44
17:00	0	0	0	0	10	6	0	0	1	0	19	0	0	4	0	0	40
17:15	0	0	0	0	20	5	0	0	0	0	2	0	0	3	1	0	31
17:30	0	0	0	0	17	6	0	0	1	0	23	0	0	4	0	0	51
17:45	0	0	0	0	13	4	0	0	0	0	23	0	0	1	0	0	41
Total	0	0	0	0	60	21	0	0	2	0	67	0	0	12	1	0	163
18:00	0	0	0	0	4	4	0	0	0	0	4	0	0	1	0	0	13
18:15	0	0	0	0	3	7	0	0	0	0	3	0	0	3	0	0	16
Grand Total	0	0	0	0	82	37	0	0	3	0	90	0	0	23	1	0	236
Apprch %	0	0	0	0	68.9	31.1	0	0	3.2	0	96.8	0	0	95.8	4.2	0	
Total %	0	0	0	0	34.7	15.7	0	0	1.3	0	38.1	0	0	9.7	0.4	0	

LSC Transportation Consultants, Inc.

545 E Pikes Peak Ave, Suite 210
Colorado Springs, CO 80905
719-633-2868

File Name : N Towner Av - Londonderry Dr PM 9-18
Site Code : 00184630
Start Date : 9/11/2018
Page No : 2

	Southbound					Londonderry Dr Westbound					N Towner Ave Northbound					Londonderry Dr Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:30 to 18:15 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 17:00																					
17:00	0	0	0	0	0	10	**6**	0	0	16	**1**	0	19	0	20	0	**4**	0	0	**4**	40
17:15	0	0	0	0	0	**20**	5	0	0	**25**	0	0	2	0	2	0	3	**1**	0	4	31
17:30	0	0	0	0	0	17	6	0	0	23	1	0	**23**	0	**24**	0	4	0	0	4	**51**
17:45	0	0	0	0	0	13	4	0	0	17	0	0	23	0	23	0	1	0	0	1	41
Total Volume	0	0	0	0	0	60	21	0	0	81	2	0	67	0	69	0	12	1	0	13	163
% App. Total	0	0	0	0		74.1	25.9	0	0		2.9	0	97.1	0		0	92.3	7.7	0		
PHF	.000	.000	.000	.000	.000	.750	.875	.000	.000	.810	.500	.000	.728	.000	.719	.000	.750	.250	.000	.813	.799



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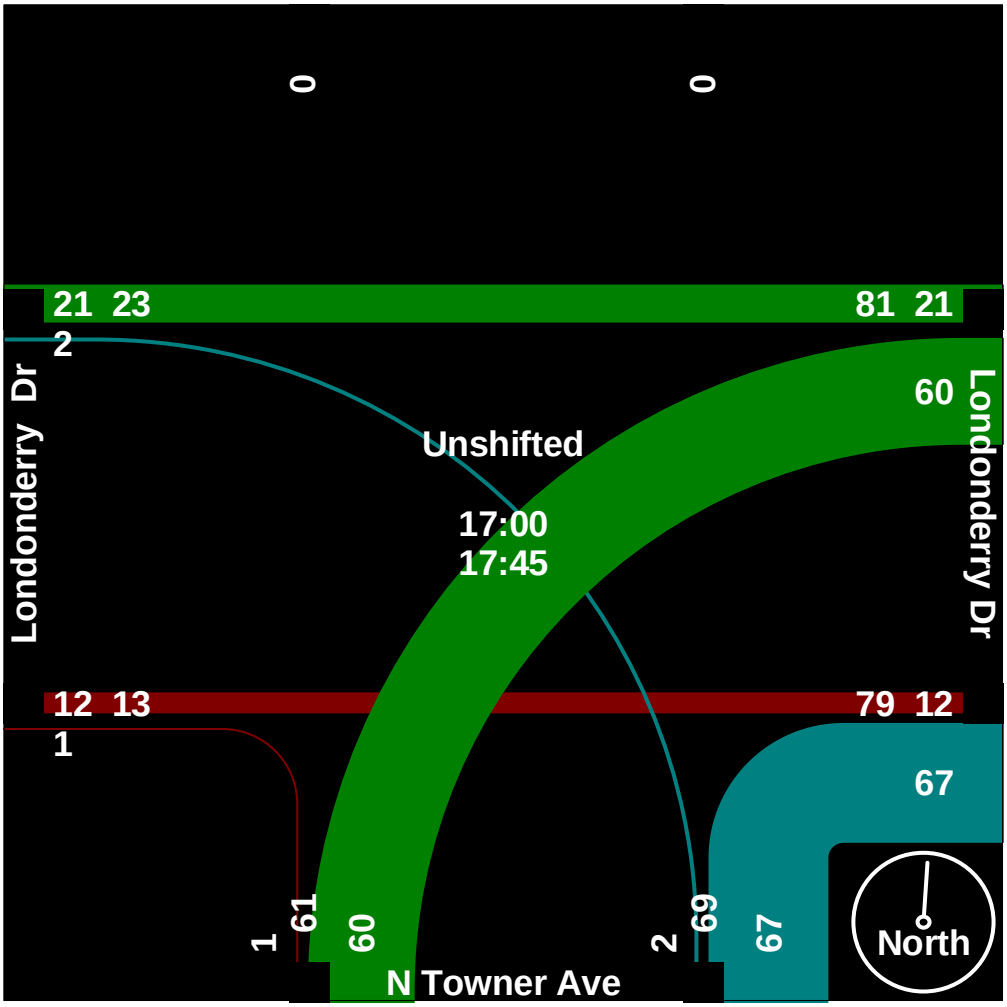
719-633-2868

File Name : N Towner Av - Londonderry Dr PM 9-18
Site Code : 00184630
Start Date : 9/11/2018
Page No : 3



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719-633-2868

File Name : S Towner Ave - Londonderry Dr AM
Site Code : 00184630
Start Date : 9/25/2018
Page No : 1

Groups Printed- Unshifted

	S Towner Ave Southbound				Londonderry Dr Westbound				S Towner Ave Northbound				Londonderry Dr Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
06:30	0	3	1	0	1	0	0	0	1	8	1	0	0	1	18	0	34
06:45	1	11	1	0	0	0	3	0	10	26	0	0	0	0	14	0	66
Total	1	14	2	0	1	0	3	0	11	34	1	0	0	1	32	0	100
07:00	4	36	0	0	3	0	1	0	6	50	3	0	2	0	22	0	127
07:15	4	34	2	0	0	0	2	0	7	82	6	0	4	1	22	0	164
07:30	1	34	1	0	6	0	9	0	7	104	4	0	1	2	29	0	198
07:45	3	37	0	0	1	0	4	0	4	30	1	0	2	1	16	0	99
Total	12	141	3	0	10	0	16	0	24	266	14	0	9	4	89	0	588
08:00	3	10	0	0	0	0	1	0	12	18	1	0	0	0	12	0	57
08:15	3	18	2	0	1	0	1	0	4	18	1	0	2	0	11	0	61
Grand Total	19	183	7	0	12	0	21	0	51	336	17	0	11	5	144	0	806
Apprch %	9.1	87.6	3.3	0	36.4	0	63.6	0	12.6	83.2	4.2	0	6.9	3.1	90	0	
Total %	2.4	22.7	0.9	0	1.5	0	2.6	0	6.3	41.7	2.1	0	1.4	0.6	17.9	0	

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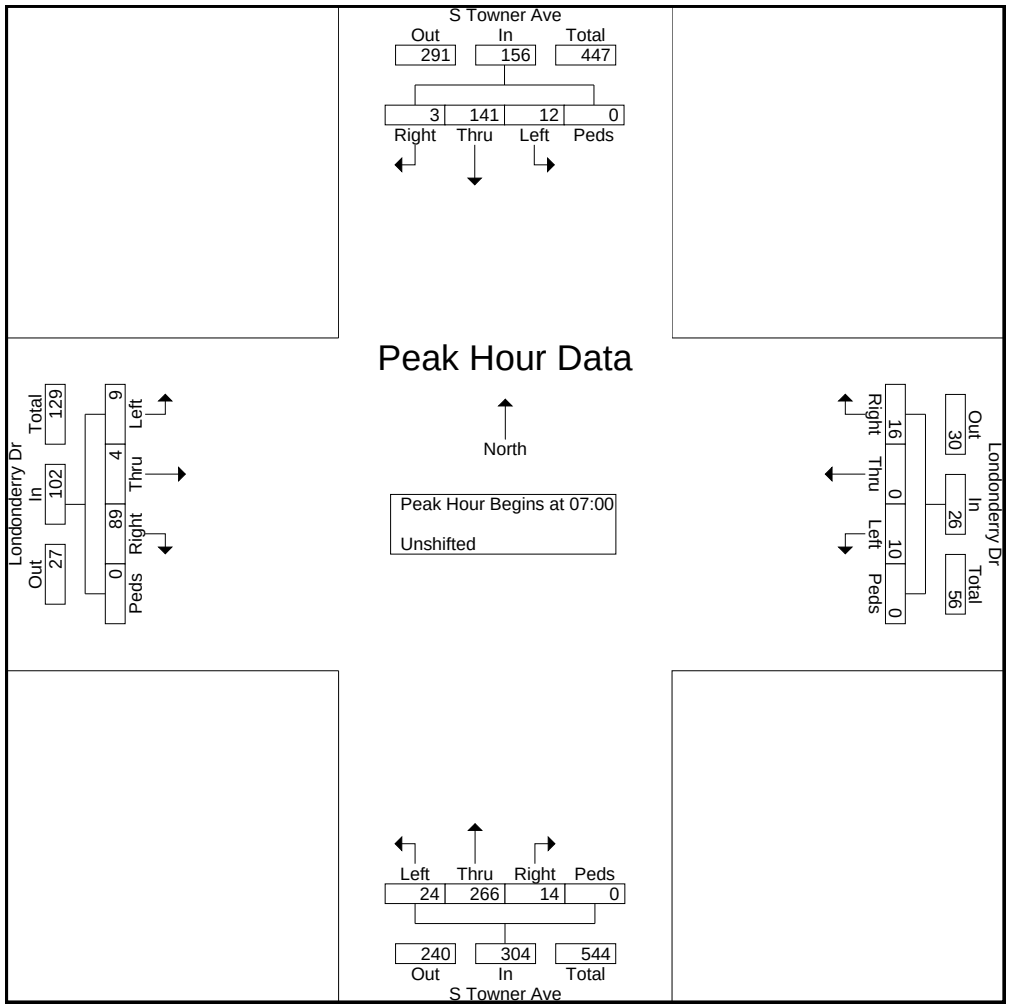
File Name : S Towner Ave - Londonderry Dr AM
Site Code : 00184630
Start Date : 9/25/2018
Page No : 2

	S Towner Ave Southbound					Londonderry Dr Westbound					S Towner Ave Northbound					Londonderry Dr Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 6:30:00 AM to 8:15:00 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 7:00:00 AM																					
7:00:00 AM	**4**	36	0	0	**40**	3	0	1	0	4	6	50	3	0	59	2	0	22	0	24	127
7:15:00 AM	4	34	**2**	0	40	0	0	2	0	2	**7**	82	**6**	0	95	**4**	1	22	0	27	164
7:30:00 AM	1	34	1	0	36	**6**	0	**9**	0	**15**	7	**104**	4	0	**115**	1	**2**	**29**	0	**32**	**198**
7:45:00 AM	3	**37**	0	0	40	1	0	4	0	5	4	30	1	0	35	2	1	16	0	19	99
Total Volume	12	141	3	0	156	10	0	16	0	26	24	266	14	0	304	9	4	89	0	102	588
% App. Total	7.7	90.4	1.9	0		38.5	0	61.5	0		7.9	87.5	4.6	0		8.8	3.9	87.3	0		
PHF	.750	.953	.375	.000	.975	.417	.000	.444	.000	.433	.857	.639	.583	.000	.661	.563	.500	.767	.000	.797	.742



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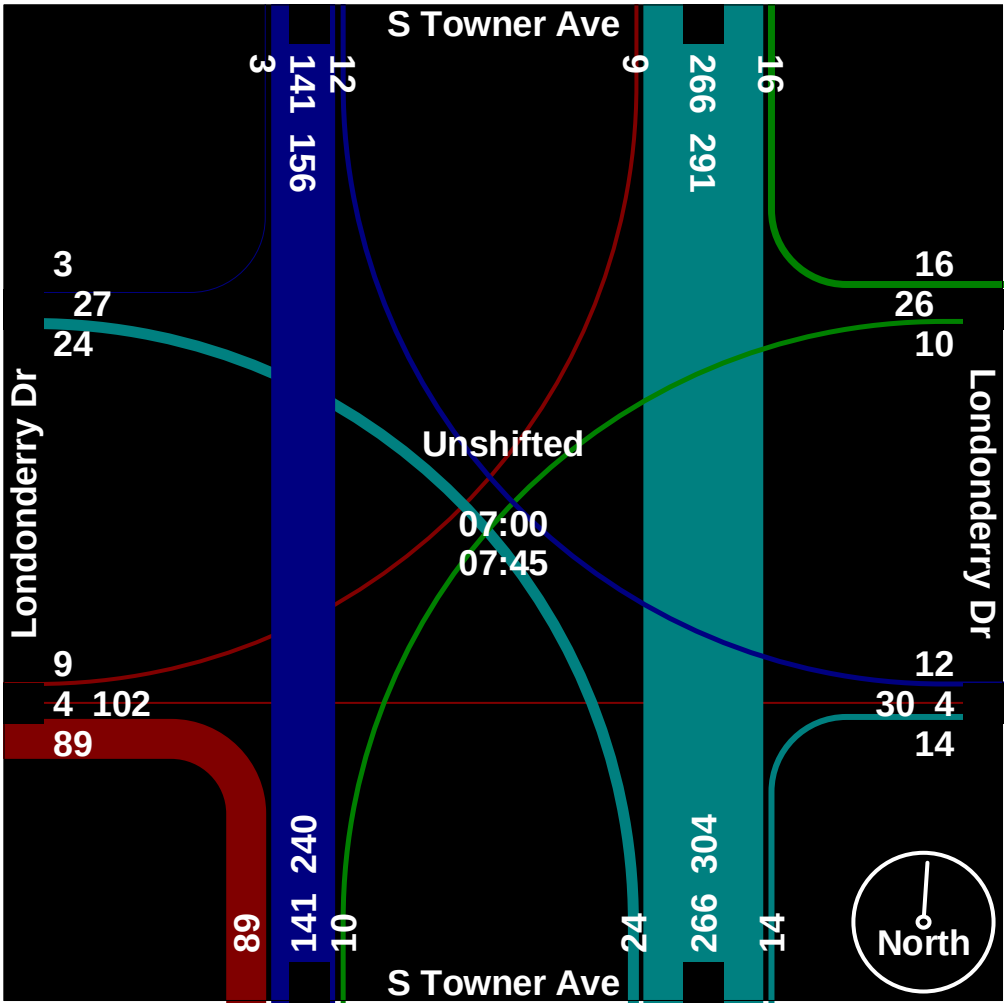
File Name : S Towner Ave - Londonderry Dr AM
Site Code : 00184630
Start Date : 9/25/2018
Page No : 3



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545 E Pikes Peak Ave, Suite 210
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719-633-2868

File Name : S Towner Ave - Londonderry Dr PM
Site Code : 00184630
Start Date : 9/25/2018
Page No : 1

Groups Printed- Unshifted

	S Towner Ave Southbound				Londonderry Dr Westbound				S Towner Ave Northbound				Londonderry Dr Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
16:30	3	7	0	0	0	1	0	0	14	6	1	0	1	0	16	0	49
16:45	0	3	1	0	0	0	0	0	20	25	1	0	1	0	12	0	63
Total	3	10	1	0	0	1	0	0	34	31	2	0	2	0	28	0	112
17:00	1	7	0	0	1	0	0	0	16	44	6	0	2	0	13	0	90
17:15	2	11	2	0	4	0	0	0	18	23	15	0	0	2	5	0	82
17:30	1	23	1	0	10	1	1	0	11	18	11	0	1	2	10	0	90
17:45	2	28	1	0	10	2	4	0	24	23	8	0	1	2	11	0	116
Total	6	69	4	0	25	3	5	0	69	108	40	0	4	6	39	0	378
18:00	0	31	3	0	3	1	2	0	20	24	2	0	1	2	10	0	99
18:15	0	7	1	0	3	1	0	0	13	12	2	0	1	0	4	0	44
Grand Total	9	117	9	0	31	6	7	0	136	175	46	0	8	8	81	0	633
Apprch %	6.7	86.7	6.7	0	70.5	13.6	15.9	0	38.1	49	12.9	0	8.2	8.2	83.5	0	
Total %	1.4	18.5	1.4	0	4.9	0.9	1.1	0	21.5	27.6	7.3	0	1.3	1.3	12.8	0	

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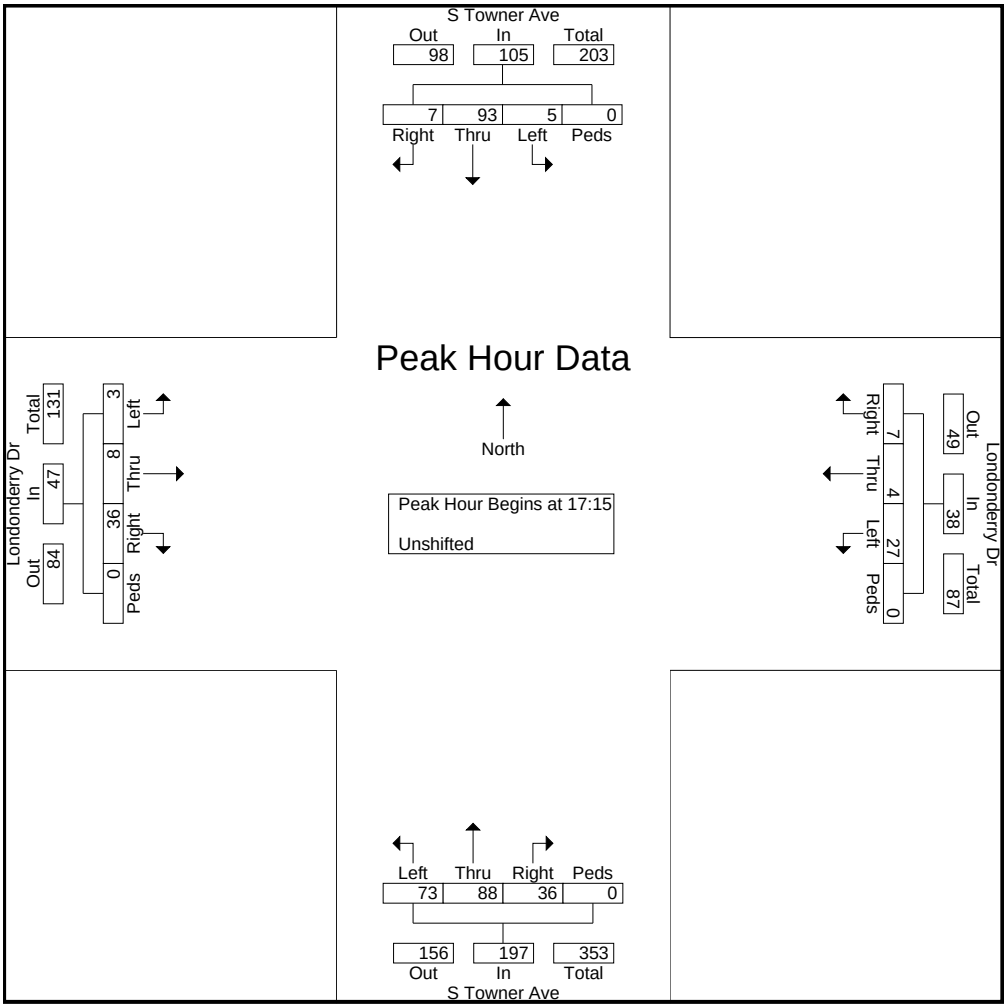
File Name : S Towner Ave - Londonderry Dr PM
Site Code : 00184630
Start Date : 9/25/2018
Page No : 2

	S Towner Ave Southbound					Londonderry Dr Westbound					S Towner Ave Northbound					Londonderry Dr Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:30 to 18:15 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 17:15																					
17:15	**2**	11	2	0	15	4	0	0	0	4	18	23	**15**	0	**56**	0	**2**	5	0	7	82
17:30	1	23	1	0	25	**10**	1	1	0	12	11	18	11	0	40	**1**	2	10	0	13	90
17:45	2	28	1	0	31	10	**2**	**4**	0	**16**	**24**	23	8	0	55	1	2	**11**	0	**14**	**116**
18:00	0	**31**	**3**	0	**34**	3	1	2	0	6	20	**24**	2	0	46	1	2	10	0	13	99
Total Volume	5	93	7	0	105	27	4	7	0	38	73	88	36	0	197	3	8	36	0	47	387
% App. Total	4.8	88.6	6.7	0		71.1	10.5	18.4	0		37.1	44.7	18.3	0		6.4	17	76.6	0		
PHF	.625	.750	.583	.000	.772	.675	.500	.438	.000	.594	.760	.917	.600	.000	.879	.750	1.000	.818	.000	.839	.834



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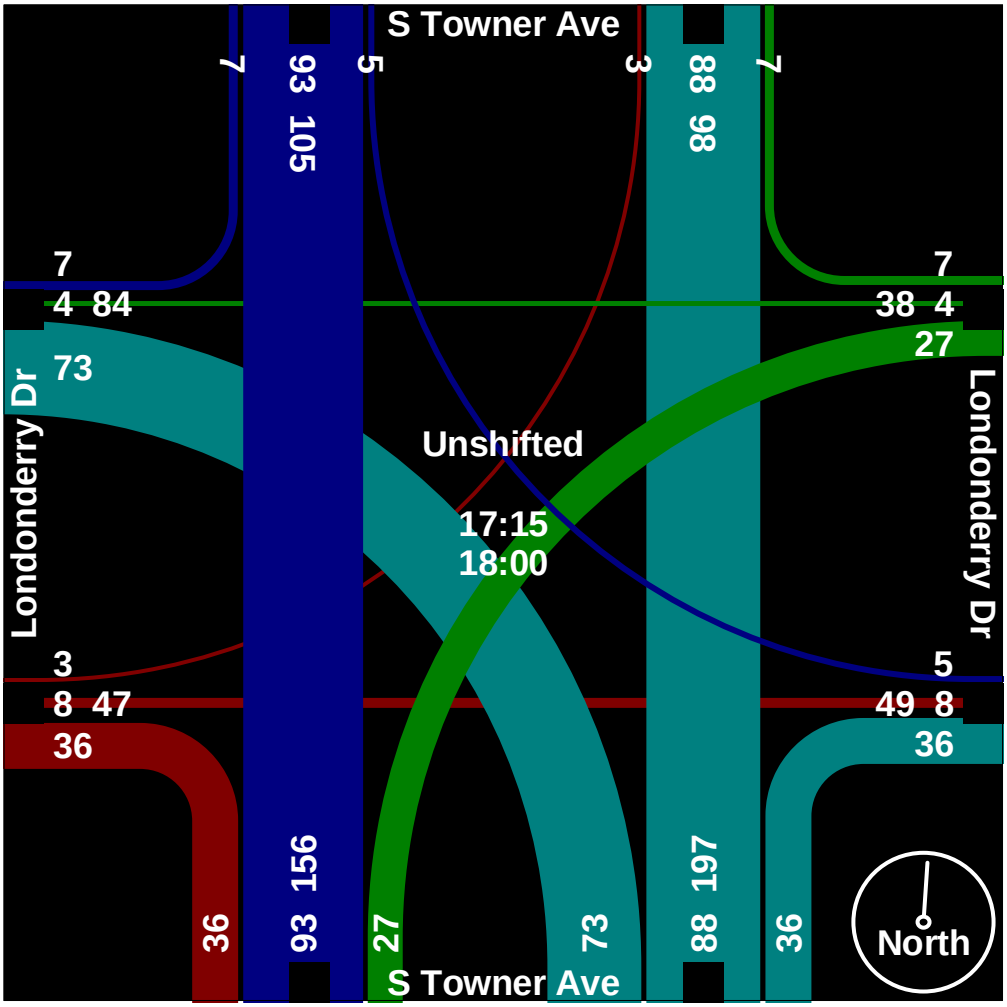
File Name : S Towner Ave - Londonderry Dr PM
Site Code : 00184630
Start Date : 9/25/2018
Page No : 3



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File Name : S Towner Ave - Londonderry Dr Schl
Site Code : 00184630
Start Date : 9/26/2018
Page No : 1

Groups Printed- Unshifted

	S Towner Ave Southbound				Londonderry Dr Westbound				S Towner Ave Northbound				Londonderry Dr Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
14:00	1	13	0	0	2	0	0	0	17	7	3	0	0	0	12	0	55
14:15	0	14	0	0	0	0	0	0	10	5	2	0	1	1	6	0	39
14:30	0	5	2	0	1	0	1	0	18	24	2	0	0	0	6	0	59
14:45	0	10	1	0	0	0	0	0	21	34	8	0	4	4	14	0	96
Total	1	42	3	0	3	0	1	0	66	70	15	0	5	5	38	0	249
15:00	0	56	2	0	8	0	10	0	10	32	6	0	2	8	34	0	168
15:15	1	28	3	0	2	0	0	0	12	14	1	0	1	0	19	0	81
15:30	1	13	0	0	2	1	1	0	13	5	1	0	1	0	11	0	49
Grand Total	3	139	8	0	15	1	12	0	101	121	23	0	9	13	102	0	547
Apprch %	2	92.7	5.3	0	53.6	3.6	42.9	0	41.2	49.4	9.4	0	7.3	10.5	82.3	0	
Total %	0.5	25.4	1.5	0	2.7	0.2	2.2	0	18.5	22.1	4.2	0	1.6	2.4	18.6	0	

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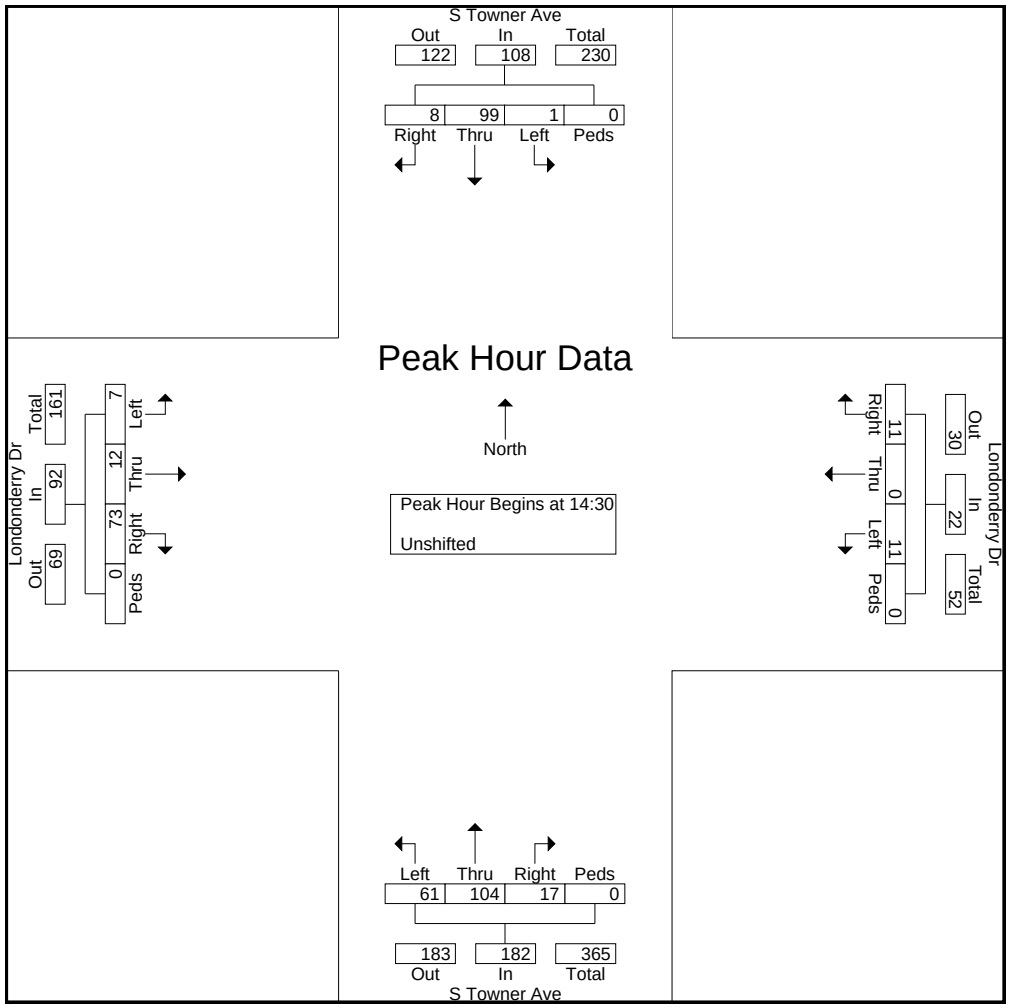
File Name : S Towner Ave - Londonderry Dr Schl
Site Code : 00184630
Start Date : 9/26/2018
Page No : 2

	S Towner Ave Southbound					Londonderry Dr Westbound					S Towner Ave Northbound					Londonderry Dr Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 2:00:00 PM to 3:30:00 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 2:30:00 PM																					
2:30:00 PM	0	5	2	0	7	1	0	1	0	2	18	24	2	0	44	0	0	6	0	6	59
2:45:00 PM	0	10	1	0	11	0	0	0	0	0	**21**	**34**	**8**	0	**63**	**4**	4	14	0	22	96
3:00:00 PM	0	**56**	2	0	**58**	**8**	0	**10**	0	**18**	10	32	6	0	48	2	**8**	**34**	0	**44**	**168**
3:15:00 PM	**1**	28	**3**	0	32	2	0	0	0	2	12	14	1	0	27	1	0	19	0	20	81
Total Volume	1	99	8	0	108	11	0	11	0	22	61	104	17	0	182	7	12	73	0	92	404
% App. Total	0.9	91.7	7.4	0		50	0	50	0		33.5	57.1	9.3	0		7.6	13	79.3	0		
PHF	.250	.442	.667	.000	.466	.344	.000	.275	.000	.306	.726	.765	.531	.000	.722	.438	.375	.537	.000	.523	.601



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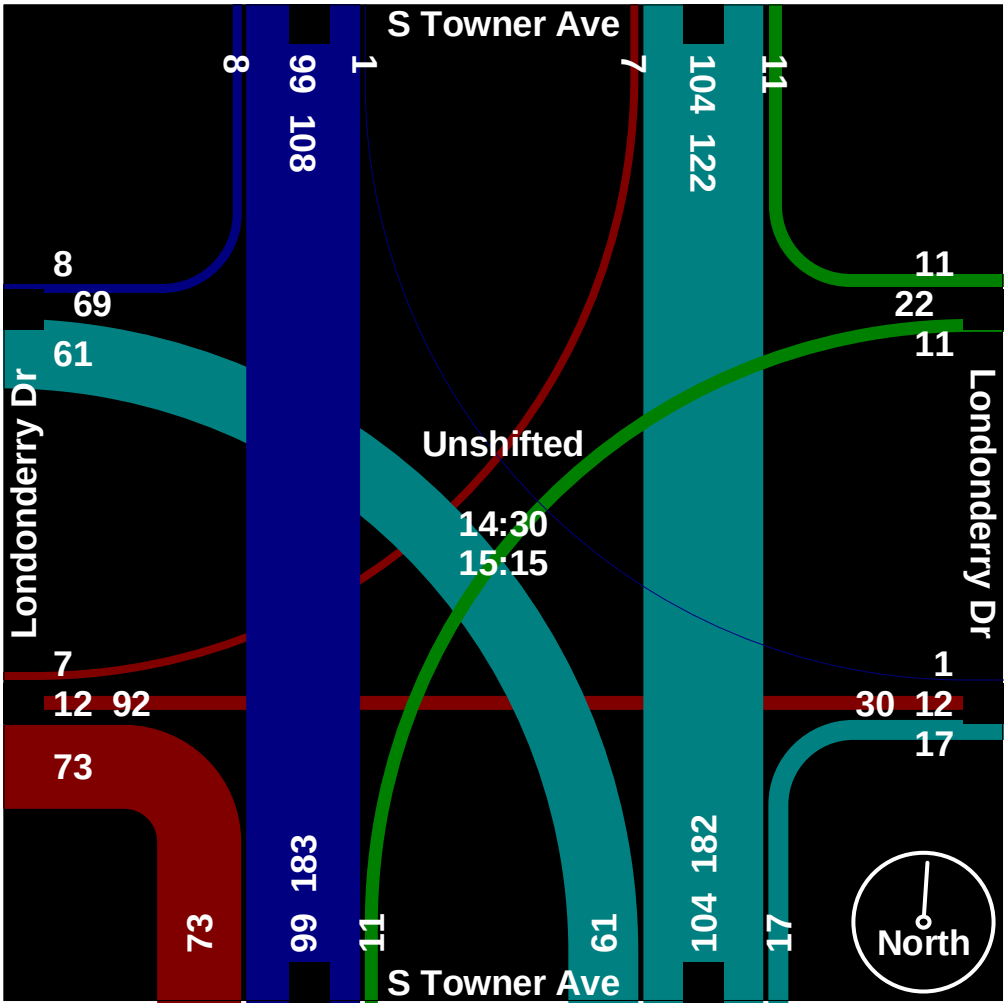
File Name : S Towner Ave - Londonderry Dr Schl
Site Code : 00184630
Start Date : 9/26/2018
Page No : 3



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Select File/Preference in the Main Scree
Then Click the Comments Tab

Groups Printed- Unshifted

	Towner Ave Southbound					Stapleton Dr Westbound					Towner Ave Northbound					Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:30	22	1	0	0	23	1	0	16	0	17	0	2	1	0	3	0	0	0	0	0	43
06:45	26	1	0	0	27	0	0	33	0	33	0	2	1	0	3	0	1	0	0	1	64
Total	48	2	0	0	50	1	0	49	0	50	0	4	2	0	6	0	1	0	0	1	107
07:00	48	5	0	0	53	0	0	47	0	47	0	5	0	0	5	0	0	0	0	0	105
07:15	65	4	0	0	69	0	0	93	0	93	0	6	2	0	8	0	0	0	0	0	170
07:30	59	4	0	0	63	1	0	119	0	120	0	8	1	0	9	0	0	0	0	0	192
07:45	45	2	0	0	47	1	0	31	0	32	0	3	1	0	4	0	0	0	0	0	83
Total	217	15	0	0	232	2	0	290	0	292	0	22	4	0	26	0	0	0	0	0	550
08:00	22	1	0	0	23	1	0	20	0	21	0	2	1	0	3	0	0	0	0	0	47
08:15	16	2	0	0	18	0	0	12	0	12	0	1	0	0	1	0	0	0	0	0	31

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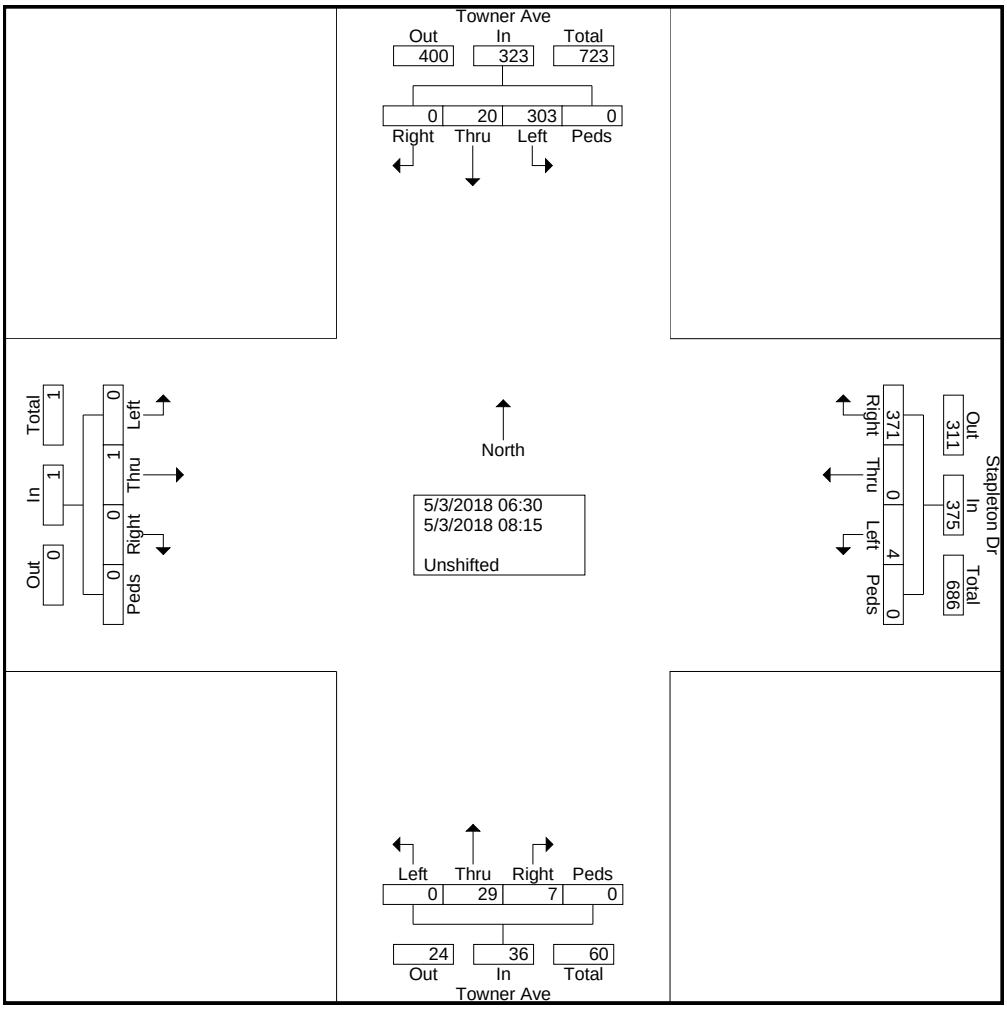
Groups Printed- Unshifted

	Towner Ave Southbound					Stapleton Dr Westbound					Towner Ave Northbound					Eastbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Grand Total	303	20	0	0	323	4	0	371	0	375	0	29	7	0	36	0	1	0	0	1	735
Apprch %	93.8	6.2	0	0		1.1	0	98.9	0		0	80.6	19.4	0		0	100	0	0		
Total %	41.2	2.7	0	0	43.9	0.5	0	50.5	0	51	0	3.9	1	0	4.9	0	0.1	0	0	0.1	



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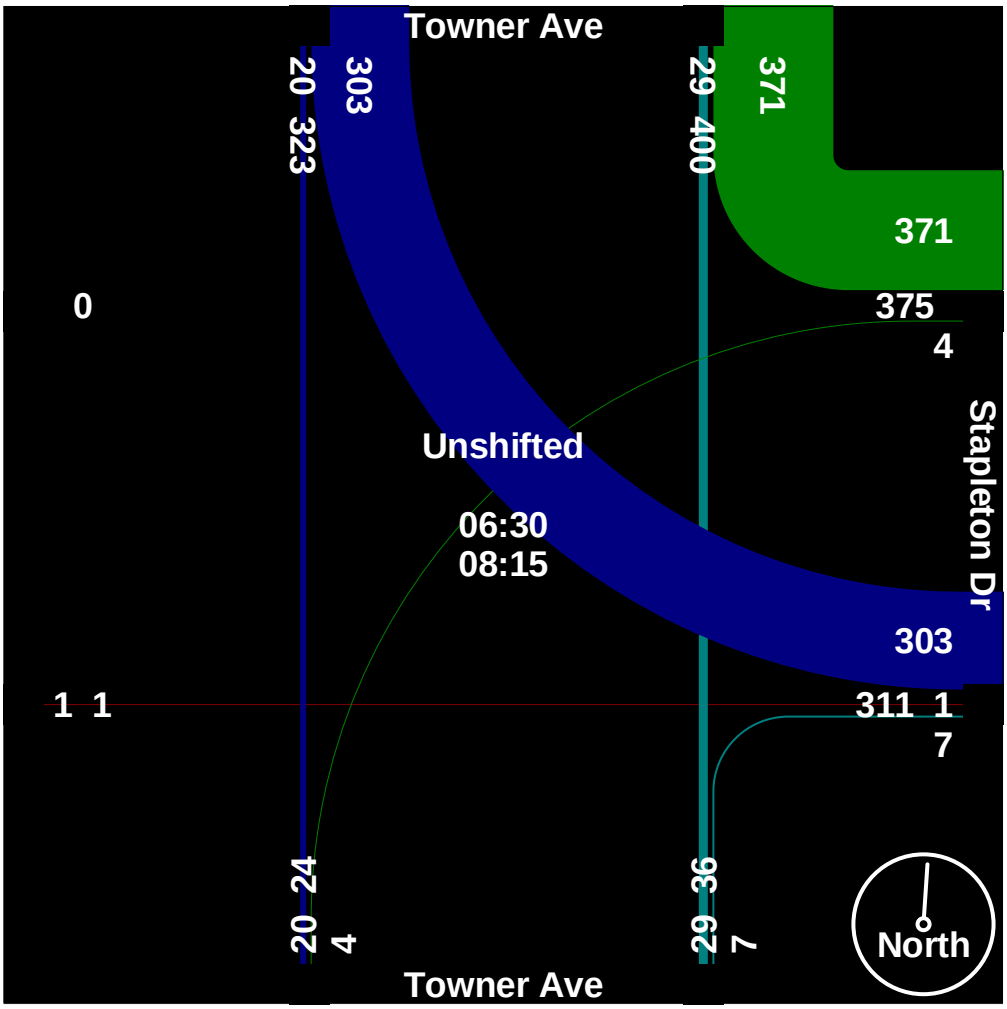

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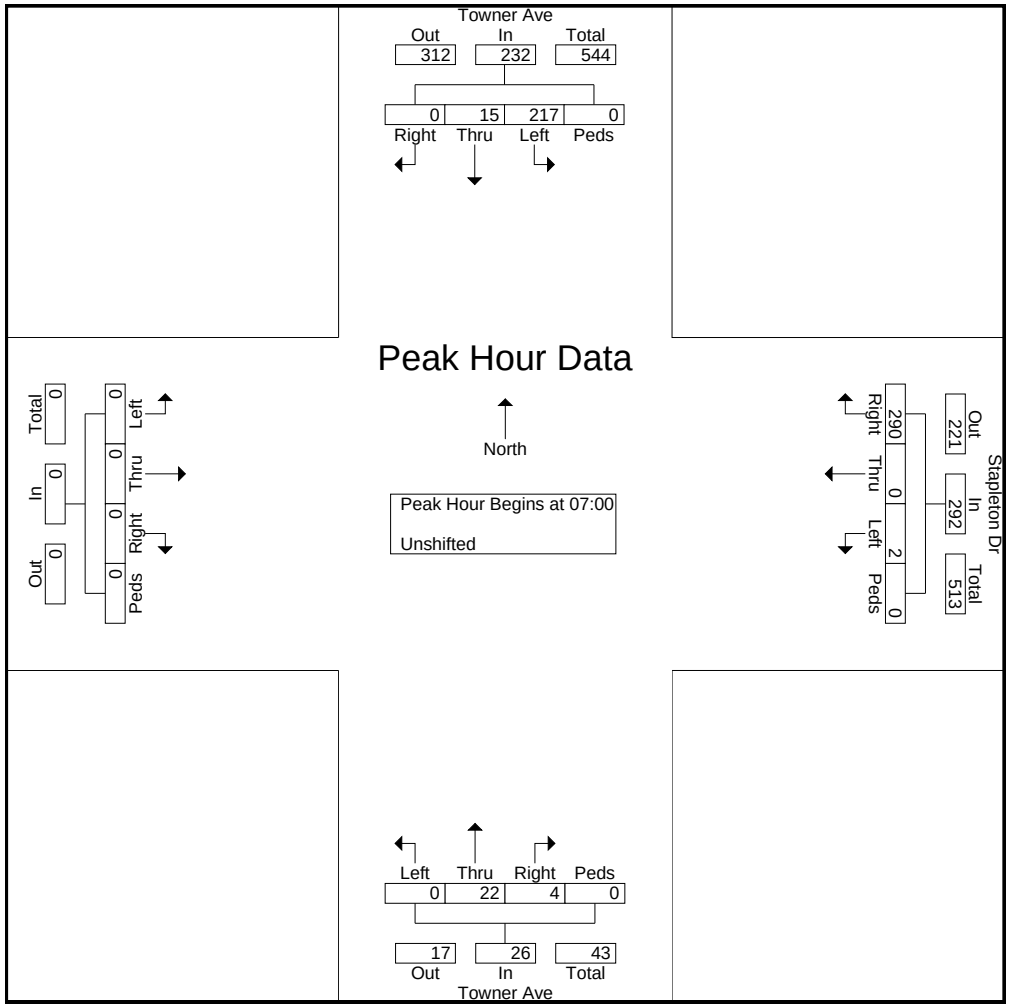
	Towner Ave Southbound					Stapleton Dr Westbound					Towner Ave Northbound					Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:30 to 08:15 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00																					
07:00	48	**5**	0	0	53	0	0	47	0	47	0	5	0	0	5	0	0	0	0	0	105
07:15	**65**	4	0	0	**69**	0	0	93	0	93	0	6	**2**	0	8	0	0	0	0	0	170
07:30	59	4	0	0	63	**1**	0	**119**	0	**120**	0	**8**	1	0	**9**	0	0	0	0	0	**192**
07:45	45	2	0	0	47	1	0	31	0	32	0	3	1	0	4	0	0	0	0	0	83
Total Volume	217	15	0	0	232	2	0	290	0	292	0	22	4	0	26	0	0	0	0	0	550
% App. Total	93.5	6.5	0	0		0.7	0	99.3	0		0	84.6	15.4	0		0	0	0	0		
PHF	.835	.750	.000	.000	.841	.500	.000	.609	.000	.608	.000	.688	.500	.000	.722	.000	.000	.000	.000	.000	.716



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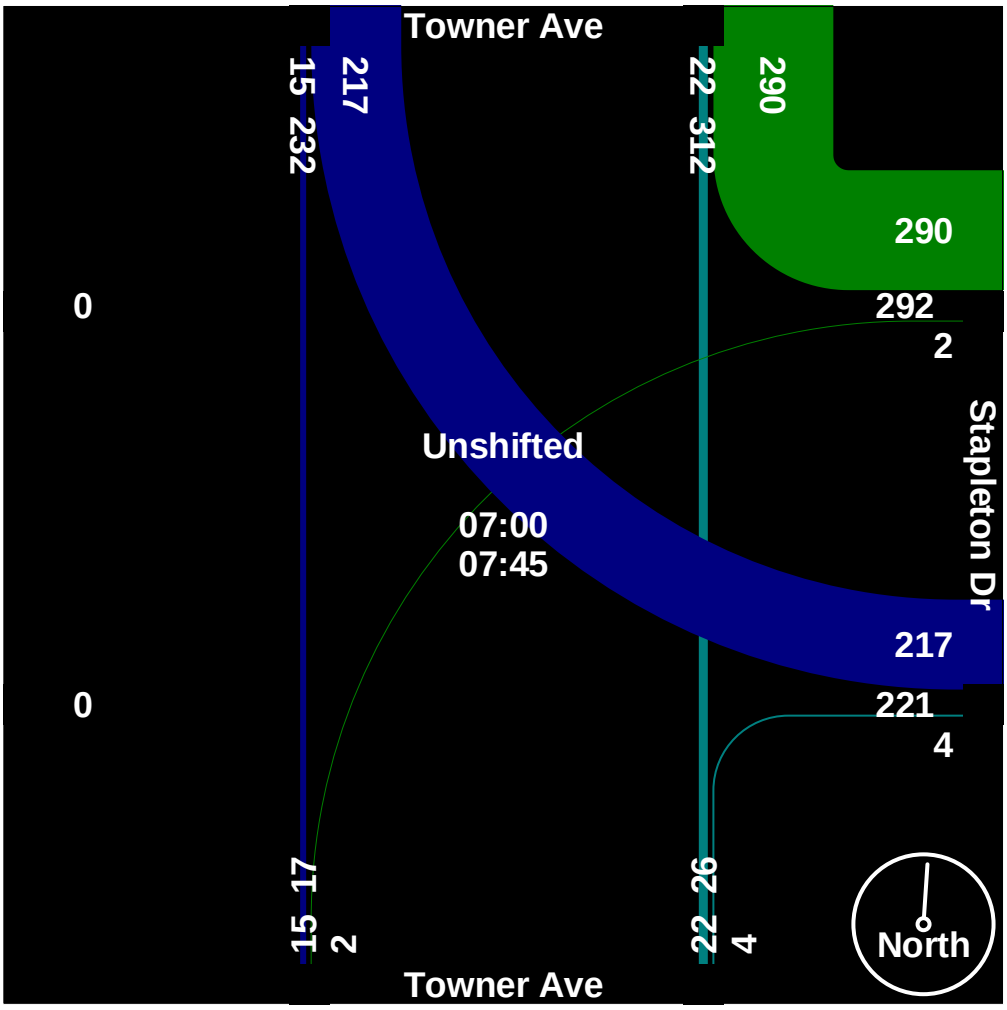

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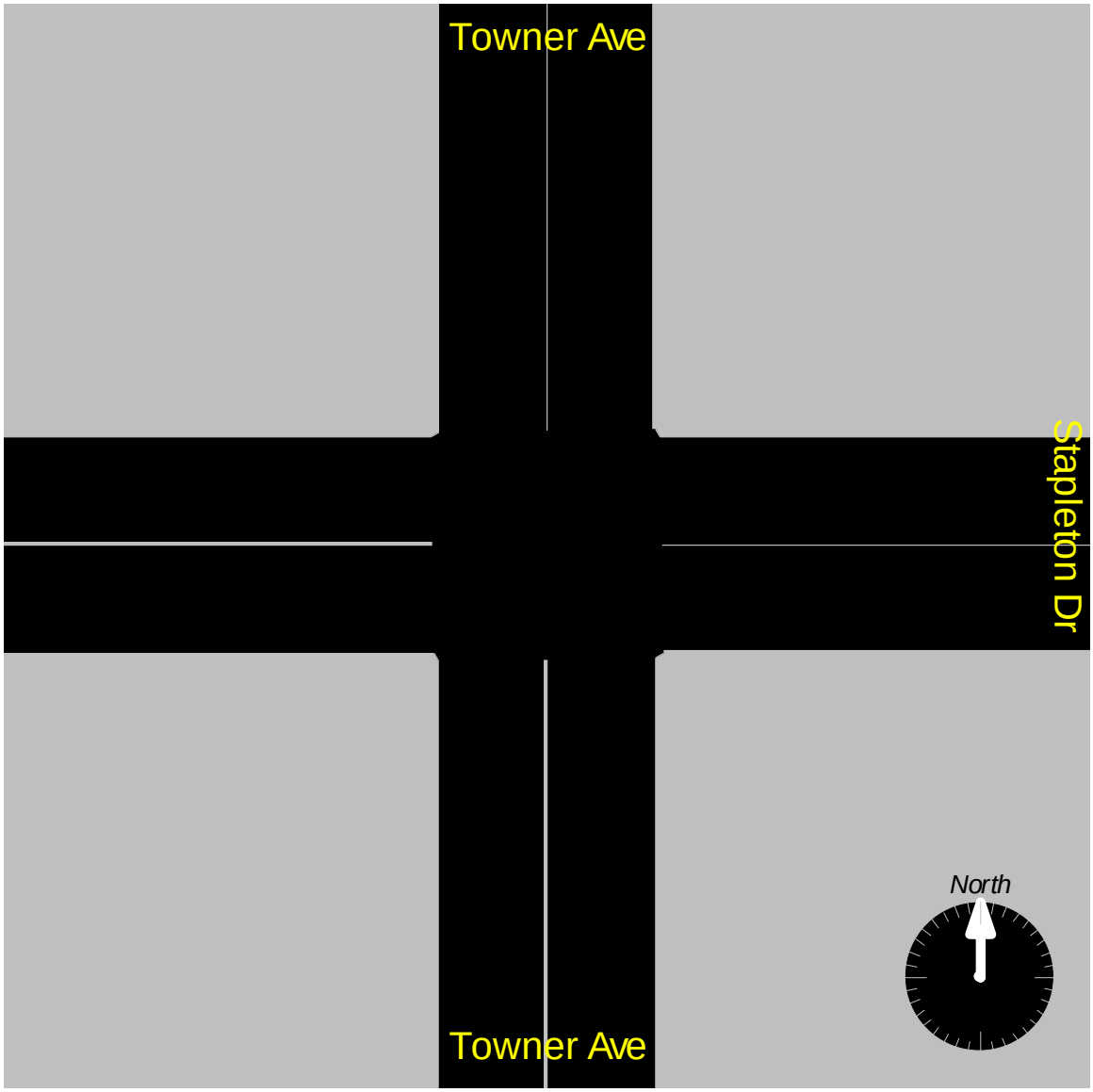

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Default Comments
Change These in The Preferences Window
Select File/Preference in the Main Scree
Then Click the Comments Tab

Groups Printed- Unshifted

	Towner ave Southbound					Stapleton Dr Westbound					Towner ave Northbound					Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
16:00	16	0	0	0	16	0	0	10	0	10	0	1	0	0	1	0	0	0	0	0	27
16:15	16	2	0	0	18	0	0	34	0	34	0	1	1	0	2	0	0	0	0	0	54
16:30	12	0	0	0	12	1	0	26	0	27	0	3	0	0	3	0	0	0	0	0	42
16:45	17	0	0	0	17	2	0	25	0	27	0	1	0	0	1	0	0	0	0	0	45
Total	61	2	0	0	63	3	0	95	0	98	0	6	1	0	7	0	0	0	0	0	168
17:00	29	2	0	0	31	1	0	18	0	19	0	1	1	0	2	0	0	0	0	0	52
17:15	13	1	0	0	14	0	0	14	0	14	0	3	1	0	4	0	0	0	0	0	32
17:30	11	1	0	0	12	1	0	16	0	17	0	0	0	0	0	0	0	0	0	0	29
17:45	9	0	0	0	9	1	0	12	0	13	0	1	0	0	1	0	0	0	0	0	23
Total	62	4	0	0	66	3	0	60	0	63	0	5	2	0	7	0	0	0	0	0	136

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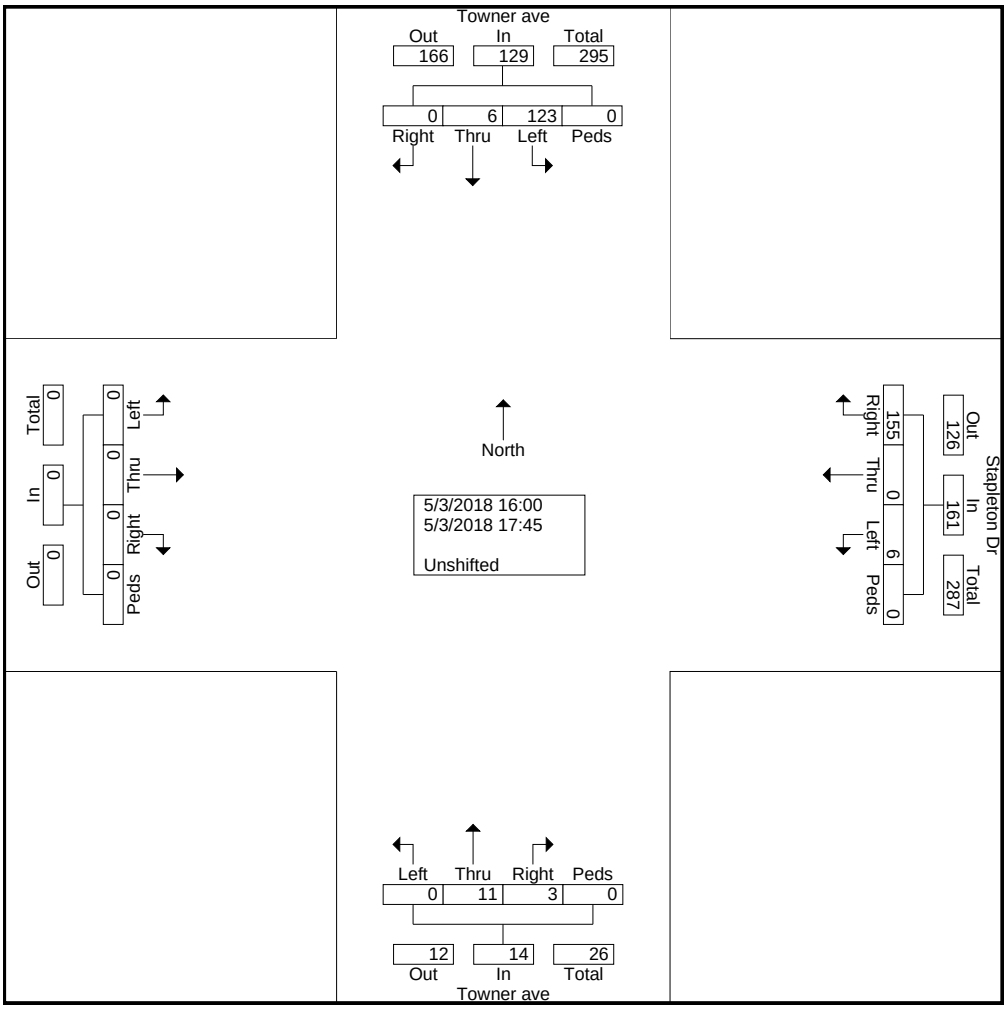
Groups Printed- Unshifted

	Towner ave Southbound					Stapleton Dr Westbound					Towner ave Northbound					Eastbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Grand Total	123	6	0	0	129	6	0	155	0	161	0	11	3	0	14	0	0	0	0	0	304
Apprch %	95.3	4.7	0	0		3.7	0	96.3	0		0	78.6	21.4	0		0	0	0	0		
Total %	40.5	2	0	0	42.4	2	0	51	0	53	0	3.6	1	0	4.6	0	0	0	0	0	



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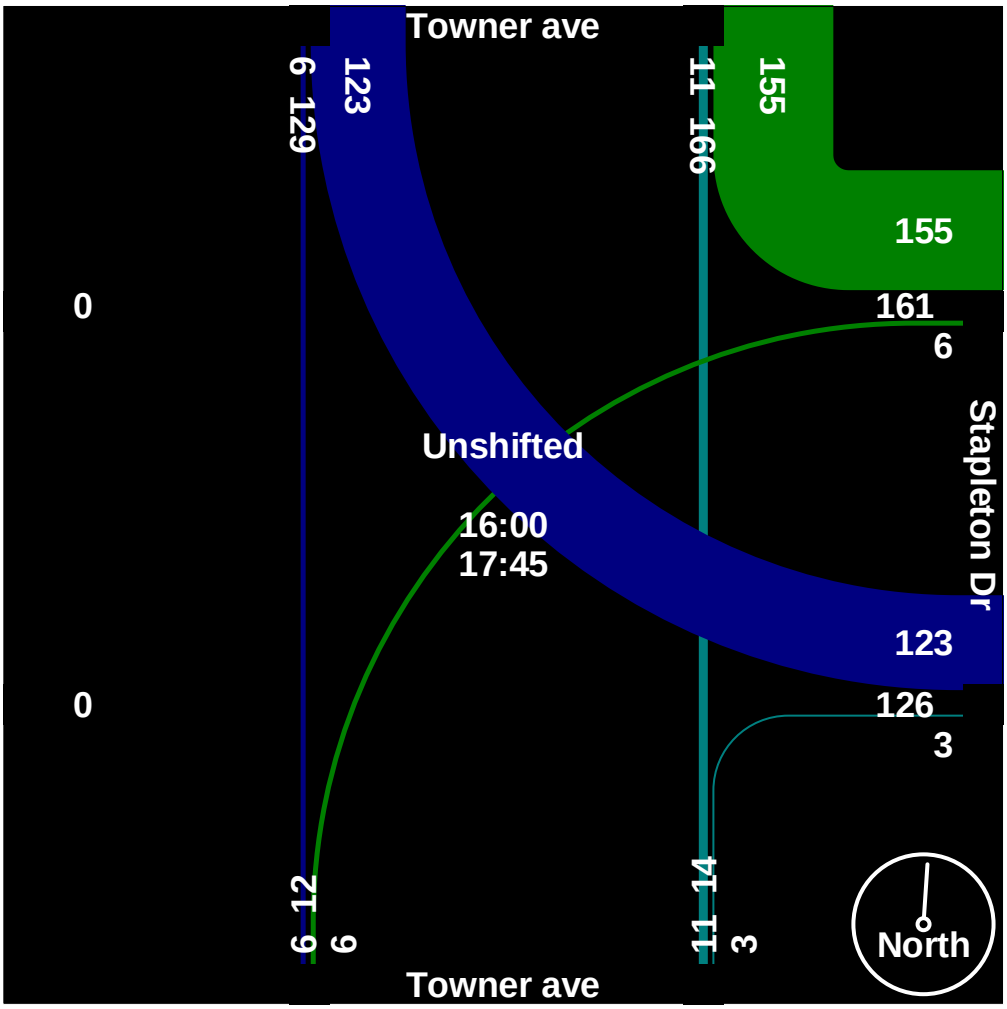

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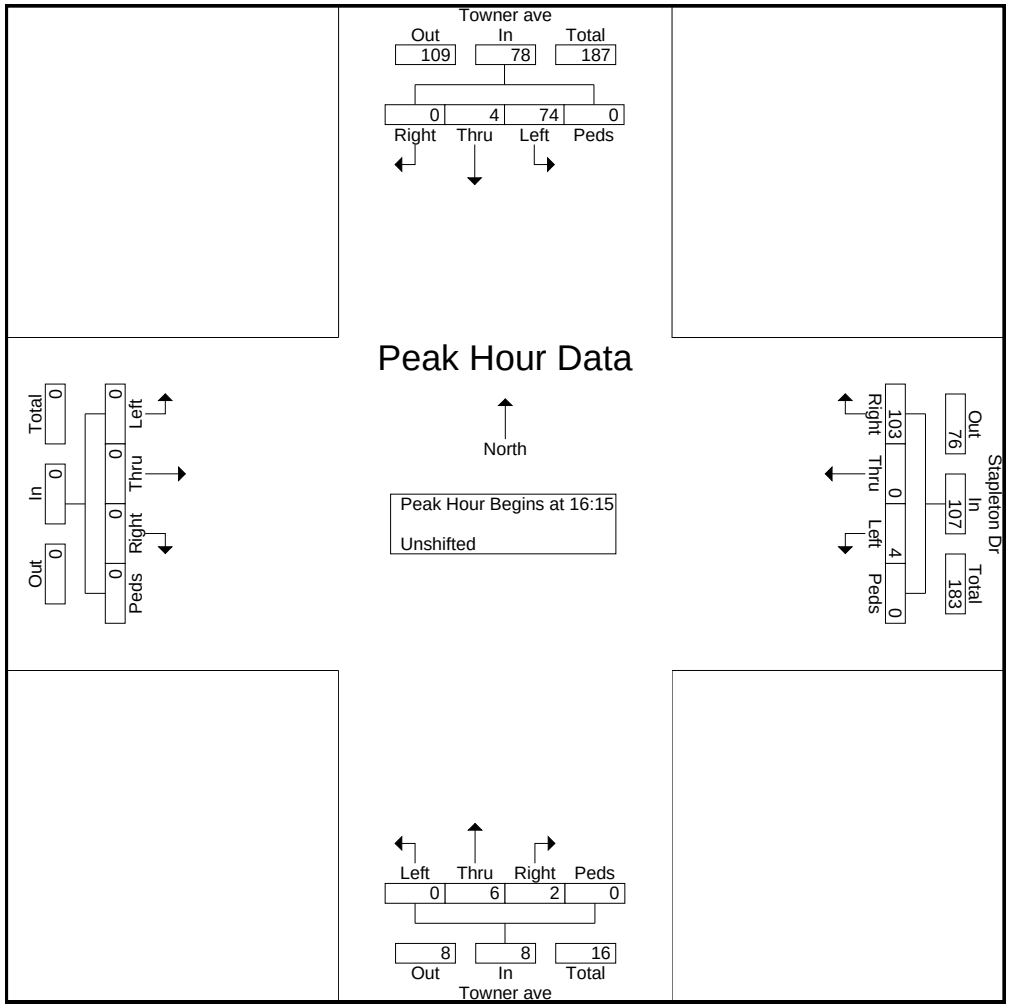
	Towner ave Southbound					Stapleton Dr Westbound					Towner ave Northbound					Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:15																					
16:15	16	**2**	0	0	18	0	0	**34**	0	**34**	0	1	**1**	0	2	0	0	0	0	0	**54**
16:30	12	0	0	0	12	1	0	26	0	27	0	**3**	0	0	**3**	0	0	0	0	0	42
16:45	17	0	0	0	17	**2**	0	25	0	27	0	1	0	0	1	0	0	0	0	0	45
17:00	**29**	2	0	0	**31**	1	0	18	0	19	0	1	1	0	2	0	0	0	0	0	52
Total Volume	74	4	0	0	78	4	0	103	0	107	0	6	2	0	8	0	0	0	0	0	193
% App. Total	94.9	5.1	0	0		3.7	0	96.3	0		0	75	25	0		0	0	0	0		
PHF	.638	.500	.000	.000	.629	.500	.000	.757	.000	.787	.000	.500	.500	.000	.667	.000	.000	.000	.000	.000	.894



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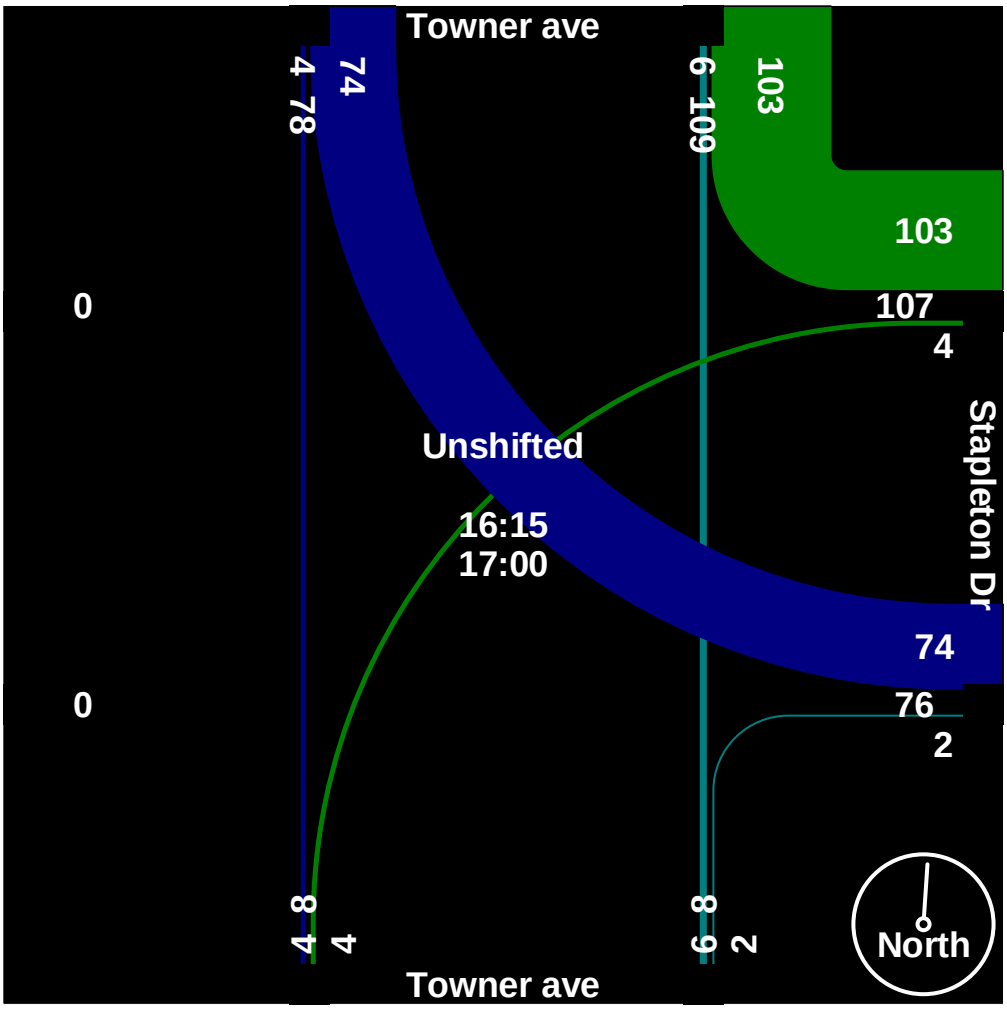

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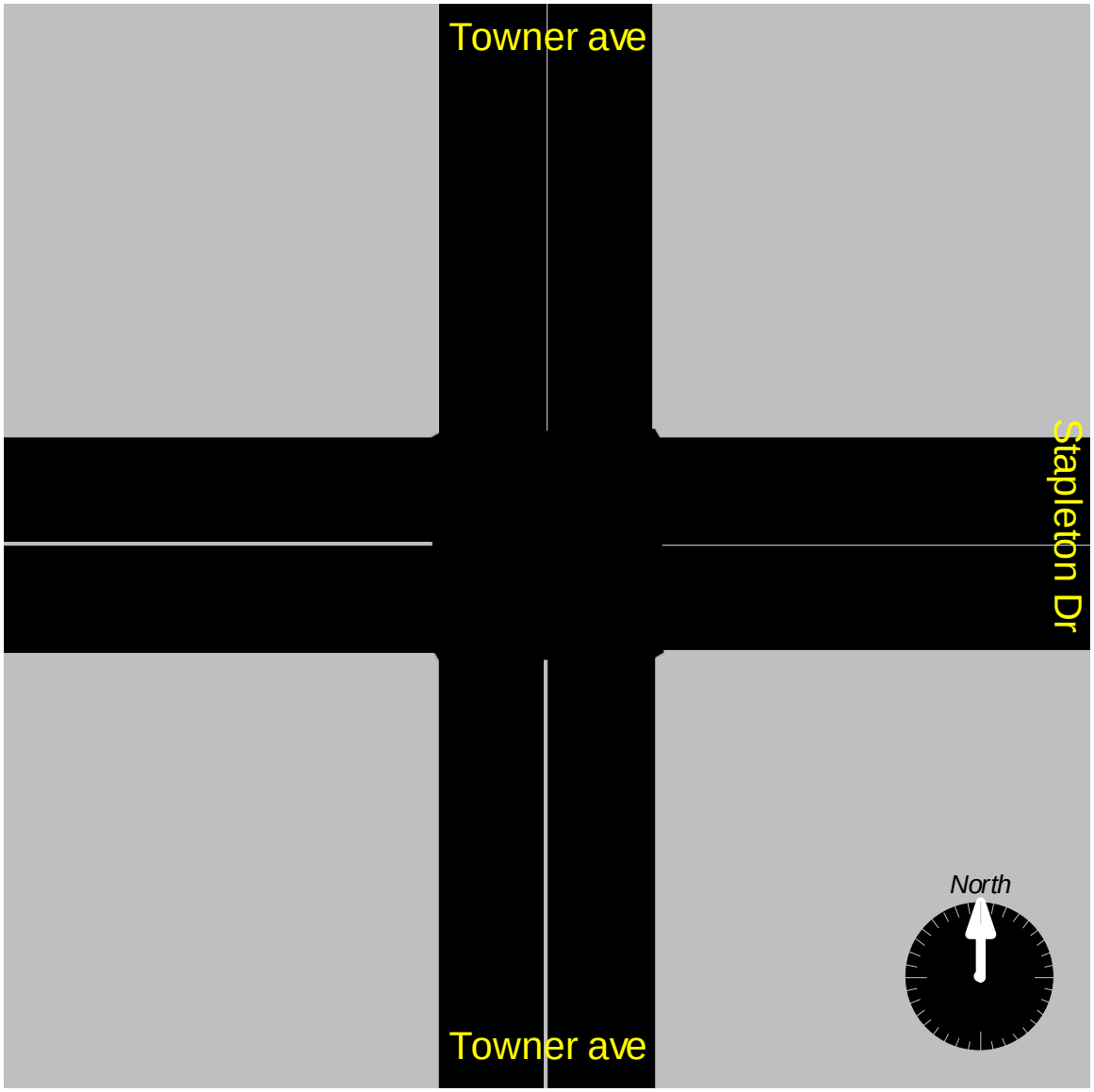


Intersection	
Int Delay, s/veh	8.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	71	8	197	44	8	223
Future Vol, veh/h	71	8	197	44	8	223
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	205	-	155	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	51	51	77	77	48	48
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	139	16	256	57	17	465

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	155	0	716	147
Stage 1	-	-	-	-	147	-
Stage 2	-	-	-	-	569	-
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	-	-	1425	-	397	900
Stage 1	-	-	-	-	880	-
Stage 2	-	-	-	-	566	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1425	-	326	900
Mov Cap-2 Maneuver	-	-	-	-	326	-
Stage 1	-	-	-	-	722	-
Stage 2	-	-	-	-	566	-

Approach	EB	WB	NB
HCM Control Delay, s	0	6.6	13.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	326	900	-	-	1425	-
HCM Lane V/C Ratio	0.051	0.516	-	-	0.18	-
HCM Control Delay (s)	16.6	13.2	-	-	8.1	-
HCM Lane LOS	C	B	-	-	A	-
HCM 95th %tile Q(veh)	0.2	3	-	-	0.7	-

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	4	89	11	0	16	24	266	14	12	141	3
Future Vol, veh/h	9	4	89	11	0	16	24	266	14	12	141	3
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	-	-	-	-	-	-	290	-	-	275	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	43	43	43	66	66	66	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	5	111	26	0	37	36	403	21	12	141	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	671	663	143	711	654	414	144	0	0	424	0	0
Stage 1	167	167	-	486	486	-	-	-	-	-	-	-
Stage 2	504	496	-	225	168	-	-	-	-	-	-	-
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	370	382	905	348	386	638	1438	-	-	1135	-	-
Stage 1	835	760	-	563	551	-	-	-	-	-	-	-
Stage 2	550	545	-	778	759	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	339	368	905	294	372	638	1438	-	-	1135	-	-
Mov Cap-2 Maneuver	339	368	-	294	372	-	-	-	-	-	-	-
Stage 1	814	752	-	549	537	-	-	-	-	-	-	-
Stage 2	505	531	-	671	751	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.8	14.7	0.6	0.6
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1438	-	-	751	432	1135	-	-
HCM Lane V/C Ratio	0.025	-	-	0.17	0.145	0.011	-	-
HCM Control Delay (s)	7.6	-	-	10.8	14.7	8.2	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.6	0.5	0	-	-

Intersection	
Intersection Delay, s/veh	11.6
Intersection LOS	B

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	290	22	4	217	15
Future Vol, veh/h	2	290	22	4	217	15
Peak Hour Factor	0.61	0.61	0.72	0.72	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	475	31	6	236	16
Number of Lanes	1	0	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	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	12	8.6	11.2
HCM LOS	B	A	B

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	1%	94%
Vol Thru, %	85%	0%	6%
Vol Right, %	15%	99%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	26	292	232
LT Vol	0	2	217
Through Vol	22	0	15
RT Vol	4	290	0
Lane Flow Rate	36	479	252
Geometry Grp	1	1	1
Degree of Util (X)	0.052	0.546	0.363
Departure Headway (Hd)	5.214	4.104	5.181
Convergence, Y/N	Yes	Yes	Yes
Cap	679	876	688
Service Time	3.304	2.133	3.256
HCM Lane V/C Ratio	0.053	0.547	0.366
HCM Control Delay	8.6	12	11.2
HCM Lane LOS	A	B	B
HCM 95th-tile Q	0.2	3.4	1.7

Intersection	
Int Delay, s/veh	6.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	12	1	60	21	2	67
Future Vol, veh/h	12	1	60	21	2	67
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	205	-	155	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	81	81	88	88	72	72
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	15	1	68	24	3	93

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	16	0	176	16
Stage 1	-	-	-	-	16	-
Stage 2	-	-	-	-	160	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1602	-	814	1063
Stage 1	-	-	-	-	1007	-
Stage 2	-	-	-	-	869	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1602	-	780	1063
Mov Cap-2 Maneuver	-	-	-	-	780	-
Stage 1	-	-	-	-	965	-
Stage 2	-	-	-	-	869	-

Approach	EB	WB	NB
HCM Control Delay, s	0	5.4	8.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	780	1063	-	-	1602	-
HCM Lane V/C Ratio	0.004	0.088	-	-	0.043	-
HCM Control Delay (s)	9.6	8.7	-	-	7.3	-
HCM Lane LOS	A	A	-	-	A	-
HCM 95th %tile Q(veh)	0	0.3	-	-	0.1	-

Intersection	
Int Delay, s/veh	4.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	8	36	27	4	7	73	88	36	5	93	7
Future Vol, veh/h	3	8	36	27	4	7	73	88	36	5	93	7
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	-	-	-	-	-	-	290	-	-	275	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	59	59	59	90	90	90	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	10	43	46	7	12	81	98	40	6	109	8

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	415	425	113	432	409	118	117	0	0	138	0	0
Stage 1	125	125	-	280	280	-	-	-	-	-	-	-
Stage 2	290	300	-	152	129	-	-	-	-	-	-	-
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	548	521	940	534	532	934	1471	-	-	1446	-	-
Stage 1	879	792	-	727	679	-	-	-	-	-	-	-
Stage 2	718	666	-	850	789	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	511	490	940	480	501	934	1471	-	-	1446	-	-
Mov Cap-2 Maneuver	511	490	-	480	501	-	-	-	-	-	-	-
Stage 1	831	789	-	687	642	-	-	-	-	-	-	-
Stage 2	663	629	-	798	786	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10	12.7	2.8	0.4
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1471	-	-	777	530	1446	-	-
HCM Lane V/C Ratio	0.055	-	-	0.072	0.122	0.004	-	-
HCM Control Delay (s)	7.6	-	-	10	12.7	7.5	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.2	0.4	0	-	-

Intersection	
Intersection Delay, s/veh	7.4
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	103	6	2	74	4
Future Vol, veh/h	4	103	6	2	74	4
Peak Hour Factor	0.79	0.79	1.00	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	130	6	2	74	4
Number of Lanes	1	0	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	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	7.1	7.2	7.9
HCM LOS	A	A	A

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	4%	95%
Vol Thru, %	75%	0%	5%
Vol Right, %	25%	96%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	8	107	78
LT Vol	0	4	74
Through Vol	6	0	4
RT Vol	2	103	0
Lane Flow Rate	8	135	78
Geometry Grp	1	1	1
Degree of Util (X)	0.009	0.132	0.095
Departure Headway (Hd)	4.081	3.511	4.367
Convergence, Y/N	Yes	Yes	Yes
Cap	872	1012	821
Service Time	2.128	1.566	2.393
HCM Lane V/C Ratio	0.009	0.133	0.095
HCM Control Delay	7.2	7.1	7.9
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0	0.5	0.3

Intersection	
Int Delay, s/veh	7.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	42	5	86	42	6	120
Future Vol, veh/h	42	5	86	42	6	120
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	205	-	155	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	84	100	100	40	40
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	50	6	86	42	15	300

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	56	0	267	53
Stage 1	-	-	-	-	53	-
Stage 2	-	-	-	-	214	-
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	-	-	1549	-	722	1014
Stage 1	-	-	-	-	970	-
Stage 2	-	-	-	-	822	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1549	-	682	1014
Mov Cap-2 Maneuver	-	-	-	-	682	-
Stage 1	-	-	-	-	916	-
Stage 2	-	-	-	-	822	-

Approach	EB	WB	NB
HCM Control Delay, s	0	5	10
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	682	1014	-	-	1549	-
HCM Lane V/C Ratio	0.022	0.296	-	-	0.056	-
HCM Control Delay (s)	10.4	10	-	-	7.5	-
HCM Lane LOS	B	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	1.2	-	-	0.2	-

Intersection	
Int Delay, s/veh	5.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	12	73	11	0	11	61	104	17	1	99	8
Future Vol, veh/h	7	12	73	11	0	11	61	104	17	1	99	8
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	-	-	-	-	-	-	290	-	-	275	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	52	52	52	31	31	31	95	95	95	47	47	47
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	23	140	35	0	35	64	109	18	2	211	17

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	488	479	220	551	478	118	228	0	0	127	0	0
Stage 1	224	224	-	246	246	-	-	-	-	-	-	-
Stage 2	264	255	-	305	232	-	-	-	-	-	-	-
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	490	486	820	445	486	934	1340	-	-	1459	-	-
Stage 1	779	718	-	758	703	-	-	-	-	-	-	-
Stage 2	741	696	-	705	713	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	454	462	820	342	462	934	1340	-	-	1459	-	-
Mov Cap-2 Maneuver	454	462	-	342	462	-	-	-	-	-	-	-
Stage 1	742	717	-	722	669	-	-	-	-	-	-	-
Stage 2	679	663	-	565	712	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.8	13.4	2.6	0.1
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1340	-	-	705	501	1459	-	-
HCM Lane V/C Ratio	0.048	-	-	0.251	0.142	0.001	-	-
HCM Control Delay (s)	7.8	-	-	11.8	13.4	7.5	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	1	0.5	0	-	-

Intersection	
Int Delay, s/veh	9.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	114	8	199	58	8	228
Future Vol, veh/h	114	8	199	58	8	228
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	205	-	155	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	51	51	77	77	48	48
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	224	16	258	75	17	475

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	240	0	823	232
Stage 1	-	-	-	-	232	-
Stage 2	-	-	-	-	591	-
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	-	-	1327	-	343	807
Stage 1	-	-	-	-	807	-
Stage 2	-	-	-	-	553	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1327	-	276	807
Mov Cap-2 Maneuver	-	-	-	-	276	-
Stage 1	-	-	-	-	650	-
Stage 2	-	-	-	-	553	-

Approach	EB	WB	NB
HCM Control Delay, s	0	6.5	15.7
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	276	807	-	-	1327	-
HCM Lane V/C Ratio	0.06	0.589	-	-	0.195	-
HCM Control Delay (s)	18.9	15.6	-	-	8.4	-
HCM Lane LOS	C	C	-	-	A	-
HCM 95th %tile Q(veh)	0.2	3.9	-	-	0.7	-

Intersection	
Int Delay, s/veh	3.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	4	127	10	0	16	37	278	14	12	177	3
Future Vol, veh/h	9	4	127	10	0	16	37	278	14	12	177	3
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	-	-	-	-	-	-	290	-	-	275	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	43	43	43	66	66	66	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	5	159	23	0	37	56	421	21	12	177	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	765	757	179	829	748	432	180	0	0	442	0	0
Stage 1	203	203	-	544	544	-	-	-	-	-	-	-
Stage 2	562	554	-	285	204	-	-	-	-	-	-	-
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	320	337	864	290	341	624	1396	-	-	1118	-	-
Stage 1	799	733	-	523	519	-	-	-	-	-	-	-
Stage 2	512	514	-	722	733	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	289	320	864	225	324	624	1396	-	-	1118	-	-
Mov Cap-2 Maneuver	289	320	-	225	324	-	-	-	-	-	-	-
Stage 1	767	725	-	502	498	-	-	-	-	-	-	-
Stage 2	462	493	-	579	725	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.4	16.6	0.9	0.5
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1396	-	-	734	371	1118	-	-
HCM Lane V/C Ratio	0.04	-	-	0.238	0.163	0.011	-	-
HCM Control Delay (s)	7.7	-	-	11.4	16.6	8.3	-	-
HCM Lane LOS	A	-	-	B	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.9	0.6	0	-	-

Intersection	
Intersection Delay, s/veh	13.9
Intersection LOS	B

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	307	22	4	300	15
Future Vol, veh/h	2	307	22	4	300	15
Peak Hour Factor	0.61	0.61	0.72	0.72	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	503	31	6	326	16
Number of Lanes	1	0	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	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	14.2	8.9	13.9
HCM LOS	B	A	B

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	1%	95%
Vol Thru, %	85%	0%	5%
Vol Right, %	15%	99%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	26	309	315
LT Vol	0	2	300
Through Vol	22	0	15
RT Vol	4	307	0
Lane Flow Rate	36	507	342
Geometry Grp	1	1	1
Degree of Util (X)	0.056	0.613	0.513
Departure Headway (Hd)	5.6	4.355	5.396
Convergence, Y/N	Yes	Yes	Yes
Cap	642	821	671
Service Time	3.611	2.426	3.398
HCM Lane V/C Ratio	0.056	0.618	0.51
HCM Control Delay	8.9	14.2	13.9
HCM Lane LOS	A	B	B
HCM 95th-tile Q	0.2	4.3	2.9

Intersection	
Int Delay, s/veh	2.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	37	0	6	21	0	18
Future Vol, veh/h	37	0	6	21	0	18
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	40	0	7	23	0	20

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	40	0	77	40
Stage 1	-	-	-	-	40	-
Stage 2	-	-	-	-	37	-
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	-	-	1570	-	926	1031
Stage 1	-	-	-	-	982	-
Stage 2	-	-	-	-	985	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1570	-	921	1031
Mov Cap-2 Maneuver	-	-	-	-	921	-
Stage 1	-	-	-	-	977	-
Stage 2	-	-	-	-	985	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.6	8.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1031	-	-	1570	-
HCM Lane V/C Ratio	0.019	-	-	0.004	-
HCM Control Delay (s)	8.6	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	4.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	11	0	8	2	0	9	2	17	1	3	11	7
Future Vol, veh/h	11	0	8	2	0	9	2	17	1	3	11	7
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	0	9	2	0	10	2	18	1	3	12	8

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	50	45	16	50	49	19	20	0	0	19	0	0
Stage 1	22	22	-	23	23	-	-	-	-	-	-	-
Stage 2	28	23	-	27	26	-	-	-	-	-	-	-
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	950	847	1063	950	843	1059	1596	-	-	1597	-	-
Stage 1	996	877	-	995	876	-	-	-	-	-	-	-
Stage 2	989	876	-	990	874	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	939	844	1063	941	840	1059	1596	-	-	1597	-	-
Mov Cap-2 Maneuver	939	844	-	941	840	-	-	-	-	-	-	-
Stage 1	995	875	-	994	875	-	-	-	-	-	-	-
Stage 2	979	875	-	980	872	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.7	8.5	0.7	1
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1596	-	-	988	1035	1597	-	-
HCM Lane V/C Ratio	0.001	-	-	0.021	0.012	0.002	-	-
HCM Control Delay (s)	7.3	0	-	8.7	8.5	7.3	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-

Intersection	
Int Delay, s/veh	4.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	55	0	39	27	0	66
Future Vol, veh/h	55	0	39	27	0	66
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	60	0	42	29	0	72

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	60	0	173	60
Stage 1	-	-	-	-	60	-
Stage 2	-	-	-	-	113	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1544	-	817	1005
Stage 1	-	-	-	-	963	-
Stage 2	-	-	-	-	912	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1544	-	794	1005
Mov Cap-2 Maneuver	-	-	-	-	794	-
Stage 1	-	-	-	-	936	-
Stage 2	-	-	-	-	912	-

Approach	EB	WB	NB
HCM Control Delay, s	0	4.4	8.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1005	-	-	1544	-
HCM Lane V/C Ratio	0.071	-	-	0.027	-
HCM Control Delay (s)	8.9	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

Intersection	
Int Delay, s/veh	4.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	40	1	65	68	2	70
Future Vol, veh/h	40	1	65	68	2	70
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	205	-	155	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	81	81	88	88	72	72
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	49	1	74	77	3	97

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	50	0	275	50
Stage 1	-	-	-	-	50	-
Stage 2	-	-	-	-	225	-
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	-	-	1557	-	715	1018
Stage 1	-	-	-	-	972	-
Stage 2	-	-	-	-	812	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1557	-	681	1018
Mov Cap-2 Maneuver	-	-	-	-	681	-
Stage 1	-	-	-	-	925	-
Stage 2	-	-	-	-	812	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3.6	8.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	681	1018	-	-	1557	-
HCM Lane V/C Ratio	0.004	0.096	-	-	0.047	-
HCM Control Delay (s)	10.3	8.9	-	-	7.4	-
HCM Lane LOS	B	A	-	-	A	-
HCM 95th %tile Q(veh)	0	0.3	-	-	0.1	-

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	3	8	61	27	4	7	115	128	36	5	117	7
Future Vol, veh/h	3	8	61	27	4	7	115	128	36	5	117	7
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	-	-	-	-	-	-	290	-	-	275	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	59	59	59	90	90	90	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	10	73	46	7	12	128	142	40	6	138	8

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	582	592	142	614	576	162	146	0	0	182	0	0
Stage 1	154	154	-	418	418	-	-	-	-	-	-	-
Stage 2	428	438	-	196	158	-	-	-	-	-	-	-
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	424	419	906	404	428	883	1436	-	-	1393	-	-
Stage 1	848	770	-	612	591	-	-	-	-	-	-	-
Stage 2	605	579	-	806	767	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	383	380	906	339	388	883	1436	-	-	1393	-	-
Mov Cap-2 Maneuver	383	380	-	339	388	-	-	-	-	-	-	-
Stage 1	773	767	-	558	538	-	-	-	-	-	-	-
Stage 2	537	527	-	729	764	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.4	16.1	3.2	0.3
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1436	-	-	748	388	1393	-	-
HCM Lane V/C Ratio	0.089	-	-	0.115	0.166	0.004	-	-
HCM Control Delay (s)	7.8	-	-	10.4	16.1	7.6	-	-
HCM Lane LOS	A	-	-	B	C	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	0.4	0.6	0	-	-

Intersection	
Intersection Delay, s/veh	9.5
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	274	6	2	202	4
Future Vol, veh/h	4	274	6	2	202	4
Peak Hour Factor	0.79	0.79	1.00	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	347	6	2	202	4
Number of Lanes	1	0	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	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	9.3	7.9	9.8
HCM LOS	A	A	A

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	1%	98%
Vol Thru, %	75%	0%	2%
Vol Right, %	25%	99%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	8	278	206
LT Vol	0	4	202
Through Vol	6	0	4
RT Vol	2	274	0
Lane Flow Rate	8	352	206
Geometry Grp	1	1	1
Degree of Util (X)	0.011	0.38	0.278
Departure Headway (Hd)	4.767	3.892	4.858
Convergence, Y/N	Yes	Yes	Yes
Cap	749	925	740
Service Time	2.809	1.905	2.892
HCM Lane V/C Ratio	0.011	0.381	0.278
HCM Control Delay	7.9	9.3	9.8
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0	1.8	1.1

Intersection	
Int Delay, s/veh	4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	8	0	21	22	0	12
Future Vol, veh/h	8	0	21	22	0	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	0	23	24	0	13

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	9	0	79	9
Stage 1	-	-	-	-	9	-
Stage 2	-	-	-	-	70	-
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	-	-	1611	-	924	1073
Stage 1	-	-	-	-	1014	-
Stage 2	-	-	-	-	953	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1611	-	911	1073
Mov Cap-2 Maneuver	-	-	-	-	911	-
Stage 1	-	-	-	-	1000	-
Stage 2	-	-	-	-	953	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3.5	8.4
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1073	-	-	1611	-
HCM Lane V/C Ratio	0.012	-	-	0.014	-
HCM Control Delay (s)	8.4	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	5.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	0	5	2	0	6	8	1	3	10	8	4
Future Vol, veh/h	1	0	5	2	0	6	8	1	3	10	8	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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	5	2	0	7	9	1	3	11	9	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	57	55	11	57	56	3	13	0	0	4	0	0
Stage 1	33	33	-	21	21	-	-	-	-	-	-	-
Stage 2	24	22	-	36	35	-	-	-	-	-	-	-
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	940	836	1070	940	835	1081	1606	-	-	1618	-	-
Stage 1	983	868	-	998	878	-	-	-	-	-	-	-
Stage 2	994	877	-	980	866	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	925	825	1070	926	824	1081	1606	-	-	1618	-	-
Mov Cap-2 Maneuver	925	825	-	926	824	-	-	-	-	-	-	-
Stage 1	977	862	-	992	873	-	-	-	-	-	-	-
Stage 2	982	872	-	968	860	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.5	8.5	4.8	3.3
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1606	-	-	1043	1038	1618	-	-
HCM Lane V/C Ratio	0.005	-	-	0.006	0.008	0.007	-	-
HCM Control Delay (s)	7.3	0	-	8.5	8.5	7.2	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-

Intersection	
Int Delay, s/veh	3.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	20	0	28	43	0	21
Future Vol, veh/h	20	0	28	43	0	21
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	22	0	30	47	0	23

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	22	0	129	22
Stage 1	-	-	-	-	22	-
Stage 2	-	-	-	-	107	-
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	-	-	1593	-	865	1055
Stage 1	-	-	-	-	1001	-
Stage 2	-	-	-	-	917	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1593	-	849	1055
Mov Cap-2 Maneuver	-	-	-	-	849	-
Stage 1	-	-	-	-	982	-
Stage 2	-	-	-	-	917	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.9	8.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1055	-	-	1593	-
HCM Lane V/C Ratio	0.022	-	-	0.019	-
HCM Control Delay (s)	8.5	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	41	70	0	0	0
Future Vol, veh/h	0	41	70	0	0	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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	45	76	0	0	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	76	0	-	0	121	76
Stage 1	-	-	-	-	76	-
Stage 2	-	-	-	-	45	-
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	1523	-	-	-	874	985
Stage 1	-	-	-	-	947	-
Stage 2	-	-	-	-	977	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1523	-	-	-	874	985
Mov Cap-2 Maneuver	-	-	-	-	874	-
Stage 1	-	-	-	-	947	-
Stage 2	-	-	-	-	977	-

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

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1523	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	-	0
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection	
Int Delay, s/veh	10.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	195	8	199	86	8	228
Future Vol, veh/h	195	8	199	86	8	228
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	205	-	155	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	51	51	77	77	48	48
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	382	16	258	112	17	475

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	398	0	1018	390
Stage 1	-	-	-	-	390	-
Stage 2	-	-	-	-	628	-
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	-	-	1161	-	263	658
Stage 1	-	-	-	-	684	-
Stage 2	-	-	-	-	532	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1161	-	205	658
Mov Cap-2 Maneuver	-	-	-	-	205	-
Stage 1	-	-	-	-	532	-
Stage 2	-	-	-	-	532	-

Approach	EB	WB	NB
HCM Control Delay, s	0	6.3	23.3
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	205	658	-	-	1161	-
HCM Lane V/C Ratio	0.081	0.722	-	-	0.223	-
HCM Control Delay (s)	24.1	23.3	-	-	9	-
HCM Lane LOS	C	C	-	-	A	-
HCM 95th %tile Q(veh)	0.3	6.1	-	-	0.9	-

Intersection	
Int Delay, s/veh	3.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	4	134	10	0	16	39	278	14	12	177	3
Future Vol, veh/h	9	4	134	10	0	16	39	278	14	12	177	3
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	-	-	-	-	-	-	290	-	-	275	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	43	43	43	66	66	66	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	5	168	23	0	37	59	421	21	12	177	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	771	763	179	839	754	432	180	0	0	442	0	0
Stage 1	203	203	-	550	550	-	-	-	-	-	-	-
Stage 2	568	560	-	289	204	-	-	-	-	-	-	-
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	317	334	864	285	338	624	1396	-	-	1118	-	-
Stage 1	799	733	-	519	516	-	-	-	-	-	-	-
Stage 2	508	511	-	719	733	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	286	316	864	218	320	624	1396	-	-	1118	-	-
Mov Cap-2 Maneuver	286	316	-	218	320	-	-	-	-	-	-	-
Stage 1	765	725	-	497	494	-	-	-	-	-	-	-
Stage 2	458	490	-	569	725	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.5	16.9	0.9	0.5
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1396	-	-	738	364	1118	-	-
HCM Lane V/C Ratio	0.042	-	-	0.249	0.166	0.011	-	-
HCM Control Delay (s)	7.7	-	-	11.5	16.9	8.3	-	-
HCM Lane LOS	A	-	-	B	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	1	0.6	0	-	-

Intersection	
Intersection Delay, s/veh	14.1
Intersection LOS	B

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	309	22	4	307	15
Future Vol, veh/h	2	309	22	4	307	15
Peak Hour Factor	0.61	0.61	0.72	0.72	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	507	31	6	334	16
Number of Lanes	1	0	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	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	14.4	9	14.3
HCM LOS	B	A	B

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	1%	95%
Vol Thru, %	85%	0%	5%
Vol Right, %	15%	99%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	26	311	322
LT Vol	0	2	307
Through Vol	22	0	15
RT Vol	4	309	0
Lane Flow Rate	36	510	350
Geometry Grp	1	1	1
Degree of Util (X)	0.056	0.62	0.526
Departure Headway (Hd)	5.628	4.376	5.411
Convergence, Y/N	Yes	Yes	Yes
Cap	639	816	672
Service Time	3.641	2.451	3.412
HCM Lane V/C Ratio	0.056	0.625	0.521
HCM Control Delay	9	14.4	14.3
HCM Lane LOS	A	B	B
HCM 95th-tile Q	0.2	4.4	3.1

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	40	0	6	22	8	0	0	18	22	0	1
Future Vol, veh/h	0	40	0	6	22	8	0	0	18	22	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	43	0	7	24	9	0	0	20	24	0	1

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	-	0	0	43	0	0	86	-	43
Stage 1	-	-	-	-	-	-	43	-	-
Stage 2	-	-	-	-	-	-	43	-	-
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	0	-	-	1566	-	-	915	0	1027
Stage 1	0	-	-	-	-	-	979	0	-
Stage 2	0	-	-	-	-	-	979	0	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	-	-	-	1566	-	-	910	0	1027
Mov Cap-2 Maneuver	-	-	-	-	-	-	910	0	-
Stage 1	-	-	-	-	-	-	974	0	-
Stage 2	-	-	-	-	-	-	979	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.2	8.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	1027	-	-	1566	-	-
HCM Lane V/C Ratio	0.019	-	-	0.004	-	-
HCM Control Delay (s)	8.6	-	-	7.3	0	-
HCM Lane LOS	A	-	-	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-	-

Intersection	
Int Delay, s/veh	4.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	14	0	14	2	0	9	4	17	1	3	13	8
Future Vol, veh/h	14	0	14	2	0	9	4	17	1	3	13	8
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	15	0	15	2	0	10	4	18	1	3	14	9

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	57	52	19	59	56	19	23	0	0	19	0	0
Stage 1	25	25	-	27	27	-	-	-	-	-	-	-
Stage 2	32	27	-	32	29	-	-	-	-	-	-	-
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	940	839	1059	937	835	1059	1592	-	-	1597	-	-
Stage 1	993	874	-	990	873	-	-	-	-	-	-	-
Stage 2	984	873	-	984	871	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	928	835	1059	920	831	1059	1592	-	-	1597	-	-
Mov Cap-2 Maneuver	928	835	-	920	831	-	-	-	-	-	-	-
Stage 1	990	872	-	987	870	-	-	-	-	-	-	-
Stage 2	972	870	-	968	869	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.8	8.5	1.3	0.9
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1592	-	-	989	1031	1597	-	-
HCM Lane V/C Ratio	0.003	-	-	0.031	0.012	0.002	-	-
HCM Control Delay (s)	7.3	0	-	8.8	8.5	7.3	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-

Intersection	
Int Delay, s/veh	4.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	0	81	0	39	36	8	0	0	66	22	0	0
Future Vol, veh/h	0	81	0	39	36	8	0	0	66	22	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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	88	0	42	39	9	0	0	72	24	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	48	0	0	88	0	0	216	220	88	252	216	44
Stage 1	-	-	-	-	-	-	88	88	-	128	128	-
Stage 2	-	-	-	-	-	-	128	132	-	124	88	-
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	1559	-	-	1508	-	-	740	678	970	701	682	1026
Stage 1	-	-	-	-	-	-	920	822	-	876	790	-
Stage 2	-	-	-	-	-	-	876	787	-	880	822	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1559	-	-	1508	-	-	724	658	970	635	662	1026
Mov Cap-2 Maneuver	-	-	-	-	-	-	724	658	-	635	662	-
Stage 1	-	-	-	-	-	-	920	822	-	876	767	-
Stage 2	-	-	-	-	-	-	851	764	-	815	822	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	3.5	9	10.9
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	970	1559	-	-	1508	-	-	635
HCM Lane V/C Ratio	0.074	-	-	-	0.028	-	-	0.038
HCM Control Delay (s)	9	0	-	-	7.5	0	-	10.9
HCM Lane LOS	A	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-	-	0.1

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	169	82	11	34	0
Future Vol, veh/h	0	169	82	11	34	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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	184	89	12	37	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	101	0	-	0	279	95
Stage 1	-	-	-	-	95	-
Stage 2	-	-	-	-	184	-
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	1491	-	-	-	711	962
Stage 1	-	-	-	-	929	-
Stage 2	-	-	-	-	848	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1491	-	-	-	711	962
Mov Cap-2 Maneuver	-	-	-	-	711	-
Stage 1	-	-	-	-	929	-
Stage 2	-	-	-	-	848	-

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

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1491	-	-	-	711
HCM Lane V/C Ratio	-	-	-	-	0.052
HCM Control Delay (s)	0	-	-	-	10.3
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Intersection	
Int Delay, s/veh	3.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	94	1	65	159	2	70
Future Vol, veh/h	94	1	65	159	2	70
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	205	-	155	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	81	81	88	88	72	72
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	116	1	74	181	3	97

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	117	0	446	117
Stage 1	-	-	-	-	117	-
Stage 2	-	-	-	-	329	-
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	-	-	1471	-	570	935
Stage 1	-	-	-	-	908	-
Stage 2	-	-	-	-	729	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1471	-	542	935
Mov Cap-2 Maneuver	-	-	-	-	542	-
Stage 1	-	-	-	-	863	-
Stage 2	-	-	-	-	729	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.2	9.4
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	542	935	-	-	1471	-
HCM Lane V/C Ratio	0.005	0.104	-	-	0.05	-
HCM Control Delay (s)	11.7	9.3	-	-	7.6	-
HCM Lane LOS	B	A	-	-	A	-
HCM 95th %tile Q(veh)	0	0.3	-	-	0.2	-

Intersection	
Int Delay, s/veh	5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	8	66	27	4	7	123	128	36	5	117	7
Future Vol, veh/h	3	8	66	27	4	7	123	128	36	5	117	7
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	-	-	-	-	-	-	290	-	-	275	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	59	59	59	90	90	90	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	10	79	46	7	12	137	142	40	6	138	8

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	600	610	142	635	594	162	146	0	0	182	0	0
Stage 1	154	154	-	436	436	-	-	-	-	-	-	-
Stage 2	446	456	-	199	158	-	-	-	-	-	-	-
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	413	409	906	391	418	883	1436	-	-	1393	-	-
Stage 1	848	770	-	599	580	-	-	-	-	-	-	-
Stage 2	591	568	-	803	767	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	371	369	906	324	377	883	1436	-	-	1393	-	-
Mov Cap-2 Maneuver	371	369	-	324	377	-	-	-	-	-	-	-
Stage 1	767	767	-	542	525	-	-	-	-	-	-	-
Stage 2	521	514	-	721	764	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.5	16.7	3.3	0.3
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1436	-	-	750	373	1393	-	-
HCM Lane V/C Ratio	0.095	-	-	0.122	0.173	0.004	-	-
HCM Control Delay (s)	7.8	-	-	10.5	16.7	7.6	-	-
HCM Lane LOS	A	-	-	B	C	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	0.4	0.6	0	-	-

Intersection	
Intersection Delay, s/veh	9.6
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	281	6	2	206	4
Future Vol, veh/h	4	281	6	2	206	4
Peak Hour Factor	0.79	0.79	1.00	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	356	6	2	206	4
Number of Lanes	1	0	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	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	9.4	7.9	9.9
HCM LOS	A	A	A

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	1%	98%
Vol Thru, %	75%	0%	2%
Vol Right, %	25%	99%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	8	285	210
LT Vol	0	4	206
Through Vol	6	0	4
RT Vol	2	281	0
Lane Flow Rate	8	361	210
Geometry Grp	1	1	1
Degree of Util (X)	0.011	0.391	0.284
Departure Headway (Hd)	4.794	3.903	4.877
Convergence, Y/N	Yes	Yes	Yes
Cap	744	924	735
Service Time	2.838	1.917	2.914
HCM Lane V/C Ratio	0.011	0.391	0.286
HCM Control Delay	7.9	9.4	9.9
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0	1.9	1.2

Intersection	
Int Delay, s/veh	3.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	10	0	21	26	25	0	0	12	14	0	1
Future Vol, veh/h	2	10	0	21	26	25	0	0	12	14	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	11	0	23	28	27	0	0	13	15	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	55	0	0	11	0	0	103	116	11	110	103	42
Stage 1	-	-	-	-	-	-	15	15	-	88	88	-
Stage 2	-	-	-	-	-	-	88	101	-	22	15	-
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	1550	-	-	1608	-	-	877	774	1070	868	787	1029
Stage 1	-	-	-	-	-	-	1005	883	-	920	822	-
Stage 2	-	-	-	-	-	-	920	811	-	996	883	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1550	-	-	1608	-	-	866	762	1070	847	774	1029
Mov Cap-2 Maneuver	-	-	-	-	-	-	866	762	-	847	774	-
Stage 1	-	-	-	-	-	-	1004	882	-	919	810	-
Stage 2	-	-	-	-	-	-	905	799	-	983	882	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.2	2.1	8.4	9.3
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	1070	1550	-	-	1608	-	-	857
HCM Lane V/C Ratio	0.012	0.001	-	-	0.014	-	-	0.019
HCM Control Delay (s)	8.4	7.3	0	-	7.3	0	-	9.3
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	5.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	0	9	2	0	6	14	2	3	10	9	8
Future Vol, veh/h	3	0	9	2	0	6	14	2	3	10	9	8
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	0	10	2	0	7	15	2	3	11	10	9

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	74	72	15	76	75	4	19	0	0	5	0	0
Stage 1	37	37	-	34	34	-	-	-	-	-	-	-
Stage 2	37	35	-	42	41	-	-	-	-	-	-	-
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	916	818	1065	914	815	1080	1597	-	-	1616	-	-
Stage 1	978	864	-	982	867	-	-	-	-	-	-	-
Stage 2	978	866	-	972	861	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	900	805	1065	895	802	1080	1597	-	-	1616	-	-
Mov Cap-2 Maneuver	900	805	-	895	802	-	-	-	-	-	-	-
Stage 1	969	858	-	973	859	-	-	-	-	-	-	-
Stage 2	963	858	-	956	855	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.6	8.5	5.4	2.7
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1597	-	-	1018	1027	1616	-	-
HCM Lane V/C Ratio	0.01	-	-	0.013	0.008	0.007	-	-
HCM Control Delay (s)	7.3	0	-	8.6	8.5	7.2	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	0	36	0	28	71	25	0	0	21	15	0	0
Future Vol, veh/h	0	36	0	28	71	25	0	0	21	15	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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	39	0	30	77	27	0	0	23	16	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	104	0	0	39	0	0	190	203	39	202	190	91
Stage 1	-	-	-	-	-	-	39	39	-	151	151	-
Stage 2	-	-	-	-	-	-	151	164	-	51	39	-
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	1488	-	-	1571	-	-	770	693	1033	756	705	967
Stage 1	-	-	-	-	-	-	976	862	-	851	772	-
Stage 2	-	-	-	-	-	-	851	762	-	962	862	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1488	-	-	1571	-	-	758	679	1033	728	691	967
Mov Cap-2 Maneuver	-	-	-	-	-	-	758	679	-	728	691	-
Stage 1	-	-	-	-	-	-	976	862	-	851	757	-
Stage 2	-	-	-	-	-	-	834	747	-	941	862	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1.7	8.6	10.1
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	1033	1488	-	-	1571	-	-	728
HCM Lane V/C Ratio	0.022	-	-	-	0.019	-	-	0.022
HCM Control Delay (s)	8.6	0	-	-	7.3	0	-	10.1
HCM Lane LOS	A	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0.1	-	-	0.1

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	73	124	38	22	0
Future Vol, veh/h	0	73	124	38	22	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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	79	135	41	24	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	176	0	-	0	235	156
Stage 1	-	-	-	-	156	-
Stage 2	-	-	-	-	79	-
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	1400	-	-	-	753	890
Stage 1	-	-	-	-	872	-
Stage 2	-	-	-	-	944	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1400	-	-	-	753	890
Mov Cap-2 Maneuver	-	-	-	-	753	-
Stage 1	-	-	-	-	872	-
Stage 2	-	-	-	-	944	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	9.9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1400	-	-	-	753
HCM Lane V/C Ratio	-	-	-	-	0.032
HCM Control Delay (s)	0	-	-	-	9.9
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	10.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	152	33	288	80	18	260
Future Vol, veh/h	152	33	288	80	18	260
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	205	-	155	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	51	77	92	92	48
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	165	65	374	87	20	542

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	230	0	1033	198
Stage 1	-	-	-	-	198	-
Stage 2	-	-	-	-	835	-
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	-	-	1338	-	258	843
Stage 1	-	-	-	-	835	-
Stage 2	-	-	-	-	426	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1338	-	186	843
Mov Cap-2 Maneuver	-	-	-	-	186	-
Stage 1	-	-	-	-	601	-
Stage 2	-	-	-	-	426	-

Approach	EB	WB	NB
HCM Control Delay, s	0	7.1	16.9
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	186	843	-	-	1338	-
HCM Lane V/C Ratio	0.105	0.643	-	-	0.28	-
HCM Control Delay (s)	26.6	16.6	-	-	8.7	-
HCM Lane LOS	D	C	-	-	A	-
HCM 95th %tile Q(veh)	0.3	4.8	-	-	1.2	-

Intersection	
Int Delay, s/veh	5.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	4	199	10	0	16	60	334	14	12	304	3
Future Vol, veh/h	9	4	199	10	0	16	60	334	14	12	304	3
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	-	-	-	-	-	-	290	-	-	275	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	43	43	43	66	66	66	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	5	249	23	0	37	91	506	21	12	304	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1047	1039	306	1156	1030	517	307	0	0	527	0	0
Stage 1	330	330	-	699	699	-	-	-	-	-	-	-
Stage 2	717	709	-	457	331	-	-	-	-	-	-	-
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	206	231	734	174	233	558	1254	-	-	1040	-	-
Stage 1	683	646	-	430	442	-	-	-	-	-	-	-
Stage 2	421	437	-	583	645	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	180	212	734	106	213	558	1254	-	-	1040	-	-
Mov Cap-2 Maneuver	180	212	-	106	213	-	-	-	-	-	-	-
Stage 1	633	638	-	399	410	-	-	-	-	-	-	-
Stage 2	364	405	-	378	637	-	-	-	-	-	-	-

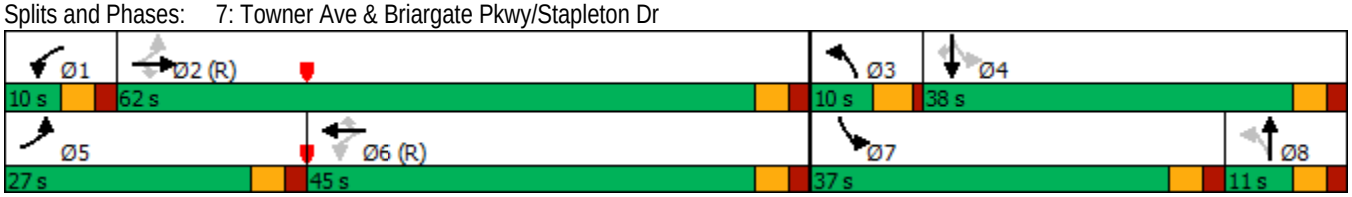
Approach	EB	WB	NB	SB
HCM Control Delay, s	15	28.8	1.2	0.3
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1254	-	-	624	211	1040	-	-
HCM Lane V/C Ratio	0.072	-	-	0.425	0.287	0.012	-	-
HCM Control Delay (s)	8.1	-	-	15	28.8	8.5	-	-
HCM Lane LOS	A	-	-	C	D	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	2.1	1.1	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	233	840	15	5	1140	435	50	23	387	16	335
Future Volume (vph)	233	840	15	5	1140	435	50	23	387	16	335
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8	7	4	
Permitted Phases	2		2	6		6	8		4		4
Detector Phase	5	2	2	1	6	6	3	8	7	4	4
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	9.5	10.0	10.0	10.0	10.0
Total Split (s)	27.0	62.0	62.0	10.0	45.0	45.0	10.0	11.0	37.0	38.0	38.0
Total Split (%)	22.5%	51.7%	51.7%	8.3%	37.5%	37.5%	8.3%	9.2%	30.8%	31.7%	31.7%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.5	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	1.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.5	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None
Act Effct Green (s)	73.3	71.3	71.3	57.6	52.4	52.4	9.4	5.9	36.7	28.7	28.7
Actuated g/C Ratio	0.61	0.59	0.59	0.48	0.44	0.44	0.08	0.05	0.31	0.24	0.24
v/c Ratio	0.83	0.43	0.02	0.01	0.79	0.73	0.37	0.37	0.84	0.04	0.55
Control Delay	51.7	15.7	0.0	13.8	36.2	14.7	40.6	51.8	52.8	32.8	7.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.7	15.7	0.0	13.8	36.2	14.7	40.6	51.8	52.8	32.8	7.3
LOS	D	B	A	B	D	B	D	D	D	C	A
Approach Delay		23.2			28.2			45.1		31.7	
Approach LOS		C			C			D		C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay: 27.8	Intersection LOS: C
Intersection Capacity Utilization 85.0%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 7: Towner Ave & Briargate Pkwy/Stapleton Dr



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	3	76	0	5	34	5	0	0	16	16	0	8
Future Vol, veh/h	3	76	0	5	34	5	0	0	16	16	0	8
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	83	0	5	37	5	0	0	17	17	0	9

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	42	0	0	83	0	0	143	141	83	148	139	40
Stage 1	-	-	-	-	-	-	89	89	-	50	50	-
Stage 2	-	-	-	-	-	-	54	52	-	98	89	-
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	1567	-	-	1514	-	-	826	750	976	820	752	1031
Stage 1	-	-	-	-	-	-	918	821	-	963	853	-
Stage 2	-	-	-	-	-	-	958	852	-	908	821	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1567	-	-	1514	-	-	816	746	976	802	748	1031
Mov Cap-2 Maneuver	-	-	-	-	-	-	816	746	-	802	748	-
Stage 1	-	-	-	-	-	-	916	819	-	961	850	-
Stage 2	-	-	-	-	-	-	947	849	-	890	819	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.8	8.8	9.3
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	976	1567	-	-	1514	-	-	866
HCM Lane V/C Ratio	0.018	0.002	-	-	0.004	-	-	0.03
HCM Control Delay (s)	8.8	7.3	0	-	7.4	0	-	9.3
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	6.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	55	0	63	6	0	5	20	19	2	2	20	21
Future Vol, veh/h	55	0	63	6	0	5	20	19	2	2	20	21
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	60	0	68	7	0	5	22	21	2	2	22	23

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	107	105	34	138	115	22	45	0	0	23	0	0
Stage 1	38	38	-	66	66	-	-	-	-	-	-	-
Stage 2	69	67	-	72	49	-	-	-	-	-	-	-
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	872	785	1039	833	775	1055	1563	-	-	1592	-	-
Stage 1	977	863	-	945	840	-	-	-	-	-	-	-
Stage 2	941	839	-	938	854	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	857	773	1039	769	763	1055	1563	-	-	1592	-	-
Mov Cap-2 Maneuver	857	773	-	769	763	-	-	-	-	-	-	-
Stage 1	963	862	-	932	828	-	-	-	-	-	-	-
Stage 2	923	827	-	875	853	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.4	9.2	3.6	0.3
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1563	-	-	945	877	1592	-	-
HCM Lane V/C Ratio	0.014	-	-	0.136	0.014	0.001	-	-
HCM Control Delay (s)	7.3	0	-	9.4	9.2	7.3	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.5	0	0	-	-

Intersection	
Int Delay, s/veh	3.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	109	0	38	45	0	63
Future Vol, veh/h	109	0	38	45	0	63
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	118	0	41	49	0	68

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	118	0	249	118
Stage 1	-	-	-	-	118	-
Stage 2	-	-	-	-	131	-
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	-	-	1470	-	739	934
Stage 1	-	-	-	-	907	-
Stage 2	-	-	-	-	895	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1470	-	718	934
Mov Cap-2 Maneuver	-	-	-	-	718	-
Stage 1	-	-	-	-	881	-
Stage 2	-	-	-	-	895	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3.4	9.2
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	934	-	-	1470	-
HCM Lane V/C Ratio	0.073	-	-	0.028	-
HCM Control Delay (s)	9.2	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

Intersection	
Int Delay, s/veh	0.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	171	0	16	83	0	14
Future Vol, veh/h	171	0	16	83	0	14
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	186	0	17	90	0	15

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	186	0	310	186
Stage 1	-	-	-	-	186	-
Stage 2	-	-	-	-	124	-
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	-	-	1388	-	682	856
Stage 1	-	-	-	-	846	-
Stage 2	-	-	-	-	902	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1388	-	673	856
Mov Cap-2 Maneuver	-	-	-	-	673	-
Stage 1	-	-	-	-	835	-
Stage 2	-	-	-	-	902	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.2	9.3
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	856	-	-	1388	-
HCM Lane V/C Ratio	0.018	-	-	0.013	-
HCM Control Delay (s)	9.3	-	-	7.6	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	6.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	72	19	126	112	30	172
Future Vol, veh/h	72	19	126	112	30	172
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	205	-	155	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	81	81	88	88	72	72
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	89	23	143	127	42	239

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	112	0	514	101
Stage 1	-	-	-	-	101	-
Stage 2	-	-	-	-	413	-
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	-	-	1478	-	521	954
Stage 1	-	-	-	-	923	-
Stage 2	-	-	-	-	668	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1478	-	470	954
Mov Cap-2 Maneuver	-	-	-	-	470	-
Stage 1	-	-	-	-	833	-
Stage 2	-	-	-	-	668	-

Approach	EB	WB	NB
HCM Control Delay, s	0	4.1	10.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	470	954	-	-	1478	-
HCM Lane V/C Ratio	0.089	0.25	-	-	0.097	-
HCM Control Delay (s)	13.4	10	-	-	7.7	-
HCM Lane LOS	B	B	-	-	A	-
HCM 95th %tile Q(veh)	0.3	1	-	-	0.3	-

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	3	8	109	27	4	7	196	272	36	5	211	7
Future Vol, veh/h	3	8	109	27	4	7	196	272	36	5	211	7
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	-	-	-	-	-	-	290	-	-	275	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	9	116	29	4	7	209	289	38	5	224	7

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	970	983	228	1026	967	308	231	0	0	327	0	0
Stage 1	238	238	-	726	726	-	-	-	-	-	-	-
Stage 2	732	745	-	300	241	-	-	-	-	-	-	-
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	233	249	811	213	254	732	1337	-	-	1233	-	-
Stage 1	765	708	-	416	430	-	-	-	-	-	-	-
Stage 2	413	421	-	709	706	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	199	209	811	155	214	732	1337	-	-	1233	-	-
Mov Cap-2 Maneuver	199	209	-	155	214	-	-	-	-	-	-	-
Stage 1	646	705	-	351	363	-	-	-	-	-	-	-
Stage 2	341	355	-	598	703	-	-	-	-	-	-	-

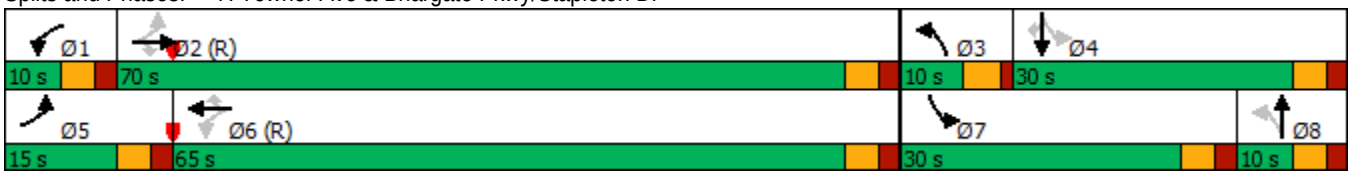
Approach	EB	WB	NB	SB
HCM Control Delay, s	12	29.3	3.2	0.2
HCM LOS	B	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1337	-	-	639	188	1233	-	-
HCM Lane V/C Ratio	0.156	-	-	0.2	0.215	0.004	-	-
HCM Control Delay (s)	8.2	-	-	12	29.3	7.9	-	-
HCM Lane LOS	A	-	-	B	D	A	-	-
HCM 95th %tile Q(veh)	0.6	-	-	0.7	0.8	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	343	1312	50	29	592	345	25	7	264	5	230
Future Volume (vph)	343	1312	50	29	592	345	25	7	264	5	230
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8	7	4	
Permitted Phases	2		2	6		6	8		4		4
Detector Phase	5	2	2	1	6	6	3	8	7	4	4
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	9.5	10.0	10.0	10.0	10.0
Total Split (s)	15.0	70.0	70.0	10.0	65.0	65.0	10.0	10.0	30.0	30.0	30.0
Total Split (%)	12.5%	58.3%	58.3%	8.3%	54.2%	54.2%	8.3%	8.3%	25.0%	25.0%	25.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.5	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	1.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.5	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None
Act Effct Green (s)	81.5	75.5	75.5	71.3	66.0	66.0	8.9	5.3	28.5	22.5	22.5
Actuated g/C Ratio	0.68	0.63	0.63	0.59	0.55	0.55	0.07	0.04	0.24	0.19	0.19
v/c Ratio	0.70	0.63	0.05	0.15	0.32	0.35	0.20	0.31	0.75	0.01	0.49
Control Delay	18.3	17.7	0.1	10.3	16.5	2.7	38.3	35.5	52.9	38.0	8.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.3	17.7	0.1	10.3	16.5	2.7	38.3	35.5	52.9	38.0	8.6
LOS	B	B	A	B	B	A	D	D	D	D	A
Approach Delay		17.3			11.4			36.9		32.3	
Approach LOS		B			B			D		C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.75	
Intersection Signal Delay: 18.2	Intersection LOS: B
Intersection Capacity Utilization 74.2%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 7: Towner Ave & Briargate Pkwy/Stapleton Dr



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	10	34	0	17	67	19	0	0	10	11	0	6
Future Vol, veh/h	10	34	0	17	67	19	0	0	10	11	0	6
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	37	0	18	73	21	0	0	11	12	0	7

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	94	0	0	37	0	0	182	189	37	185	179	84
Stage 1	-	-	-	-	-	-	59	59	-	120	120	-
Stage 2	-	-	-	-	-	-	123	130	-	65	59	-
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	1500	-	-	1574	-	-	779	706	1035	776	715	975
Stage 1	-	-	-	-	-	-	953	846	-	884	796	-
Stage 2	-	-	-	-	-	-	881	789	-	946	846	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1500	-	-	1574	-	-	763	693	1035	757	701	975
Mov Cap-2 Maneuver	-	-	-	-	-	-	763	693	-	757	701	-
Stage 1	-	-	-	-	-	-	946	840	-	878	786	-
Stage 2	-	-	-	-	-	-	865	780	-	930	840	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.7	1.2	8.5	9.5
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	1035	1500	-	-	1574	-	-	822
HCM Lane V/C Ratio	0.011	0.007	-	-	0.012	-	-	0.022
HCM Control Delay (s)	8.5	7.4	0	-	7.3	0	-	9.5
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.1

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	30	0	42	4	0	3	71	10	7	6	13	53
Future Vol, veh/h	30	0	42	4	0	3	71	10	7	6	13	53
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	33	0	46	4	0	3	77	11	8	7	14	58

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	228	230	43	249	255	15	72	0	0	19	0	0
Stage 1	57	57	-	169	169	-	-	-	-	-	-	-
Stage 2	171	173	-	80	86	-	-	-	-	-	-	-
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	727	670	1027	705	649	1065	1528	-	-	1597	-	-
Stage 1	955	847	-	833	759	-	-	-	-	-	-	-
Stage 2	831	756	-	929	824	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	694	632	1027	645	613	1065	1528	-	-	1597	-	-
Mov Cap-2 Maneuver	694	632	-	645	613	-	-	-	-	-	-	-
Stage 1	906	843	-	791	720	-	-	-	-	-	-	-
Stage 2	786	717	-	883	820	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.6	9.7	6	0.6
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1528	-	-	856	776	1597	-	-
HCM Lane V/C Ratio	0.051	-	-	0.091	0.01	0.004	-	-
HCM Control Delay (s)	7.5	0	-	9.6	9.7	7.3	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.3	0	0	-	-

Intersection	
Int Delay, s/veh	1.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	55	0	24	103	0	19
Future Vol, veh/h	55	0	24	103	0	19
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	60	0	26	112	0	21

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	60	0	224	60
Stage 1	-	-	-	-	60	-
Stage 2	-	-	-	-	164	-
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	-	-	1544	-	764	1005
Stage 1	-	-	-	-	963	-
Stage 2	-	-	-	-	865	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1544	-	750	1005
Mov Cap-2 Maneuver	-	-	-	-	750	-
Stage 1	-	-	-	-	946	-
Stage 2	-	-	-	-	865	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.4	8.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1005	-	-	1544	-
HCM Lane V/C Ratio	0.021	-	-	0.017	-
HCM Control Delay (s)	8.7	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	74	0	15	126	0	17
Future Vol, veh/h	74	0	15	126	0	17
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	80	0	16	137	0	18

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	80	0	249	80
Stage 1	-	-	-	-	80	-
Stage 2	-	-	-	-	169	-
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	-	-	1518	-	739	980
Stage 1	-	-	-	-	943	-
Stage 2	-	-	-	-	861	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1518	-	731	980
Mov Cap-2 Maneuver	-	-	-	-	731	-
Stage 1	-	-	-	-	933	-
Stage 2	-	-	-	-	861	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.8	8.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	980	-	-	1518	-
HCM Lane V/C Ratio	0.019	-	-	0.011	-
HCM Control Delay (s)	8.7	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	11.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	195	71	288	95	31	260
Future Vol, veh/h	195	71	288	95	31	260
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	205	-	155	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	51	77	92	92	48
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	212	139	374	103	34	542

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	351	0	1133	282
Stage 1	-	-	-	-	282	-
Stage 2	-	-	-	-	851	-
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	-	-	1208	-	224	757
Stage 1	-	-	-	-	766	-
Stage 2	-	-	-	-	419	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1208	-	155	757
Mov Cap-2 Maneuver	-	-	-	-	155	-
Stage 1	-	-	-	-	529	-
Stage 2	-	-	-	-	419	-

Approach	EB	WB	NB
HCM Control Delay, s	0	7.3	21.6
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	155	757	-	-	1208	-
HCM Lane V/C Ratio	0.217	0.716	-	-	0.31	-
HCM Control Delay (s)	34.6	20.8	-	-	9.3	-
HCM Lane LOS	D	C	-	-	A	-
HCM 95th %tile Q(veh)	0.8	6.1	-	-	1.3	-

Intersection	
Int Delay, s/veh	5.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	4	206	10	0	16	63	347	14	12	343	3
Future Vol, veh/h	9	4	206	10	0	16	63	347	14	12	343	3
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	-	-	-	-	-	-	290	-	-	275	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	43	43	43	66	66	66	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	5	258	23	0	37	95	526	21	12	343	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1114	1106	345	1227	1097	537	346	0	0	547	0	0
Stage 1	369	369	-	727	727	-	-	-	-	-	-	-
Stage 2	745	737	-	500	370	-	-	-	-	-	-	-
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	185	210	698	155	213	544	1213	-	-	1022	-	-
Stage 1	651	621	-	415	429	-	-	-	-	-	-	-
Stage 2	406	425	-	553	620	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	161	191	698	89	194	544	1213	-	-	1022	-	-
Mov Cap-2 Maneuver	161	191	-	89	194	-	-	-	-	-	-	-
Stage 1	600	614	-	383	396	-	-	-	-	-	-	-
Stage 2	349	392	-	342	613	-	-	-	-	-	-	-

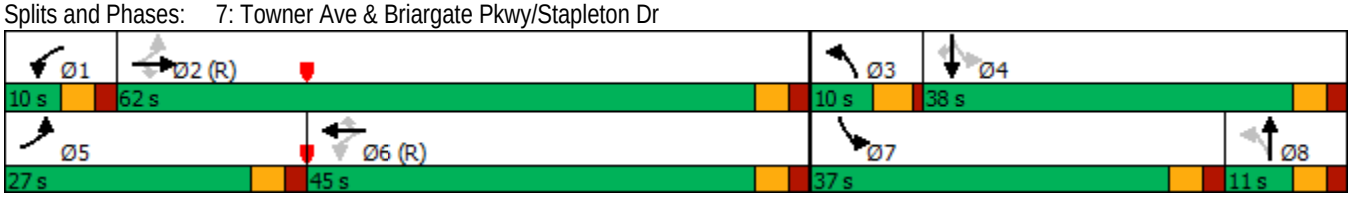
Approach	EB	WB	NB	SB
HCM Control Delay, s	16.3	34.1	1.2	0.3
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1213	-	-	589	183	1022	-	-
HCM Lane V/C Ratio	0.079	-	-	0.465	0.33	0.012	-	-
HCM Control Delay (s)	8.2	-	-	16.3	34.1	8.6	-	-
HCM Lane LOS	A	-	-	C	D	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	2.5	1.4	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	247	840	15	5	1140	436	50	23	390	16	378
Future Volume (vph)	247	840	15	5	1140	436	50	23	390	16	378
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8	7	4	
Permitted Phases	2		2	6		6	8		4		4
Detector Phase	5	2	2	1	6	6	3	8	7	4	4
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	9.5	10.0	10.0	10.0	10.0
Total Split (s)	27.0	62.0	62.0	10.0	45.0	45.0	10.0	11.0	37.0	38.0	38.0
Total Split (%)	22.5%	51.7%	51.7%	8.3%	37.5%	37.5%	8.3%	9.2%	30.8%	31.7%	31.7%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.5	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	1.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.5	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None
Act Effct Green (s)	73.2	71.2	71.2	56.8	51.6	51.6	9.4	5.9	36.8	28.8	28.8
Actuated g/C Ratio	0.61	0.59	0.59	0.47	0.43	0.43	0.08	0.05	0.31	0.24	0.24
v/c Ratio	0.85	0.43	0.02	0.02	0.80	0.74	0.37	0.37	0.84	0.04	0.62
Control Delay	54.1	15.8	0.0	13.8	37.2	15.1	40.6	51.8	53.1	32.8	10.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.1	15.8	0.0	13.8	37.2	15.1	40.6	51.8	53.1	32.8	10.8
LOS	D	B	A	B	D	B	D	D	D	C	B
Approach Delay		24.1			29.0			45.1		32.3	
Approach LOS		C			C			D		C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.85	
Intersection Signal Delay: 28.6	Intersection LOS: C
Intersection Capacity Utilization 86.0%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 7: Towner Ave & Briargate Pkwy/Stapleton Dr



Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	3	80	0	5	35	13	0	0	16	38	0	10
Future Vol, veh/h	3	80	0	5	35	13	0	0	16	38	0	10
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	87	0	5	38	14	0	0	17	41	0	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	52	0	0	87	0	0	154	155	87	157	148	45
Stage 1	-	-	-	-	-	-	93	93	-	55	55	-
Stage 2	-	-	-	-	-	-	61	62	-	102	93	-
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	1554	-	-	1509	-	-	813	737	971	809	743	1025
Stage 1	-	-	-	-	-	-	914	818	-	957	849	-
Stage 2	-	-	-	-	-	-	950	843	-	904	818	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1554	-	-	1509	-	-	802	733	971	791	739	1025
Mov Cap-2 Maneuver	-	-	-	-	-	-	802	733	-	791	739	-
Stage 1	-	-	-	-	-	-	912	816	-	955	846	-
Stage 2	-	-	-	-	-	-	937	840	-	886	816	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.7	8.8	9.6
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	971	1554	-	-	1509	-	-	830
HCM Lane V/C Ratio	0.018	0.002	-	-	0.004	-	-	0.063
HCM Control Delay (s)	8.8	7.3	0	-	7.4	0	-	9.6
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.2

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	58	0	69	6	0	5	22	20	2	2	21	23
Future Vol, veh/h	58	0	69	6	0	5	22	20	2	2	21	23
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	63	0	75	7	0	5	24	22	2	2	23	25

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	114	112	36	148	123	23	48	0	0	24	0	0
Stage 1	40	40	-	71	71	-	-	-	-	-	-	-
Stage 2	74	72	-	77	52	-	-	-	-	-	-	-
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	863	778	1037	820	767	1054	1559	-	-	1591	-	-
Stage 1	975	862	-	939	836	-	-	-	-	-	-	-
Stage 2	935	835	-	932	852	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	847	765	1037	751	754	1054	1559	-	-	1591	-	-
Mov Cap-2 Maneuver	847	765	-	751	754	-	-	-	-	-	-	-
Stage 1	959	861	-	924	823	-	-	-	-	-	-	-
Stage 2	915	822	-	864	851	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.5	9.2	3.7	0.3
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1559	-	-	941	864	1591	-	-
HCM Lane V/C Ratio	0.015	-	-	0.147	0.014	0.001	-	-
HCM Control Delay (s)	7.3	0	-	9.5	9.2	7.3	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.5	0	0	-	-

Intersection	
Int Delay, s/veh	3.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	133	0	38	54	8	0	0	63	22	0	0
Future Vol, veh/h	0	133	0	38	54	8	0	0	63	22	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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	145	0	41	59	9	0	0	68	24	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	68	0	0	145	0	0	291	295	145	325	291	64
Stage 1	-	-	-	-	-	-	145	145	-	146	146	-
Stage 2	-	-	-	-	-	-	146	150	-	179	145	-
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	1533	-	-	1437	-	-	661	616	902	628	619	1000
Stage 1	-	-	-	-	-	-	858	777	-	857	776	-
Stage 2	-	-	-	-	-	-	857	773	-	823	777	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1533	-	-	1437	-	-	646	598	902	567	600	1000
Mov Cap-2 Maneuver	-	-	-	-	-	-	646	598	-	567	600	-
Stage 1	-	-	-	-	-	-	858	777	-	857	753	-
Stage 2	-	-	-	-	-	-	831	750	-	761	777	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	2.9	9.3	11.6
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	902	1533	-	-	1437	-	-	567
HCM Lane V/C Ratio	0.076	-	-	-	0.029	-	-	0.042
HCM Control Delay (s)	9.3	0	-	-	7.6	0	-	11.6
HCM Lane LOS	A	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-	-	0.1

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	0	219	0	16	99	11	0	0	14	34	0	0
Future Vol, veh/h	0	219	0	16	99	11	0	0	14	34	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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	238	0	17	108	12	0	0	15	37	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	120	0	0	238	0	0	386	392	238	394	386	114
Stage 1	-	-	-	-	-	-	238	238	-	148	148	-
Stage 2	-	-	-	-	-	-	148	154	-	246	238	-
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	1468	-	-	1329	-	-	573	544	801	566	548	939
Stage 1	-	-	-	-	-	-	765	708	-	855	775	-
Stage 2	-	-	-	-	-	-	855	770	-	758	708	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1468	-	-	1329	-	-	567	536	801	550	540	939
Mov Cap-2 Maneuver	-	-	-	-	-	-	567	536	-	550	540	-
Stage 1	-	-	-	-	-	-	765	708	-	855	764	-
Stage 2	-	-	-	-	-	-	843	759	-	744	708	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1	9.6	12
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	801	1468	-	-	1329	-	-	550
HCM Lane V/C Ratio	0.019	-	-	-	0.013	-	-	0.067
HCM Control Delay (s)	9.6	0	-	-	7.7	0	-	12
HCM Lane LOS	A	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.2

Intersection	
Int Delay, s/veh	6.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	100	44	126	159	73	172
Future Vol, veh/h	100	44	126	159	73	172
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	205	-	155	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	81	81	88	88	72	72
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	123	54	143	181	101	239

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	177	0	617	150
Stage 1	-	-	-	-	150	-
Stage 2	-	-	-	-	467	-
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	-	-	1399	-	453	896
Stage 1	-	-	-	-	878	-
Stage 2	-	-	-	-	631	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1399	-	407	896
Mov Cap-2 Maneuver	-	-	-	-	407	-
Stage 1	-	-	-	-	788	-
Stage 2	-	-	-	-	631	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3.5	12.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	407	896	-	-	1399	-
HCM Lane V/C Ratio	0.249	0.267	-	-	0.102	-
HCM Control Delay (s)	16.8	10.5	-	-	7.9	-
HCM Lane LOS	C	B	-	-	A	-
HCM 95th %tile Q(veh)	1	1.1	-	-	0.3	-

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	3	8	113	27	4	7	203	315	36	5	236	7
Future Vol, veh/h	3	8	113	27	4	7	203	315	36	5	236	7
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	-	-	-	-	-	-	290	-	-	275	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	9	120	29	4	7	216	335	38	5	251	7

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1057	1070	255	1115	1054	354	258	0	0	373	0	0
Stage 1	265	265	-	786	786	-	-	-	-	-	-	-
Stage 2	792	805	-	329	268	-	-	-	-	-	-	-
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	221	784	185	226	690	1307	-	-	1185	-	-
Stage 1	740	689	-	385	403	-	-	-	-	-	-	-
Stage 2	382	395	-	684	687	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	172	184	784	132	188	690	1307	-	-	1185	-	-
Mov Cap-2 Maneuver	172	184	-	132	188	-	-	-	-	-	-	-
Stage 1	618	686	-	321	337	-	-	-	-	-	-	-
Stage 2	311	330	-	570	684	-	-	-	-	-	-	-

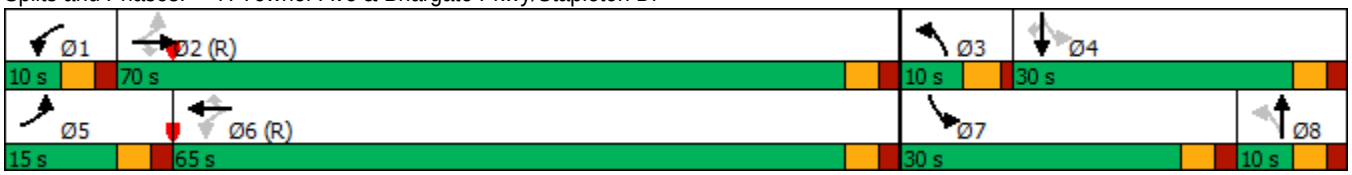
Approach	EB	WB	NB	SB
HCM Control Delay, s	12.6	34.7	3	0.2
HCM LOS	B	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1307	-	-	605	161	1185	-	-
HCM Lane V/C Ratio	0.165	-	-	0.218	0.251	0.004	-	-
HCM Control Delay (s)	8.3	-	-	12.6	34.7	8.1	-	-
HCM Lane LOS	A	-	-	B	D	A	-	-
HCM 95th %tile Q(veh)	0.6	-	-	0.8	0.9	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	391	1312	50	29	592	348	25	7	266	5	258
Future Volume (vph)	391	1312	50	29	592	348	25	7	266	5	258
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8	7	4	
Permitted Phases	2		2	6		6	8		4		4
Detector Phase	5	2	2	1	6	6	3	8	7	4	4
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	9.5	10.0	10.0	10.0	10.0
Total Split (s)	15.0	70.0	70.0	10.0	65.0	65.0	10.0	10.0	30.0	30.0	30.0
Total Split (%)	12.5%	58.3%	58.3%	8.3%	54.2%	54.2%	8.3%	8.3%	25.0%	25.0%	25.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.5	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	1.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.5	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None
Act Effct Green (s)	81.4	75.4	75.4	70.0	64.8	64.8	8.9	5.3	28.6	22.6	22.6
Actuated g/C Ratio	0.68	0.63	0.63	0.58	0.54	0.54	0.07	0.04	0.24	0.19	0.19
v/c Ratio	0.78	0.63	0.05	0.15	0.33	0.36	0.20	0.31	0.75	0.01	0.53
Control Delay	24.0	17.8	0.1	10.3	16.9	2.7	38.4	35.7	53.0	38.0	8.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.0	17.8	0.1	10.3	16.9	2.7	38.4	35.7	53.0	38.0	8.6
LOS	C	B	A	B	B	A	D	D	D	D	A
Approach Delay		18.7			11.6			37.0		31.2	
Approach LOS		B			B			D		C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.78	
Intersection Signal Delay: 18.9	Intersection LOS: B
Intersection Capacity Utilization 74.3%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 7: Towner Ave & Briargate Pkwy/Stapleton Dr



Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	11	36	0	17	70	43	0	0	10	25	0	7
Future Vol, veh/h	11	36	0	17	70	43	0	0	10	25	0	7
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	39	0	18	76	47	0	0	11	27	0	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	123	0	0	39	0	0	203	222	39	205	199	100
Stage 1	-	-	-	-	-	-	63	63	-	136	136	-
Stage 2	-	-	-	-	-	-	140	159	-	69	63	-
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	1464	-	-	1571	-	-	755	677	1033	753	697	956
Stage 1	-	-	-	-	-	-	948	842	-	867	784	-
Stage 2	-	-	-	-	-	-	863	766	-	941	842	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1464	-	-	1571	-	-	738	663	1033	733	683	956
Mov Cap-2 Maneuver	-	-	-	-	-	-	738	663	-	733	683	-
Stage 1	-	-	-	-	-	-	940	835	-	860	775	-
Stage 2	-	-	-	-	-	-	846	757	-	924	835	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.8	1	8.5	9.9
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	1033	1464	-	-	1571	-	-	772
HCM Lane V/C Ratio	0.011	0.008	-	-	0.012	-	-	0.045
HCM Control Delay (s)	8.5	7.5	0	-	7.3	0	-	9.9
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.1

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	32	0	45	4	0	3	77	12	7	6	14	57
Future Vol, veh/h	32	0	45	4	0	3	77	12	7	6	14	57
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	35	0	49	4	0	3	84	13	8	7	15	62

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	247	249	46	270	276	17	77	0	0	21	0	0
Stage 1	60	60	-	185	185	-	-	-	-	-	-	-
Stage 2	187	189	-	85	91	-	-	-	-	-	-	-
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	707	654	1023	683	632	1062	1522	-	-	1595	-	-
Stage 1	951	845	-	817	747	-	-	-	-	-	-	-
Stage 2	815	744	-	923	820	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	672	614	1023	620	593	1062	1522	-	-	1595	-	-
Mov Cap-2 Maneuver	672	614	-	620	593	-	-	-	-	-	-	-
Stage 1	898	841	-	771	705	-	-	-	-	-	-	-
Stage 2	767	702	-	874	816	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.8	9.8	6	0.6
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1522	-	-	841	755	1595	-	-
HCM Lane V/C Ratio	0.055	-	-	0.1	0.01	0.004	-	-
HCM Control Delay (s)	7.5	0	-	9.8	9.8	7.3	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.3	0	0	-	-

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	71	0	24	131	25	0	0	19	15	0	0
Future Vol, veh/h	0	71	0	24	131	25	0	0	19	15	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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	77	0	26	142	27	0	0	21	16	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	169	0	0	77	0	0	285	298	77	296	285	156
Stage 1	-	-	-	-	-	-	77	77	-	208	208	-
Stage 2	-	-	-	-	-	-	208	221	-	88	77	-
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	1409	-	-	1522	-	-	667	614	984	656	624	890
Stage 1	-	-	-	-	-	-	932	831	-	794	730	-
Stage 2	-	-	-	-	-	-	794	720	-	920	831	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1409	-	-	1522	-	-	658	602	984	633	612	890
Mov Cap-2 Maneuver	-	-	-	-	-	-	658	602	-	633	612	-
Stage 1	-	-	-	-	-	-	932	831	-	794	716	-
Stage 2	-	-	-	-	-	-	779	706	-	901	831	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1	8.7	10.8
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	984	1409	-	-	1522	-	-	633
HCM Lane V/C Ratio	0.021	-	-	-	0.017	-	-	0.026
HCM Control Delay (s)	8.7	0	-	-	7.4	0	-	10.8
HCM Lane LOS	A	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0.1	-	-	0.1

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	0	105	0	0	180	38	0	0	0	22	0	0
Future Vol, veh/h	0	105	0	0	180	38	0	0	0	22	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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	114	0	0	196	41	0	0	0	24	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	237	0	0	114	0	0	331	351	114	331	331	217
Stage 1	-	-	-	-	-	-	114	114	-	217	217	-
Stage 2	-	-	-	-	-	-	217	237	-	114	114	-
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	1330	-	-	1475	-	-	622	573	939	622	588	823
Stage 1	-	-	-	-	-	-	891	801	-	785	723	-
Stage 2	-	-	-	-	-	-	785	709	-	891	801	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1330	-	-	1475	-	-	622	573	939	622	588	823
Mov Cap-2 Maneuver	-	-	-	-	-	-	622	573	-	622	588	-
Stage 1	-	-	-	-	-	-	891	801	-	785	723	-
Stage 2	-	-	-	-	-	-	785	709	-	891	801	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	0	11
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1330	-	-	1475	-	-	622
HCM Lane V/C Ratio	-	-	-	-	-	-	-	0.038
HCM Control Delay (s)	0	0	-	-	0	-	-	11
HCM Lane LOS	A	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0.1

Falcon Hills Traffic Impact Study, April 8, 2004
Page 1, Table 1, Figures 2 and 3

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TRANSPORTATION CONSULTANTS, INC.

April 8, 2004

Mr. Harold Fong
Manager, Falcon Hills
Six Ninety Nine LA, LLC
545 East Pikes Peak, Suite 207
Colorado Springs, CO 80903

RE: Falcon Hills
Updated March 2004
LSC #036080

Dear Mr. Fong:

In response to your request, we have prepared this updated traffic impact analysis report for Falcon Hills. A previous traffic study was prepared for Falcon Hills entitled *Traffic Impact Report For Falcon Hills* dated May 3, 2000 by URS Corporation. Falcon Hills is located west of Meridian Road and north of Stapleton Road in El Paso County, Colorado. The site location and vicinity are shown in Figure 1. The purpose of this report is to present an updated study based on the current land use plan, including the specific separate traffic impacts for each of the various landowners within Falcon Hills as well as for the area as a whole, and to identify the short- and long-term transportation system improvements adjacent to Falcon Hills.

This report contains an analysis of the traffic estimated to be generated by each of the existing and future proposed development parcels within Falcon Hills, estimates of the projected site-generated traffic volumes on the existing and future adjacent roadway system, and the impacts of additional traffic on the area roadways and intersections by ownership land use type. The report also identifies recommendations for auxiliary turn lanes, traffic signals, and other roadway system improvements for the short and long term.

LAND USE PLAN AND OWNERSHIP

Falcon Hills is located west of Meridian Road and north of Stapleton Road. Aside from existing developed individual lots, of which there were about 497 in August 2003, there are three major owners of developing and undeveloped land within Falcon Hills. These owners are **Six Ninety Nine LA, LLC; School District 49; and Roger Barrack/Scott Smith**. These three owners will each contribute to a portion of the total traffic impacts of future development within Falcon Hills. Thus, the idea is that each would contribute to an equitable portion of the total cost of street improvements necessitated by the traffic generated.

Table 1

Trip Generation Estimate

Falcon Hills Update

Land Use Code	Land Use Description	Trip Generation Units	Trip Generation Rates [1] Average Weekday Traffic	Morning Peak Hour In	Morning Peak Hour Out	Afternoon Peak Hour In	Afternoon Peak Hour Out	Total Trips Generated Average Weekday Traffic	Morning Peak Hour In	Morning Peak Hour Out	Afternoon Peak Hour In	Afternoon Peak Hour Out	Percent Internal Trips	Total External Trips Generated Average Weekday Traffic	Morning Peak Hour In	Morning Peak Hour Out	Afternoon Peak Hour In	Afternoon Peak Hour Out	New Trips Generated Percent Pass-by Trips[2]	New Trips Generated Average New Weekday Traffic
SCENARIO 1																				
Six Ninety Nine LA, LLC Land Uses																				
Residential Uses																				
210	Single-Family Detached Housing	1290 DU[3]	9.57	0.19	0.56	0.65	0.36	12,345	242	726	834	469	10%	11,111	218	653	750	422	0%	11,111
220	Apartment	180 DU	6.74	0.08	0.43	0.43	0.21	1,213	15	78	78	38	10%	1,092	13	70	70	34	0%	1,092
			Total Six Ninety Nine Residential					13,558	257	803	912	507		12,203	231	723	820	457		12,203
Neighborhood Commercial Uses																				
820	Shopping Center	82 KSF[4]	73.17	1.06	0.68	3.22	3.49	6,000	87	55	264	286	6%	5,640	81	52	249	269	34%	3,722
			Total Six Ninety Nine Properties					**19,558**	**343**	**859**	**1,176**	**794**		**17,843**	**312**	**775**	**1,069**	**726**		**15,925**
School District 49 Land Uses																				
530	High School	706 Students	1.79	0.32	0.14	0.06	0.09	1,264	227	97	42	64	25%	948	170	73	32	48	0%	948
Southeast Corner Land Uses (Not Owned By Six Ninety Nine LA, LLC)																				
820	Shopping Center	360 KSF	43.15	0.58	0.37	1.95	2.11	15,534	209	134	702	760	6%	14,602	197	126	660	715	34%	9,637
			TOTAL SCENARIO 1					**36,356**	**780**	**1,090**	**1,920**	**1,618**		**33,392**	**679**	**974**	**1,761**	**1,488**		**26,510**
SCENARIO 2																				
Six Ninety Nine LA, LLC																				
Residential Uses																				
210	Single-Family Detached Housing	1260 DU	9.57	0.19	0.56	0.65	0.36	12,058	236	709	814	458	13%	10,491	206	617	709	399	0%	10,491
220	Apartment	180 DU	6.74	0.08	0.43	0.43	0.21	1,213	15	78	78	38	13%	1,055	13	68	68	33	0%	1,055
			Total Six Ninety Nine Residential					13,271	251	787	892	496		11,546	218	684	776	432		11,546
Neighborhood Commercial Uses																				
820	Shopping Center	82 KSF	73.17	1.06	0.68	3.22	3.49	6,000	87	55	264	286	6%	5,640	81	52	249	269	34%	3,722
			Total Six Ninety Nine Properties					**19,271**	**338**	**842**	**1,157**	**783**		**17,186**	**300**	**736**	**1,025**	**701**		**15,268**
School District 49 Land Uses																				
530	High School	706 Students	1.79	0.32	0.14	0.06	0.09	1,264	227	97	42	64	25%	948	170	73	32	48	0%	948
520	Elementary School	500 Students	1.02	0.17	0.12	0.00	0.01	510	86	59	1	5	67%	168	28	20	0	2	0%	168
			Total School District 49					**1774**	**313**	**157**	**43**	**69**		**1116**	**199**	**93**	**32**	**49**		**1116**
Southeast Corner Land Uses (Not Owned By Six Ninety Nine LA, LLC)																				
820	Shopping Center	360 KSF	43.15	0.58	0.37	1.95	2.11	15,534	209	134	702	760	6%	14,602	197	126	660	715	34%	9,637
			TOTAL SCENARIO 2					**36,579**	**860**	**1,133**	**1,901**	**1,612**		**32,904**	**695**	**955**	**1,717**	**1,465**		**26,022**

Notes:

(1) Source: "Trip Generation," Institute of Transportation Engineers, 6th ed., 1997.

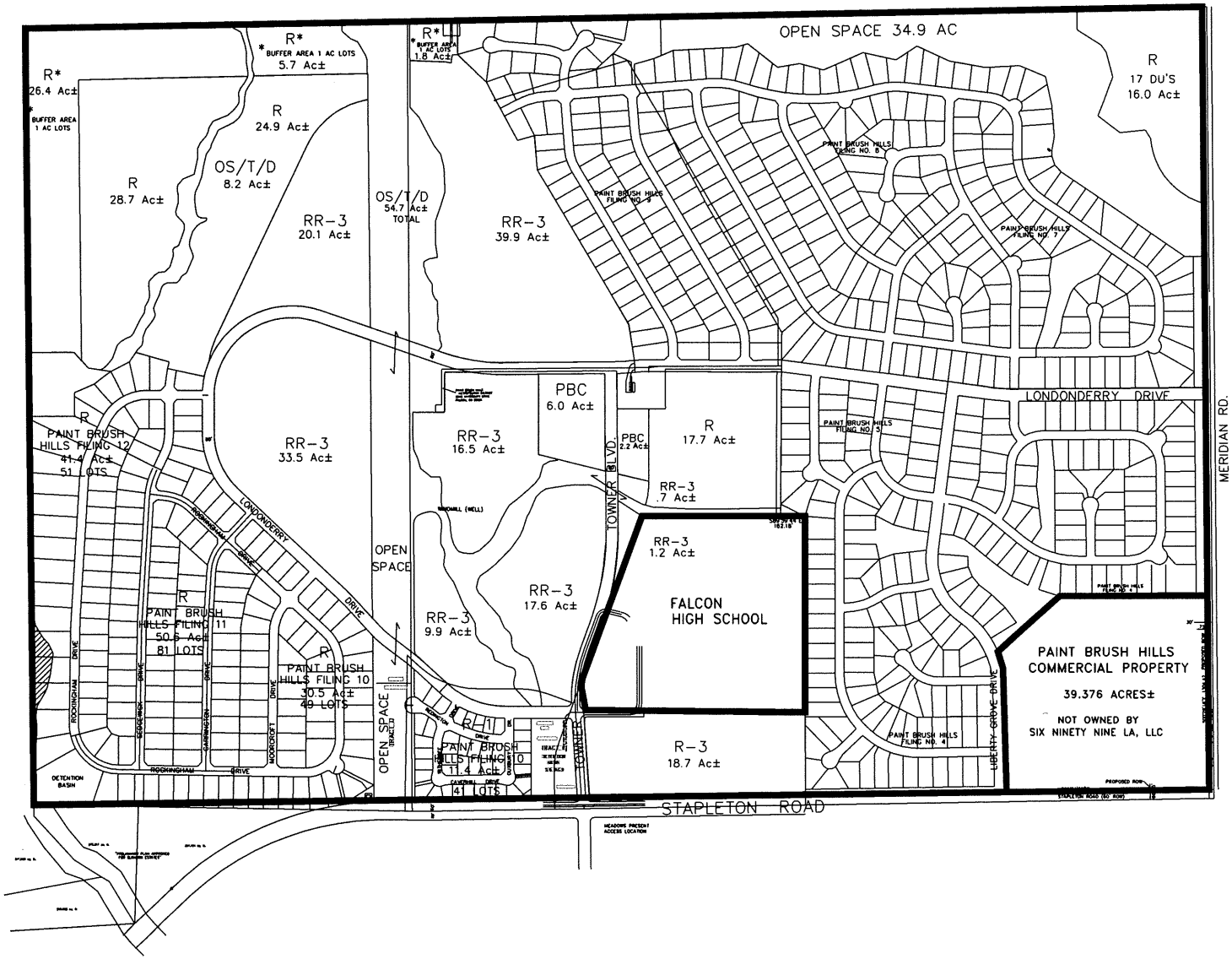
(2) Source: "Trip Generation Handbook An ITE Recommended Practice" Institute of Transportation Engineers, October 1998.

(3) DU = dwelling unit

(4) KSF = thousand square feet of floor area

Source: LSC Transportation Consultants, Inc.

Date: 04/08/04



Not to Scale

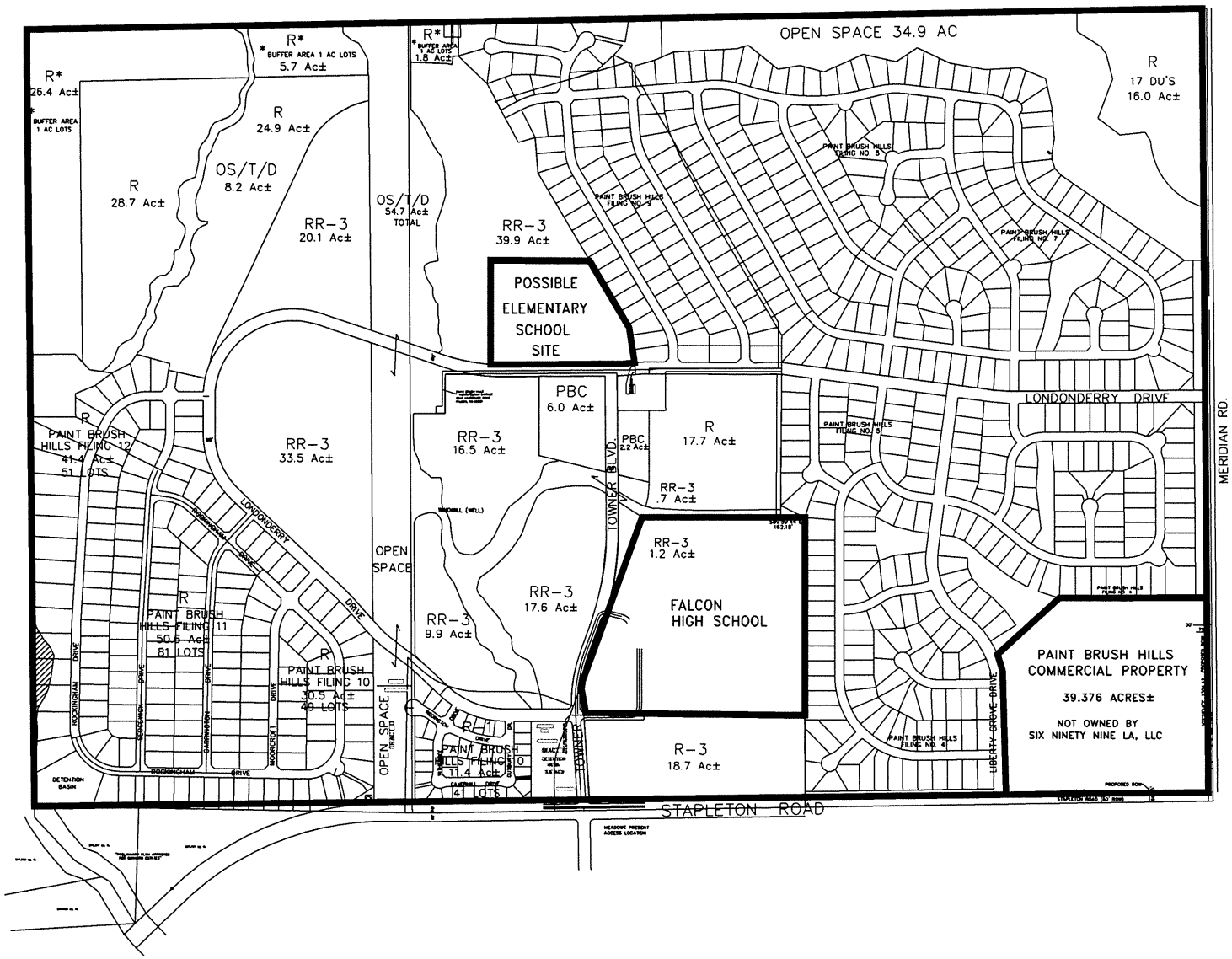
Site Plan - Scenario One
Without Elementary School Site

Falcon Hills Update

Figure 2

LSC # 036080

TRANSPORTATION CONSULTANTS, INC.



Not to Scale

Site Plan - Scenario Two
With Elementary School Site

Falcon Hills Update

Figure 3

LSC # 036080

TRANSPORTATION
CONSULTANTS, INC.

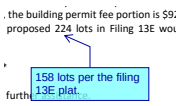
Markup Summary

dsdlaforce (4)

Subject: Callout
Page Label: 9
Author: dsdlaforce
Date: 10/15/2018 9:15:16 AM
Color:

There seems to be a disconnect with the construction drawings. The construction drawings and plat identifies Keating Drive and Asbee as a Residential Collector.

Include Keating Drive and Devoncove Drive in the Area Roadways section (pg 4).
1. Did PBH Filing 11 intend Keating Drive to be a collector road? This results in a collector road that does not seem to connect to a similar or higher road classification.
2. Based on future filing 14 to the west, should Devoncove Drive be constructed as a residential collector?



Subject: Callout
Page Label: 11
Author: dsdlaforce
Date: 10/15/2018 9:19:43 AM
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158 lots per the filing 13E plat.

Subject: Callout
Page Label: 10
Author: dsdlaforce
Date: 10/15/2018 9:29:02 AM
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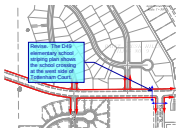
Include an exhibit with the Traffic impact study showing the anticipated reconfiguration of Londonderry Drive to verify if sufficient ROW is available for a southbound right turn deceleration lane. If not the plat may need to provide additional ROW for this future auxiliary lane.



Subject: Callout
Page Label: 19
Author: dsdlaforce
Date: 10/15/2018 9:41:21 AM
Color:

Revise. The D49 elementary school striping plan shows the school crossing at the west side of Tottenham Court.