



**LSC TRANSPORTATION CONSULTANTS, INC.**  
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May 24, 2019

Mr. Mike Taylor  
Vision Development, Inc.  
540 Elkton Drive, Suite 202  
Colorado Springs, CO 80907

RE: Jackson Creek North Filing 2  
Traffic Impact Analysis  
Monument, Colorado  
LSC #184980

Dear Mr. Taylor:

In response to your request, LSC Transportation Consultants, Inc. has prepared this traffic impact analysis for the proposed Jackson Creek North Filing No. 2 residential development to be located north of the intersection of Bowstring Road and Harness Road in Monument, Colorado. The site location is shown in Figure 1.

## **REPORT CONTENTS**

This report identifies the following: proposed land use, planned street extensions as part of this project, access points, projected vehicle-trip generation, assignment of the site-generated traffic volumes to the short-term and long-term adjacent street networks, projections of future background and total traffic volumes, evaluation of the proposed access points to Harness Road, adjacent intersection and access point level of service (plus the intersection of Jackson Creek Parkway and Harness Road), and conclusions/recommendations.

## **SITE DEVELOPMENT AND LAND USE**

LSC recently completed a traffic impact study for Jackson Creek North Filing 1 to be located west of Bowstring Road and south of the planned extension of Harness Road. The currently proposed Jackson Creek North Filing 2 site is located north of Filing 1. There are existing single-family homes south of the site and an existing mini storage facility southwest of the site, and a recently opened senior living center just west of the site. The areas east of the site are planned to be developed for single-family homes in the future.

The site is planned to be developed with 85 lots for single-family homes. Harness Road is planned to be constructed from its current terminus just east of Jackson Creek Parkway to Bowstring Road with Jackson Creek Filing 1. With this filing Bowstring Road would be extended north from its current terminus to just south of the future extension of Cloverleaf Road. Cloverleaf Road is not planned to be constructed with this filing. Two full-movement site access points are proposed to Harness Road. These access points are located 270 feet west of the Filing 1 access and 465 feet east of Bowstring Road. Four full-movement access points are proposed to Bowstring Road north of Harness Road. The site plan is shown in Figure 2.

## ROADWAY AND TRAFFIC CONDITIONS

### Area Roadways

Figure 1 shows the roadways in the vicinity of the site. The major roadways are identified below, followed by a brief description.

- **Jackson Creek Parkway** extends south from Highway 105 to Baptist Road where it continues south to North Gate Boulevard as Struthers Road. Jackson Creek Parkway is classified as a Major Collector (commercial) by the Town of Monument. Jackson Creek Parkway is currently a two-lane roadway generally north of Leather Chaps Road. South of Leather Chaps Road, Jackson Creek Parkway is a four-lane street with a posted speed limit of 35 miles per hour (mph).
- **Harness Road** is a Minor Collector street that extends northeast from Higby Road. There is a short existing section of Harness Road south of Higby Road that extends northeast from Bowstring Road to Curled Oak Drive and a short existing section that extends just east from Jackson Creek Parkway. Harness Road is planned to be constructed between these two sections as part of Jackson Creek Filing 1. In the future, Harness Road is planned to be extended north from Curled Oak Drive to the existing intersection of Harness/Higby. The intersection of Jackson Creek Parkway and Harness Road has the potential to be signalized in the future once traffic signal warrants are met.
- **Bowstring Road** is a Minor Collector street that extends north from Higby Road. There is also a short existing section of Bowstring Road that extends north of Leather Chaps Road to Harness Road adjacent to the site. Bowstring Road is planned to be extended north to just south of the future extension of Cloverleaf Road with this project. In the future, Bowstring Road is planned to be extended north to Higby Road.
- **Cloverleaf Road** is a Minor Collector street that extends north from Higby Road. In the future Cloverleaf Road is planned to be extended southwest to Jackson Creek Parkway, however, this is not planned to occur with the currently proposed Jackson Creek Filing 2.

## 2018 Traffic Conditions

Figure 3 shows the morning and afternoon peak-hour traffic volumes at the intersection of Jackson Creek Parkway/Harness Road based on counts conducted by LSC in May 2018. The traffic counts were conducted prior to the opening of the senior living center located northeast of the intersection. 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 1 shows the level of service delay ranges.

<b>Table 1</b> <b>Intersection Levels of Service Delay Ranges</b>			
<b>Level of Service</b>	<b>Signalized Intersections</b>		<b>Unsignalized Intersections</b>
	<b>Average Control Delay (seconds per vehicle)</b>	<b>V/C<sup>(1)</sup></b>	<b>Average Control Delay (seconds per vehicle)<sup>(2)</sup></b>
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: <i>Transportation Research Circular 212</i>			
(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 intersection of Jackson Creek/Harness was analyzed to determine the existing levels of service based on the unsignalized intersection method of analysis procedures found in the *Highway Capacity Manual, 6<sup>th</sup> Edition* by the Transportation Research Board. Figure 3 shows the detailed level of service analysis results. The level of service (LOS) reports are attached.

The westbound left-turn movement at the intersection of Jackson Creek/Harness is currently operating at LOS C during the morning peak hour and LOS E during the afternoon peak hour.

## **SHORT-TERM (YEAR 2020) BACKGROUND TRAFFIC**

Figure 4 shows the projected short-term background traffic volumes at the intersections of Jackson Creek Parkway/Harness Road and Bowstring Road/Harness Road. Background traffic is the traffic estimated to be on the area streets without consideration of the proposed development. These background traffic volumes were based on existing traffic volumes (from Figure 3) plus a shift of local traffic volumes from other current travel routes with the connection of Harness Road between Jackson Creek Parkway and Bowstring Road, plus the traffic projected to be generated by the recently opened senior living center on the northeast corner of Jackson Creek Parkway and Harness Road, plus the traffic projected to be generated by Jackson Creek Filing 1, plus a growth of about two percent per year for through traffic on Jackson Creek Parkway. The projected traffic volumes for the senior living center were taken from the *Jackson Creek Senior Living Center Updated Traffic Impact Analysis* by LSC dated July 7, 2016. The report has been attached. The projected traffic volumes for Jackson Creek Filing 1 were taken from the updated traffic impact analysis for that project by LSC dated September 6, 2018. The traffic volume assumed to shift from existing routes to the proposed Harness connection were based on traffic counts at the intersection of Bowstring Road and Leather Chaps Drive. About 70 percent of the traffic generated by the Remington Hills at Jackson Creek Filing No. 1 (located northeast of the intersection) and about half of the existing through traffic at this intersection were estimated to instead use the new Harness connection. These background numbers assume conditions/volumes prior to the proposed Phase 1 Ferrari/Monument Marketplace North development.

## **2040 BACKGROUND TRAFFIC**

The background traffic volumes for the year 2040 are based on the *Monument Heights Traffic Impact Analysis* by Felsburg Holt & Ulevig dated February 2015 and on previous work completed by LSC in the area including the *Regency Park Master Plan Amendment Updated Traffic Technical Memorandum* by LSC dated December 16, 2014. The model used for the *Regency Park Master Plan Updated Traffic Technical Memorandum* was updated to reflect the land uses in the *Monument Heights Traffic Impact Analysis* and refined for this site-specific study. The background numbers for this report are based on the updated model. Applicable pages from the FHU report and our report are attached for reference. The background traffic volumes for 2040 are shown in Figure 5. The 2040 background traffic assumes buildout of the Regency Park Master Plan area.

## **TRIP GENERATION**

The estimates of vehicle-trips expected to be generated by the site have been made using the nationally published trip generation rates found in *Trip Generation, 10th Edition, 2017* by the Institute of Transportation Engineers (ITE). Table 2 shows the results of the trip generation estimates.



As shown in Table 2, the site is expected to generate about 802 new vehicle-trips on the average weekday, with about one-half entering and one-half exiting the site in a 24-hour period. During the morning peak hour, which generally occurs for one hour between 6:30 and 8:30 a.m., about 16 vehicles would enter and 47 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 53 vehicles would enter and 31 vehicles would exit the site.

### **TRIP DISTRIBUTION AND ASSIGNMENT**

The directional distribution of the site-generated traffic volumes on the adjacent roadways is an essential component in determining the site's traffic impacts. Figure 6 shows the estimated directional distribution of site-generated traffic. Separate short- and long-term distributions are shown. The short-term distribution assumes Harness Road has been connected between its existing terminus just east of Jackson Creek Parkway and Bowstring Road. The long-term distribution assumes Harness Road, Bowstring Road, and Cloverleaf Road have been extended northeast to Higby Road.

When the distribution percentages (from Figure 6) are applied to the trip generation estimates (from Table 1), the resulting site-generated traffic volumes can be determined. Figure 7 shows the short-term site-generated traffic volumes. Figure 8 shows the long-term site-generated traffic volumes.

### **SHORT-TERM TOTAL TRAFFIC**

Figure 9 shows the short-term total traffic volumes. The short-term total traffic volumes are the sum of the short-term background traffic volumes (from Figure 4), plus the short-term site-generated traffic volumes (from Figure 7).

### **2040 TOTAL TRAFFIC**

Figure 10 shows the total traffic volumes for 2040. The 2040 total traffic volumes are the sum of the 2040 background traffic volumes (from Figure 5) plus the long-term site-generated traffic volumes (from Figure 8).

### **PROJECTED LEVELS OF SERVICE**

The Jackson Creek North Filings 1 and 2 access points to Harness Road and the intersections of Jackson Creek Parkway/Harness Road and Bowstring Road/Harness Road have been analyzed to determine the projected levels of service for the short-term background, 2040 background, short-term total, and 2040 total traffic volumes. Figures 4, 5, 9, and 10 show the level of service analysis results. The level of service reports are attached.

The westbound left-turn movement at the intersection of Jackson Creek Parkway and Harness Road is currently operating at LOS E during the afternoon peak hour. This movement is projected to operate at LOS F during the afternoon peak hour with the completion of Harness Road between its current terminus and Bowstring Road assuming the existing two-lane cross section of Jackson Creek Parkway and two-way stop-sign control. It is unlikely that this intersection would meet a traffic signal warrant based on this short-term scenario. An alternative to the westbound left turn at this intersection exists. Motorists can use southbound Bowstring Road and Leather Chaps to reach a signalized intersection. Please refer to the *Monument Marketplace North Traffic Impact Analysis* report by LSC dated May 19, 2019 for the long-term analysis of the intersection of Jackson Creek Parkway and Harness Road.

The full-movement Jackson Creek North Filing 1 and 2 access points to Harness Road are projected to operate at a satisfactory level of service (LOS C or better) for all movements as two-way stop-sign-controlled intersections based on the projected short-term and 2040 total traffic volumes.

The intersection of Harness/Bowstring is projected to operate at a satisfactory level of service (LOS C or better) for all movements as a two-way stop-sign-controlled intersection based on the projected short-term total traffic volumes. By 2040, the northbound and southbound approaches are projected to operate at LOS F based on both background and total traffic volumes. If this intersection were signed as an all-way stop-sign-controlled intersection, the eastbound through movement is projected to operate at LOS F during the afternoon peak hour. If this intersection is constructed as a modern one-lane roundabout, all movements are projected to operate at LOS A during the peak hours.

#### **TRAFFIC SIGNAL WARRANT ANALYSIS**

The intersections of Jackson Creek Parkway/Harness Road and Bowstring Road/Harness Road were analyzed to determine if a Four-Hour Vehicular Volume Traffic Signal Warrant would be met or close to being met based on the projected short-term and 2040 morning and afternoon peak-hour total traffic volume. The preliminary/partial (for planning purposes) Four-Hour Vehicular Volume Traffic Signal Warrant analysis using the peak hours is intended to provide an indication that a warrant may be met or is close to being met. In order for a Four-Hour Traffic Signal Warrant to be satisfied, the volume threshold would need to be met for two additional hours of the day. For example, the four-hour warrant would be satisfied with the volume thresholds met for the one hour in the morning, two hours (instead of the one-hour peak) during the afternoon peak period, and an hour during the mid-afternoon.

Figures 11 and 12 show the results of the analysis for Jackson Creek/Harness based on the projected short-term total and 2040 total traffic volumes, respectively. The short-term total analysis assumes the existing two-lane cross section on Jackson Creek Parkway. The minor approach volume includes only the westbound left-turn volume in the short-term analysis. The

long-term analysis assumes Jackson Creek Parkway has been widened to two through lanes in each direction. The minor approach volume includes the westbound traffic left-turn and through traffic volumes. As shown in Figure 11, based on the projected short-term total traffic volumes this intersection is **not** projected to meet the threshold established within the Four-Hour Vehicular Volume Traffic Signal Warrant criteria during both the morning peak and afternoon peak hours. Moreover, because the warrant thresholds are not met for the morning or afternoon peak hours in the short term, it is unlikely that the threshold would be met for four of the off-peak hours. By 2040, both the morning and afternoon peak hours are projected to meet the thresholds.

Figure 13 shows the results of the analysis for Bowstring/Harness. The analysis assumed a posted speed limit of less than 40 mph. The minor approach volumes include the northbound left-turn and through volumes. As shown on Figure 13, the 2040 total morning and afternoon peak-hour traffic volumes are below the thresholds for a Four-Hour Vehicular Volume Traffic Signal Warrant.

## CONCLUSIONS AND RECOMMENDATIONS

Based on the preceding analysis, the following conclusions and recommendations can be drawn regarding the traffic impacts of the Jackson Creek North Filing 1 residential development.

- The site is expected to generate about 802 new vehicle-trips on the average weekday, with about one-half entering and one-half exiting the site in a 24-hour period. During the morning peak hour about 16 vehicles would enter and 47 vehicles would exit the site. During the afternoon peak hour about 53 vehicles would enter and 31 vehicles would exit the site.
- Based on the projected short-term background traffic volumes, the westbound left-turn movement at the intersection of Jackson Creek Parkway and Harness Road is projected to operate at LOS F during the afternoon peak hour assuming the existing two-lane cross section of Jackson Creek Parkway and two-way stop-sign control. It is unlikely that this intersection would meet a traffic signal warrant based on this short-term scenario. An alternative to the westbound left turn at this intersection exists. Motorists can use southbound Bowstring Road and Leather Chaps to reach a signalized intersection. By 2040 it was assumed Jackson Creek Parkway would be expanded to two through lanes in each direction and a west leg would be added to the intersection of Jackson Creek/Harness. Please refer to the *Monument Marketplace North Traffic Impact Analysis* report by LSC dated May 19, 2019 for the long-term analysis of the intersection of Jackson Creek Parkway and Harness Road.
- The full-movement Jackson Creek North Filing 1 and 2 access points to Harness Road are projected to operate at a satisfactory level of service (LOS C or better) for all movements as two-way stop-sign-controlled intersections based on the projected short-term and 2040 total traffic volumes.

- The intersection of Harness/Bowstring is projected to operate at a satisfactory level of service (LOS C or better) for all movements as a two-way stop-sign-controlled intersection based on the projected short-term total traffic volumes. By 2040 the northbound and southbound approaches are projected to operate at LOS F based on both background and total traffic volumes. This intersection is not projected to meet the thresholds for a Four-Hour Vehicular Volume Traffic Signal Warrant based on the projected 2040 total traffic volumes. If this intersection were signed as an all-way stop-sign-controlled intersection, the eastbound through movement is projected to operate at LOS F during the afternoon peak hour. If this intersection is constructed as a modern one-lane roundabout, all movements are projected to operate at LOS A during the peak hours.

### **Recommended Improvements**

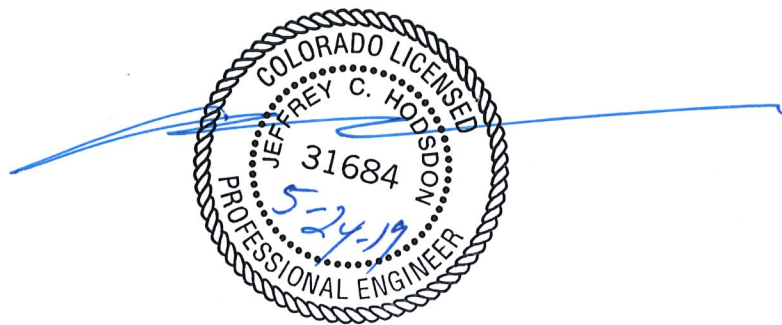
- A northbound right-turn deceleration lane and southbound left-turn lanes would need to be added on Jackson Creek Parkway approaching the Harness Road intersection with the extension of Harness Road west to Jackson Creek Parkway.
- Eastbound and westbound left-turn lanes should be provided on Harness Road approaching the Jackson Creek North Filing 1 and 2 access points and Bowstring Road. Striped left-turn lanes can be provided with the standard collector cross section. An eastbound right-turn deceleration lane should be incorporated into the design of Harness Road at Bowstring. If this intersection is designed as a modern roundabout, turn lanes would not be needed. Also, if use of all-way stop-sign control is anticipated as the ultimate traffic control, the deceleration lane would not be needed.

\* \* \* \* \*

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

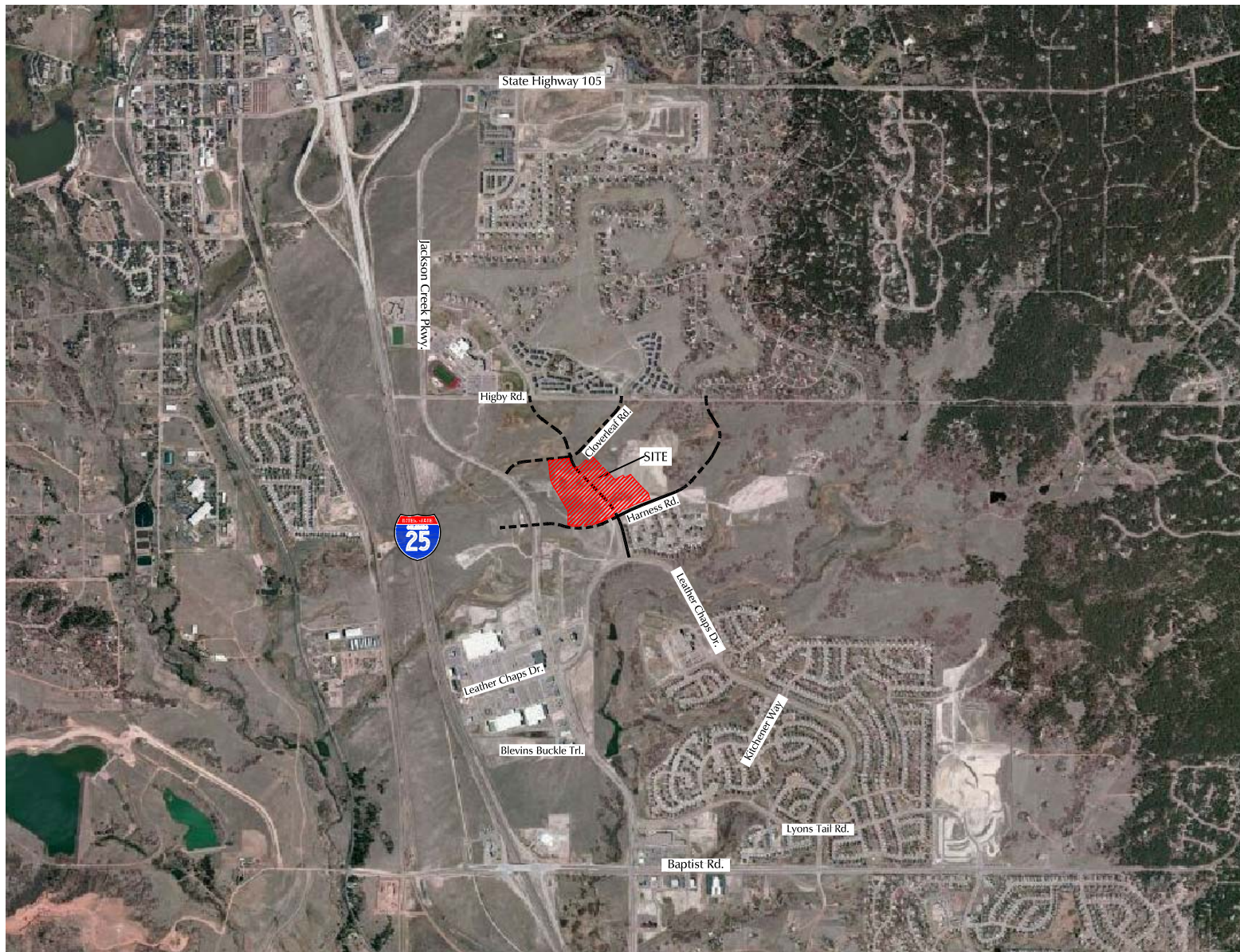
JCH:KDF:bjwb

Enclosures: Table 2  
Figures 1-13  
Traffic Count Reports  
Level of Service Reports  
*Jackson Creek Senior Living Center Updated Traffic Impact Analysis* by LSC dated  
July 7, 2016  
Pages from the *Monument Heights Traffic Impact Analysis* by Felsburg Holt &  
Ullevig, February 2015  
Updated Master Plan transportation model results and trip generation estimate  
from *Regency Park Master Plan Amendment Updated Traffic Technical  
Memorandum* by LSC Transportation Consultants, December 16, 2014

**Table 2**  
**Trip Generation Estimate**  
**Jackson Creek North Filing No. 2**

Land Use Code	Land Use Description	Trip Generation Units	Trip Generation Rates <sup>(1)</sup>						Total Trips Generated			
			Average Weekday Traffic	Morning Peak Hour		Afternoon Peak Hour		Average Weekday Traffic	Morning Peak Hour		Afternoon Peak Hour	
				In	Out	In	Out		In	Out	In	Out
210	Single-Family Detached Housing	85 DU <sup>(2)</sup>	9.44	0.19	0.56	0.62	0.37	802	16	47	53	31
Notes: (1) Source: " <i>Trip Generation, 10th Edition, 2017</i> " by the Institute of Transportation Engineers (ITE) (2) DU = dwelling unit												
Source: LSC Transportation Consultants, Inc.												

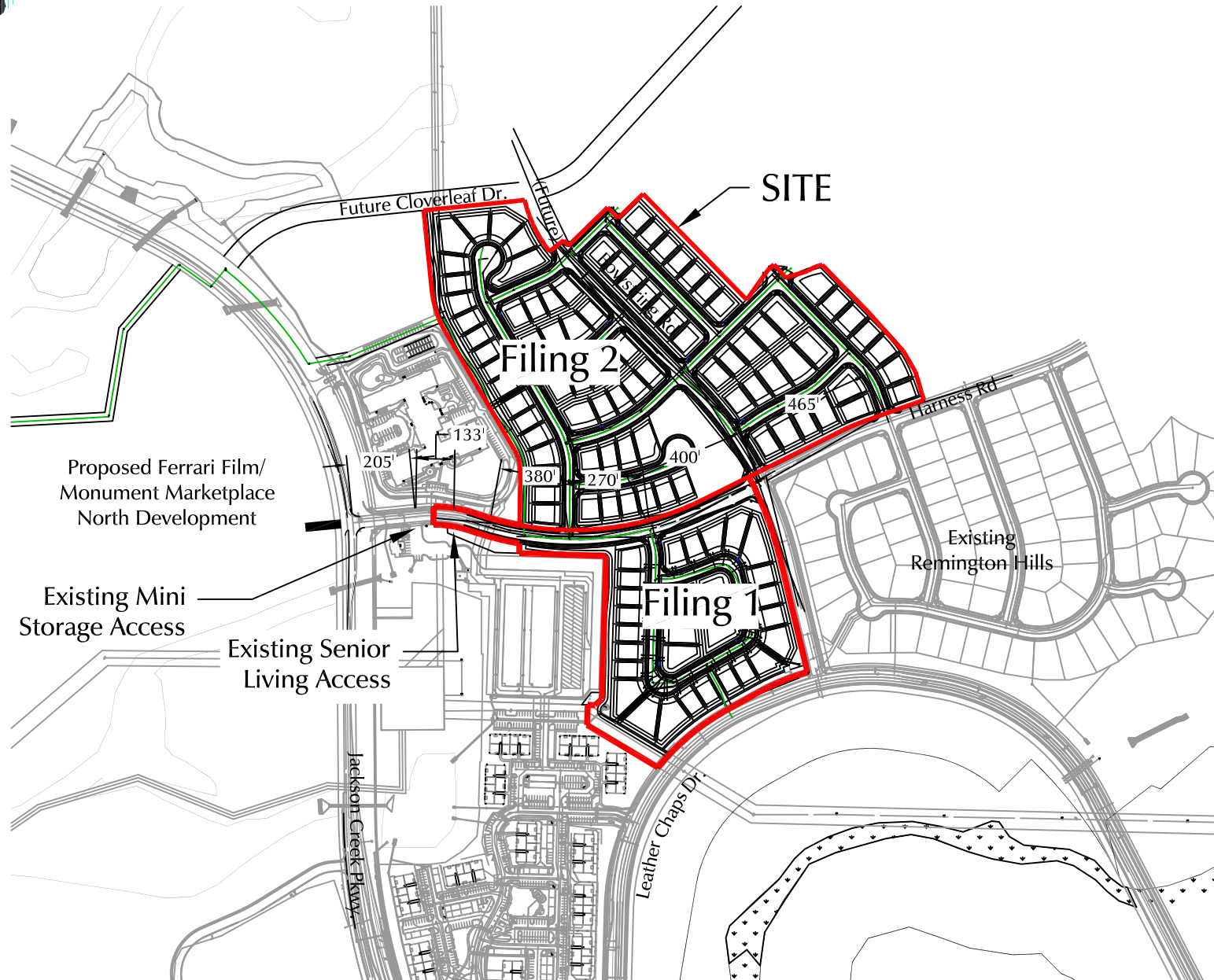




Approximate Scale  
Scale: 1" = 2,500'

Figure 1  
**Vicinity  
Map**

Jackson Creek North Filing 2 (LSC #184980)

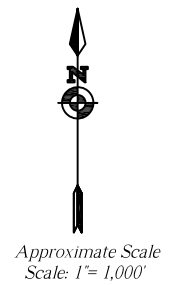
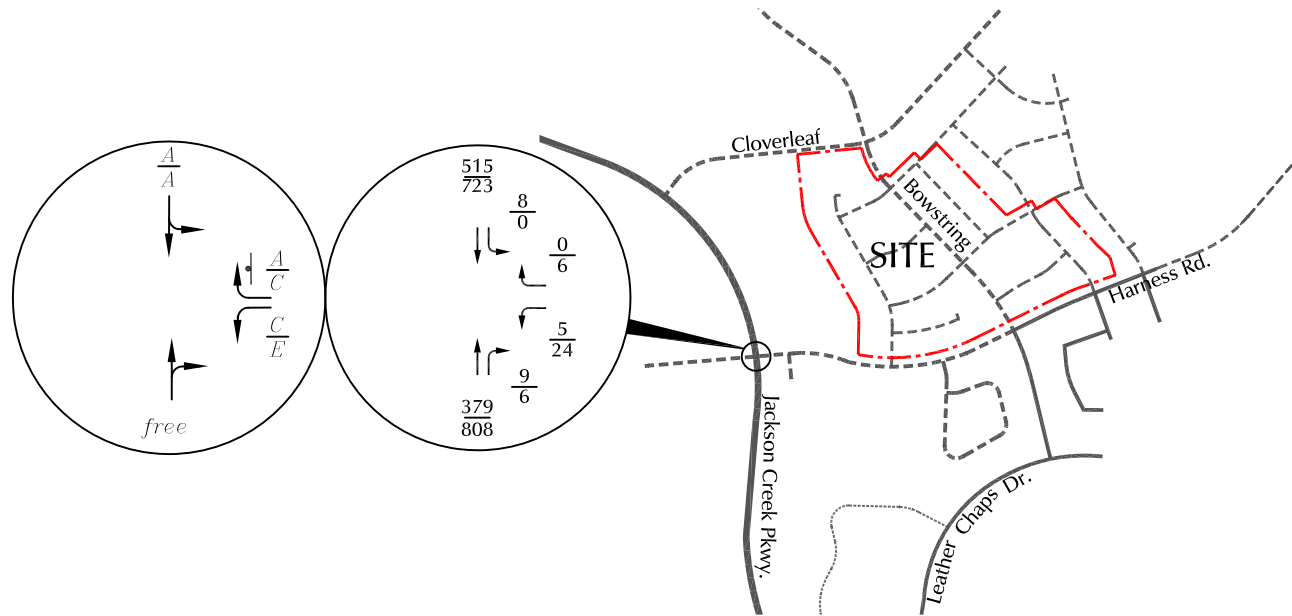


Approximate Scale  
Scale: 1" = 500'

Figure 2  
**Site Plan**

Jackson Creek North Filing 2 (LSC #184980)





#### LEGEND:

- | = Stop Sign
- $\frac{XX}{XX}$  =  $\frac{\text{AM Weekday Peak-Hour Traffic (vehicles per hour)}}{\text{PM Weekday Peak-Hour Traffic (vehicles per hour)}}$  (Counts by LSC\*)
- $\frac{A}{B}$  =  $\frac{\text{AM Individual Movement Peak-Hour Level of Service}}{\text{PM Individual Movement Peak-Hour Level of Service}}$
- XXX = Average Weekday Traffic (vehicles per day)

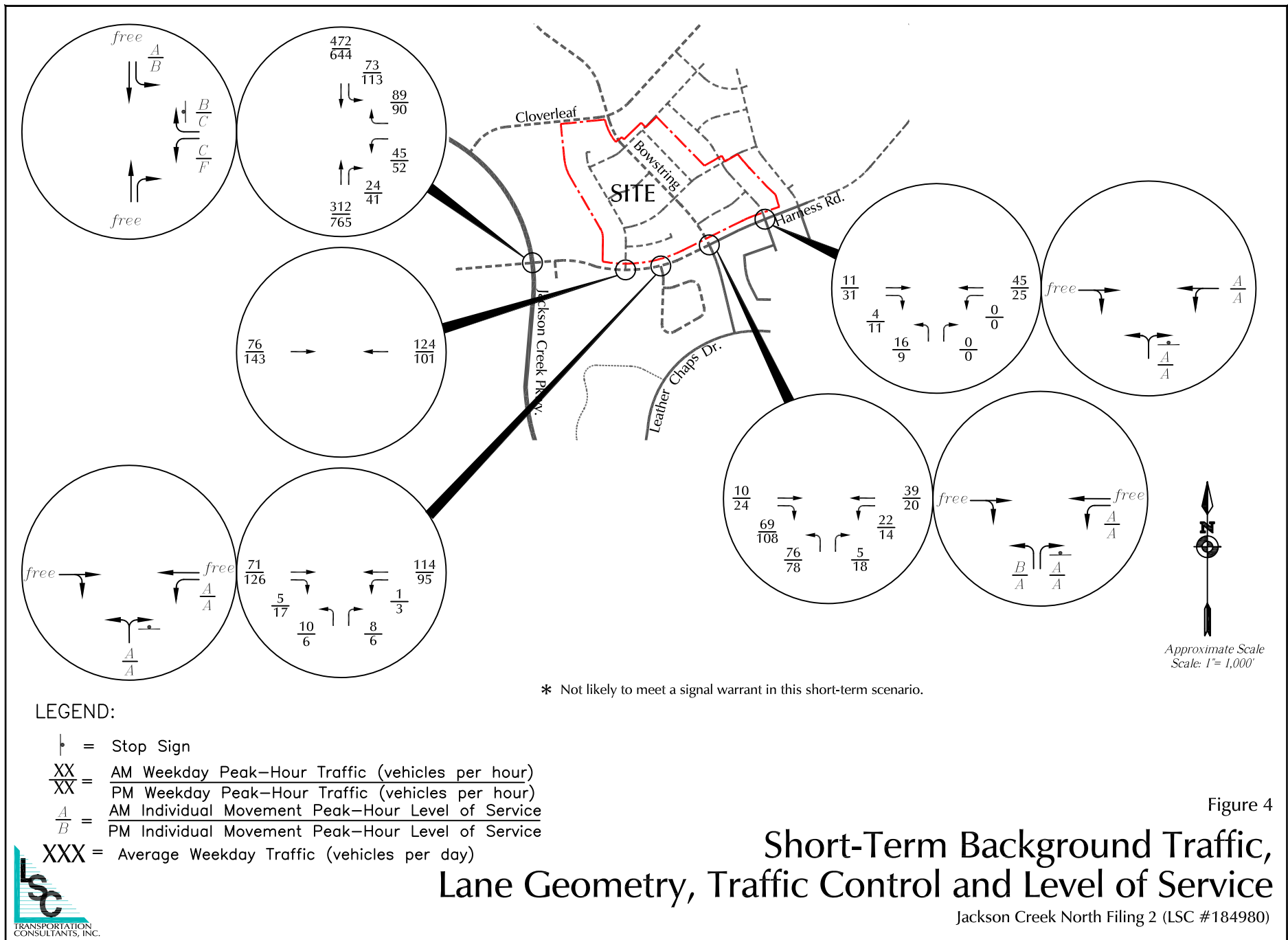


\* counts date: 5/15/18

Figure 3

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

Jackson Creek North Filing 2 (LSC #184980)



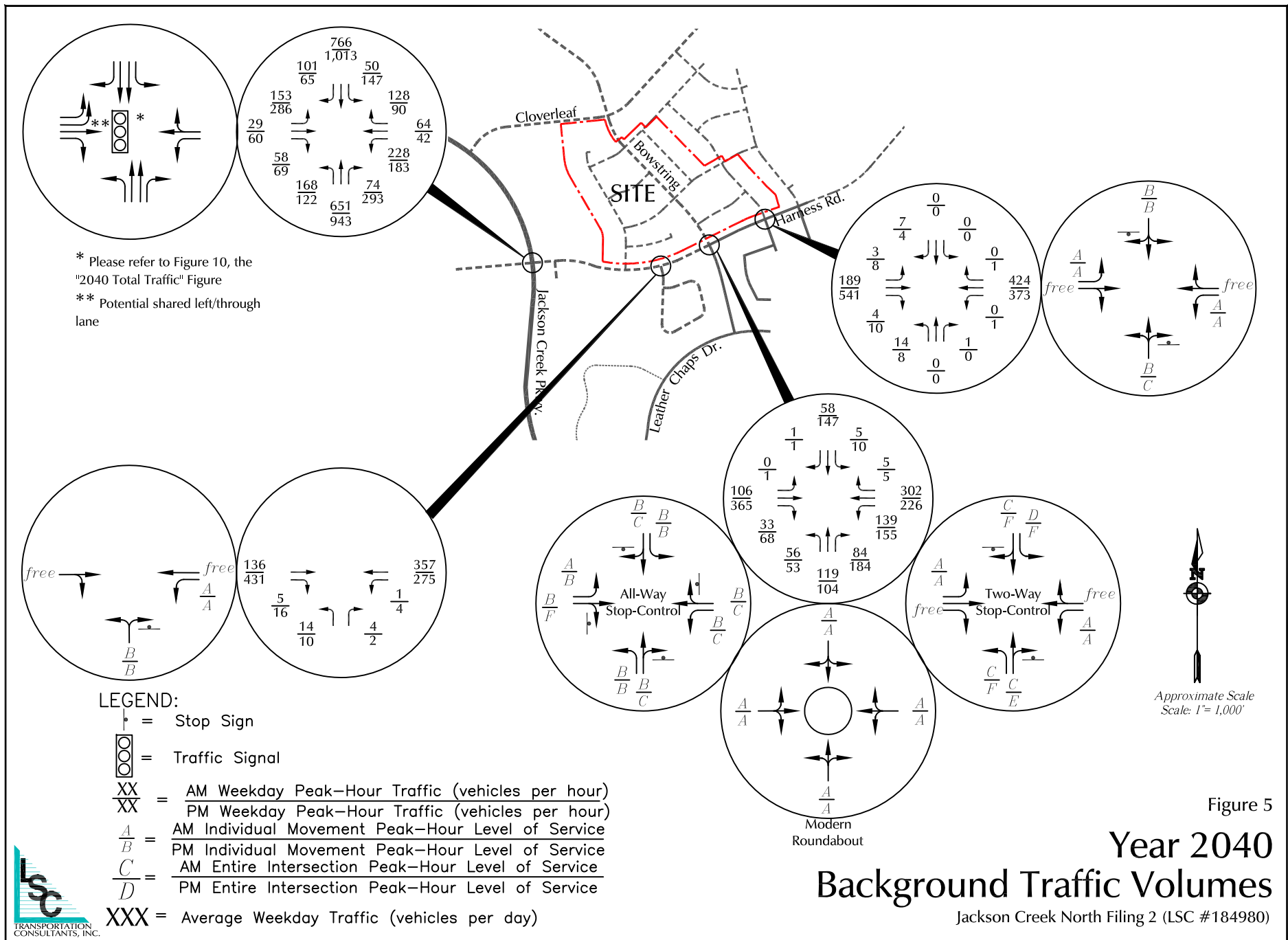
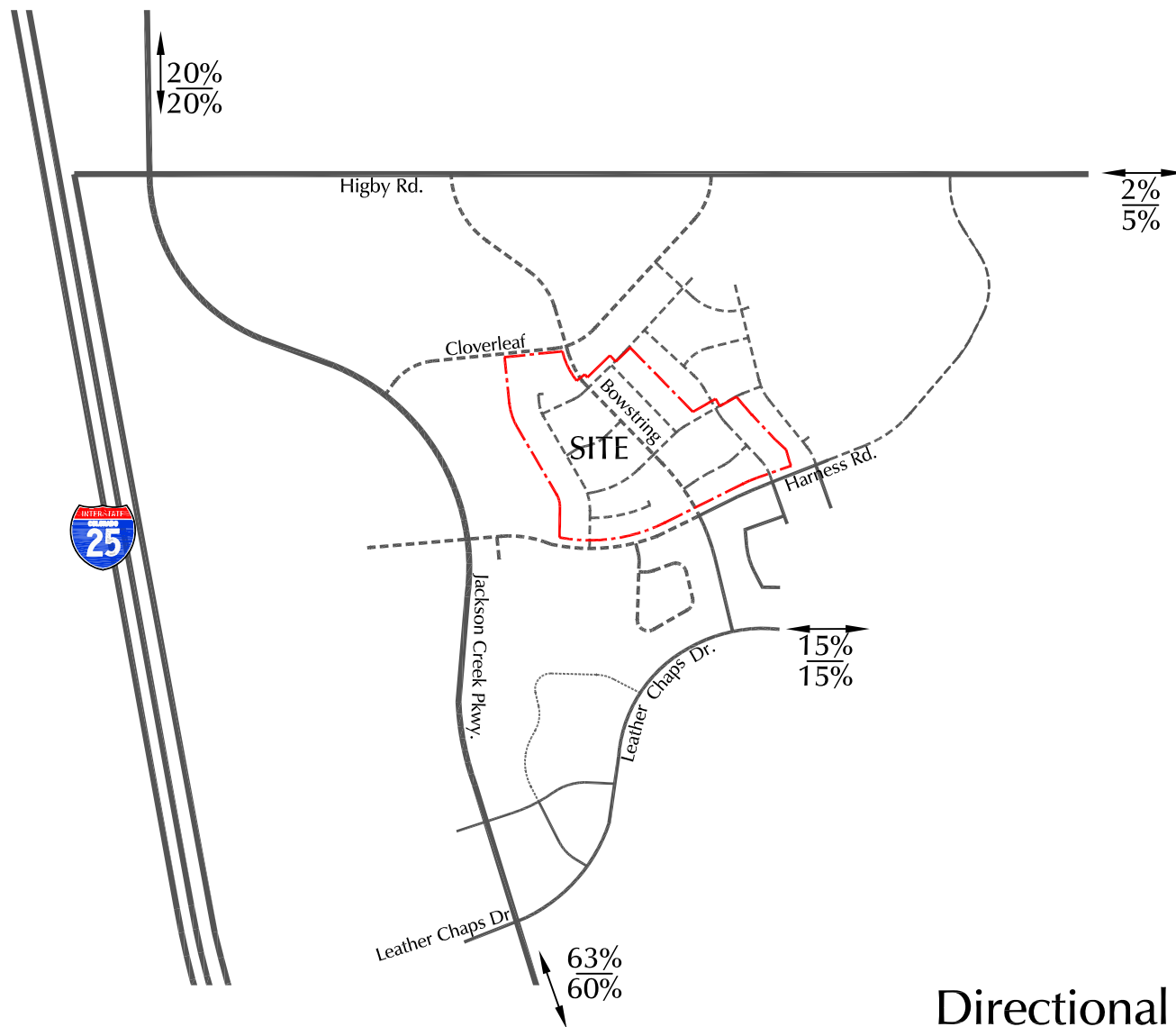


Figure 5  
**Year 2040**  
**Background Traffic Volumes**  
 Jackson Creek North Filing 2 (LSC #184980)



Approximate Scale  
Scale: 1" = 1,000'

LEGEND:



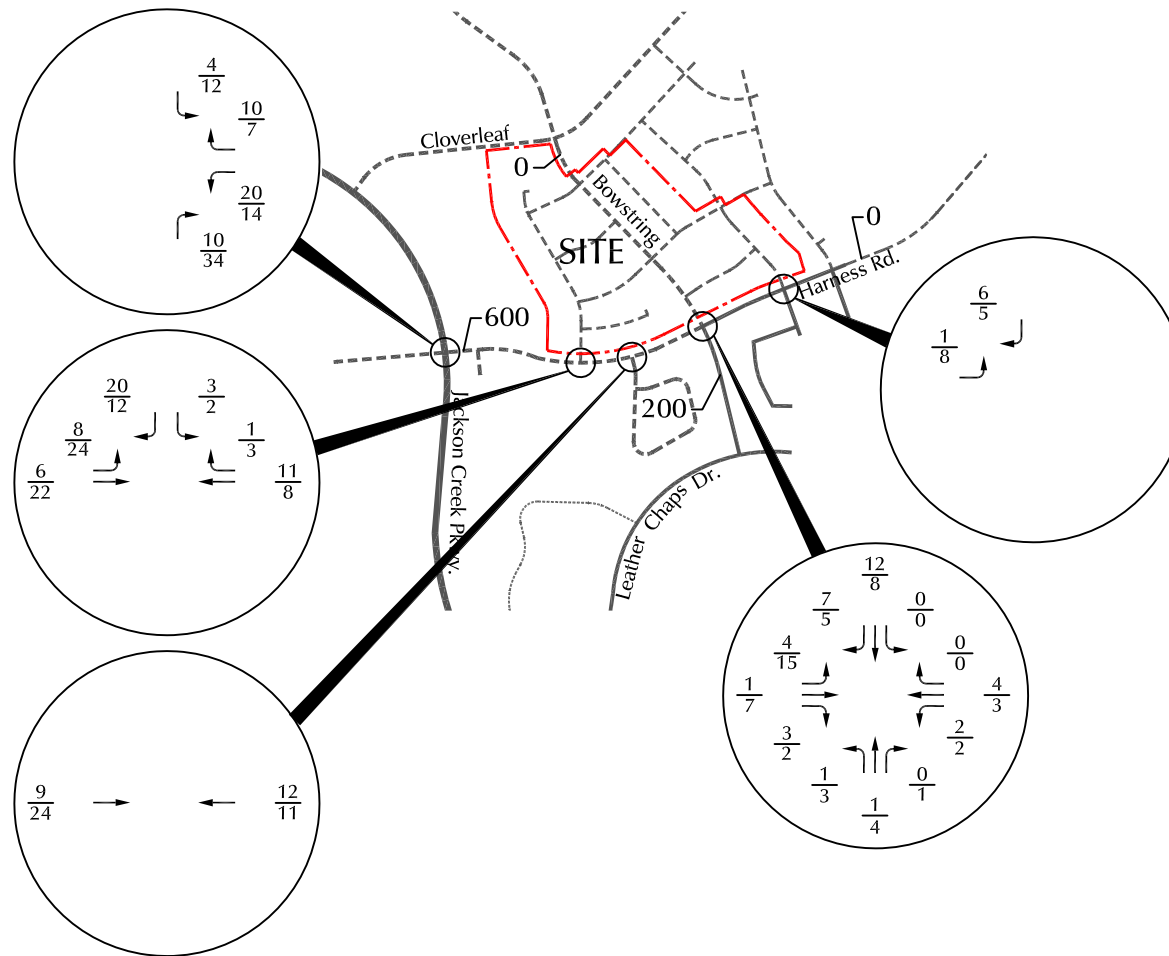
XX% = Short-Term Percent Directional Distribution  
XX% = Long-Term Percent Directional Distribution



# Directional Distribution of Site-Generated Traffic

Jackson Creek North Filing 2 (LSC #184980)

Figure 6



LEGEND:

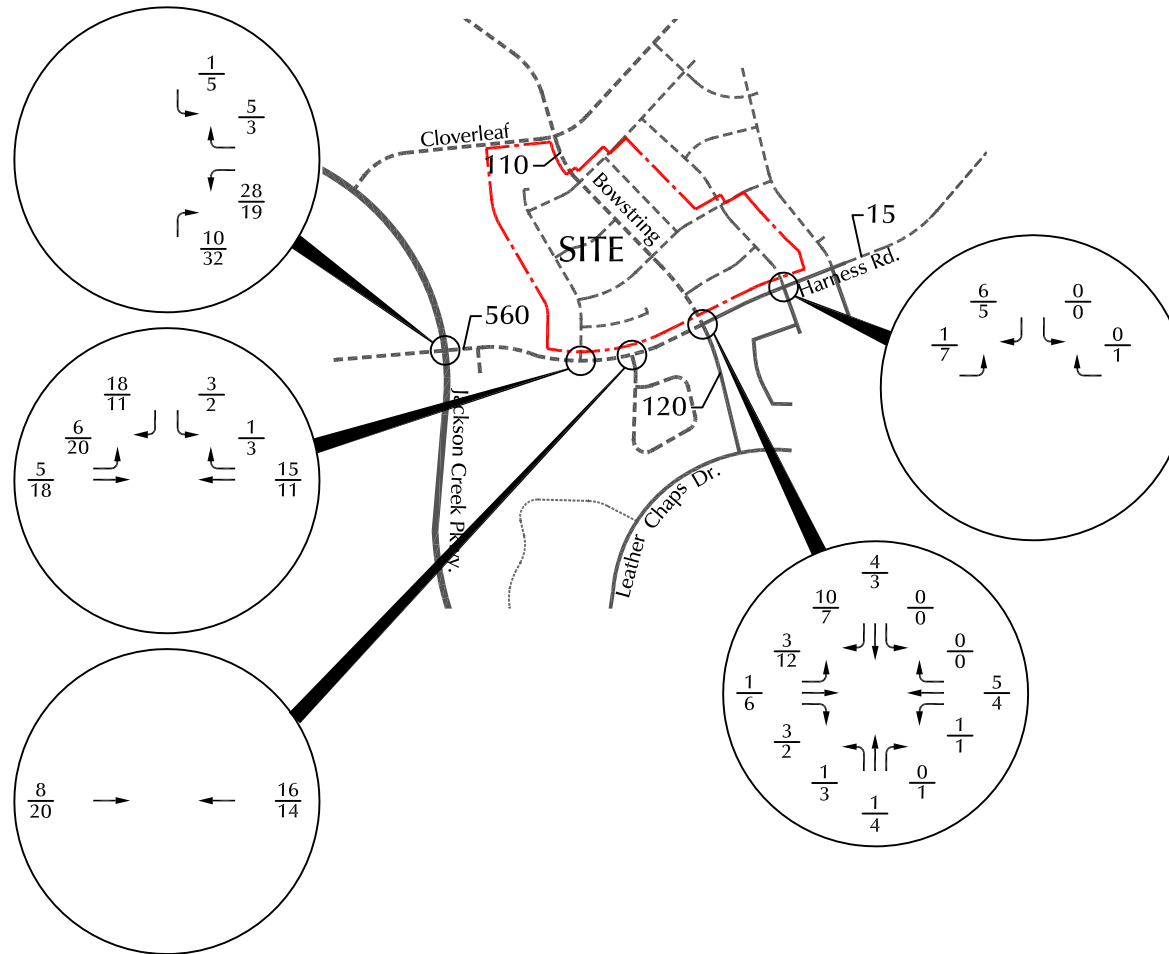
$\frac{XX}{XX}$  = AM Weekday Peak-Hour Traffic (vehicles per hour)  
 $\frac{XX}{XX}$  = PM Weekday Peak-Hour Traffic (vehicles per hour)  
 XXX = Average Weekday Traffic (vehicles per day)



Figure 7

# Short-Term Assignment of Site-Generated Traffic

Jackson Creek North Filing 2 (LSC #184980)



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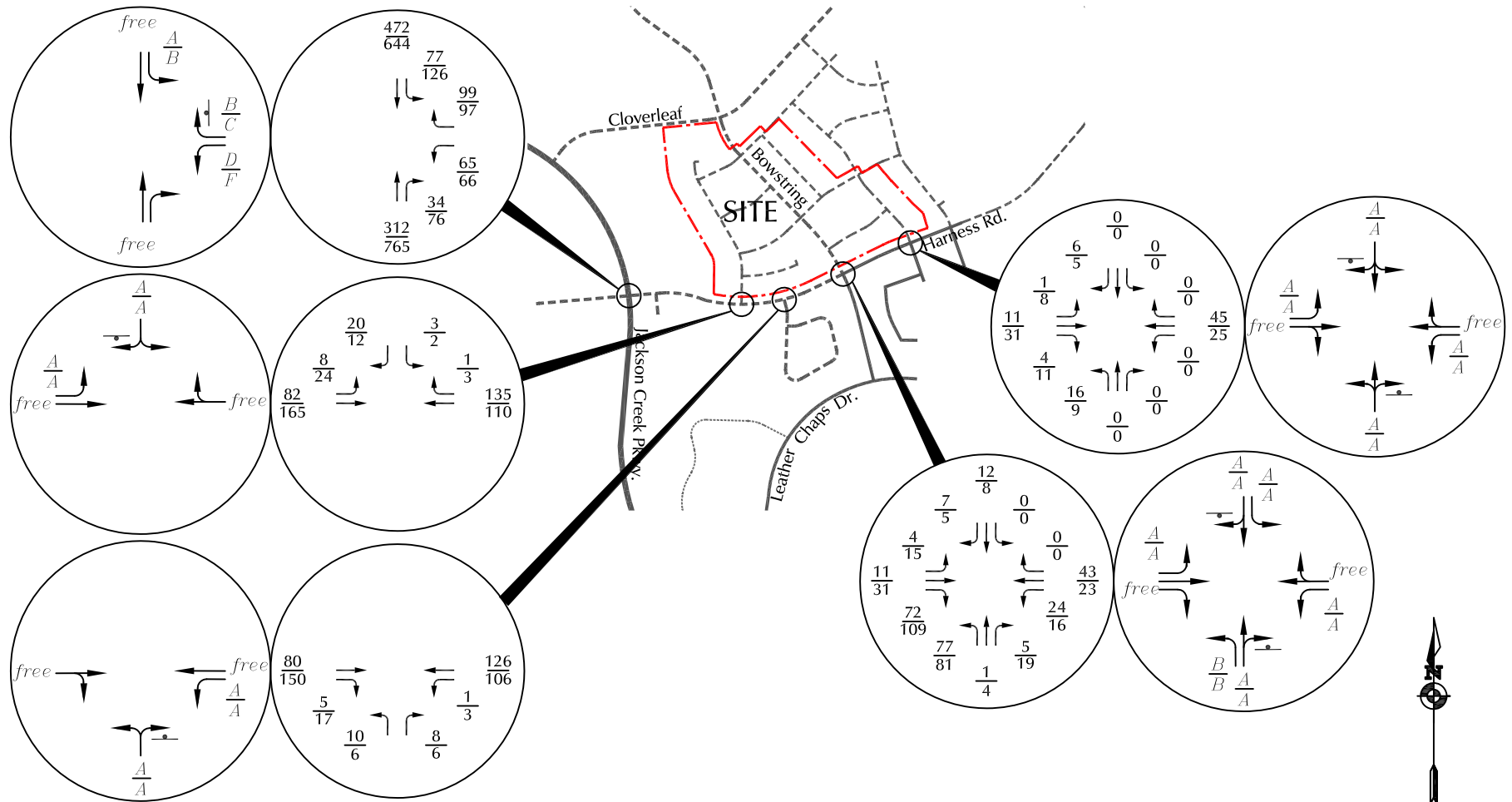
$\frac{XX}{XX}$  = AM Weekday Peak-Hour Traffic (vehicles per hour)  
 $\frac{XX}{XX}$  = PM Weekday Peak-Hour Traffic (vehicles per hour)  
 XXX = Average Weekday Traffic (vehicles per day)



Figure 8

# Long-Term Assignment of Site-Generated Traffic

Jackson Creek North Filing 2 (LSC #184980)



# LEGEND:

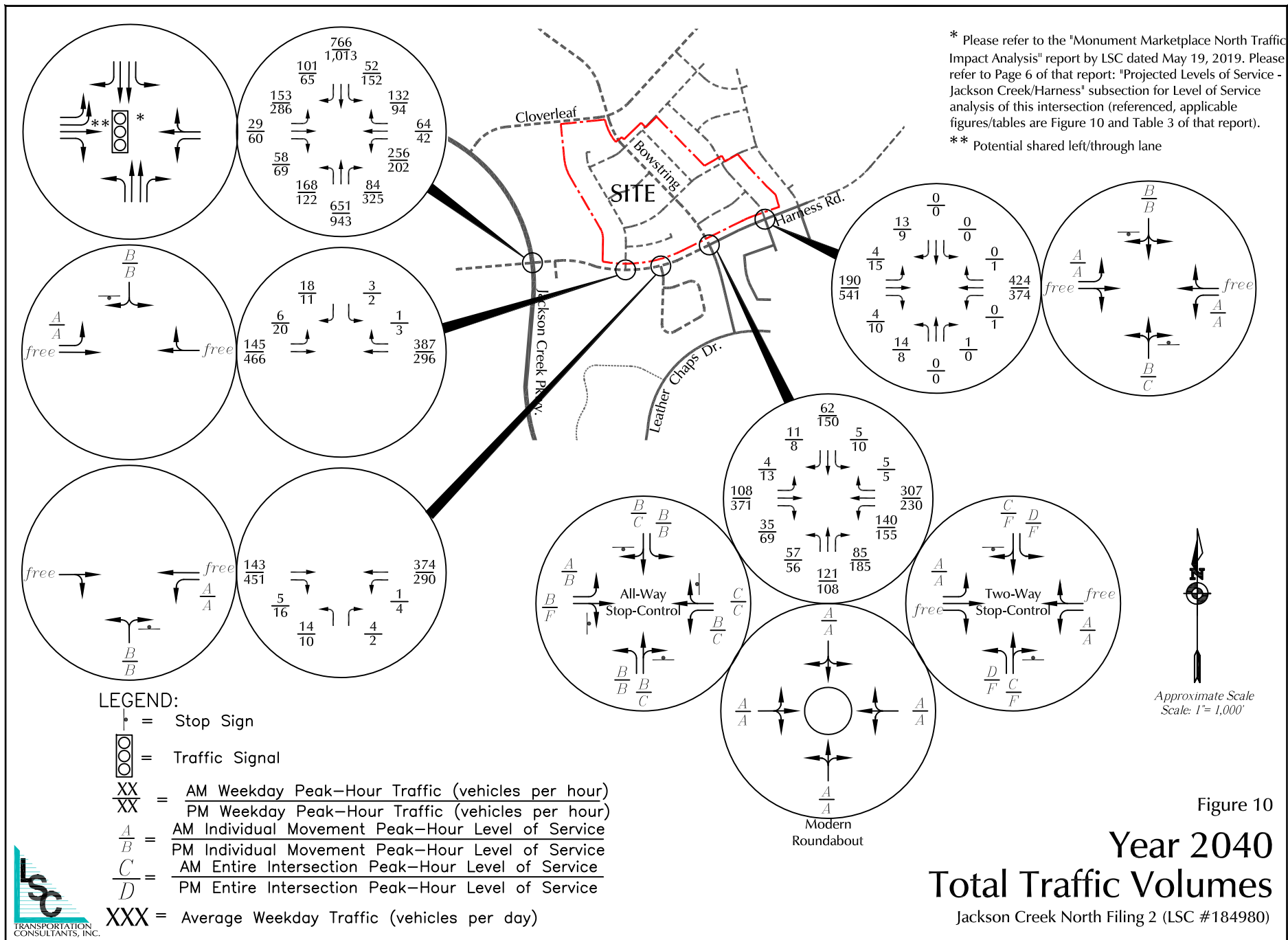
- | = Stop Sign
- $\frac{XX}{XX}$  = AM Weekday Peak-Hour Traffic (vehicles per hour)  
PM Weekday Peak-Hour Traffic (vehicles per hour)
- $\frac{A}{B}$  = AM Individual Movement Peak-Hour Level of Service  
PM Individual Movement Peak-Hour Level of Service
- XXX = Average Weekday Traffic (vehicles per day)

Approximate Scale  
Scale: 1"= 1,000'

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

Jackson Creek North Filing 2 (LSC #184980)

Figure 9





Jackson Creek Parkway/Harness Road  
Figure 4C-1. Warrant 2, Four Hour Vehicular Volume

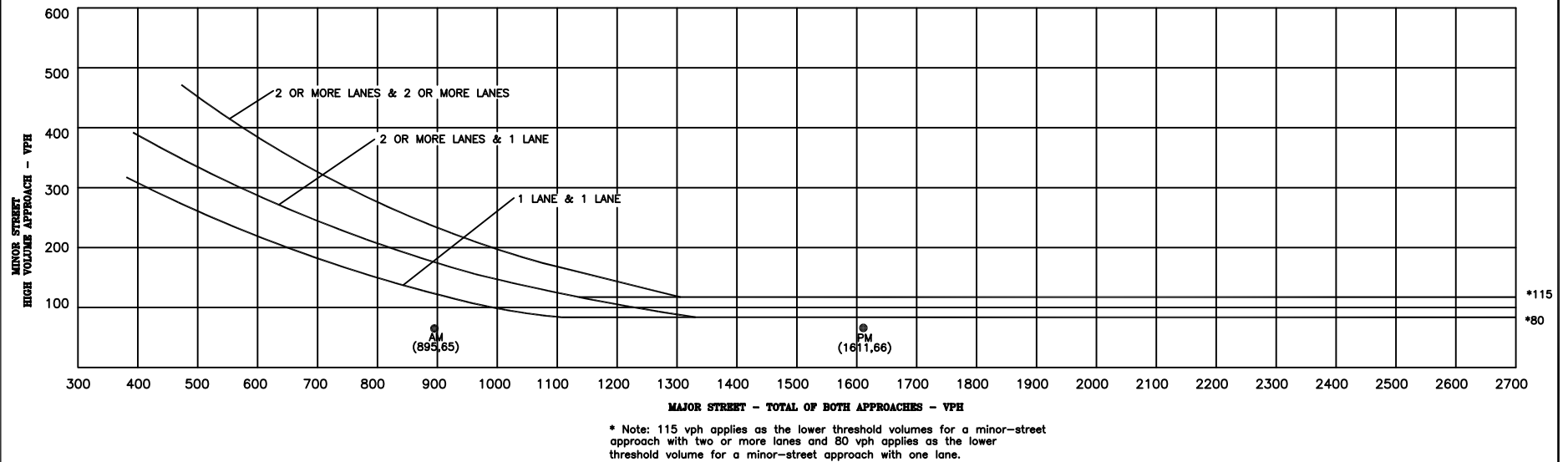


Figure 11

# Traffic Signal Warrant Analysis Jackson Creek Pkwy./Harness Rd. Short-Term Total Traffic \*

Jackson Creek North Filing 2 (LSC #184980)

Jackson Creek Parkway/Harness Road  
Figure 4C-1. Warrant 2, Four Hour Vehicular Volume

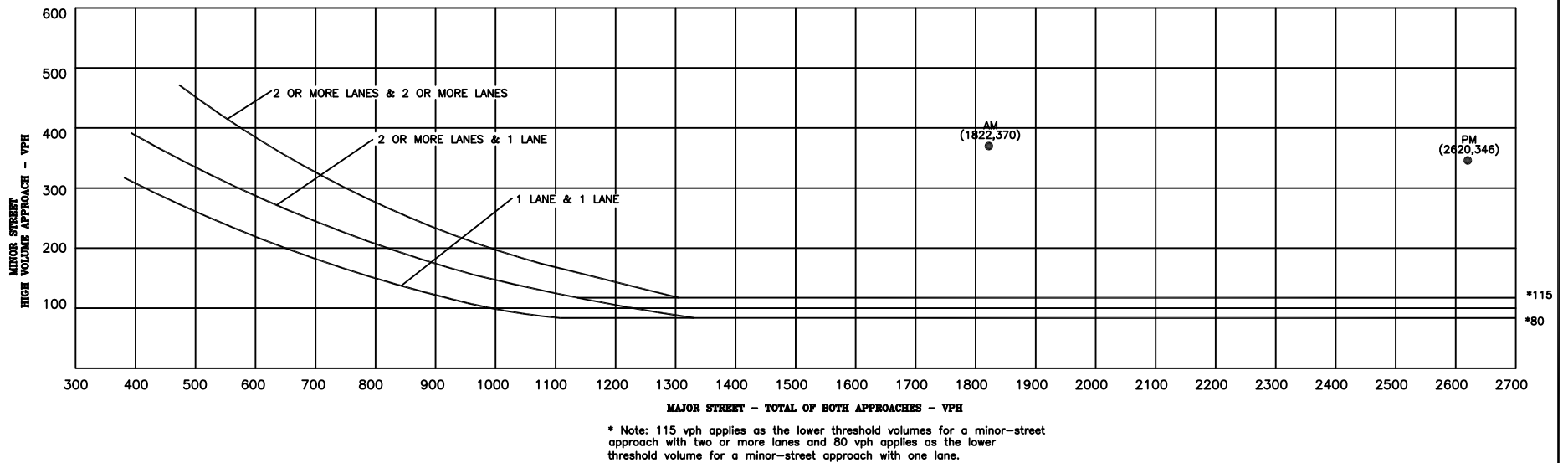


Figure 12

Traffic Signal Warrant Analysis  
Jackson Creek Pkwy./Harness Rd.  
2040 Total Traffic \*

Jackson Creek North Filing 2 (LSC #184980)

Bowstring Road/Harness Road  
Figure 4C-1. Warrant 2, Four Hour Vehicular Volume

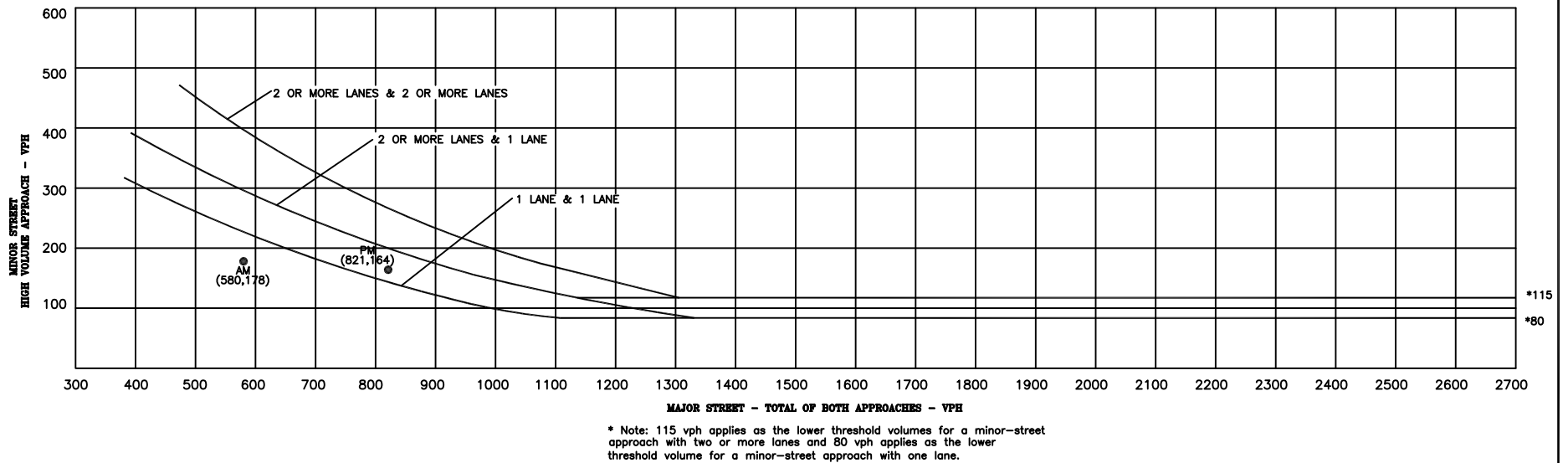


Figure 13

# Traffic Signal Warrant Analysis Harness Rd./Bowstring Rd. 2040 Total Traffic

Jackson Creek North Filing 2 (LSC #184980)

**LSC Transportation Consultants, Inc.**  
Colorado Springs, CO 80905  
719-633-2868

Default Comments

Change These in The Preferences Window

Select File/Preference in the Main Scree

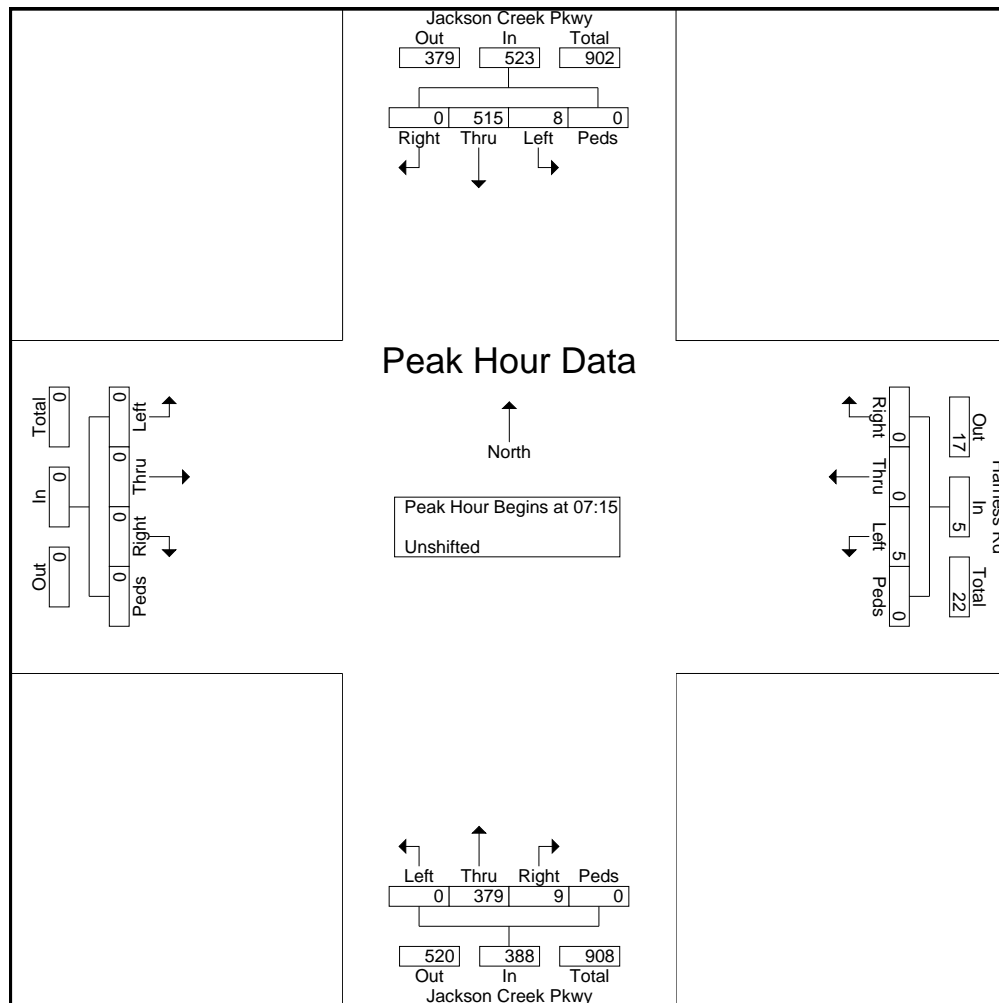
Then Click the Comments Tab

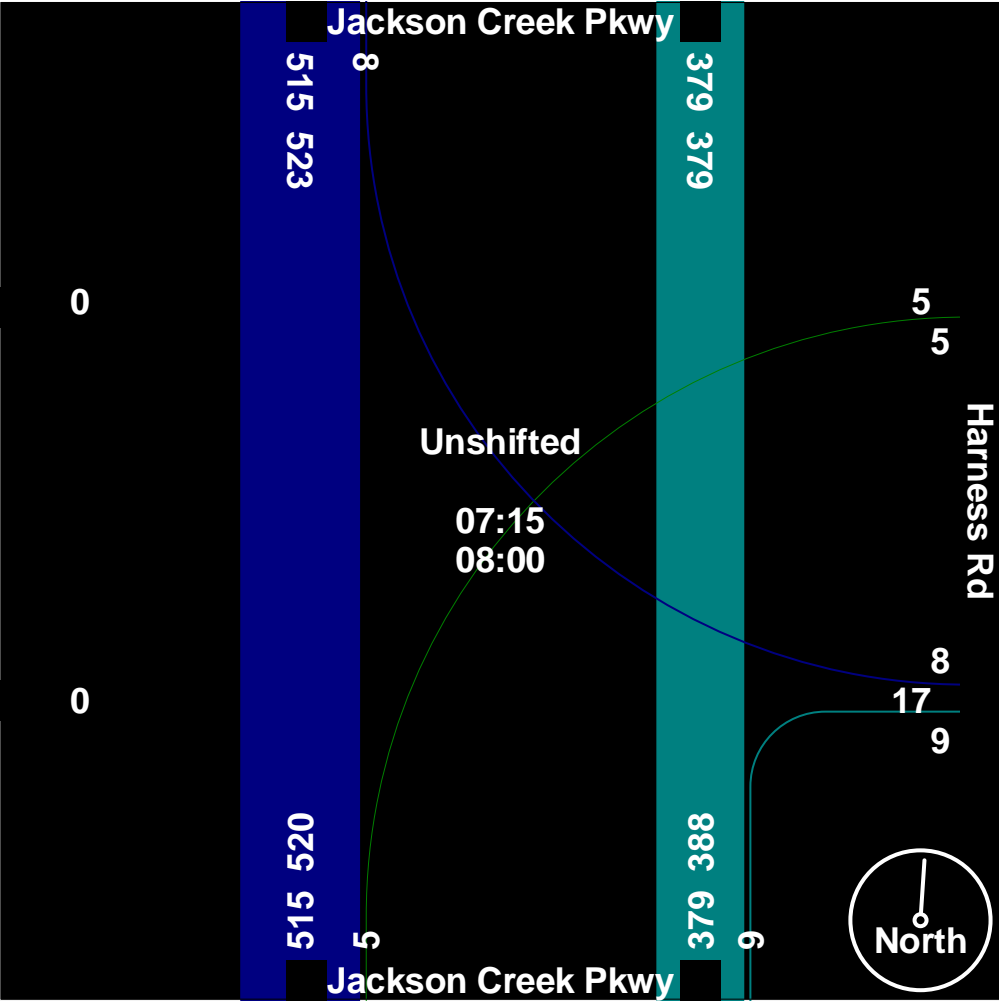
**Groups Printed- Unshifted**

	<b>Jackson Creek Pkwy Southbound</b>					<b>Harness Rd Westbound</b>					<b>Jackson Creek Pkwy Northbound</b>					<b>Eastbound</b>					
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	0	58	0	0	58	0	0	0	0	0	0	30	3	0	33	0	0	0	0	0	91
06:45	5	69	0	0	74	0	0	0	0	0	0	63	11	0	74	0	0	0	0	0	148
Total	5	127	0	0	132	0	0	0	0	0	0	93	14	0	107	0	0	0	0	0	239
07:00	2	93	0	0	95	1	0	0	0	1	0	87	9	0	96	0	0	0	0	0	192
07:15	2	150	0	0	152	3	0	0	0	3	0	86	3	0	89	0	0	0	0	0	244
07:30	0	125	0	0	125	1	0	0	0	1	0	96	3	0	99	0	0	0	0	0	225
07:45	4	127	0	0	131	1	0	0	0	1	0	105	1	0	106	0	0	0	0	0	238
Total	8	495	0	0	503	6	0	0	0	6	0	374	16	0	390	0	0	0	0	0	899
08:00	2	113	0	0	115	0	0	0	0	0	0	92	2	0	94	0	0	0	0	0	209
08:15	1	118	0	0	119	3	0	1	0	4	0	109	2	0	111	0	0	0	0	0	234

**LSC Transportation Consultants, Inc.**  
Colorado Springs, CO 80905  
719-633-2868

	Jackson Creek Pkwy Southbound					Harness Rd Westbound					Jackson Creek Pkwy 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 07:15																					
07:15	2	150	0	0	152	3	0	0	0	3	0	86	3	0	89	0	0	0	0	0	244
07:30	0	125	0	0	125	1	0	0	0	1	0	96	3	0	99	0	0	0	0	0	225
07:45	4	127	0	0	131	1	0	0	0	1	0	105	1	0	106	0	0	0	0	0	238
08:00	2	113	0	0	115	0	0	0	0	0	0	92	2	0	94	0	0	0	0	0	209
Total Volume	8	515	0	0	523	5	0	0	0	5	0	379	9	0	388	0	0	0	0	0	916
% App. Total	1.5	98.5	0	0		100	0	0	0		0	97.7	2.3	0		0	0	0	0		
PHF	.500	.858	.000	.000	.860	.417	.000	.000	.000	.417	.000	.902	.750	.000	.915	.000	.000	.000	.000	.000	.939





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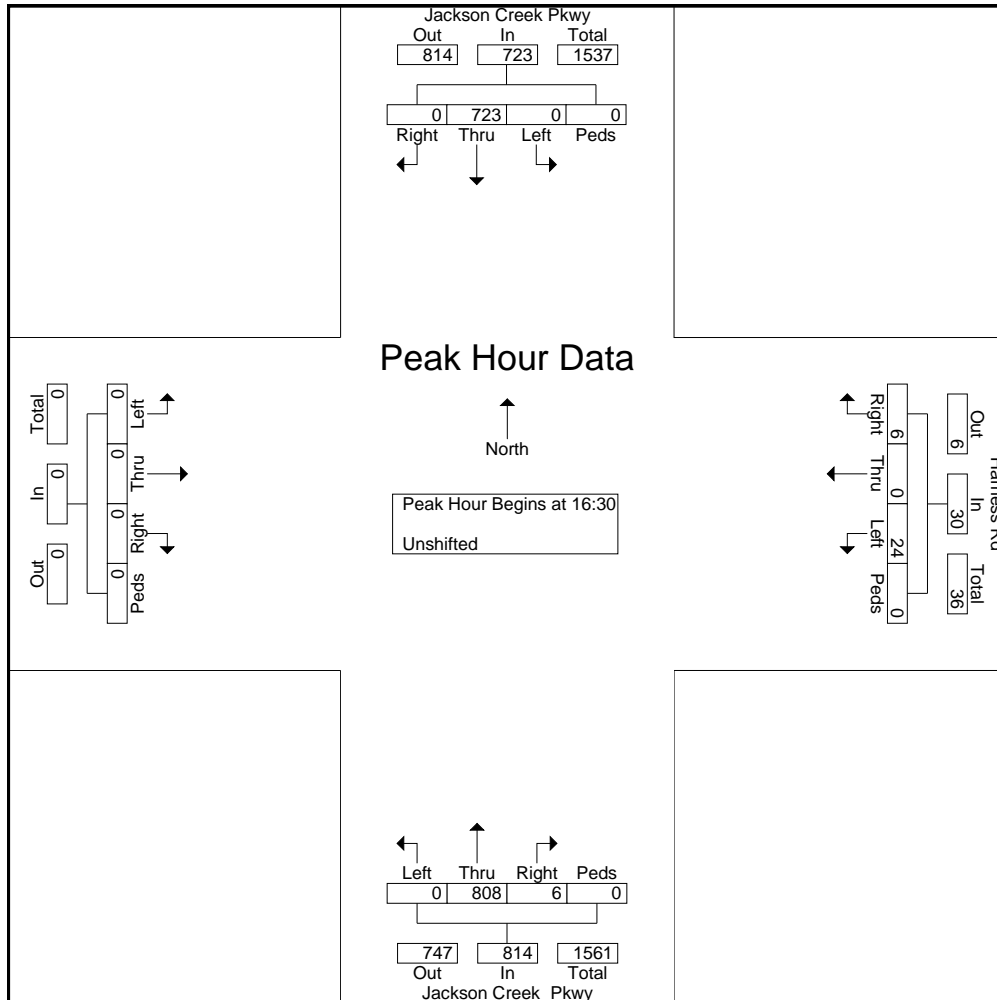
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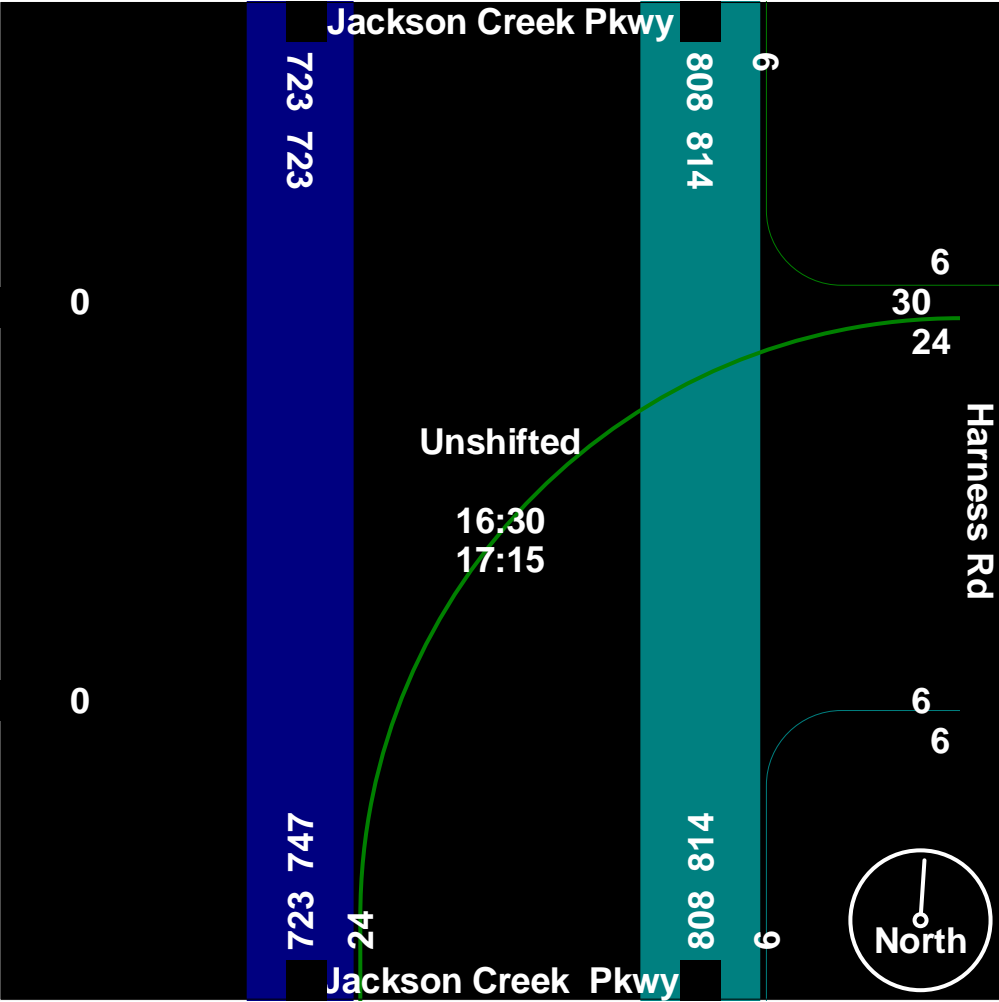
	<b>Jackson Creek Pkwy Southbound</b>					<b>Harness Rd Westbound</b>					<b>Jackson Creek Pkwy Northbound</b>					<b>Eastbound</b>					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
16:00	0	167	0	0	167	4	0	1	0	5	0	184	1	0	185	0	0	0	0	0	357
16:15	0	205	0	0	205	2	0	0	0	2	0	210	0	0	210	0	0	0	0	0	417
16:30	0	192	0	0	192	3	0	0	0	3	0	184	0	0	184	0	0	0	0	0	379
16:45	0	189	0	0	189	7	0	1	0	8	0	211	1	0	212	0	0	0	0	0	409
Total	0	753	0	0	753	16	0	2	0	18	0	789	2	0	791	0	0	0	0	0	1562
17:00	0	161	0	0	161	11	0	5	0	16	0	180	3	0	183	0	0	0	0	0	360
17:15	0	181	0	0	181	3	0	0	0	3	0	233	2	0	235	0	0	0	0	0	419
17:30	0	159	0	0	159	0	0	0	0	0	0	203	0	0	203	0	0	0	0	0	362
17:45	0	140	0	0	140	2	0	1	0	3	0	184	1	0	185	0	0	0	0	0	328
Total	0	641	0	0	641	16	0	6	0	22	0	800	6	0	806	0	0	0	0	0	1469

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	Jackson Creek Pkwy Southbound					Harness Rd Westbound					Jackson Creek Pkwy 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 16:30																					
16:30	0	192	0	0	192	3	0	0	0	3	0	184	0	0	184	0	0	0	0	0	379
16:45	0	189	0	0	189	7	0	1	0	8	0	211	1	0	212	0	0	0	0	0	409
17:00	0	161	0	0	161	11	0	5	0	16	0	180	3	0	183	0	0	0	0	0	360
17:15	0	181	0	0	181	3	0	0	0	3	0	233	2	0	235	0	0	0	0	0	419
Total Volume	0	723	0	0	723	24	0	6	0	30	0	808	6	0	814	0	0	0	0	0	1567
% App. Total	0	100	0	0		80	0	20	0		0	99.3	0.7	0		0	0	0	0		
PHF	.000	.941	.000	.000	.941	.545	.000	.300	.000	.469	.000	.867	.500	.000	.866	.000	.000	.000	.000	.000	.935







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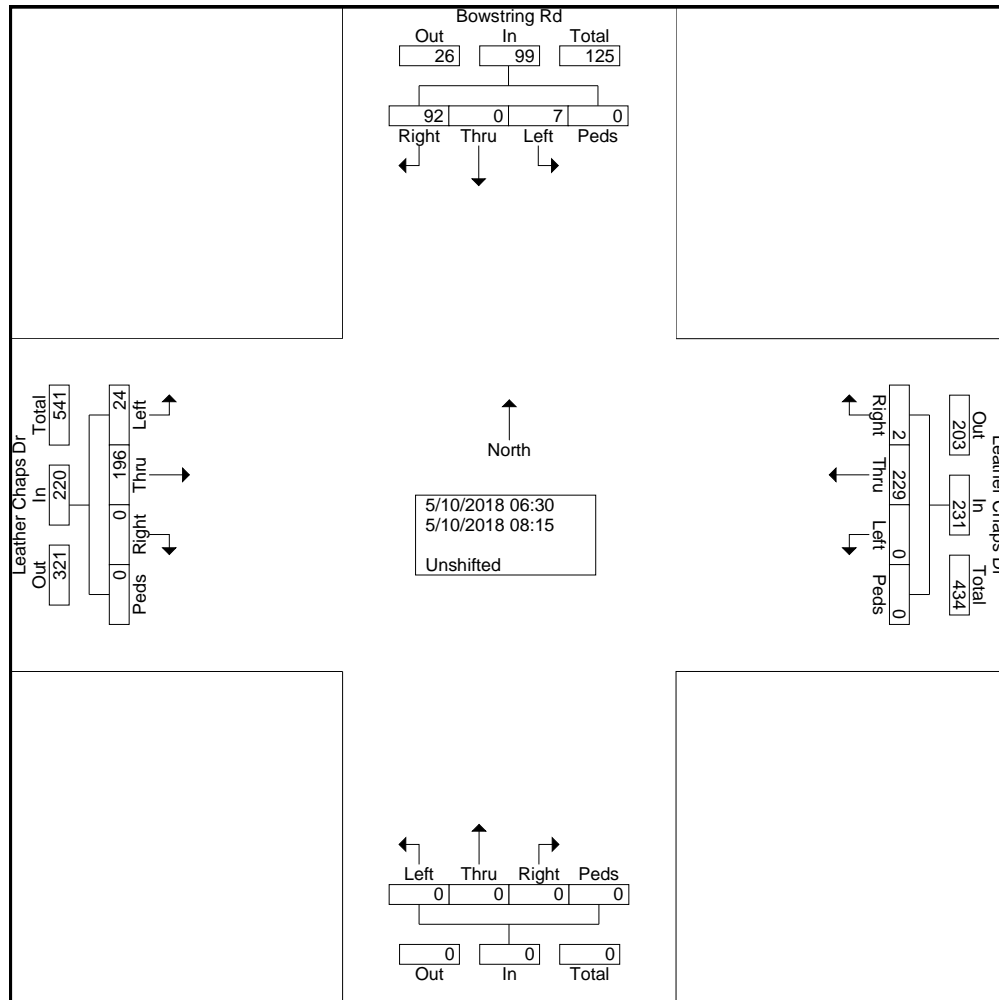
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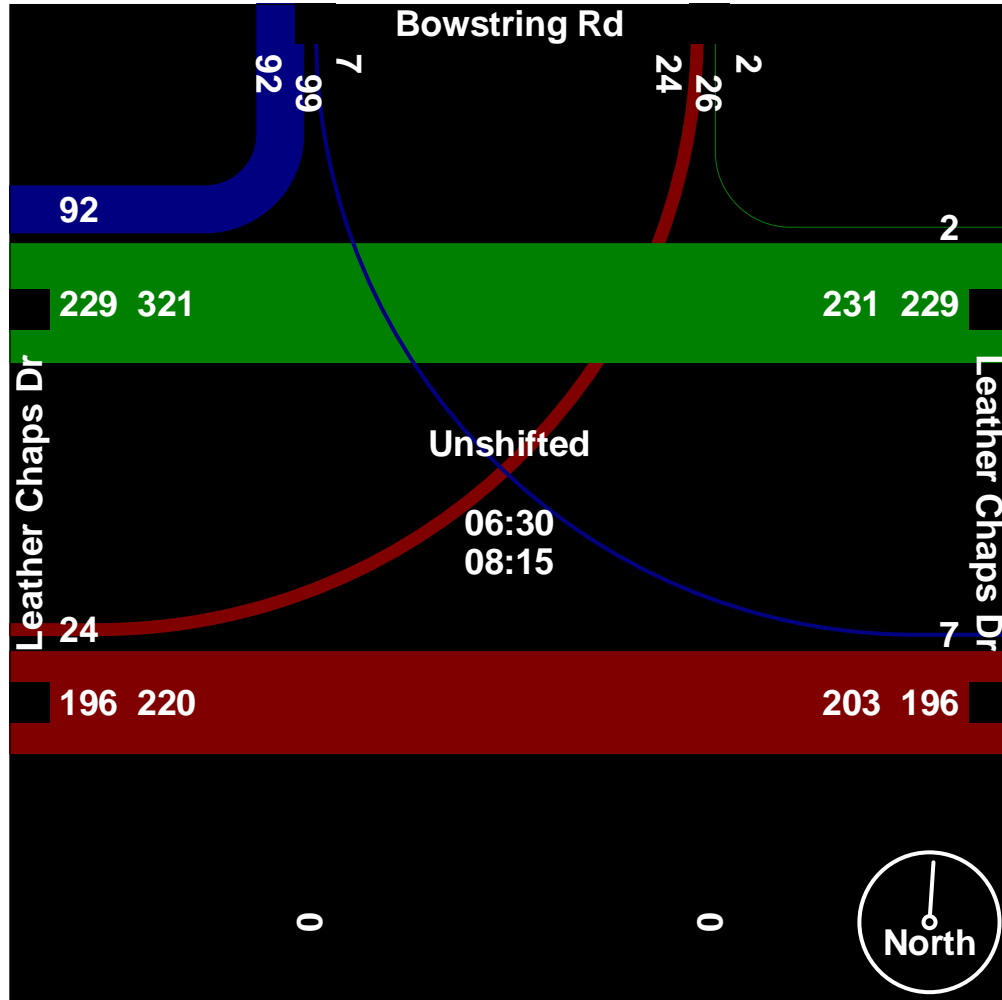
	<b>Bowstring Rd Southbound</b>					<b>Leather Chaps Dr Westbound</b>					<b>Northbound</b>					<b>Leather Chaps Dr Eastbound</b>					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:30	1	0	9	0	10	0	22	0	0	22	0	0	0	0	0	1	13	0	0	14	46
06:45	0	0	12	0	12	0	30	1	0	31	0	0	0	0	0	2	14	0	0	16	59
Total	1	0	21	0	22	0	52	1	0	53	0	0	0	0	0	3	27	0	0	30	105
07:00	1	0	15	0	16	0	40	0	0	40	0	0	0	0	0	3	21	0	0	24	80
07:15	3	0	15	0	18	0	53	0	0	53	0	0	0	0	0	2	33	0	0	35	106
07:30	0	0	14	0	14	0	34	0	0	34	0	0	0	0	0	6	39	0	0	45	93
07:45	1	0	12	0	13	0	23	1	0	24	0	0	0	0	0	3	29	0	0	32	69
Total	5	0	56	0	61	0	150	1	0	151	0	0	0	0	0	14	122	0	0	136	348
08:00	0	0	6	0	6	0	12	0	0	12	0	0	0	0	0	4	15	0	0	19	37
08:15	1	0	9	0	10	0	15	0	0	15	0	0	0	0	0	3	32	0	0	35	60

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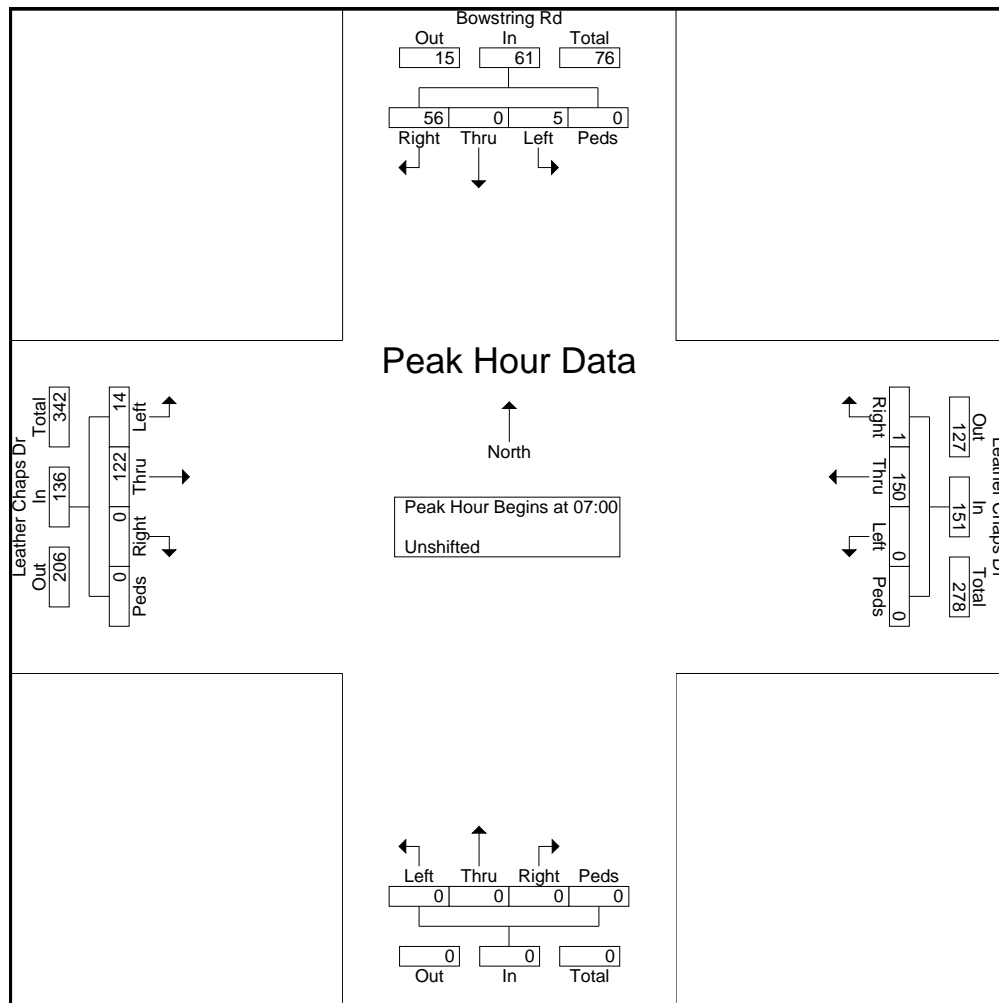
	Bowstring Rd Southbound					Leather Chaps Dr Westbound					Northbound					Leather Chaps Dr Eastbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Grand Total	7	0	92	0	99	0	229	2	0	231	0	0	0	0	0	24	196	0	0	220	550
Apprch %	7.1	0	92.9	0		0	99.1	0.9	0		0	0	0	0		10.9	89.1	0	0		
Total %	1.3	0	16.7	0	18	0	41.6	0.4	0	42	0	0	0	0	0	4.4	35.6	0	0	40	

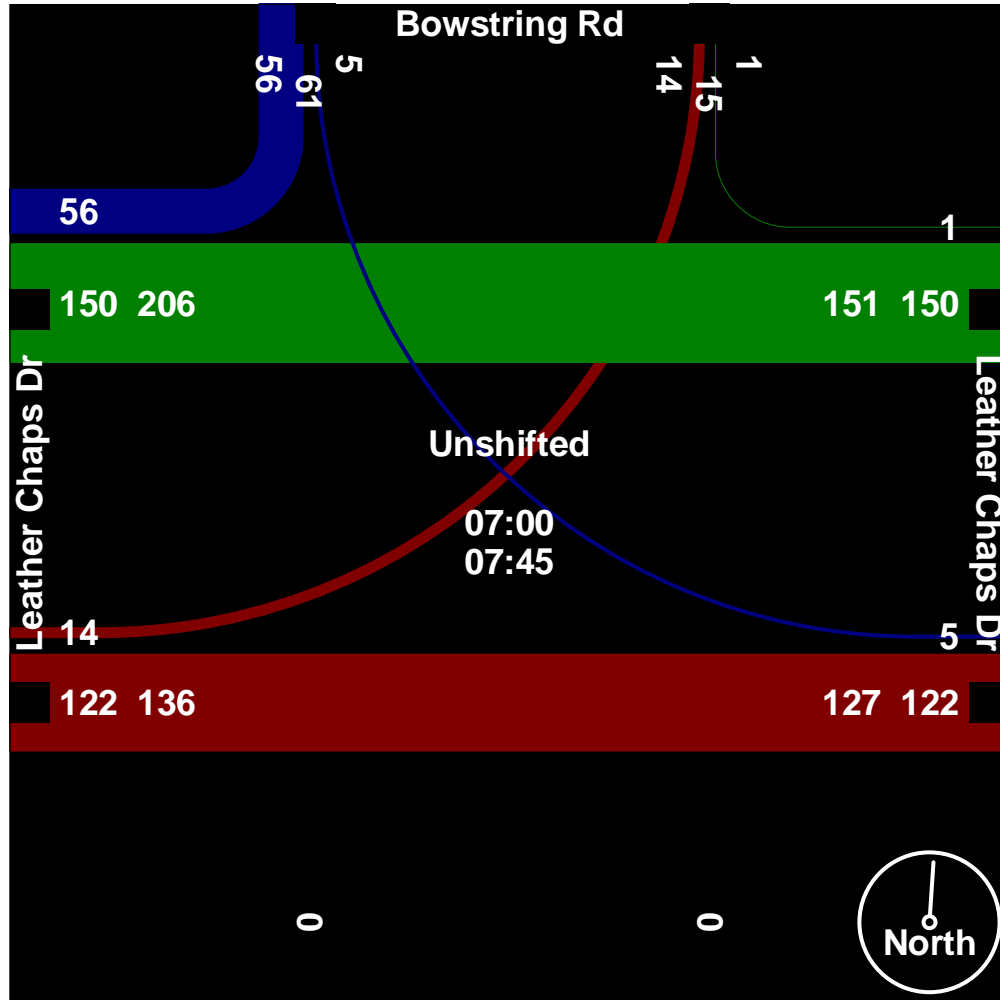


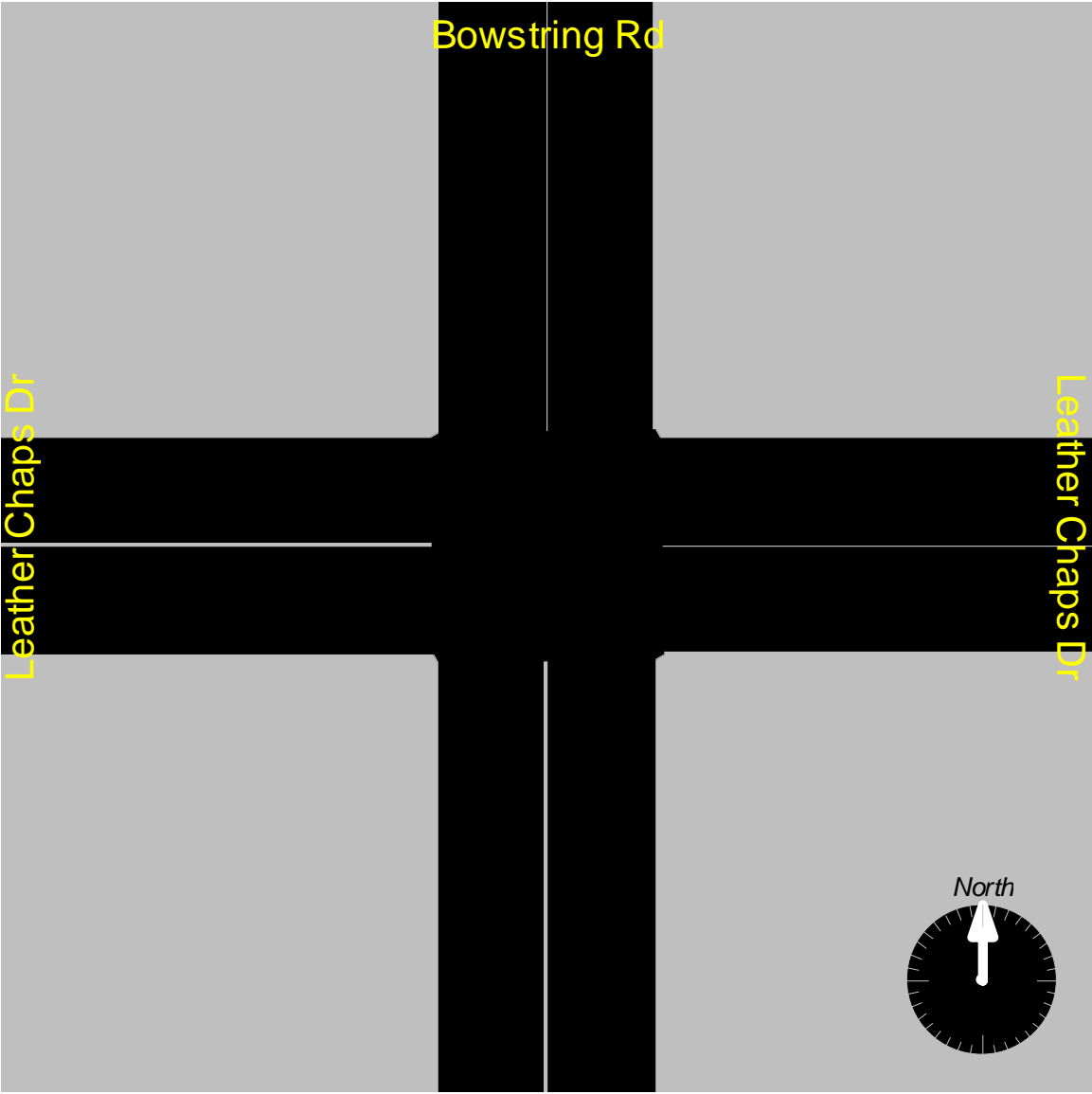


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	Bowstring Rd Southbound					Leather Chaps Dr Westbound					Northbound					Leather Chaps Dr Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:30 to 08:15 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00																					
07:00	1	0	15	0	16	0	40	0	0	40	0	0	0	0	0	3	21	0	0	24	80
07:15	3	0	15	0	18	0	53	0	0	53	0	0	0	0	0	2	33	0	0	35	106
07:30	0	0	14	0	14	0	34	0	0	34	0	0	0	0	0	6	39	0	0	45	93
07:45	1	0	12	0	13	0	23	1	0	24	0	0	0	0	0	3	29	0	0	32	69
Total Volume	5	0	56	0	61	0	150	1	0	151	0	0	0	0	0	14	122	0	0	136	348
% App. Total	8.2	0	91.8	0		0	99.3	0.7	0		0	0	0	0		10.3	89.7	0	0		
PHF	.417	.000	.933	.000	.847	.000	.708	.250	.000	.712	.000	.000	.000	.000	.000	.583	.782	.000	.000	.756	.821







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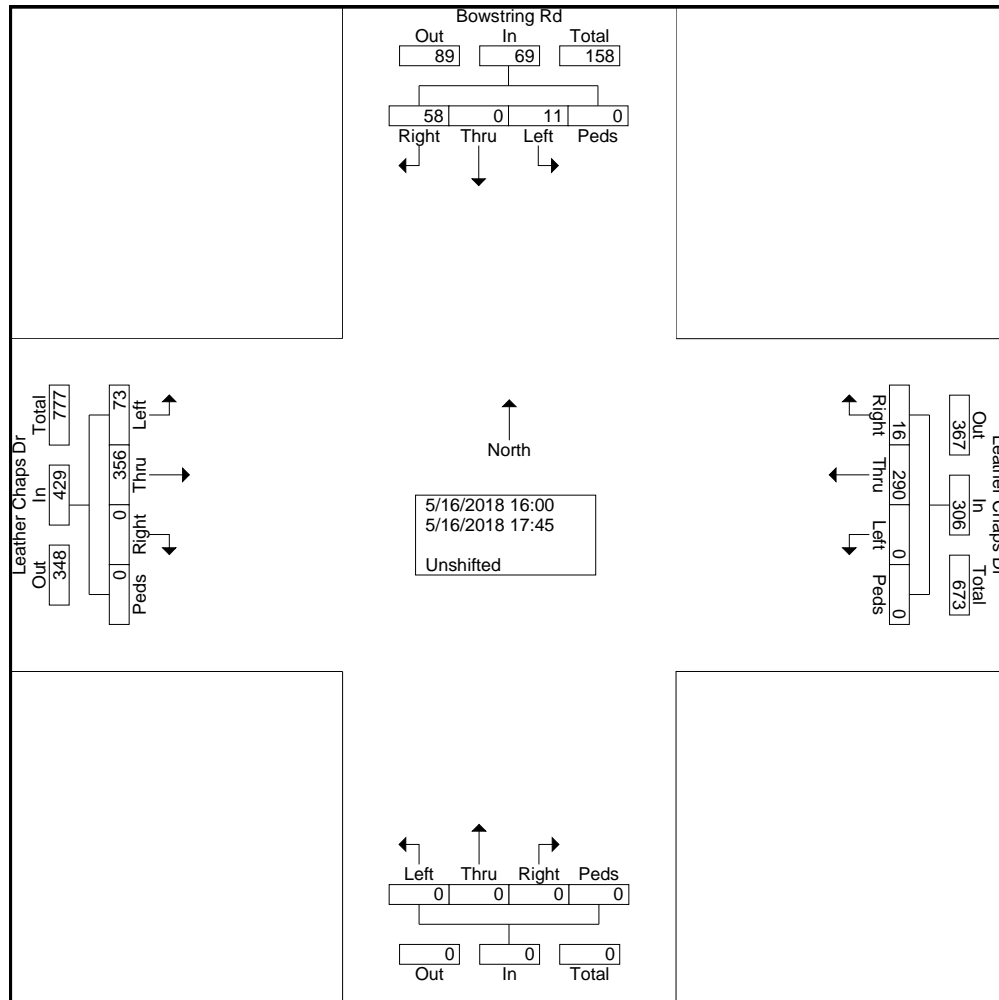
	<b>Bowstring Rd Southbound</b>					<b>Leather Chaps Dr Westbound</b>					<b>Northbound</b>					<b>Leather Chaps Dr Eastbound</b>					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
16:00	0	0	8	0	8	0	37	2	0	39	0	0	0	0	0	13	25	0	0	38	85
16:15	3	0	11	0	14	0	36	2	0	38	0	0	0	0	0	9	52	0	0	61	113
16:30	1	0	6	0	7	0	38	2	0	40	0	0	0	0	0	10	44	0	0	54	101
16:45	2	0	4	0	6	0	30	2	0	32	0	0	0	0	0	7	32	0	0	39	77
Total	6	0	29	0	35	0	141	8	0	149	0	0	0	0	0	39	153	0	0	192	376
17:00	1	0	12	0	13	0	28	0	0	28	0	0	0	0	0	9	52	0	0	61	102
17:15	2	0	5	0	7	0	27	1	0	28	0	0	0	0	0	7	59	0	0	66	101
17:30	1	0	8	0	9	0	37	4	0	41	0	0	0	0	0	10	50	0	0	60	110
17:45	1	0	4	0	5	0	57	3	0	60	0	0	0	0	0	8	42	0	0	50	115
Total	5	0	29	0	34	0	149	8	0	157	0	0	0	0	0	34	203	0	0	237	428

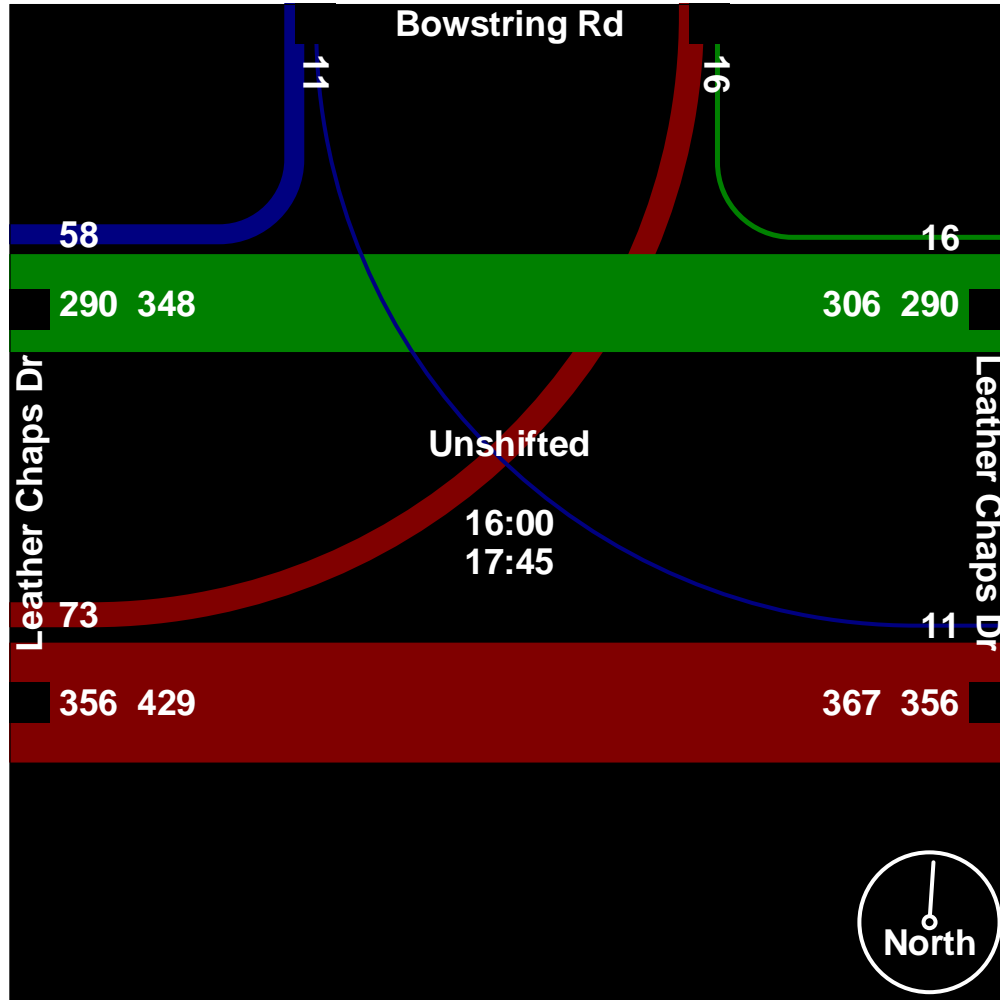


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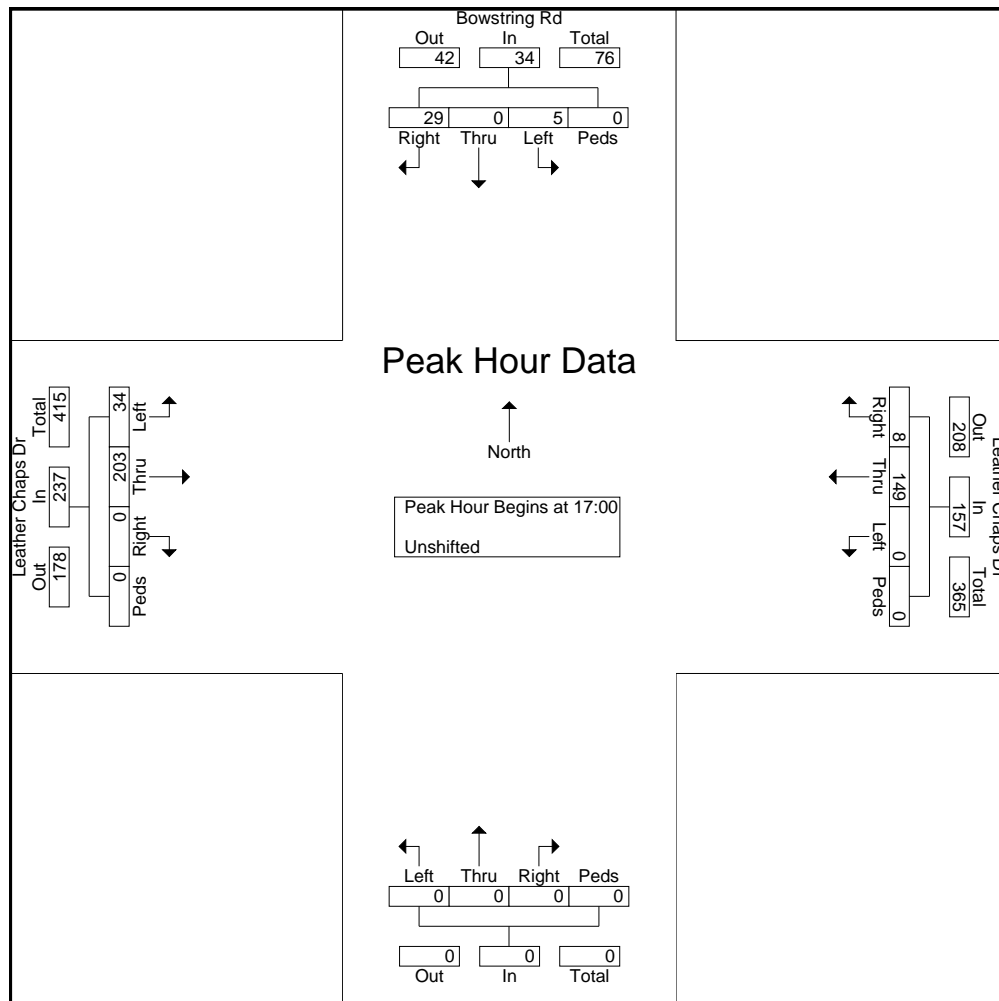
	Bowstring Rd Southbound					Leather Chaps Dr Westbound					Northbound					Leather Chaps Dr Eastbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Grand Total	11	0	58	0	69	0	290	16	0	306	0	0	0	0	0	73	356	0	0	429	804
Apprch %	15.9	0	84.1	0		0	94.8	5.2	0		0	0	0	0		17	83	0	0		
Total %	1.4	0	7.2	0	8.6	0	36.1	2	0	38.1	0	0	0	0	0	9.1	44.3	0	0	53.4	

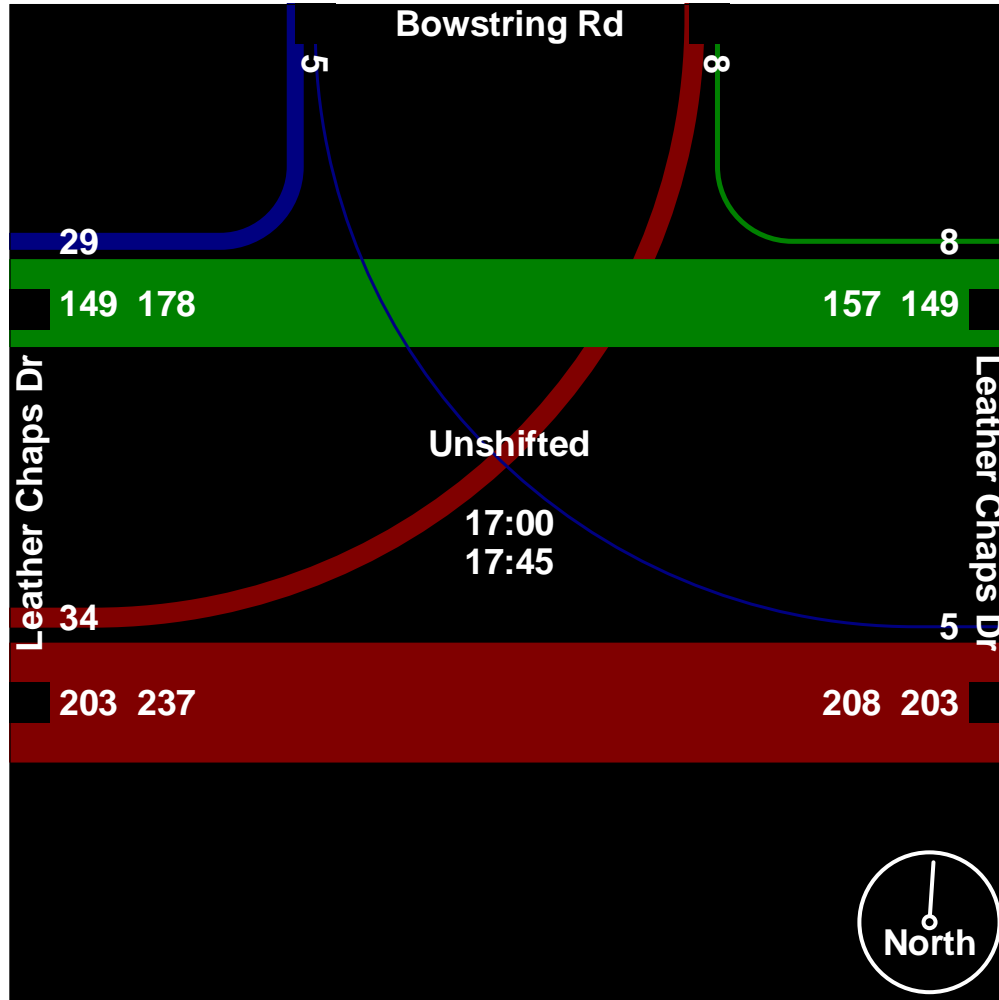


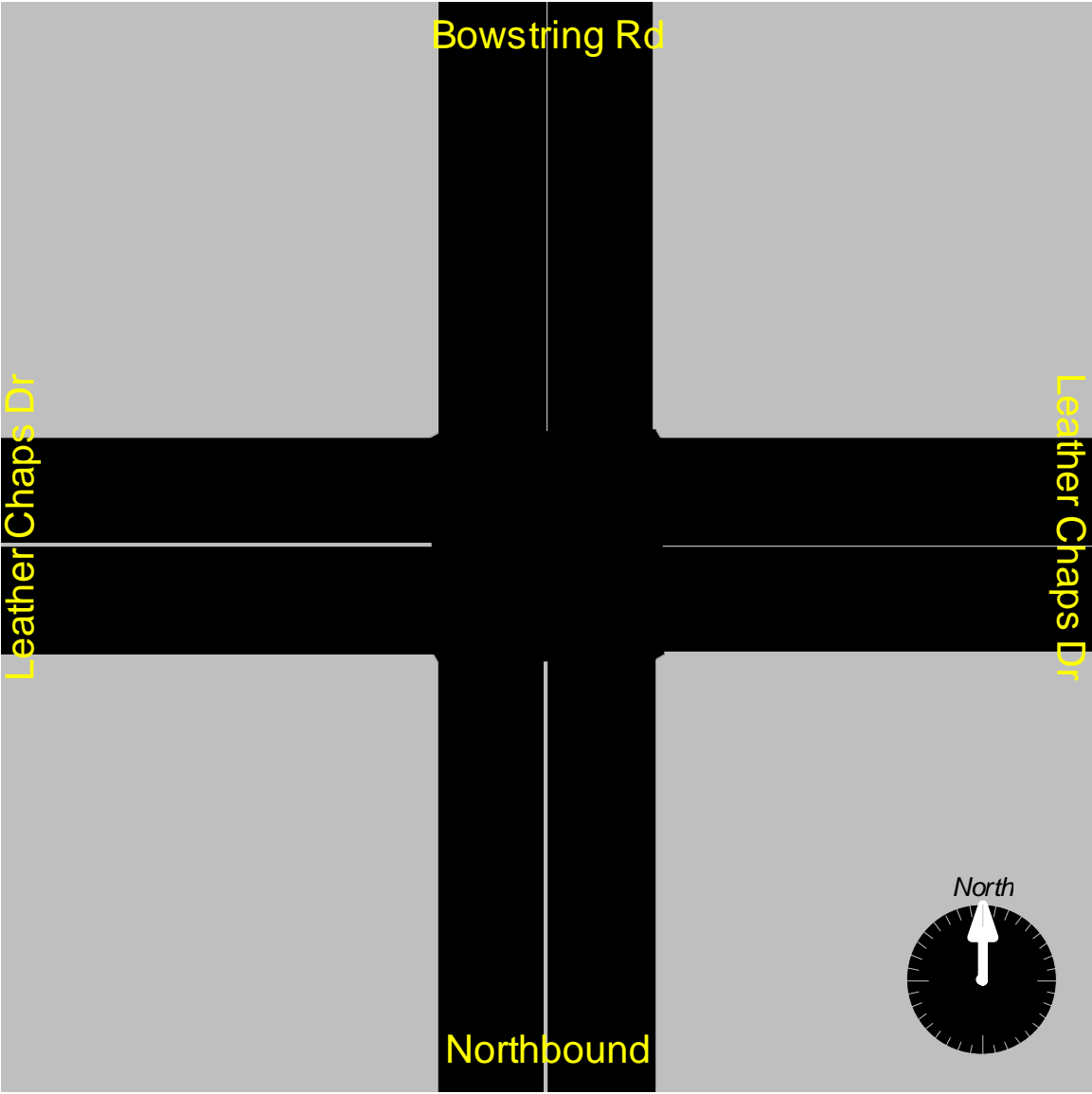


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	Bowstring Rd Southbound					Leather Chaps Dr Westbound					Northbound					Leather Chaps Dr Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 17:00																					
17:00	1	0	12	0	13	0	28	0	0	28	0	0	0	0	0	9	52	0	0	61	102
17:15	2	0	5	0	7	0	27	1	0	28	0	0	0	0	0	7	59	0	0	66	101
17:30	1	0	8	0	9	0	37	4	0	41	0	0	0	0	0	10	50	0	0	60	110
17:45	1	0	4	0	5	0	57	3	0	60	0	0	0	0	0	8	42	0	0	50	115
Total Volume	5	0	29	0	34	0	149	8	0	157	0	0	0	0	0	34	203	0	0	237	428
% App. Total	14.7	0	85.3	0		0	94.9	5.1	0		0	0	0	0		14.3	85.7	0	0		
PHF	.625	.000	.604	.000	.654	.000	.654	.500	.000	.654	.000	.000	.000	.000	.000	.850	.860	.000	.000	.898	.930













HCM 6th TWSC  
1: Jackson Creek Pkwy & Harness Rd

Existing Traffic  
AM Peak Hour

Intersection						
Int Delay, s/veh	0.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	0	480	9	8	560
Future Vol, veh/h	5	0	480	9	8	560
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	155	255	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	42	42	100	100	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	0	480	9	9	651







Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1149	480	0
Stage 1	480	-	-
Stage 2	669	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	219	586	-
Stage 1	622	-	-
Stage 2	509	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	217	586	-
Mov Cap-2 Maneuver	217	-	-
Stage 1	617	-	-
Stage 2	509	-	-

Approach	WB	NB	SB
HCM Control Delay, s	22.6	0	0.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	-	- 217	- 1074	-
HCM Lane V/C Ratio	-	- 0.055	- 0.009	-
HCM Control Delay (s)	-	- 22.6	0 8.4	-
HCM Lane LOS	-	- C	A A	-
HCM 95th %tile Q(veh)	-	- 0.2	- 0	-

HCM 6th TWSC  
1: Jackson Creek Pkwy & Harness Rd

Existing Traffic  
PM Peak Hour

Intersection						
Int Delay, s/veh	0.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	24	6	834	6	0	723
Future Vol, veh/h	24	6	834	6	0	723
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	155	255	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	87	87	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	24	6	959	7	0	723







Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1682	959	0
Stage 1	959	-	-
Stage 2	723	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	104	312	-
Stage 1	372	-	-
Stage 2	481	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	104	312	-
Mov Cap-2 Maneuver	104	-	-
Stage 1	372	-	-
Stage 2	481	-	-

Approach	WB	NB	SB
HCM Control Delay, s	43.1	0	0
HCM LOS	E		






Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	-	- 104 312	713	-
HCM Lane V/C Ratio	-	- 0.231 0.019	-	-
HCM Control Delay (s)	-	- 49.7 16.8	0	-
HCM Lane LOS	-	- E C	A	-
HCM 95th %tile Q(veh)	-	- 0.8 0.1	0	-

HCM 6th TWSC  
1: Jackson Creek Pkwy & Harness Rd

Short-Term Background Traffic  
AM Peak Hour






Intersection						
Int Delay, s/veh	2.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	45	89	417	24	73	519
Future Vol, veh/h	45	89	417	24	73	519
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	155	255	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	100	92	92	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	49	97	417	26	79	603
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1178	417	0	0	443	0
Stage 1	417	-	-	-	-	-
Stage 2	761	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	211	636	-	-	1117	-
Stage 1	665	-	-	-	-	-
Stage 2	461	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	196	636	-	-	1117	-
Mov Cap-2 Maneuver	196	-	-	-	-	-
Stage 1	618	-	-	-	-	-
Stage 2	461	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	17.6	0	1			
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT		
Capacity (veh/h)	-	- 196 636 1117	-	-		
HCM Lane V/C Ratio	-	- 0.25 0.152 0.071	-	-		
HCM Control Delay (s)	-	- 29.4 11.7 8.5	-	-		
HCM Lane LOS	-	- D B A	-	-		
HCM 95th %tile Q(veh)	-	- 0.9 0.5 0.2	-	-		






Intersection						
Int Delay, s/veh	0.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	71	5	1	114	10	8
Future Vol, veh/h	71	5	1	114	10	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	77	5	1	124	11	9
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	82	0	206	80
Stage 1	-	-	-	-	80	-
Stage 2	-	-	-	-	126	-
Critical Hdwy	-	-	4.11	-	6.41	6.21
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	-	-	2.209	-	3.509	3.309
Pot Cap-1 Maneuver	-	-	1522	-	785	983
Stage 1	-	-	-	-	946	-
Stage 2	-	-	-	-	902	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1522	-	784	983
Mov Cap-2 Maneuver	-	-	-	-	778	-
Stage 1	-	-	-	-	945	-
Stage 2	-	-	-	-	902	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	0.1		9.3		
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	857	-	-	1522	-	
HCM Lane V/C Ratio	0.023	-	-	0.001	-	
HCM Control Delay (s)	9.3	-	-	7.4	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	0.1	-	-	0	-	

HCM 6th TWSC  
4: Bowstring Rd & Harness Rd







Short-Term Background Traffic  
AM Peak Hour






Intersection						
Int Delay, s/veh	4.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	10	69	22	39	76	5
Future Vol, veh/h	10	69	22	39	76	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	11	75	24	42	83	5
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	86	0	139	49
Stage 1	-	-	-	-	49	-
Stage 2	-	-	-	-	90	-
Critical Hdwy	-	-	4.11	-	6.41	6.21
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	-	-	2.209	-	3.509	3.309
Pot Cap-1 Maneuver	-	-	1517	-	856	1022
Stage 1	-	-	-	-	976	-
Stage 2	-	-	-	-	936	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1517	-	842	1022
Mov Cap-2 Maneuver	-	-	-	-	809	-
Stage 1	-	-	-	-	960	-
Stage 2	-	-	-	-	936	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	2.7		9.9		
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	809	1022	-	-	1517	-
HCM Lane V/C Ratio	0.102	0.005	-	-	0.016	-
HCM Control Delay (s)	10	8.5	-	-	7.4	-
HCM Lane LOS	B	A	-	-	A	-
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-

Intersection						
Int Delay, s/veh	1.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	11	4	0	45	16	0
Future Vol, veh/h	11	4	0	45	16	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	12	4	0	49	17	0
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	16	0	63	14
Stage 1	-	-	-	-	14	-
Stage 2	-	-	-	-	49	-
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	-	943	1066
Stage 1	-	-	-	-	1009	-
Stage 2	-	-	-	-	973	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1602	-	943	1066
Mov Cap-2 Maneuver	-	-	-	-	880	-
Stage 1	-	-	-	-	1009	-
Stage 2	-	-	-	-	973	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	0		9.2		
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	880	-	-	1602	-	
HCM Lane V/C Ratio	0.02	-	-	-	-	
HCM Control Delay (s)	9.2	-	-	0	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	0.1	-	-	0	-	

HCM 6th TWSC  
1: Jackson Creek Pkwy & Harness Rd

Short-Term Background Traffic  
PM Peak Hour

Intersection						
Int Delay, s/veh	6.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	52	90	792	41	113	644
Future Vol, veh/h	52	90	792	41	113	644
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	155	255	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	87	92	92	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	57	98	910	45	123	644
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1800	910	0	0	955	0
Stage 1	910	-	-	-	-	-
Stage 2	890	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	88	333	-	-	720	-
Stage 1	393	-	-	-	-	-
Stage 2	401	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	73	333	-	-	720	-
Mov Cap-2 Maneuver	73	-	-	-	-	-
Stage 1	326	-	-	-	-	-
Stage 2	401	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	65.6	0	1.8			
HCM LOS	F					
Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT		
Capacity (veh/h)	-	- 73 333	720	-		
HCM Lane V/C Ratio	-	- 0.774 0.294	0.171	-		
HCM Control Delay (s)	-	- 144.1 20.2	11	-		
HCM Lane LOS	-	- F C	B	-		
HCM 95th %tile Q(veh)	-	- 3.7 1.2	0.6	-		






Intersection						
Int Delay, s/veh	0.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	126	17	3	95	6	6
Future Vol, veh/h	126	17	3	95	6	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	137	18	3	103	7	7
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	155	0	255	146
Stage 1	-	-	-	-	146	-
Stage 2	-	-	-	-	109	-
Critical Hdwy	-	-	4.11	-	6.41	6.21
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	-	-	2.209	-	3.509	3.309
Pot Cap-1 Maneuver	-	-	1431	-	736	904
Stage 1	-	-	-	-	884	-
Stage 2	-	-	-	-	918	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1431	-	735	904
Mov Cap-2 Maneuver	-	-	-	-	745	-
Stage 1	-	-	-	-	882	-
Stage 2	-	-	-	-	918	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.2		9.5	
HCM LOS					A	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	817	-	-	1431	-	
HCM Lane V/C Ratio	0.016	-	-	0.002	-	
HCM Control Delay (s)	9.5	-	-	7.5	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	0	-	-	0	-	

HCM 6th TWSC  
4: Bowstring Rd & Harness Rd

Short-Term Background Traffic  
PM Peak Hour

Intersection




Int Delay, s/veh 4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	24	108	14	20	78	18
Future Vol, veh/h	24	108	14	20	78	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	-	-	150	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	26	117	15	22	85	20

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	143
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.11
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.209
Pot Cap-1 Maneuver	-	-	1446
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1446
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-







Approach	EB	WB	NB
HCM Control Delay, s	0	3.1	9.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	819	977	-	-	1446	-
HCM Lane V/C Ratio	0.104	0.02	-	-	0.011	-
HCM Control Delay (s)	9.9	8.8	-	-	7.5	-
HCM Lane LOS	A	A	-	-	A	-
HCM 95th %tile Q(veh)	0.3	0.1	-	-	0	-

Intersection						
Int Delay, s/veh	1.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	31	11	0	25	9	0
Future Vol, veh/h	31	11	0	25	9	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	34	12	0	27	10	0
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	46	0	67	40
Stage 1	-	-	-	-	40	-
Stage 2	-	-	-	-	27	-
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	-	-	1562	-	938	1031
Stage 1	-	-	-	-	982	-
Stage 2	-	-	-	-	996	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1562	-	938	1031
Mov Cap-2 Maneuver	-	-	-	-	879	-
Stage 1	-	-	-	-	982	-
Stage 2	-	-	-	-	996	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	0		9.1		
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	879	-	-	1562	-	
HCM Lane V/C Ratio	0.011	-	-	-	-	
HCM Control Delay (s)	9.1	-	-	0	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	0	-	-	0	-	

HCM 6th TWSC  
1: Jackson Creek Pkwy & Harness Rd

Short-Term Total Traffic  
AM Peak Hour

Intersection						
Int Delay, s/veh	3.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	65	99	417	34	77	519
Future Vol, veh/h	65	99	417	34	77	519
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	155	255	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	100	92	92	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	71	108	417	37	84	603

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1188	417	0	0	454
Stage 1	417	-	-	-	-
Stage 2	771	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	208	636	-	-	1107
Stage 1	665	-	-	-	-
Stage 2	456	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	192	636	-	-	1107
Mov Cap-2 Maneuver	192	-	-	-	-
Stage 1	614	-	-	-	-
Stage 2	456	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	20.7	0	1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	192	636	1107
HCM Lane V/C Ratio	-	-	0.368	0.169	0.076
HCM Control Delay (s)	-	-	34.3	11.8	8.5
HCM Lane LOS	-	-	D	B	A
HCM 95th %tile Q(veh)	-	-	1.6	0.6	0.2







HCM 6th TWSC  
2: Harness Rd & Fil 2 West Access

Short-Term Total Traffic  
AM Peak Hour

Intersection

Int Delay, s/veh 1.1

Movement EBL EBT WBT WBR SBL SBR

Lane Configurations						
Traffic Vol, veh/h	8	82	135	1	3	20
Future Vol, veh/h	8	82	135	1	3	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	9	89	147	1	3	22

Major/Minor Major1 Major2 Minor2

Conflicting Flow All	148	0	-	0	255	148
Stage 1	-	-	-	-	148	-
Stage 2	-	-	-	-	107	-
Critical Hdwy	4.11	-	-	-	6.41	6.21
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	2.209	-	-	-	3.509	3.309
Pot Cap-1 Maneuver	1440	-	-	-	736	901
Stage 1	-	-	-	-	882	-
Stage 2	-	-	-	-	920	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1440	-	-	-	732	901
Mov Cap-2 Maneuver	-	-	-	-	741	-
Stage 1	-	-	-	-	877	-
Stage 2	-	-	-	-	920	-

Approach EB WB SB

HCM Control Delay, s	0.7	0	9.2
HCM LOS			A

Minor Lane/Major Mvmt EBL EBT WBT WBR SBLn1






Capacity (veh/h)	1440	-	-	-	876
HCM Lane V/C Ratio	0.006	-	-	-	0.029
HCM Control Delay (s)	7.5	-	-	-	9.2
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

HCM 6th TWSC  
3: Fil 1 East Access & Harness Rd

Short-Term Total Traffic  
AM Peak Hour

Intersection

Int Delay, s/veh 0.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	80	5	1	126	10	8
Future Vol, veh/h	80	5	1	126	10	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	87	5	1	137	11	9









Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	92
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.11
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.209
Pot Cap-1 Maneuver	-	-	1509
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1509
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-







Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	9.4
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	843	-	-	1509	-
HCM Lane V/C Ratio	0.023	-	-	0.001	-
HCM Control Delay (s)	9.4	-	-	7.4	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

HCM 6th TWSC  
4: Bowstring Rd & Harness Rd

Short-Term Total Traffic  
AM Peak Hour

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	4	11	72	24	43	0	77	1	5	0	12	7
Future Vol, veh/h	4	11	72	24	43	0	77	1	5	0	12	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	150	-	-	150	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	92	92	92	92	95	92	92	92	92	92	92
Heavy Vehicles, %	2	1	1	1	1	2	1	2	1	2	2	2
Mvmt Flow	4	12	78	26	47	0	84	1	5	0	13	8
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	47	0	0	90	0	0	169	158	51	161	197	47
Stage 1	-	-	-	-	-	-	59	59	-	99	99	-
Stage 2	-	-	-	-	-	-	110	99	-	62	98	-
Critical Hdwy	4.12	-	-	4.11	-	-	7.11	6.52	6.21	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.209	-	-	3.509	4.018	3.309	3.518	4.018	3.318
Pot Cap-1 Maneuver	1560	-	-	1512	-	-	797	734	1020	804	699	1022
Stage 1	-	-	-	-	-	-	955	846	-	907	813	-
Stage 2	-	-	-	-	-	-	898	813	-	949	814	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1560	-	-	1512	-	-	768	719	1020	787	685	1022
Mov Cap-2 Maneuver	-	-	-	-	-	-	768	719	-	787	685	-
Stage 1	-	-	-	-	-	-	952	843	-	904	799	-
Stage 2	-	-	-	-	-	-	862	799	-	940	812	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.3			2.7			10.2			9.7		
HCM LOS							B			A		
Minor Lane/Major Mvmt	NBLn1 NBLn2		EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2		
Capacity (veh/h)	768 953		1560	-	-	1512	-	-	-	-	780	
HCM Lane V/C Ratio	0.109 0.007		0.003	-	-	0.017	-	-	-	-	0.026	
HCM Control Delay (s)	10.3 8.8		7.3	-	-	7.4	-	-	0	9.7		
HCM Lane LOS	B A		A	-	-	A	-	-	A	A		
HCM 95th %tile Q(veh)	0.4 0		0	-	-	0.1	-	-	-	0.1		

Intersection												
Int Delay, s/veh	2.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	11	4	0	45	0	16	0	0	0	0	6
Future Vol, veh/h	1	11	4	0	45	0	16	0	0	0	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	100	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	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	12	4	0	49	0	17	0	0	0	0	7







Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	49	0	0	16	0	0	69	65	14	65	67	49
Stage 1	-	-	-	-	-	-	16	16	-	49	49	-
Stage 2	-	-	-	-	-	-	53	49	-	16	18	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1558	-	-	1602	-	-	923	826	1066	929	824	1020
Stage 1	-	-	-	-	-	-	1004	882	-	964	854	-
Stage 2	-	-	-	-	-	-	960	854	-	1004	880	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1558	-	-	1602	-	-	917	825	1066	929	823	1020
Mov Cap-2 Maneuver	-	-	-	-	-	-	917	825	-	929	823	-
Stage 1	-	-	-	-	-	-	1003	881	-	963	854	-
Stage 2	-	-	-	-	-	-	954	854	-	1003	879	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0	9	8.6
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	917	1558	-	-	1602	-	-	1020
HCM Lane V/C Ratio	0.019	0.001	-	-	-	-	-	0.006
HCM Control Delay (s)	9	7.3	-	-	0	-	-	8.6
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0

HCM 6th TWSC  
1: Jackson Creek Pkwy & Harness Rd

Short-Term Total Traffic  
PM Peak Hour

Intersection						
Int Delay, s/veh	10.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	66	97	792	76	126	644
Future Vol, veh/h	66	97	792	76	126	644
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	155	255	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	87	92	92	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	72	105	910	83	137	644
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	1828	910	0	0	993	0
Stage 1	910	-	-	-	-	-
Stage 2	918	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	84	333	-	-	696	-
Stage 1	393	-	-	-	-	-
Stage 2	389	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 67	333	-	-	696	-
Mov Cap-2 Maneuver	~ 67	-	-	-	-	-
Stage 1	316	-	-	-	-	-
Stage 2	389	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	108	0		2		
HCM LOS	F					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	67	333	696	-
HCM Lane V/C Ratio	-	-	1.071	0.317	0.197	-
HCM Control Delay (s)	-	-	236.3	20.7	11.4	-
HCM Lane LOS	-	-	F	C	B	-
HCM 95th %tile Q(veh)	-	-	5.5	1.3	0.7	-
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

HCM 6th TWSC  
2: Harness Rd & Fil 2 West Access

Short-Term Total Traffic  
PM Peak Hour

Intersection

Int Delay, s/veh 1

Movement EBL EBT WBT WBR SBL SBR

Lane Configurations 

Traffic Vol, veh/h 24 165 110 3 2 12

Future Vol, veh/h 24 165 110 3 2 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 150 - - - 0 -

Veh in Median Storage, # - 0 0 - 0 -

Grade, % - 0 0 - 0 -

Peak Hour Factor 92 92 92 92 92 92

Heavy Vehicles, % 1 1 1 1 1 1

Mvmt Flow 26 179 120 3 2 13

Major/Minor Major1 Major2 Minor2

Conflicting Flow All 123 0 - 0 353 122

Stage 1 - - - - 122 -

Stage 2 - - - - 231 -

Critical Hdwy 4.11 - - - 6.41 6.21

Critical Hdwy Stg 1 - - - - 5.41 -

Critical Hdwy Stg 2 - - - - 5.41 -

Follow-up Hdwy 2.209 - - - 3.509 3.309

Pot Cap-1 Maneuver 1470 - - - 647 932

Stage 1 - - - - 906 -

Stage 2 - - - - 810 -

Platoon blocked, % - - - -

Mov Cap-1 Maneuver 1470 - - - 635 932

Mov Cap-2 Maneuver - - - - 666 -

Stage 1 - - - - 890 -

Stage 2 - - - - 810 -

Approach EB WB SB

HCM Control Delay, s 1 0 9.2

HCM LOS A

Minor Lane/Major Mvmt EBL EBT WBT WBR SBLn1






Capacity (veh/h) 1470 - - - 882

HCM Lane V/C Ratio 0.018 - - - 0.017

HCM Control Delay (s) 7.5 - - - 9.2









HCM Lane LOS A - - - A

HCM 95th %tile Q(veh) 0.1 - - - 0.1







Intersection						
Int Delay, s/veh	0.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	150	17	3	106	6	6
Future Vol, veh/h	150	17	3	106	6	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	163	18	3	115	7	7
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	181	0	293	172
Stage 1	-	-	-	-	172	-
Stage 2	-	-	-	-	121	-
Critical Hdwy	-	-	4.11	-	6.41	6.21
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	-	-	2.209	-	3.509	3.309
Pot Cap-1 Maneuver	-	-	1400	-	700	874
Stage 1	-	-	-	-	861	-
Stage 2	-	-	-	-	907	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1400	-	699	874
Mov Cap-2 Maneuver	-	-	-	-	720	-
Stage 1	-	-	-	-	859	-
Stage 2	-	-	-	-	907	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.2		9.6	
HCM LOS					A	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	790	-	-	1400	-	
HCM Lane V/C Ratio	0.017	-	-	0.002	-	
HCM Control Delay (s)	9.6	-	-	7.6	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	0.1	-	-	0	-	

HCM 6th TWSC  
4: Bowstring Rd & Harness Rd

Short-Term Total Traffic  
PM Peak Hour

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	15	31	109	16	23	0	81	4	19	0	8	5
Future Vol, veh/h	15	31	109	16	23	0	81	4	19	0	8	5
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	150	-	-	150	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	92	92	92	92	95	92	92	92	92	92	92
Heavy Vehicles, %	2	1	1	1	1	2	1	2	1	2	2	2
Mvmt Flow	16	34	118	17	25	0	88	4	21	0	9	5
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	25	0	0	152	0	0	191	184	93	197	243	25
Stage 1	-	-	-	-	-	-	125	125	-	59	59	-
Stage 2	-	-	-	-	-	-	66	59	-	138	184	-
Critical Hdwy	4.12	-	-	4.11	-	-	7.11	6.52	6.21	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.209	-	-	3.509	4.018	3.309	3.518	4.018	3.318
Pot Cap-1 Maneuver	1589	-	-	1435	-	-	771	710	967	762	659	1051
Stage 1	-	-	-	-	-	-	881	792	-	953	846	-
Stage 2	-	-	-	-	-	-	947	846	-	865	747	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1589	-	-	1435	-	-	746	694	967	730	645	1051
Mov Cap-2 Maneuver	-	-	-	-	-	-	746	694	-	730	645	-
Stage 1	-	-	-	-	-	-	872	784	-	943	836	-
Stage 2	-	-	-	-	-	-	921	836	-	833	740	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.7			3.1			10.2			9.8		
HCM LOS							B			A		
Minor Lane/Major Mvmt	NBLn1 NBLn2		EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2		
Capacity (veh/h)	746 905		1589	-	-	1435	-	-	-	-	758	
HCM Lane V/C Ratio	0.118 0.028		0.01	-	-	0.012	-	-	-	-	0.019	
HCM Control Delay (s)	10.5 9.1		7.3	-	-	7.5	-	-	0	9.8		
HCM Lane LOS	B A		A	-	-	A	-	-	A	A		
HCM 95th %tile Q(veh)	0.4 0.1		0	-	-	0	-	-	-	0.1		








Intersection												
Int Delay, s/veh	2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	31	11	0	25	0	9	0	0	0	0	5
Future Vol, veh/h	8	31	11	0	25	0	9	0	0	0	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	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	8	34	12	0	27	0	10	0	0	0	0	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	27	0	0	46	0	0	86	83	40	83	89	27
Stage 1	-	-	-	-	-	-	56	56	-	27	27	-
Stage 2	-	-	-	-	-	-	30	27	-	56	62	-
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	1587	-	-	1562	-	-	900	807	1031	904	801	1048
Stage 1	-	-	-	-	-	-	956	848	-	990	873	-
Stage 2	-	-	-	-	-	-	987	873	-	956	843	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1587	-	-	1562	-	-	892	803	1031	900	797	1048
Mov Cap-2 Maneuver	-	-	-	-	-	-	892	803	-	900	797	-
Stage 1	-	-	-	-	-	-	951	844	-	985	873	-
Stage 2	-	-	-	-	-	-	982	873	-	951	839	-










Approach	EB	WB	NB	SB
HCM Control Delay, s	1.1	0	9.1	8.5
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	892	1587	-	-	1562	-	-	1048
HCM Lane V/C Ratio	0.011	0.005	-	-	-	-	-	0.005
HCM Control Delay (s)	9.1	7.3	-	-	0	-	-	8.5
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

Intersection						
Int Delay, s/veh	0.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	136	5	1	357	14	4
Future Vol, veh/h	136	5	1	357	14	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	143	5	1	376	15	4
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	148	0	524	146
Stage 1	-	-	-	-	146	-
Stage 2	-	-	-	-	378	-
Critical Hdwy	-	-	4.11	-	6.41	6.21
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	-	-	2.209	-	3.509	3.309
Pot Cap-1 Maneuver	-	-	1440	-	515	904
Stage 1	-	-	-	-	884	-
Stage 2	-	-	-	-	695	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1440	-	514	904
Mov Cap-2 Maneuver	-	-	-	-	580	-
Stage 1	-	-	-	-	883	-
Stage 2	-	-	-	-	695	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	0		10.9		
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	630	-	-	1440	-	
HCM Lane V/C Ratio	0.03	-	-	0.001	-	
HCM Control Delay (s)	10.9	-	-	7.5	-	
HCM Lane LOS	B	-	-	A	-	
HCM 95th %tile Q(veh)	0.1	-	-	0	-	

HCM 6th TWSC  
4: Bowstring Rd & Harness Rd

2040 Background Traffic  
AM Peak Hour

Intersection												
Int Delay, s/veh	8.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	106	33	139	302	5	56	119	84	5	58	1
Future Vol, veh/h	0	106	33	139	302	5	56	119	84	5	58	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	150	-	150	150	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	0	112	35	146	318	5	59	125	88	5	61	1







Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	323	0	0	147	0	0	756	727	112	849	760	321
Stage 1	-	-	-	-	-	-	112	112	-	613	613	-
Stage 2	-	-	-	-	-	-	644	615	-	236	147	-
Critical Hdwy	4.11	-	-	4.11	-	-	7.11	6.51	6.21	7.11	6.51	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Follow-up Hdwy	2.209	-	-	2.209	-	-	3.509	4.009	3.309	3.509	4.009	3.309
Pot Cap-1 Maneuver	1242	-	-	1441	-	-	326	352	944	282	337	722
Stage 1	-	-	-	-	-	-	895	805	-	481	485	-
Stage 2	-	-	-	-	-	-	463	484	-	769	777	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1242	-	-	1441	-	-	255	316	944	164	303	722
Mov Cap-2 Maneuver	-	-	-	-	-	-	255	316	-	164	303	-
Stage 1	-	-	-	-	-	-	895	805	-	481	436	-
Stage 2	-	-	-	-	-	-	357	435	-	589	777	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			2.4			21.4			20.3		
HCM LOS							C			C		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	255	436	1242	-	-	1441	-	-	164	306
HCM Lane V/C Ratio	0.231	0.49	-	-	-	0.102	-	-	0.032	0.203
HCM Control Delay (s)	23.3	20.9	0	-	-	7.8	-	-	27.7	19.7
HCM Lane LOS	C	C	A	-	-	A	-	-	D	C
HCM 95th %tile Q(veh)	0.9	2.6	0	-	-	0.3	-	-	0.1	0.7

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	189	4	0	424	0	14	0	1	0	0	7
Future Vol, veh/h	3	189	4	0	424	0	14	0	1	0	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	100	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	199	4	0	446	0	15	0	1	0	0	7

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	446	0	0	203	0	0	657	653	201	654	655	446
Stage 1	-	-	-	-	-	-	207	207	-	446	446	-
Stage 2	-	-	-	-	-	-	450	446	-	208	209	-
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	1114	-	-	1369	-	-	378	387	840	380	386	612
Stage 1	-	-	-	-	-	-	795	731	-	591	574	-
Stage 2	-	-	-	-	-	-	589	574	-	794	729	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1114	-	-	1369	-	-	373	386	840	379	385	612
Mov Cap-2 Maneuver	-	-	-	-	-	-	373	386	-	379	385	-
Stage 1	-	-	-	-	-	-	793	729	-	589	574	-
Stage 2	-	-	-	-	-	-	582	574	-	791	727	-









Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	14.7	11
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	387	1114	-	-	1369	-	-	612
HCM Lane V/C Ratio	0.041	0.003	-	-	-	-	-	0.012
HCM Control Delay (s)	14.7	8.2	-	-	0	-	-	11
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0

HCM 6th AWSC  
4: Bowstring Rd & Harness Rd

2040 Background Traffic  
AM Peak Hour

Intersection	
Intersection Delay, s/veh	12.4
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	106	33	139	302	5	56	119	84	5	58	1
Future Vol, veh/h	0	106	33	139	302	5	56	119	84	5	58	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	0	112	35	146	318	5	59	125	88	5	61	1
Number of Lanes	1	1	0	1	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	10.8	13.5	11.8	10.3
HCM LOS	B	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	0%	100%	0%	100%	0%
Vol Thru, %	0%	59%	100%	76%	0%	98%	0%	98%
Vol Right, %	0%	41%	0%	24%	0%	2%	0%	2%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	56	203	0	139	139	307	5	59
LT Vol	56	0	0	0	139	0	5	0
Through Vol	0	119	0	106	0	302	0	58
RT Vol	0	84	0	33	0	5	0	1
Lane Flow Rate	59	214	0	146	146	323	5	62
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.112	0.359	0	0.247	0.255	0.518	0.011	0.115
Departure Headway (Hd)	6.847	6.044	6.235	6.066	6.283	5.767	7.216	6.694
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	523	594	0	591	572	627	495	535
Service Time	4.591	3.788	3.98	3.812	4.018	3.501	4.971	4.448
HCM Lane V/C Ratio	0.113	0.36	0	0.247	0.255	0.515	0.01	0.116
HCM Control Delay	10.5	12.2	9	10.8	11.2	14.6	10.1	10.3
HCM Lane LOS	B	B	N	B	B	B	B	B
HCM 95th-tile Q	0.4	1.6	0	1	1	3	0	0.4

HCM 6th Roundabout  
4: Bowstring Rd & Harness Rd























2040 Background Traffic  
AM Peak Hour

Intersection				
Intersection Delay, s/veh	6.1			
Intersection LOS	A			
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	147	469	272	67
Demand Flow Rate, veh/h	148	473	275	68
Vehicles Circulating, veh/h	214	186	118	528
Vehicles Exiting, veh/h	382	207	244	131
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	4.4	7.5	5.0	5.3
Approach LOS	A	A	A	A
Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	148	473	275	68
Cap Entry Lane, veh/h	1109	1141	1223	805
Entry HV Adj Factor	0.992	0.991	0.988	0.991
Flow Entry, veh/h	147	469	272	67
Cap Entry, veh/h	1101	1131	1209	798
V/C Ratio	0.133	0.414	0.225	0.084
Control Delay, s/veh	4.4	7.5	5.0	5.3
LOS	A	A	A	A
95th %tile Queue, veh	0	2	1	0

# Timings

## 1: Jackson Creek Pkwy & Harness Rd

2040 Background Traffic  
PM Peak Hour

											
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	286	60	69	183	42	122	943	293	147	1013	65
Future Volume (vph)	286	60	69	183	42	122	943	293	147	1013	65
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8		2			6	
Permitted Phases			4	8		2		2	6		6
Detector Phase	7	4	4	3	8	2	2	2	6	6	6
Switch Phase											
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	9.0	21.0	21.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
Total Split (s)	20.0	40.0	40.0	20.0	40.0	60.0	60.0	60.0	60.0	60.0	60.0
Total Split (%)	16.7%	33.3%	33.3%	16.7%	33.3%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	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	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes						
Recall Mode	None	None	None	None	None	Max	Max	Max	Max	Max	Max
Act Effect Green (s)	12.9	10.4	10.4	24.2	10.3	55.2	55.2	55.2	55.2	55.2	55.2
Actuated g/C Ratio	0.14	0.11	0.11	0.26	0.11	0.59	0.59	0.59	0.59	0.59	0.59
v/c Ratio	0.64	0.31	0.30	0.49	0.60	0.57	0.48	0.30	0.61	0.51	0.07
Control Delay	45.1	42.2	12.9	29.9	35.1	26.2	12.6	4.3	27.4	13.1	3.3
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	45.1	42.2	12.9	29.9	35.1	26.2	12.6	4.3	27.4	13.1	3.3
LOS	D	D	B	C	D	C	B	A	C	B	A
Approach Delay		39.3			32.1		12.0			14.3	
Approach LOS		D			C		B			B	

### Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 93.4

Natural Cycle: 70

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.64

Intersection Signal Delay: 18.2







Intersection LOS: B






Intersection Capacity Utilization 67.3%

ICU Level of Service C













Analysis Period (min) 15

Splits and Phases: 1: Jackson Creek Pkwy & Harness Rd

 Ø2	 Ø3	 Ø4
60 s	20 s	40 s
 Ø6	 Ø7	 Ø8
60 s	20 s	40 s

Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	431	16	4	275	10	2
Future Vol, veh/h	431	16	4	275	10	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	454	17	4	289	11	2
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	471	0	760	463
Stage 1	-	-	-	-	463	-
Stage 2	-	-	-	-	297	-
Critical Hdwy	-	-	4.11	-	6.41	6.21
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	-	-	2.209	-	3.509	3.309
Pot Cap-1 Maneuver	-	-	1096	-	375	601
Stage 1	-	-	-	-	636	-
Stage 2	-	-	-	-	756	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1096	-	374	601
Mov Cap-2 Maneuver	-	-	-	-	482	-
Stage 1	-	-	-	-	633	-
Stage 2	-	-	-	-	756	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	0.1		12.4		
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	498	-	-	1096	-	
HCM Lane V/C Ratio	0.025	-	-	0.004	-	
HCM Control Delay (s)	12.4	-	-	8.3	-	
HCM Lane LOS	B	-	-	A	-	
HCM 95th %tile Q(veh)	0.1	-	-	0	-	



Intersection												
Int Delay, s/veh	24.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	365	68	155	226	5	53	104	184	10	148	1
Future Vol, veh/h	1	365	68	155	226	5	53	104	184	10	148	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	150	-	150	150	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	1	384	72	163	238	5	56	109	194	11	156	1







Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	243	0	0	456	0	0	1031	955	384	1141	1025	241
Stage 1	-	-	-	-	-	-	386	386	-	567	567	-
Stage 2	-	-	-	-	-	-	645	569	-	574	458	-
Critical Hdwy	4.11	-	-	4.11	-	-	7.11	6.51	6.21	7.11	6.51	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Follow-up Hdwy	2.209	-	-	2.209	-	-	3.509	4.009	3.309	3.509	4.009	3.309
Pot Cap-1 Maneuver	1329	-	-	1110	-	-	212	259	666	179	236	800
Stage 1	-	-	-	-	-	-	639	612	-	510	509	-
Stage 2	-	-	-	-	-	-	462	507	-	506	569	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1329	-	-	1110	-	-	69	221	666	69	201	800
Mov Cap-2 Maneuver	-	-	-	-	-	-	69	221	-	69	201	-
Stage 1	-	-	-	-	-	-	638	611	-	509	434	-
Stage 2	-	-	-	-	-	-	252	432	-	294	568	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0	-	-	3.5	-	-	59.3	-	-	66.1	-	-
HCM LOS	-	-	-	-	-	-	F	-	-	F	-	-

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	69	386	1329	-	-	1110	-	-	69	202
HCM Lane V/C Ratio	0.809	0.785	0.001	-	-	0.147	-	-	0.153	0.776
HCM Control Delay (s)	158.5	41.1	7.7	-	-	8.8	-	-	66.3	66.1
HCM Lane LOS	F	E	A	-	-	A	-	-	F	F
HCM 95th %tile Q(veh)	3.8	6.7	0	-	-	0.5	-	-	0.5	5.4









Intersection												
Int Delay, s/veh	0.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	541	10	1	373	0	8	0	0	0	0	4
Future Vol, veh/h	8	541	10	1	373	0	8	0	0	0	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	569	11	1	393	0	8	0	0	0	0	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	393	0	0	580	0	0	988	986	575	986	991	393
Stage 1	-	-	-	-	-	-	591	591	-	395	395	-
Stage 2	-	-	-	-	-	-	397	395	-	591	596	-
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	1166	-	-	994	-	-	226	248	518	227	246	656
Stage 1	-	-	-	-	-	-	493	494	-	630	605	-
Stage 2	-	-	-	-	-	-	629	605	-	493	492	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1166	-	-	994	-	-	223	246	518	226	244	656
Mov Cap-2 Maneuver	-	-	-	-	-	-	223	246	-	226	244	-
Stage 1	-	-	-	-	-	-	490	491	-	626	604	-
Stage 2	-	-	-	-	-	-	624	604	-	490	489	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	21.8	10.5
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	223	1166	-	-	994	-	-	656
HCM Lane V/C Ratio	0.038	0.007	-	-	0.001	-	-	0.006
HCM Control Delay (s)	21.8	8.1	-	-	8.6	-	-	10.5
HCM Lane LOS	C	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0

Intersection	
Intersection Delay, s/veh	29.4
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	365	68	155	226	5	53	104	184	10	148	1
Future Vol, veh/h	1	365	68	155	226	5	53	104	184	10	148	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	1	384	72	163	238	5	56	109	194	11	156	1
Number of Lanes	1	1	0	1	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	51.9	17.3	20.9	15.9
HCM LOS	F	C	C	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	100%	0%	100%	0%
Vol Thru, %	0%	36%	0%	84%	0%	98%	0%	99%
Vol Right, %	0%	64%	0%	16%	0%	2%	0%	1%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	53	288	1	433	155	231	10	149
LT Vol	53	0	1	0	155	0	10	0
Through Vol	0	104	0	365	0	226	0	148
RT Vol	0	184	0	68	0	5	0	1
Lane Flow Rate	56	303	1	456	163	243	11	157
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.132	0.633	0.002	0.93	0.371	0.517	0.026	0.37
Departure Headway (Hd)	8.495	7.516	7.972	7.346	8.181	7.65	9.017	8.493
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	423	482	451	497	441	472	397	423
Service Time	6.217	5.239	5.691	5.065	5.931	5.4	6.773	6.249
HCM Lane V/C Ratio	0.132	0.629	0.002	0.918	0.37	0.515	0.028	0.371
HCM Control Delay	12.5	22.4	10.7	52	15.7	18.4	12	16.2
HCM Lane LOS	B	C	B	F	C	C	B	C
HCM 95th-tile Q	0.5	4.3	0	11.1	1.7	2.9	0.1	1.7

HCM 6th Roundabout  
4: Bowstring Rd & Harness Rd























2040 Background Traffic  
PM Peak Hour

Intersection				
Intersection Delay, s/veh	7.9			
Intersection LOS	A			
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	457	406	359	168
Demand Flow Rate, veh/h	462	410	363	170
Vehicles Circulating, veh/h	334	168	400	462
Vehicles Exiting, veh/h	298	595	396	116
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	9.3	6.6	8.5	6.2
Approach LOS	A	A	A	A
Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	462	410	363	170
Cap Entry Lane, veh/h	982	1163	918	861
Entry HV Adj Factor	0.990	0.989	0.989	0.991
Flow Entry, veh/h	457	406	359	168
Cap Entry, veh/h	971	1150	907	853
V/C Ratio	0.471	0.353	0.396	0.197
Control Delay, s/veh	9.3	6.6	8.5	6.2
LOS	A	A	A	A
95th %tile Queue, veh	3	2	2	1

# Timings

## 1: Jackson Creek Pkwy & Harness Rd

2040 Total Traffic  
AM Peak Hour







											
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	153	29	58	256	64	168	651	84	52	766	101
Future Volume (vph)	153	29	58	256	64	168	651	84	52	766	101
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8		2			6	
Permitted Phases			4	8		2		2	6		6
Detector Phase	7	4	4	3	8	2	2	2	6	6	6
Switch Phase											
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	9.0	21.0	21.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
Total Split (s)	15.0	40.0	40.0	15.0	40.0	65.0	65.0	65.0	65.0	65.0	65.0
Total Split (%)	12.5%	33.3%	33.3%	12.5%	33.3%	54.2%	54.2%	54.2%	54.2%	54.2%	54.2%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	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	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes						
Recall Mode	None	None	None	None	None	Max	Max	Max	Max	Max	Max
Act Effect Green (s)	9.2	12.0	12.0	23.0	12.5	60.2	60.2	60.2	60.2	60.2	60.2
Actuated g/C Ratio	0.09	0.12	0.12	0.24	0.13	0.62	0.62	0.62	0.62	0.62	0.62
v/c Ratio	0.50	0.13	0.24	0.78	0.71	0.50	0.31	0.09	0.13	0.37	0.10
Control Delay	48.2	38.0	11.6	48.5	36.2	17.6	9.8	2.4	10.1	10.3	2.2
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	48.2	38.0	11.6	48.5	36.2	17.6	9.8	2.4	10.1	10.3	2.2
LOS	D	D	B	D	D	B	A	A	B	B	A
Approach Delay		38.1			43.1		10.5			9.4	
Approach LOS		D			D		B			A	

### Intersection Summary

Cycle Length: 120  
 Actuated Cycle Length: 96.9  
 Natural Cycle: 60  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.78  
 Intersection Signal Delay: 18.6  
 Intersection Capacity Utilization 64.7%  
 Analysis Period (min) 15

Intersection LOS: B  
 ICU Level of Service C

Splits and Phases: 1: Jackson Creek Pkwy & Harness Rd

 Ø2	 Ø3	 Ø4
65 s	15 s	40 s
 Ø6	 Ø7	 Ø8
65 s	15 s	40 s





HCM 6th TWSC  
2: Harness Rd & Fil 2 West Access

2040 Total Traffic  
AM Peak Hour

Intersection

Int Delay, s/veh 0.5

Movement EBL EBT WBT WBR SBL SBR

Lane Configurations						
Traffic Vol, veh/h	6	145	387	1	3	18
Future Vol, veh/h	6	145	387	1	3	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	150	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	6	153	407	1	3	19

Major/Minor Major1 Major2 Minor2






Conflicting Flow All	408	0	-	0	573	408
Stage 1	-	-	-	-	408	-
Stage 2	-	-	-	-	165	-
Critical Hdwy	4.11	-	-	-	6.41	6.21
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	2.209	-	-	-	3.509	3.309
Pot Cap-1 Maneuver	1156	-	-	-	483	645
Stage 1	-	-	-	-	673	-
Stage 2	-	-	-	-	867	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1156	-	-	-	481	645
Mov Cap-2 Maneuver	-	-	-	-	554	-
Stage 1	-	-	-	-	670	-
Stage 2	-	-	-	-	867	-

Approach EB WB SB

HCM Control Delay, s	0.3	0	10.9
HCM LOS			B













Minor Lane/Major Mvmt EBL EBT WBT WBR SBLn1

Capacity (veh/h)	1156	-	-	-	630
HCM Lane V/C Ratio	0.005	-	-	-	0.035
HCM Control Delay (s)	8.1	-	-	-	10.9
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1







Intersection						
Int Delay, s/veh	0.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	143	5	1	374	14	4
Future Vol, veh/h	143	5	1	374	14	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	151	5	1	394	15	4
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	156	0	550	154
Stage 1	-	-	-	-	154	-
Stage 2	-	-	-	-	396	-
Critical Hdwy	-	-	4.11	-	6.41	6.21
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	-	-	2.209	-	3.509	3.309
Pot Cap-1 Maneuver	-	-	1430	-	498	895
Stage 1	-	-	-	-	877	-
Stage 2	-	-	-	-	682	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1430	-	498	895
Mov Cap-2 Maneuver	-	-	-	-	567	-
Stage 1	-	-	-	-	876	-
Stage 2	-	-	-	-	682	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		11	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	617	-	-	1430	-	
HCM Lane V/C Ratio	0.031	-	-	0.001	-	
HCM Control Delay (s)	11	-	-	7.5	-	
HCM Lane LOS	B	-	-	A	-	
HCM 95th %tile Q(veh)	0.1	-	-	0	-	

HCM 6th TWSC  
4: Bowstring Rd & Harness Rd

2040 Total Traffic  
AM Peak Hour

Intersection												
Int Delay, s/veh	9.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	108	35	140	307	5	57	121	85	5	62	11
Future Vol, veh/h	4	108	35	140	307	5	57	121	85	5	62	11
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	150	-	150	150	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	4	114	37	147	323	5	60	127	89	5	65	12
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	328	0	0	151	0	0	780	744	114	869	779	326
Stage 1	-	-	-	-	-	-	122	122	-	620	620	-
Stage 2	-	-	-	-	-	-	658	622	-	249	159	-
Critical Hdwy	4.11	-	-	4.11	-	-	7.11	6.51	6.21	7.11	6.51	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Follow-up Hdwy	2.209	-	-	2.209	-	-	3.509	4.009	3.309	3.509	4.009	3.309
Pot Cap-1 Maneuver	1237	-	-	1436	-	-	314	344	941	273	328	718
Stage 1	-	-	-	-	-	-	885	797	-	477	481	-
Stage 2	-	-	-	-	-	-	455	480	-	757	768	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1237	-	-	1436	-	-	236	308	941	155	294	718
Mov Cap-2 Maneuver	-	-	-	-	-	-	236	308	-	155	294	-
Stage 1	-	-	-	-	-	-	882	795	-	476	432	-
Stage 2	-	-	-	-	-	-	341	431	-	573	766	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			2.4			22.7			20.2		
HCM LOS							C			C		
Minor Lane/Major Mvmt	NBLn1 NBLn2		EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2		
Capacity (veh/h)	236	426	1237	-	-	1436	-	-	155	323		
HCM Lane V/C Ratio	0.254	0.509	0.003	-	-	0.103	-	-	0.034	0.238		
HCM Control Delay (s)	25.4	21.9	7.9	-	-	7.8	-	-	29	19.6		
HCM Lane LOS	D	C	A	-	-	A	-	-	D	C		
HCM 95th %tile Q(veh)	1	2.8	0	-	-	0.3	-	-	0.1	0.9		



Intersection												
Int Delay, s/veh	0.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	190	4	0	424	0	14	0	1	0	0	13
Future Vol, veh/h	4	190	4	0	424	0	14	0	1	0	0	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	200	4	0	446	0	15	0	1	0	0	14

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	446	0	0	204	0	0	663	656	202	657	658	446
Stage 1	-	-	-	-	-	-	210	210	-	446	446	-
Stage 2	-	-	-	-	-	-	453	446	-	211	212	-
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	1114	-	-	1368	-	-	375	385	839	378	384	612
Stage 1	-	-	-	-	-	-	792	728	-	591	574	-
Stage 2	-	-	-	-	-	-	586	574	-	791	727	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1114	-	-	1368	-	-	366	383	839	376	382	612
Mov Cap-2 Maneuver	-	-	-	-	-	-	366	383	-	376	382	-
Stage 1	-	-	-	-	-	-	789	725	-	589	574	-
Stage 2	-	-	-	-	-	-	573	574	-	787	724	-









Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			0			14.9			11		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	380	1114	-	-	1368	-	-	612
HCM Lane V/C Ratio	0.042	0.004	-	-	-	-	-	0.022
HCM Control Delay (s)	14.9	8.2	-	-	0	-	-	11
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1

HCM 6th AWSC  
4: Bowstring Rd & Harness Rd

2040 Total Traffic  
AM Peak Hour

Intersection												
Intersection Delay, s/veh	12.7											
Intersection LOS	B											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	108	35	140	307	5	57	121	85	5	62	11
Future Vol, veh/h	4	108	35	140	307	5	57	121	85	5	62	11
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	4	114	37	147	323	5	60	127	89	5	65	12
Number of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	2			2			2			2		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	2			2			2			2		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	2			2			2			2		
HCM Control Delay	11			14			12			10.5		
HCM LOS	B			B			B			B		
Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2				
Vol Left, %	100%	0%	100%	0%	100%	0%	100%	0%				
Vol Thru, %	0%	59%	0%	76%	0%	98%	0%	85%				
Vol Right, %	0%	41%	0%	24%	0%	2%	0%	15%				
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop				
Traffic Vol by Lane	57	206	4	143	140	312	5	73				
LT Vol	57	0	4	0	140	0	5	0				
Through Vol	0	121	0	108	0	307	0	62				
RT Vol	0	85	0	35	0	5	0	11				
Lane Flow Rate	60	217	4	151	147	328	5	77				
Geometry Grp	7	7	7	7	7	7	7	7				
Degree of Util (X)	0.115	0.368	0.008	0.257	0.261	0.534	0.011	0.142				
Departure Headway (Hd)	6.908	6.108	6.831	6.149	6.366	5.85	7.265	6.648				
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes				
Cap	518	588	523	583	564	617	491	538				
Service Time	4.658	3.857	4.587	3.905	4.108	3.592	5.026	4.409				
HCM Lane V/C Ratio	0.116	0.369	0.008	0.259	0.261	0.532	0.01	0.143				
HCM Control Delay	10.6	12.4	9.6	11	11.4	15.1	10.1	10.5				
HCM Lane LOS	B	B	A	B	B	C	B	B				
HCM 95th-tile Q	0.4	1.7	0	1	1	3.2	0	0.5				





HCM 6th Roundabout  
4: Bowstring Rd & Harness Rd






2040 Total Traffic  
AM Peak Hour

Intersection				
Intersection Delay, s/veh	6.3			
Intersection LOS	A			
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	155	475	276	82
Demand Flow Rate, veh/h	156	479	279	83
Vehicles Circulating, veh/h	219	193	124	535
Vehicles Exiting, veh/h	399	210	251	137
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	4.5	7.6	5.0	5.6
Approach LOS	A	A	A	A
Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	156	479	279	83
Cap Entry Lane, veh/h	1104	1133	1216	800
Entry HV Adj Factor	0.993	0.991	0.988	0.992
Flow Entry, veh/h	155	475	276	82
Cap Entry, veh/h	1096	1123	1202	793
V/C Ratio	0.141	0.423	0.229	0.104
Control Delay, s/veh	4.5	7.6	5.0	5.6
LOS	A	A	A	A
95th %tile Queue, veh	0	2	1	0

HCM 6th TWSC  
2: Harness Rd & Fil 2 West Access










2040 Total Traffic  
PM Peak Hour







Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	20	466	296	3	2	11
Future Vol, veh/h	20	466	296	3	2	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	21	491	312	3	2	12
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	315	0	-	0	847	314
Stage 1	-	-	-	-	314	-
Stage 2	-	-	-	-	533	-
Critical Hdwy	4.11	-	-	-	6.41	6.21
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	2.209	-	-	-	3.509	3.309
Pot Cap-1 Maneuver	1251	-	-	-	334	729
Stage 1	-	-	-	-	743	-
Stage 2	-	-	-	-	590	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1251	-	-	-	328	729
Mov Cap-2 Maneuver	-	-	-	-	437	-
Stage 1	-	-	-	-	730	-
Stage 2	-	-	-	-	590	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.3	0		10.6		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1251	-	-	-	661	
HCM Lane V/C Ratio	0.017	-	-	-	0.021	
HCM Control Delay (s)	7.9	-	-	-	10.6	
HCM Lane LOS	A	-	-	-	B	
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1	

Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	451	16	4	290	10	2
Future Vol, veh/h	451	16	4	290	10	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	475	17	4	305	11	2
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	492	0	797	484
Stage 1	-	-	-	-	484	-
Stage 2	-	-	-	-	313	-
Critical Hdwy	-	-	4.11	-	6.41	6.21
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	-	-	2.209	-	3.509	3.309
Pot Cap-1 Maneuver	-	-	1077	-	357	585
Stage 1	-	-	-	-	622	-
Stage 2	-	-	-	-	744	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1077	-	356	585
Mov Cap-2 Maneuver	-	-	-	-	468	-
Stage 1	-	-	-	-	620	-
Stage 2	-	-	-	-	744	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	0.1		12.6		
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	484	-	-	1077	-	
HCM Lane V/C Ratio	0.026	-	-	0.004	-	
HCM Control Delay (s)	12.6	-	-	8.4	-	
HCM Lane LOS	B	-	-	A	-	
HCM 95th %tile Q(veh)	0.1	-	-	0	-	

HCM 6th TWSC  
4: Bowstring Rd & Harness Rd

2040 Total Traffic  
PM Peak Hour

Intersection												
Int Delay, s/veh	33.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	13	371	69	155	230	5	56	108	185	10	150	8
Future Vol, veh/h	13	371	69	155	230	5	56	108	185	10	150	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	150	-	150	150	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	14	391	73	163	242	5	59	114	195	11	158	8
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	247	0	0	464	0	0	1073	992	391	1181	1063	245
Stage 1	-	-	-	-	-	-	419	419	-	571	571	-
Stage 2	-	-	-	-	-	-	654	573	-	610	492	-
Critical Hdwy	4.11	-	-	4.11	-	-	7.11	6.51	6.21	7.11	6.51	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Follow-up Hdwy	2.209	-	-	2.209	-	-	3.509	4.009	3.309	3.509	4.009	3.309
Pot Cap-1 Maneuver	1325	-	-	1103	-	-	199	247	660	168	224	796
Stage 1	-	-	-	-	-	-	614	592	-	508	506	-
Stage 2	-	-	-	-	-	-	457	505	-	483	549	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1325	-	-	1103	-	-	~ 53	208	660	60	189	796
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 53	208	-	60	189	-
Stage 1	-	-	-	-	-	-	607	585	-	502	431	-
Stage 2	-	-	-	-	-	-	244	430	-	271	543	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			3.5			87.6			78.5		
HCM LOS							F			F		
Minor Lane/Major Mvmt	NBLn1 NBLn2		EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2		
Capacity (veh/h)	53	366	1325	-	-	1103	-	-	60	197		
HCM Lane V/C Ratio	1.112	0.843	0.01	-	-	0.148	-	-	0.175	0.844		
HCM Control Delay (s)	284.3	50	7.7	-	-	8.8	-	-	77.4	78.6		
HCM Lane LOS	F	F	A	-	-	A	-	-	F	F		
HCM 95th %tile Q(veh)	5.1	7.7	0	-	-	0.5	-	-	0.6	6.2		
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s			+: Computation Not Defined				*: All major volume in platoon			

Intersection												
Int Delay, s/veh	0.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	541	10	1	374	1	8	0	0	0	0	9
Future Vol, veh/h	15	541	10	1	374	1	8	0	0	0	0	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	569	11	1	394	1	8	0	0	0	0	9

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	395	0	0	580	0	0	1008	1004	575	1004	1009	395
Stage 1	-	-	-	-	-	-	607	607	-	397	397	-
Stage 2	-	-	-	-	-	-	401	397	-	607	612	-
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	1164	-	-	994	-	-	219	242	518	220	240	654
Stage 1	-	-	-	-	-	-	483	486	-	629	603	-
Stage 2	-	-	-	-	-	-	626	603	-	483	484	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1164	-	-	994	-	-	213	238	518	218	236	654
Mov Cap-2 Maneuver	-	-	-	-	-	-	213	238	-	218	236	-
Stage 1	-	-	-	-	-	-	476	479	-	620	602	-
Stage 2	-	-	-	-	-	-	616	602	-	476	477	-









Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0	22.6	10.6
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	213	1164	-	-	994	-	-	654
HCM Lane V/C Ratio	0.04	0.014	-	-	0.001	-	-	0.014
HCM Control Delay (s)	22.6	8.1	-	-	8.6	-	-	10.6
HCM Lane LOS	C	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0

HCM 6th AWSC  
4: Bowstring Rd & Harness Rd

2040 Total Traffic  
PM Peak Hour

Intersection	
Intersection Delay, s/veh	32.3
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	13	371	69	155	230	5	56	108	185	10	150	8
Future Vol, veh/h	13	371	69	155	230	5	56	108	185	10	150	8
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	14	391	73	163	242	5	59	114	195	11	158	8
Number of Lanes	1	1	0	1	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	58.1	18.1	22.1	16.7
HCM LOS	F	C	C	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	100%	0%	100%	0%
Vol Thru, %	0%	37%	0%	84%	0%	98%	0%	95%
Vol Right, %	0%	63%	0%	16%	0%	2%	0%	5%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	56	293	13	440	155	235	10	158
LT Vol	56	0	13	0	155	0	10	0
Through Vol	0	108	0	371	0	230	0	150
RT Vol	0	185	0	69	0	5	0	8
Lane Flow Rate	59	308	14	463	163	247	11	166
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.142	0.657	0.031	0.963	0.379	0.538	0.027	0.398
Departure Headway (Hd)	8.644	7.67	8.11	7.483	8.356	7.824	9.169	8.612
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	416	472	443	486	431	460	390	417
Service Time	6.371	5.396	5.831	5.204	6.115	5.583	6.931	6.374
HCM Lane V/C Ratio	0.142	0.653	0.032	0.953	0.378	0.537	0.028	0.398
HCM Control Delay	12.8	23.9	11.1	59.5	16.2	19.4	12.2	17
HCM Lane LOS	B	C	B	F	C	C	B	C
HCM 95th-tile Q	0.5	4.7	0.1	12.1	1.7	3.1	0.1	1.9



HCM 6th Roundabout  
4: Bowstring Rd & Harness Rd

2040 Total Traffic  
PM Peak Hour

Intersection				
Intersection Delay, s/veh	8.3			
Intersection LOS	A			
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	478	410	368	177
Demand Flow Rate, veh/h	483	414	372	179
Vehicles Circulating, veh/h	336	189	420	469
Vehicles Exiting, veh/h	312	603	399	134
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	9.7	6.8	8.9	6.4
Approach LOS	A	A	A	A
Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	483	414	372	179
Cap Entry Lane, veh/h	980	1138	899	855
Entry HV Adj Factor	0.990	0.989	0.989	0.991
Flow Entry, veh/h	478	410	368	177
Cap Entry, veh/h	970	1126	889	848
V/C Ratio	0.493	0.364	0.414	0.209
Control Delay, s/veh	9.7	6.8	8.9	6.4
LOS	A	A	A	A
95th %tile Queue, veh	3	2	2	1



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July 7, 2016

Mr. Brett Behnke  
Jackson Creek Assisted Living, LLC  
540 Elkton Drive, Suite 202  
Colorado Springs, CO 80907

RE: Jackson Creek Senior Living Center  
Monument, Colorado  
Updated Traffic Impact Analysis  
LSC #164190

Dear Mr. Behnke:

In response to your request, LSC Transportation Consultants, Inc. has prepared this updated traffic impact analysis for the proposed Jackson Creek Senior Living Center to be located east of Jackson Creek Parkway and north of a planned extension of Harness Road in Monument, Colorado. The site location is shown in Figure 1.

## **REPORT CONTENTS**

This report identifies the following: proposed land use, projected vehicle-trip generation, assignment of the site-generated traffic volumes to the proposed access points and the short-term and long-term adjacent street networks, projections of future background and total traffic volumes, adjacent intersection and access point level of service, and conclusions/recommendations.

## **SITE DEVELOPMENT AND LAND USE**

The site is located east of Jackson Creek Parkway and north of the planned extension of Harness Road. The Jackson Creek Filing 1 residential subdivision is planned east of the site and a self-storage development is planned south of the site. This report assumes that the 6.527-acre vacant parcel just north of the site will be developed for multi-family residential uses in the future. The site plan is attached.

The Jackson Creek Senior Living Center is proposed to include a building with 131 units. These would include 28 memory care units, 76 assisted living units and 27 independent living units.

The employees will work in three shifts. The three shifts would be from 6:00 a.m. to 2:00 p.m., 2:00 to 10:00 p.m., and 10:00 p.m. to 6:00 a.m. The facility will have one minibus and one community car.

The Jackson Creek Senior Living Center site is east of Jackson Creek Parkway and north of a planned extension of Harness Road. Harness Road is planned to be constructed from Jackson Creek Parkway to just east of Bowstring Road in the short term as part of the Jackson Creek North Filing 1.

Site access is proposed to Jackson Creek Parkway about 465 feet north of the future Harness Road intersection. This access may be restricted to a three-quarter movement access (left-in/right-in/right-out only) once Jackson Creek is improved to two through lanes in each direction and with a raised median adjacent to the site.

An additional full-movement access is proposed to Harness Road about 340 feet east of Jackson Creek Parkway (135 feet east of the mini storage access point).

## ROADWAY AND TRAFFIC CONDITIONS

### Area Roadways

Figure 1 shows the roadways in the vicinity of the site. The major roadways are identified below, followed by a brief description.

- **Jackson Creek Parkway** extends south from Highway 105 to Baptist Road where it continues south to North Gate Boulevard as Struthers Road. Jackson Creek Parkway is classified as a Major Collector (commercial) by the Town of Monument. Jackson Creek Parkway is currently a two-lane roadway generally north of Leather Chaps Road. South of Leather Chaps Road, Jackson Creek Parkway is a four-lane street with a posted speed limit of 35 miles per hour (mph). Adjacent to the site, the current posted speed limit is 40 mph.
- **Higby Road** is a two-lane Collector that extends east from Jackson Creek Parkway to Roller Coaster Road. The intersection of Higby Road and Jackson Creek Parkway is currently signalized.
- **Harness Road** is a Minor Collector street that extends northeast from Higby Road. There is also a short existing section of Harness Road south of Higby Road that extends northeast from Bowstring Road to Curled Oak Drive. In the short term Harness Road is planned to be extended west from the intersection of Bowstring/Harness to Jackson Creek Parkway. In the future, Harness Road is planned to be extended north from Curled Oak Drive to the existing intersection of Harness/Higby. The future intersection of Jackson Creek Parkway and Harness Road will be a full-movement intersection and has the potential to be signalized in the future once traffic signal warrants are met.
- **Cloverleaf Road** is a Minor Collector street that extends north from Higby Road. In the future Cloverleaf Road is planned to be extended southwest to Jackson Creek Parkway. The future

intersection of Jackson Creek Parkway and Cloverleaf Road will be a full-movement intersection and has the potential to be signalized in the future once traffic signal warrants are met.

### **Existing Traffic Conditions**

Figure 2 shows the existing traffic volumes on Jackson Creek Parkway adjacent to the site. These volumes are based on peak-hour turning movement traffic counts conducted at the intersection of Higby Road/Jackson Creek Parkway by LSC in March 2016. The traffic count reports are attached.

### **SHORT-TERM BACKGROUND TRAFFIC**

Figure 3 shows the projected short-term background traffic volumes at the future intersection of Jackson Creek Parkway/Harness Road. Background traffic is the traffic estimated to be on the area streets without consideration of the proposed development. The short-term background traffic volumes assume Harness Road has been extended east from Jackson Creek Parkway to Bowstring Road. Note: it is our understanding that there will be an interim period of time when the Harness Road connection to Jackson Creek Parkway will only provide access to the mini-storage development and this site (secondary access to this site) and will not extend east to Bowstring Road. Background traffic includes the through traffic and the traffic generated by existing developments that would use these new extensions, but assumes zero traffic generated by the site. These volumes are based on the existing traffic volumes plus estimates of traffic from currently planned developments in the general area including Jackson Creek Storage to be located southeast of Jackson Creek Parkway/Harness Road, Jackson Creek North Filing 1 to be located west of Bowstring Road and north and south of Harness Road, Vistas II located just south of the site, the Creekside Commercial development located southeast of the intersection of Jackson Creek/Leather Chaps, and the remaining lots within the Jackson Creek Commerce Center.

### **2040 BACKGROUND TRAFFIC**

The background traffic volumes for the year 2040 are based on previous work completed by LSC in the area including the *Regency Park Master Plan Amendment Updated Traffic Technical Memorandum* by LSC dated December 16, 2014. The background traffic volumes for 2040 are shown in Figures 4 and 5. The background traffic volumes shown in Figure 4 assume the proposed site access point remains open as a full-movement intersection and is shared with the parcel to the north. The traffic volumes shown in Figure 5 assume this access has been restricted to a three-quarter movement access (left-in/right-in/right-out only).

### **TRIP GENERATION**

The estimates of vehicle-trips expected to be generated by the site have been made using the nationally published trip generation rates found in *Trip Generation, 9th Edition, 2012* by the Institute of Transportation Engineers (ITE). Table 1 shows the results of the trip generation estimates.

The site is expected to generate about 370 new vehicle-trips on the average weekday, with about one-half entering and one-half exiting the site in a 24-hour period. During the morning peak hour, which generally occurs for one hour between 6:30 and 8:30 a.m., about 11 vehicles would enter and nine 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 14 vehicles would enter and 16 vehicles would exit the site.

## **TRIP DISTRIBUTION AND ASSIGNMENT**

The directional distribution of the site-generated traffic volumes on the adjacent roadways is an essential component in determining the site's traffic impacts. Figure 5 shows the estimated directional distribution of site-generated traffic. The estimates are based on the following factors: the location of the site with respect to nearby residential, employment, commercial, and activity centers and the balance of the Tri-Lakes area; the land use proposed for the site; the proposed access system for the site; the street system serving the site; and existing traffic patterns as indicated by traffic counts conducted by LSC.

When the distribution percentages (from Figure 6) are applied to the trip generation estimates (from Table 1), the resulting site-generated traffic volumes can be determined. The site-generated traffic volumes are shown in Figures 7 and 8. The site-generated traffic volumes shown in Figure 7 assume the proposed site access point remains open as a full-movement intersection. The site-generated traffic volumes shown in Figure 8 assume this access has been restricted to a three-quarter movement access (left-in/right-in/right-out only).

## **SHORT-TERM TOTAL TRAFFIC**

Figure 9 shows the short-term total traffic volumes. The short-term total traffic volumes are the sum of the short-term background traffic volumes (from Figure 3), plus the site-generated traffic volumes (from Figure 7). The short-term total traffic volumes assume the site access to Jackson Creek Parkway remains a full-movement intersection in the short term.

## **2040 TOTAL TRAFFIC**

Figures 10 and 11 show the total traffic volumes for 2040. The 2040 total traffic volumes are the sum of the 2040 background traffic volumes (from Figures 4 and 5) plus the buildout site-generated traffic volumes (from Figures 7 and 8). The traffic volumes shown in Figure 10 assume the proposed site access point remains open as a full-movement intersection and is shared with the parcel to the north. The traffic volumes shown in Figure 11 assume this access has been restricted to a three-quarter movement access (left-in/right-in/right-out only).

## **PROJECTED 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.

<b>Table 2</b>		
<b>Intersection Levels of Service Delay Ranges</b>		
<b>Level of Service</b>	<b>Signalized Intersections</b>	<b>Unsignalized Intersections</b>
	<b>Control Delay (seconds per vehicle)</b>	
A	10 sec or less	10 sec or less
B	10-20 sec	10-15 sec
C	20-35 sec	15-25 sec
D	35-55 sec	25-35 sec
E	55-80 sec	35-50 sec
F	80 sec or more	50 sec or more

The intersections in the vicinity of the site have been analyzed to determine the projected levels of service for the short-term background, 2040 background, short-term total, and 2040 total traffic volumes. The Stop-sign-controlled intersections were analyzed using the unsignalized method of analysis procedures outlined in the *Highway Capacity Manual, 2010 Edition* by the Transportation Research Board and the signalized intersections were analyzed using Synchro. Figures 3, 4, 8, and 9 show the level of service analysis results. The level of service reports are attached.

### **Jackson Creek Parkway/Harness Road**

The westbound left-turn movement at the intersection of Jackson Creek Parkway and Harness Road is projected to operate at LOS F during the afternoon peak hour based on the short-term background and total traffic volumes assuming the existing two-lane cross section of Jackson Creek Parkway and two-way Stop-sign control. It is unlikely that this intersection would meet a traffic signal warrant based on this short-term scenario. An alternative to the westbound left turn at this intersection exists. During peak periods motorists would have the option of using southbound Bowstring Road and Leather Chaps to reach a signalized intersection. Note: it is our understanding that there will be an interim period of time when the Harness Road connection to Jackson Creek Parkway will only provide access to the mini-storage development and this site (secondary access to this site) and will not extend east to Bowstring Road. By 2040 it was assumed that this intersection would be signalized. All movements are projected to operate at a satisfactory level of service as a signal-controlled intersection.

### **Jackson Creek Parkway/Site Access**

All movements at the proposed site access to Jackson Creek Parkway are projected to operate at level of service D or better during the peak hours based on the projected short-term total traffic volumes assuming the existing two-lane cross section of Jackson Creek Parkway and assuming the

access is a full-movement Stop-sign-controlled intersection. By 2040 Jackson Creek Parkway will likely be improved to provide two through lanes in each direction and a raised center median. If the site access remains open as a full-movement intersection the westbound approach is projected to operate at LOS E during the afternoon peak hour. If this access is restricted to three-quarter movement (left-in/right-in/right-out only) all approaches are projected to operate at LOS B or better.

## **TRAFFIC SIGNAL WARRANT ANALYSIS**

### **Jackson Creek Parkway/Harness Road**

The intersection of Jackson Creek Parkway/Harness Road was analyzed to determine if a Four-Hour Vehicular Volume Traffic Signal Warrant would be met or close to being met based on the projected short-term total traffic volumes. This analysis assumes Harness Road constructed from Jackson Creek Parkway to the existing section just east of Bowstring Road but not extended further northeast to Higby Road. The short-term total analysis also assumes the existing two-lane cross section on Jackson Creek Parkway. Figure 12 shows the results of the analysis. As shown in Figure 12 this intersection is **not** projected to meet the thresholds for a Four-Hour Vehicular Volume Traffic Signal Warrant during the morning and afternoon peak hours based on the short-term scenario.

## **CONCLUSIONS AND RECOMMENDATIONS**

Based on the preceding analysis, the following conclusions and recommendations can be drawn regarding the traffic impacts of the Jackson Creek Senior Center.

1. The site is expected to generate about 370 new vehicle-trips on the average weekday, with about one-half entering and one-half exiting the site in a 24-hour period. During the morning peak hour about 11 vehicles would enter and nine vehicles would exit the site. During the afternoon peak hour about 14 vehicles would enter and 16 vehicles would exit the site.
2. The westbound left-turn movement at the intersection of Jackson Creek Parkway and Harness Road is projected to operate at LOS F during the afternoon peak hour based on both background and total short-term traffic volumes assuming the existing two-lane cross section of Jackson Creek Parkway and two-way Stop-sign control. It is unlikely that this intersection would meet a traffic signal warrant based on this short-term scenario. An alternative to the westbound left turn at this intersection exists. During peak periods motorists would have the option of using southbound Bowstring Road and Leather Chaps to reach a signalized intersection. By 2040 it was assumed that this intersection would be signalized. All movements are projected to operate at a satisfactory level of service as a signal-controlled intersection.
3. All movements at the proposed site access to Jackson Creek Parkway are projected to operate at level of service D or better during the peak hours based on the projected short-term total traffic volumes assuming the existing two-lane cross section of Jackson Creek Parkway and assuming the access is a full-movement Stop-sign-controlled intersection. By 2040 Jackson Creek Parkway will likely be improved to provide two through lanes in each direction and a

raised center median. If the site access remains open as a full-movement intersection the westbound approach is projected to operate at LOS E during the afternoon peak hour. If this access is restricted to three-quarter movement (left-in/right-in/right-out only) all approaches are projected to operate at LOS B or better.

4. No auxiliary turn lanes at the site access would be required on Jackson Creek Parkway based on the existing two-lane cross section of Jackson Creek Parkway and the projected short-term total traffic volumes. Although not required by code, the applicant will be installing a southbound left-turn bay with sufficient length to accommodate the southbound left-turn volume turning into the site. This will prevent left turning vehicles from blocking southbound through traffic. When Jackson Creek Parkway is improved to provide two through lanes in each direction with a raised center median a southbound left-turn lane for the site access should be included in the design.
5. It is our understanding that there will be an interim period of time when the Harness Road connection to Jackson Creek Parkway will only provide access to the mini-storage development and this site (secondary access to this site) and will not extend east to Bowstring Road. A northbound right-turn lane at the intersection of Harness/Jackson Creek Parkway would not be required during this interim period as the northbound right turning volumes generated by this Senior Living project plus the mini storage traffic would not exceed the turning volume threshold requiring this right-turn lane during this interim period. A northbound right-turn acceleration lane at this intersection is not required by code. It is our understanding that the southbound left-turn lane at this intersection will be installed with the connection of Harness between Jackson Creek Parkway and Bowstring Road. Until this connection occurs, the intersection will only provide the secondary access to the Senior Living and the access to mini storage facility.

\* \* \* \* \*

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:br

Enclosures: Table 1  
Figures 1-12  
Site Plan  
Traffic Count Reports  
Level of Service Reports



**Table 1**  
**Trip Generation Estimate**  
**Jackson Creek Senior Living**

Land Use Code	Land Use Description	Trip Generation Units	Trip Generation Rates <sup>(1)</sup>					Total Trips Generated				
			Average Weekday Traffic	Morning Peak Hour		Afternoon Peak Hour		Average Weekday Traffic	Morning Peak Hour		Afternoon Peak Hour	
				In	Out	In	Out		In	Out		
254	Assisted Living	104 Beds	2.66	0.09	0.05	0.10	0.12	277	9	5	10	13
252	Senior Adult Housing - Attached	24 Occ DU <sup>(2)</sup>	3.44	0.07	0.13	0.14	0.12	83	2	3	3	3
								359	11	8	13	16

Notes:

(1) Source: "*Trip Generation, 9th Edition, 2012*" by the Institute of Transportation Engineers (ITE)

(2) Occ DU = occupied dwelling unit (assumes 100% occupancy)

Source: LSC Transportation Consultants, Inc.



Approximate Scale  
Scale: 1" = 2,500'

Figure 1  
**Vicinity  
Map**

Jackson Creek Senior Living (LSC #164190)



Approximate Scale  
Scale: 1" = 1,000'

#### LEGEND:



= 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

$\frac{C}{D}$

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



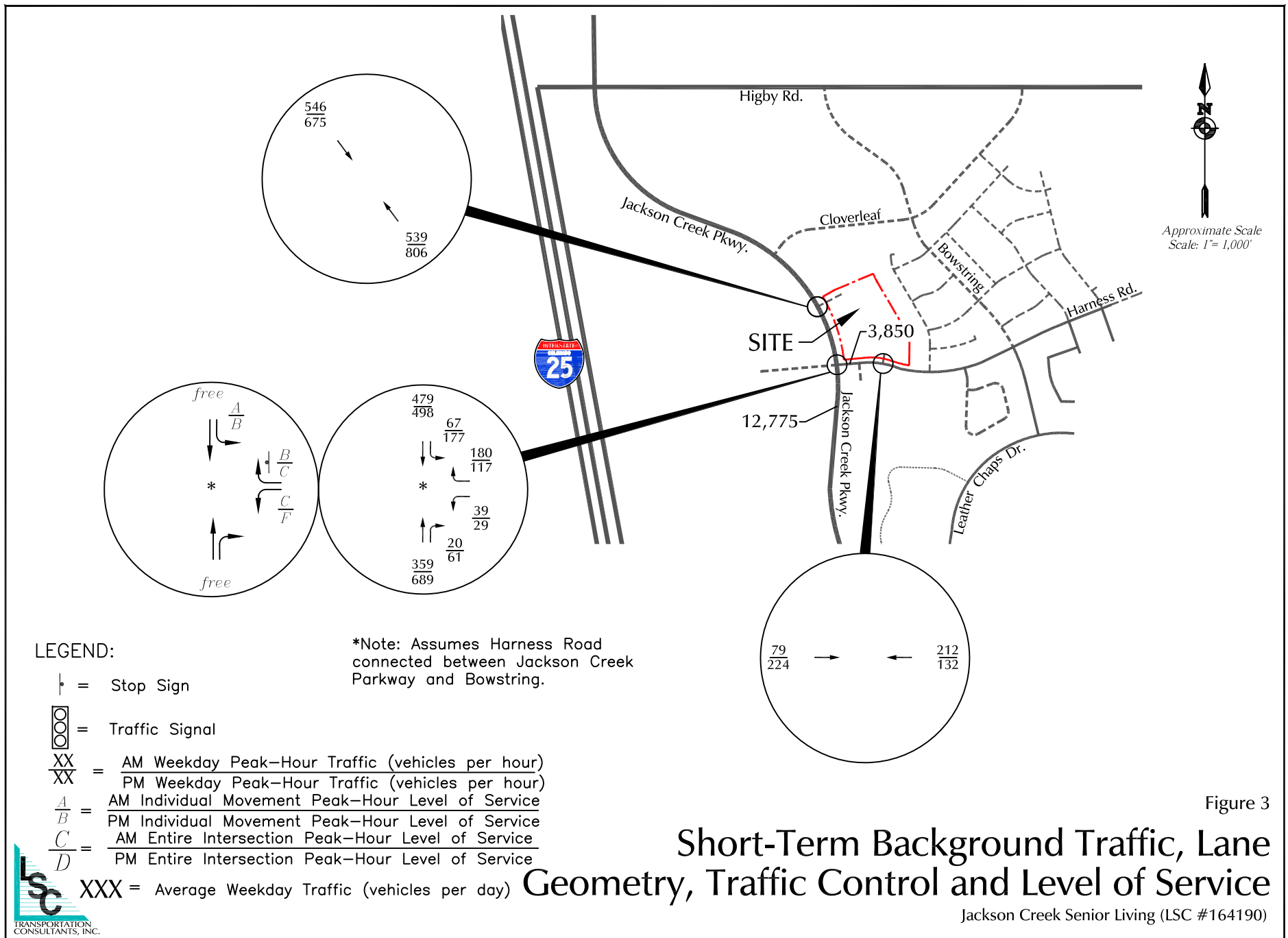
Based on counts by LSC March 2016

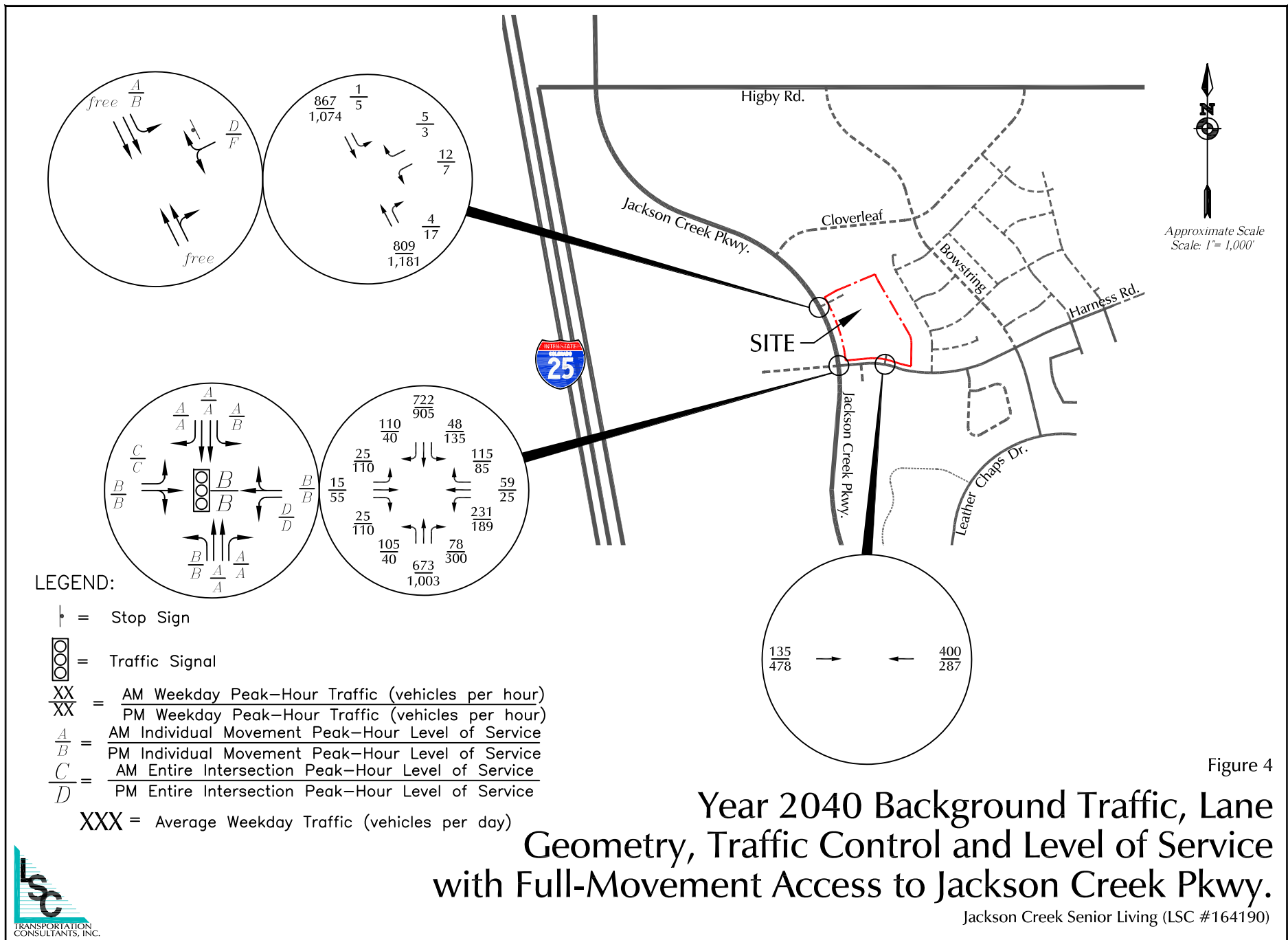


Figure 2

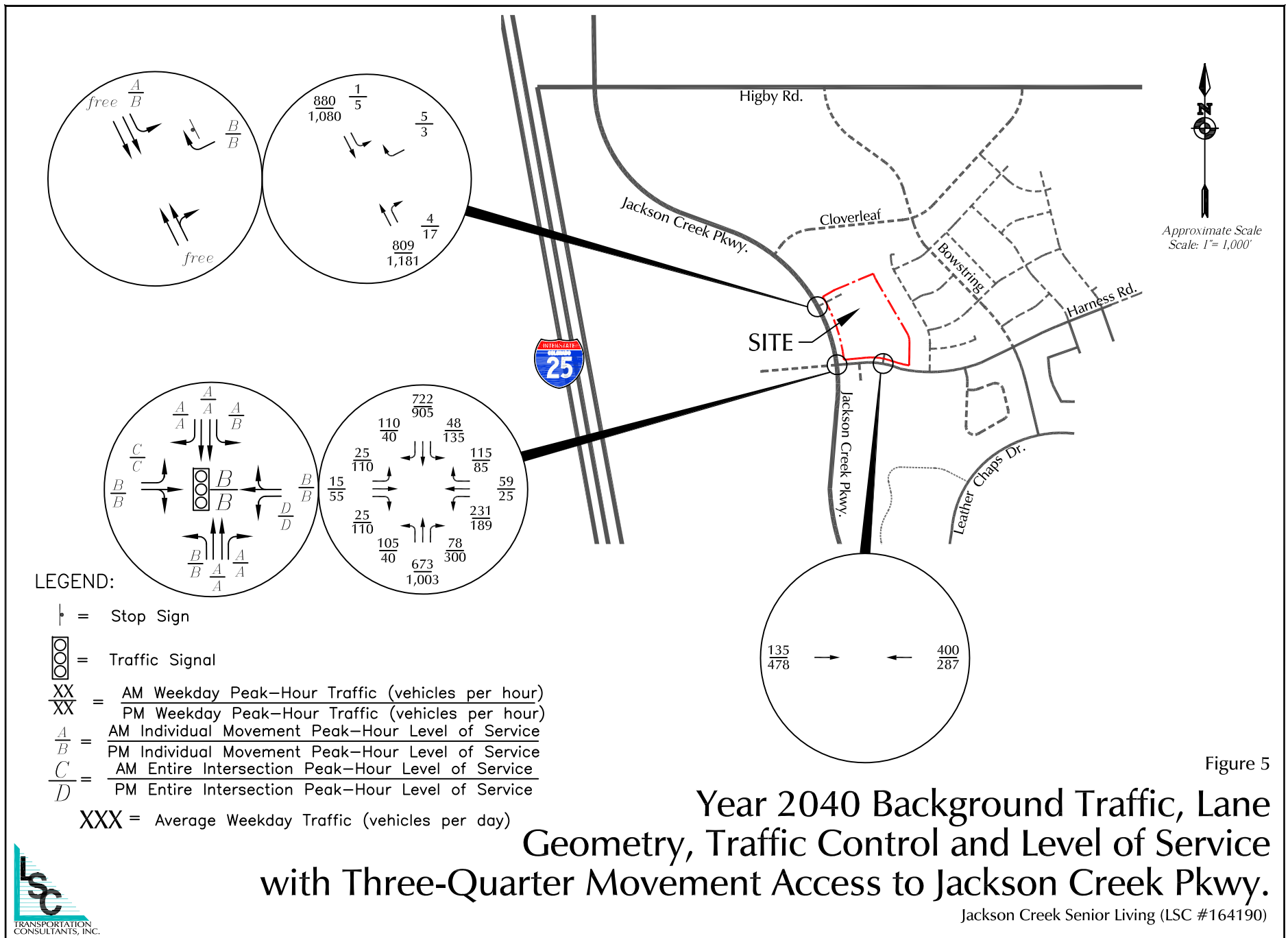
## Existing Traffic, Lane Geometry, Traffic Control and Level of Service

Jackson Creek Senior Living (LSC #164190)









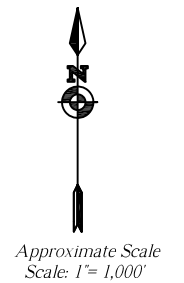
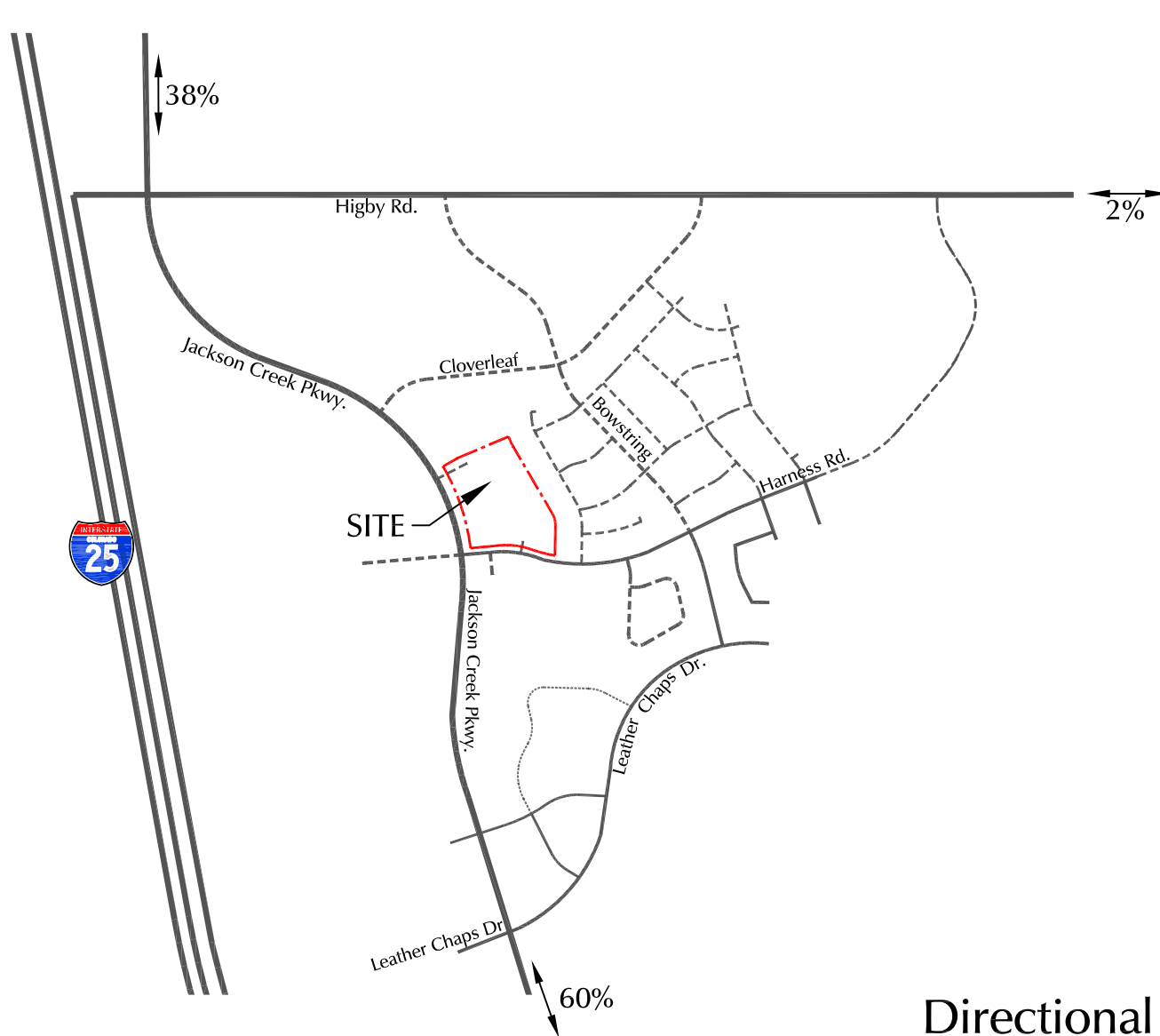
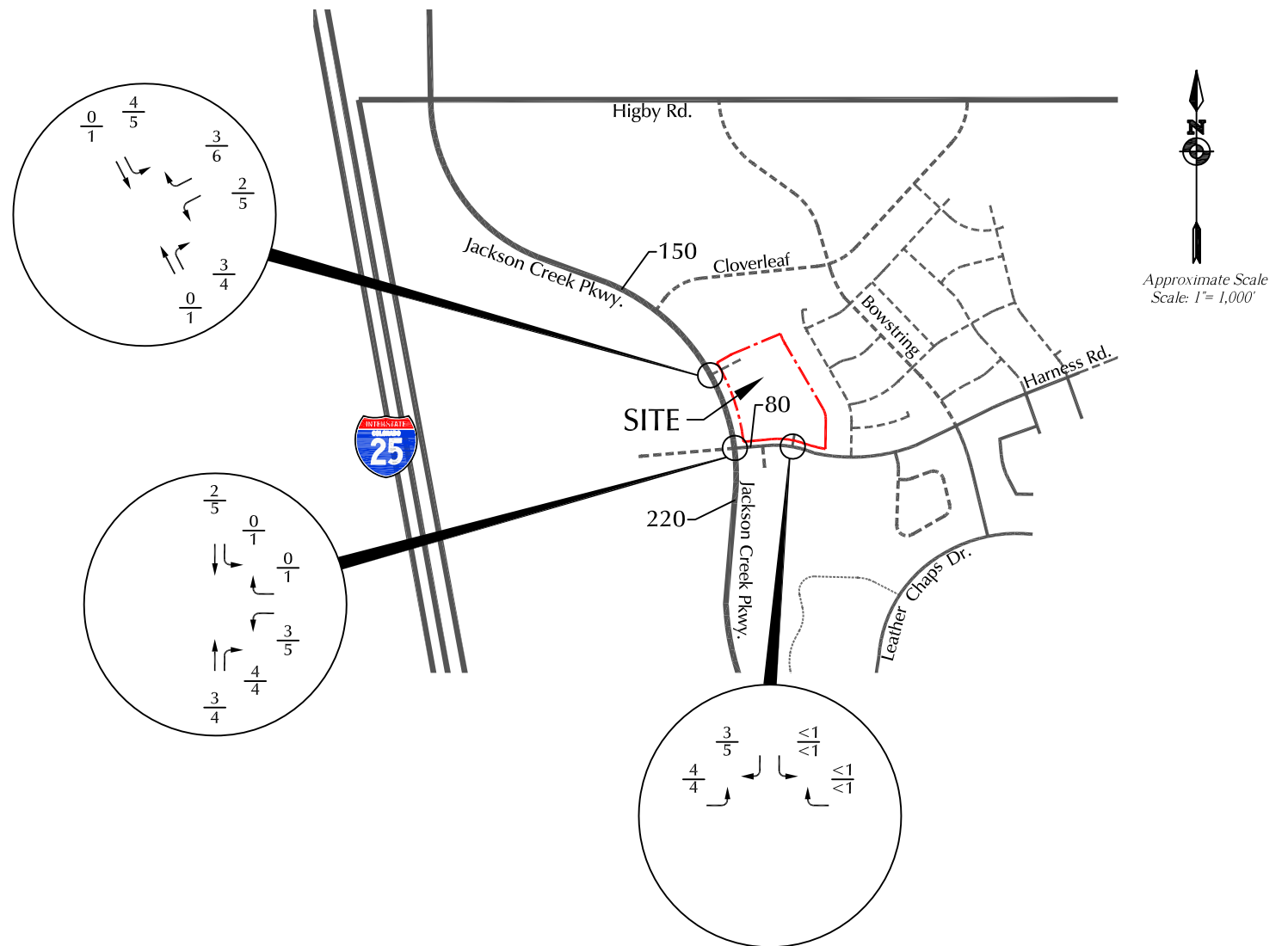


Figure 6

## Directional Distribution of Site-Generated Traffic

Jackson Creek Senior Living (LSC #164190)



LEGEND:

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

XXX = Average Weekday Traffic (vehicles per day)

Figure 7

## Assignment of Site-Generated Traffic with Full-Movement Access to Jackson Creek Pkwy.

Jackson Creek Senior Living (LSC #164190)



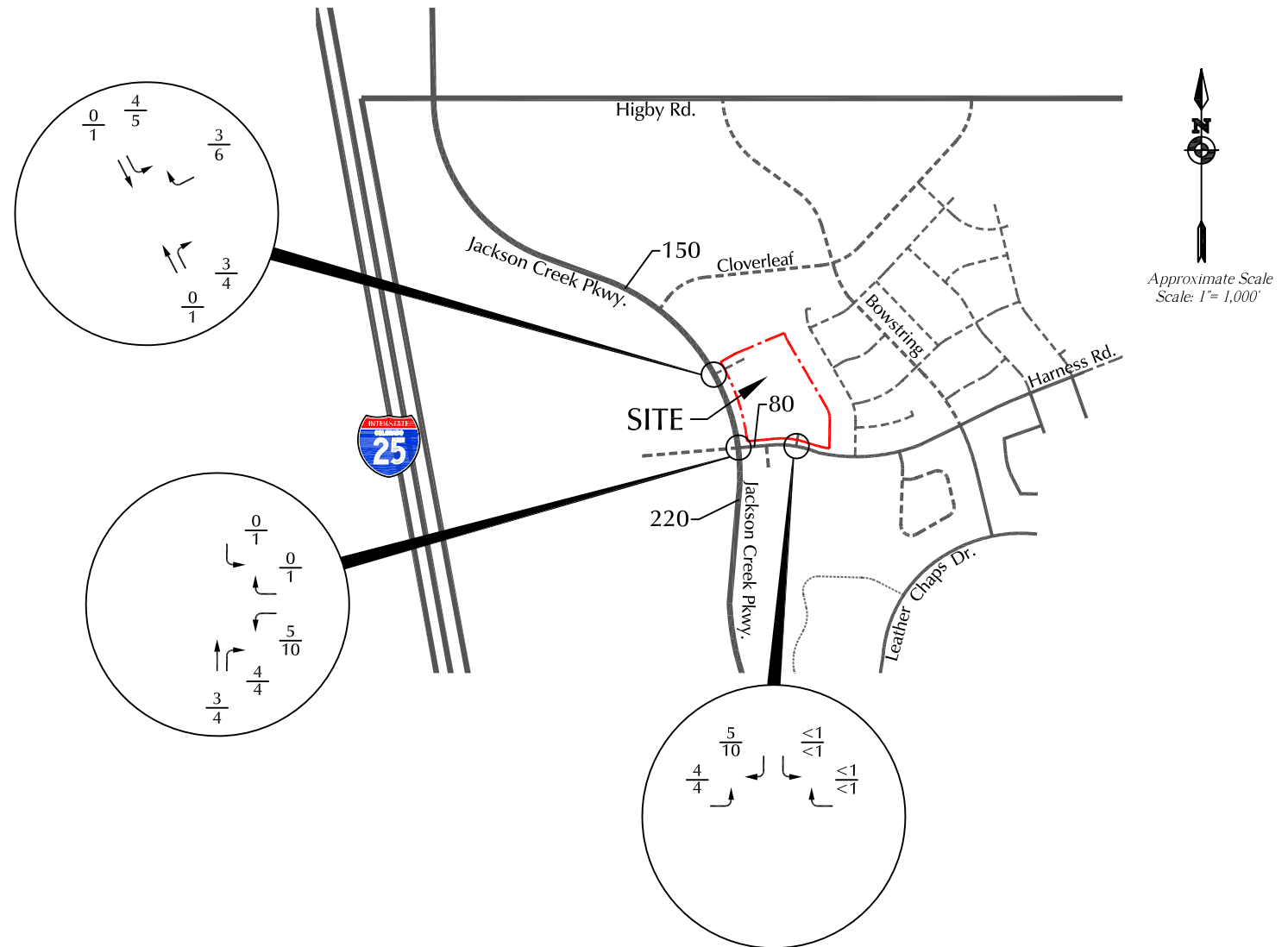


Figure 8

## Assignment of Site-Generated Traffic with Three-Quarter Movement Access to Jackson Creek Pkwy.

Jackson Creek Senior Living (LSC #164190)

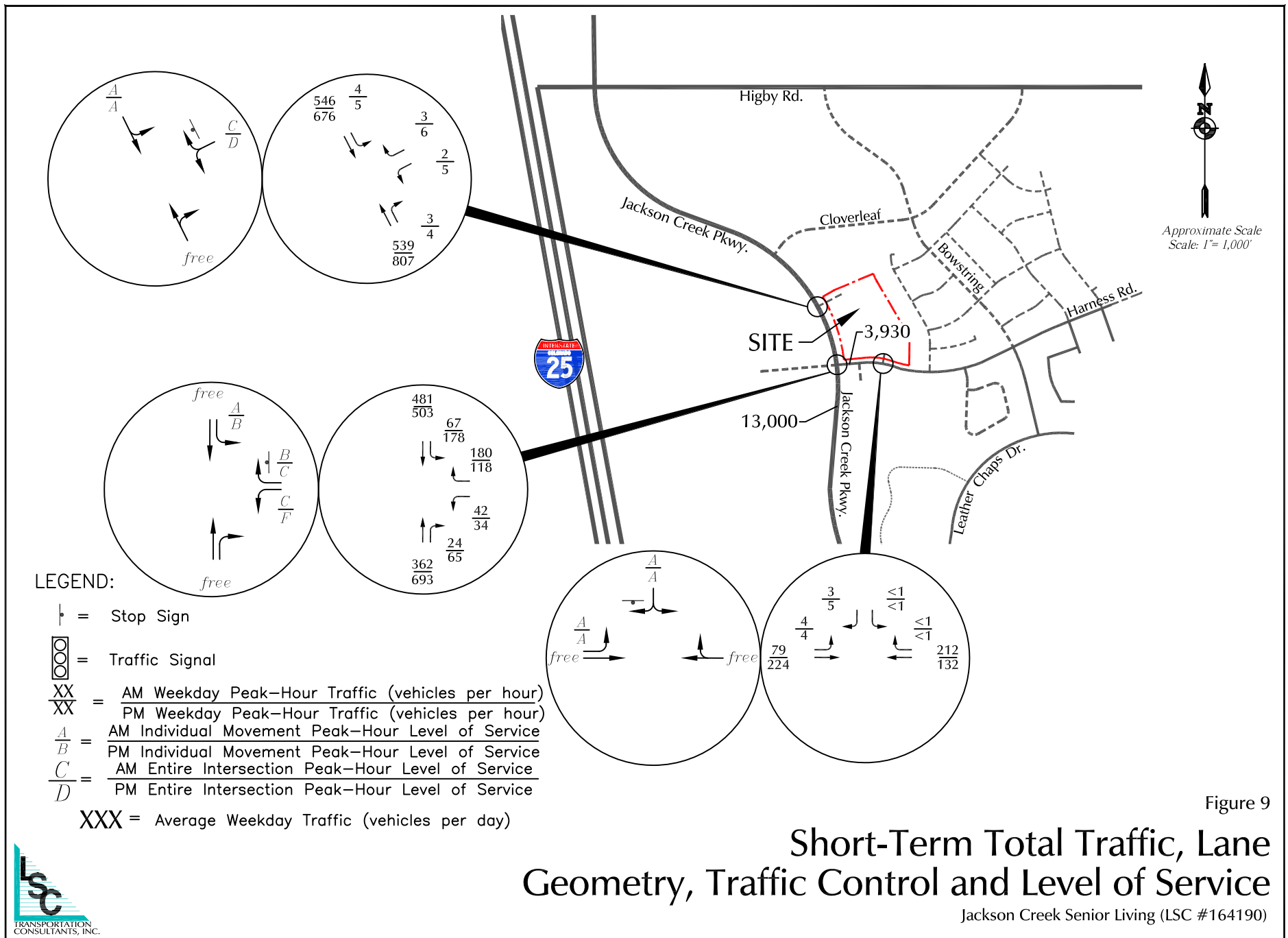
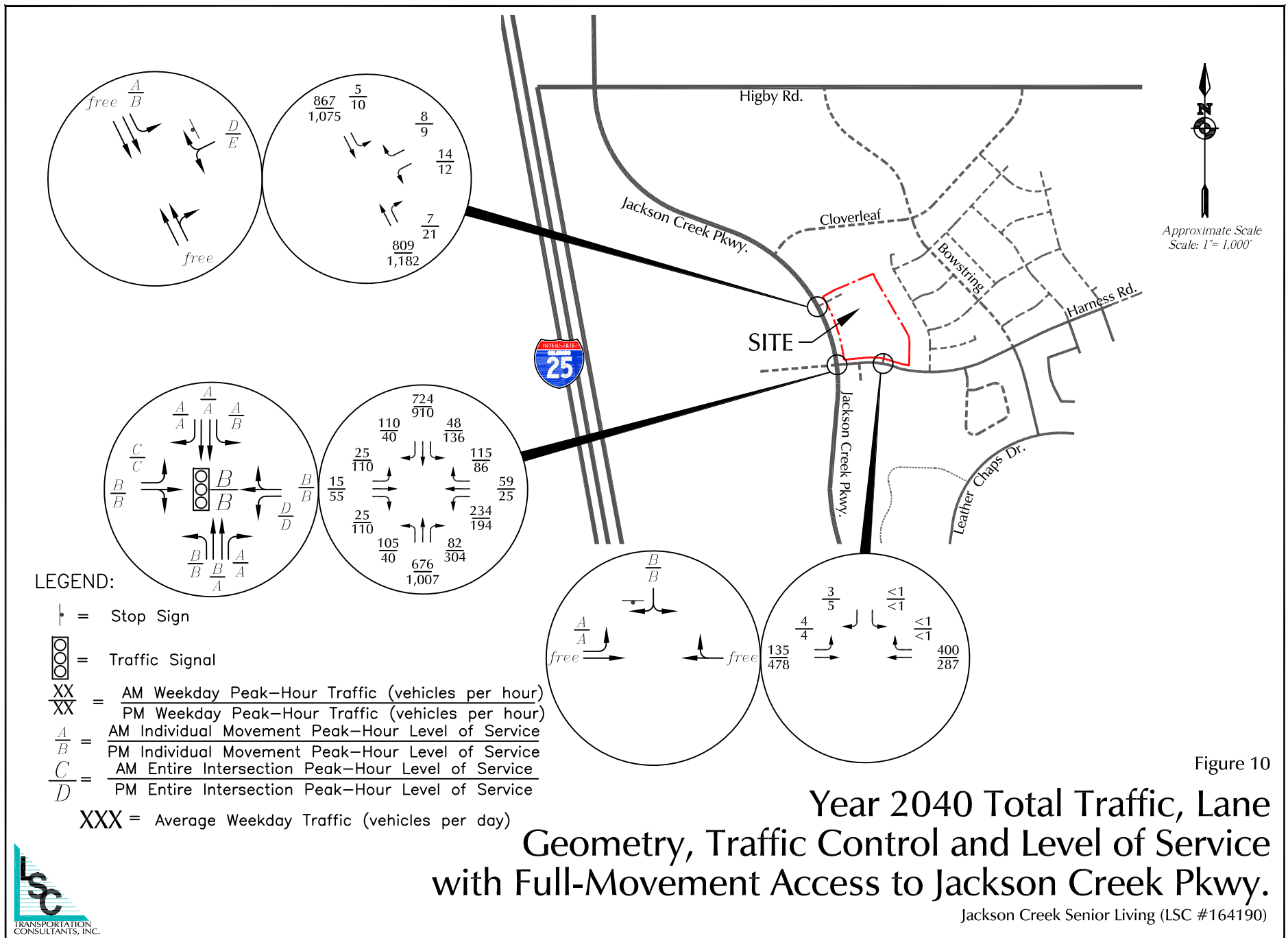
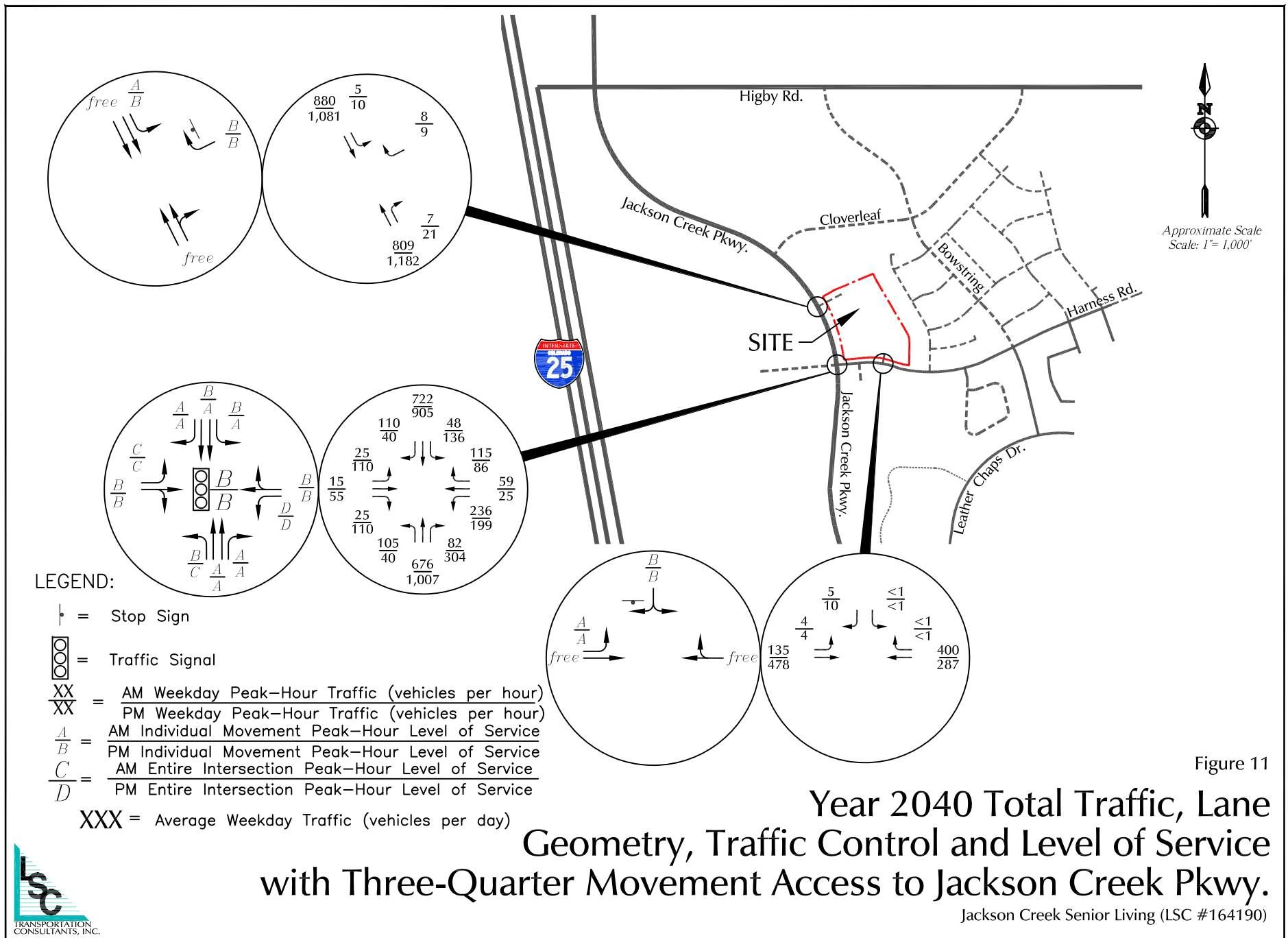


Figure 9

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

Jackson Creek Senior Living (LSC #164190)





Jackson Creek Parkway/Harness Road  
Figure 4C-1. Warrant 2, Four Hour Vehicular Volume

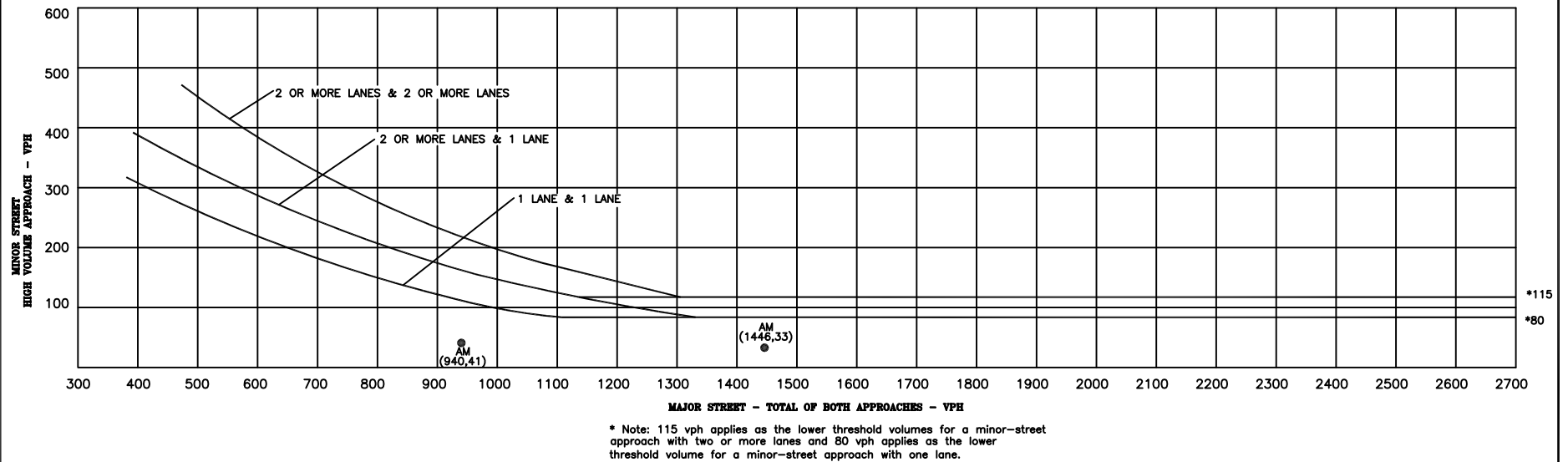


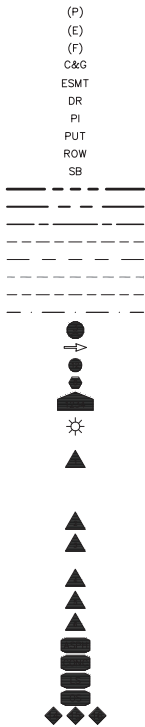
Figure 12

# Traffic Signal Warrant Analysis Jackson Creek Pkwy./Harness Rd. Short-Term Total Traffic \*

Jackson Creek Senior Living (LSC #164190)

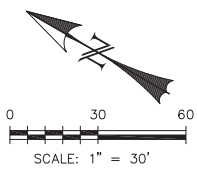
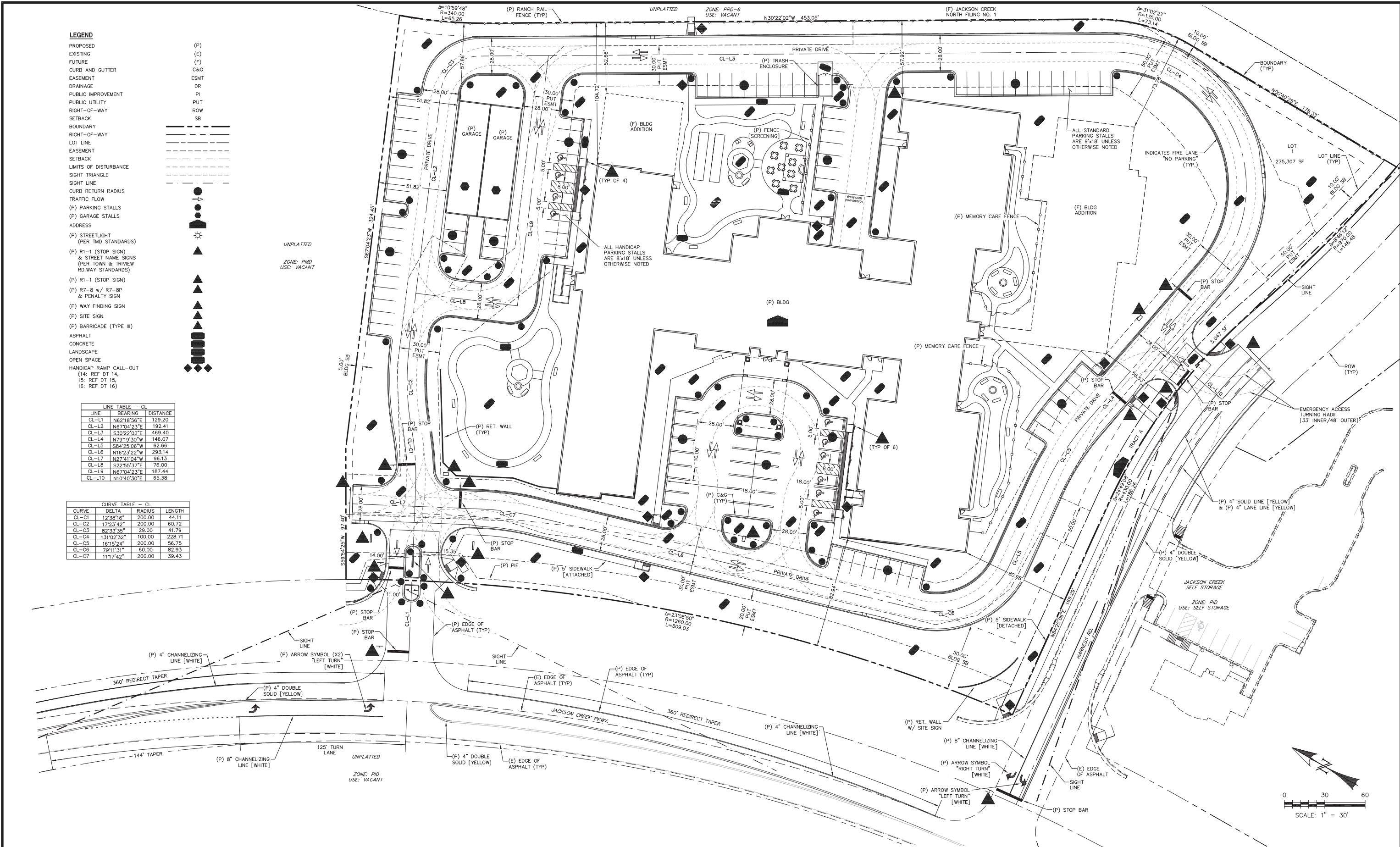
**LEGEND**

PROPOSED (P)  
 EXISTING (E)  
 FUTURE (F)  
 CURB AND GUTTER C&G  
 EASEMENT ESMT  
 DRAINAGE DR  
 PUBLIC IMPROVEMENT PI  
 PUBLIC UTILITY PUT  
 RIGHT-OF-WAY ROW  
 SETBACK SB  
 BOUNDARY  
 RIGHT-OF-WAY  
 LOT LINE  
 EASEMENT  
 SETBACK  
 LIMITS OF DISTURBANCE  
 SIGHT TRIANGLE  
 SIGHT LINE  
 CURB RETURN RADIUS  
 TRAFFIC FLOW  
 (P) PARKING STALLS  
 (P) GARAGE STALLS  
 ADDRESS  
 (P) STREETLIGHT (PER TMD STANDARDS)  
 (P) R1-1 (STOP SIGN) & STREET NAME SIGNS (PER TOWN & TRIVIEW RD. WAY STANDARDS)  
 (P) R1-1 (STOP SIGN)  
 (P) R7-8 w/ R7-8P & PENALTY SIGN  
 (P) WAY FINDING SIGN  
 (P) SITE SIGN  
 (P) BARRICADE (TYPE III)  
 ASPHALT  
 CONCRETE  
 LANDSCAPE  
 OPEN SPACE  
 HANDICAP RAMP CALL-OUT (14: REF DT 14, 15: REF DT 15, 16: REF DT 16)



LINE TABLE - CL		
LINE	BEARING	DISTANCE
CL-L1	N62°18'56"E	129.20
CL-L2	N67°04'23"E	192.41
CL-L3	S30°22'02"E	469.40
CL-L4	N79°19'30"W	146.07
CL-L5	S84°25'06"W	62.66
CL-L6	N16°23'22"W	293.14
CL-L7	N27°41'04"W	96.13
CL-L8	S22°55'37"E	76.00
CL-L9	N67°04'23"E	187.44
CL-L10	N10°40'30"E	65.38

CURVE TABLE - CL			
CURVE	DELTA	RADIUS	LENGTH
CL-C1	12°38'16"	200.00	44.11
CL-C2	17°23'42"	200.00	60.72
CL-C3	82°33'35"	29.00	41.79
CL-C4	131°02'32"	100.00	228.71
CL-C5	16°15'24"	200.00	56.75
CL-C6	79°11'31"	60.00	82.93
CL-C7	111°7'42"	200.00	39.43



REV.	DESCRIPTION	DATE
1	ADDRESS AGENCY COMMENTS	06/30/16



PREPARED FOR:  
 JACKSON CREEK  
 ASSISTED LIVING, LLC  
 540 ELKTON DRIVE  
 SUITE 202  
 COLORADO SPRINGS, CO 80907  
 (719) 522-0500



JACKSON CREEK  
 SENIOR LIVING  
 PRELIMINARY/FINAL PD SITE PLAN  
 - SITE PLAN -

DESIGNED BY: MGP	DRAWN BY: MGP
SCALE: 1"=30'	DATE: 07/07/16
JOB NUMBER: 91601	SHEET: PD-2



LSC Transportation Consultants, Inc.  
**545 E. Pikes Peak Ave., #210**  
**Colorado Springs, CO 80903**  
**(719) 633-2868**

LSC Transportation Consultants, Inc.

Site Name : Jackson Creek Pkwy - Higby Rd AM  
 Site Code : 00164190  
 Start Date : 03/10/2016  
 Page No : 1

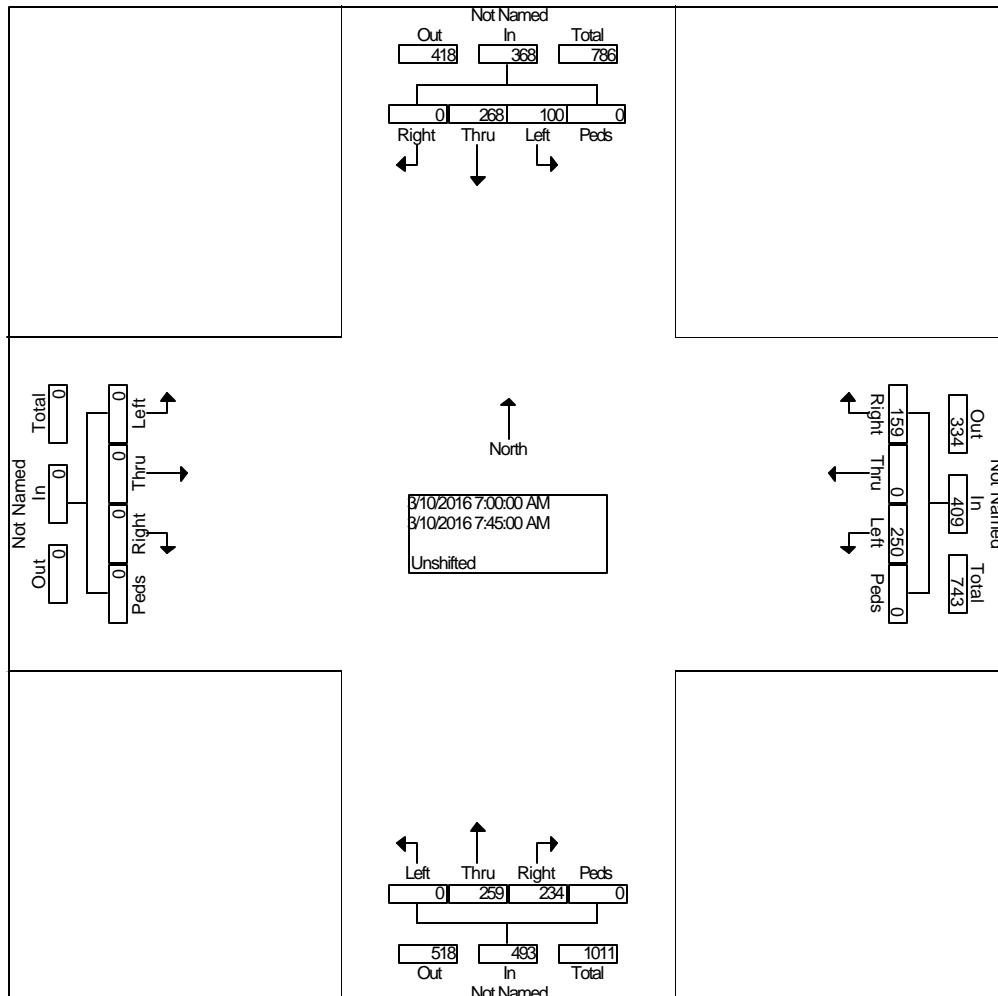
Groups Printed- Unshifted

	From North				From East				From South				From West				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
06:30 AM	0	26	9	0	21	0	36	0	0	33	0	0	0	0	0	0	125
06:45 AM	0	29	8	0	22	0	39	0	16	34	0	0	0	0	0	0	148
Total	0	55	17	0	43	0	75	0	16	67	0	0	0	0	0	0	273
07:00 AM	0	44	25	0	48	0	63	0	66	60	0	0	0	0	0	0	306
07:15 AM	0	81	48	0	57	0	99	0	110	78	0	0	0	0	0	0	473
07:30 AM	0	66	18	0	41	0	61	0	43	52	0	0	0	0	0	0	281
07:45 AM	0	77	9	0	13	0	27	0	15	69	0	0	0	0	0	0	210
Total	0	268	100	0	159	0	250	0	234	259	0	0	0	0	0	0	1270
08:00 AM	0	55	10	0	19	0	32	0	8	35	0	0	0	0	0	0	159
08:15 AM	0	55	7	0	12	0	32	0	11	62	0	0	0	0	0	0	179
Grand Total	0	433	134	0	233	0	389	0	269	423	0	0	0	0	0	0	1881
Apprch %	0.0	76.4	23.6	0.0	37.5	0.0	62.5	0.0	38.9	61.1	0.0	0.0	0.0	0.0	0.0	0.0	
Total %	0.0	23.0	7.1	0.0	12.4	0.0	20.7	0.0	14.3	22.5	0.0	0.0	0.0	0.0	0.0	0.0	

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 Site Code : 00164190  
 Start Date : 03/10/2016  
 Page No : 2

	From North					From East					From South					From West					
Start Time	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Int. Total
Peak Hour From 06:30 AM to 08:15 AM - Peak 1 of 1																					
Intersection	07:00 AM																				
Volume	0	268	100	0	368	159	0	250	0	409	234	259	0	0	493	0	0	0	0	0	1270
Percent	0.0	72.8	27.2	0.0		38.9	0.0	61.1	0.0		47.5	52.5	0.0	0.0		0.0	0.0	0.0	0.0		
07:15 Volume	0	81	48	0	129	57	0	99	0	156	110	78	0	0	188	0	0	0	0	0	473
Peak Factor																					0.671
High Int.	07:15 AM					07:15 AM					07:15 AM					6:15:00 AM					
Volume	0	81	48	0	129	57	0	99	0	156	110	78	0	0	188						
Peak Factor	0.713					0.655					0.656										





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 Site Code : 00164190  
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 Page No : 1

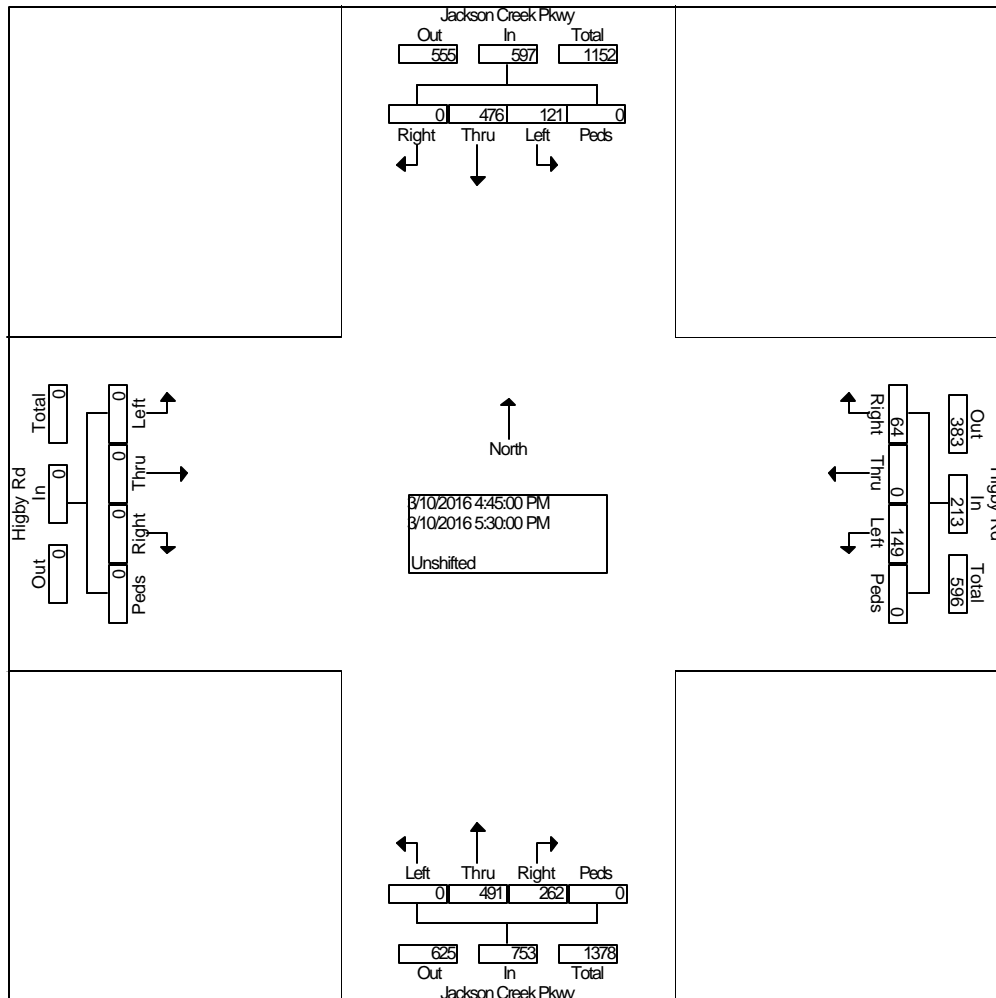
Groups Printed- Unshifted

	Jackson Creek Pkwy From North				Higby Rd From East				Jackson Creek Pkwy From South				Higby Rd From West				Int. Total
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
04:00 PM	0	120	20	0	9	0	28	0	38	129	0	0	0	0	0	0	344
04:15 PM	0	116	21	0	17	0	25	0	51	114	0	0	0	0	0	0	344
04:30 PM	0	121	24	0	17	0	20	0	57	108	0	0	0	0	0	0	347
04:45 PM	0	116	28	0	13	0	27	0	60	132	0	0	0	0	0	0	376
Total	0	473	93	0	56	0	100	0	206	483	0	0	0	0	0	0	1411
05:00 PM	0	114	33	0	16	0	28	0	75	119	0	0	0	0	0	0	385
05:15 PM	0	140	29	0	15	0	42	0	61	132	0	0	0	0	0	0	419
05:30 PM	0	106	31	0	20	0	52	0	66	108	0	0	0	0	0	0	383
05:45 PM	0	102	24	0	18	0	47	0	59	99	0	0	0	0	0	0	349
Total	0	462	117	0	69	0	169	0	261	458	0	0	0	0	0	0	1536
Grand Total	0	935	210	0	125	0	269	0	467	941	0	0	0	0	0	0	2947
Apprch %	0.0	81.7	18.3	0.0	31.7	0.0	68.3	0.0	33.2	66.8	0.0	0.0	0.0	0.0	0.0	0.0	
Total %	0.0	31.7	7.1	0.0	4.2	0.0	9.1	0.0	15.8	31.9	0.0	0.0	0.0	0.0	0.0	0.0	

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 Page No : 2

	Jackson Creek Pkwy From North					Higby Rd From East					Jackson Creek Pkwy From South					Higby Rd From West					
Start Time	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Int. Total
Peak Hour From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Intersection	04:45 PM																				
Volume	0	476	121	0	597	64	0	149	0	213	262	491	0	0	753	0	0	0	0	0	1563
Percent	0.0	79.7	20.3	0.0		30.0	0.0	70.0	0.0		34.8	65.2	0.0	0.0		0.0	0.0	0.0	0.0		
05:15 Volume	0	140	29	0	169	15	0	42	0	57	61	132	0	0	193	0	0	0	0	0	419
Peak Factor																					0.933
High Int.	05:15 PM					05:30 PM					05:00 PM					3:45:00 PM					
Volume	0	140	29	0	169	20	0	52	0	72	75	119	0	0	194						
Peak Factor	0.883										0.740					0.970					



HCM 2010 TWSC  
4: Jackson Creek Pkwy & Harness Rd

Short-Term Background Traffic  
AM Peak Hour

Intersection						
Int Delay, s/veh	3.3					
Movement	WBL	WBR		NBT	NBR	SBL SBT
Vol, veh/h	39	180		359	20	67 479
Conflicting Peds, #/hr	0	0		0	0	0 0
Sign Control	Stop	Stop		Free	Free	Free Free
RT Channelized	-	None		-	None	- None
Storage Length	0	0		-	155	255 -
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	42	196		390	22	73 521
Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1056	390		0	0	390 0
Stage 1	390	-		-	-	- -
Stage 2	666	-		-	-	- -
Critical Hdwy	6.42	6.22		-	-	4.12 -
Critical Hdwy Stg 1	5.42	-		-	-	- -
Critical Hdwy Stg 2	5.42	-		-	-	- -
Follow-up Hdwy	3.518	3.318		-	-	2.218 -
Pot Cap-1 Maneuver	250	658		-	-	1169 -
Stage 1	684	-		-	-	- -
Stage 2	511	-		-	-	- -
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	234	658		-	-	1169 -
Mov Cap-2 Maneuver	234	-		-	-	- -
Stage 1	684	-		-	-	- -
Stage 2	479	-		-	-	- -
Approach	WB		NB		SB	
HCM Control Delay, s	14.8		0		1	
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	234	658	1169	-
HCM Lane V/C Ratio	-	-	0.181	0.297	0.062	-
HCM Control Delay (s)	-	-	23.8	12.8	8.3	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.6	1.2	0.2	-

HCM 2010 TWSC  
4: Jackson Creek Pkwy & Harness Rd

Short-Term Background Traffic  
PM Peak Hour

Intersection						
Int Delay, s/veh	3.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	29	117	689	61	177	498
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	155	255	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	32	127	749	66	192	541
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	1675	749	0	0	749	0
Stage 1	749	-	-	-	-	-
Stage 2	926	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	105	412	-	-	860	-
Stage 1	467	-	-	-	-	-
Stage 2	386	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	82	412	-	-	860	-
Mov Cap-2 Maneuver	82	-	-	-	-	-
Stage 1	467	-	-	-	-	-
Stage 2	300	-	-	-	-	-
Approach	WB		NB		SB	
HCM Control Delay, s	28.8		0		2.7	
HCM LOS	D					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	82	412	860	-
HCM Lane V/C Ratio	-	-	0.384	0.309	0.224	-
HCM Control Delay (s)	-	-	74	17.6	10.4	-
HCM Lane LOS	-	-	F	C	B	-
HCM 95th %tile Q(veh)	-	-	1.5	1.3	0.9	-

HCM 2010 TWSC  
3: Jackson Creek Pkwy & Site Access

Short-Term Total Traffic  
AM Peak Hour

Intersection						
Int Delay, s/veh	0.1					
Movement	WBL	WBR		NBT	NBR	SBL SBT
Vol, veh/h	2	3		539	3	4 546
Conflicting Peds, #/hr	0	0		0	0	0 0
Sign Control	Stop	Stop		Free	Free	Free Free
RT Channelized	-	None		-	None	- None
Storage Length	0	-		-	-	- -
Veh in Median Storage, #	0	-		0	-	- 0
Grade, %	0	-		0	-	- 0
Peak Hour Factor	92	92		92	92	92 92
Heavy Vehicles, %	2	2		2	2	2 2
Mvmt Flow	2	3		586	3	4 593
Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1190	588		0	0	589 0
Stage 1	588	-		-	-	- -
Stage 2	602	-		-	-	- -
Critical Hdwy	6.42	6.22		-	-	4.12 -
Critical Hdwy Stg 1	5.42	-		-	-	- -
Critical Hdwy Stg 2	5.42	-		-	-	- -
Follow-up Hdwy	3.518	3.318		-	-	2.218 -
Pot Cap-1 Maneuver	207	509		-	-	986 -
Stage 1	555	-		-	-	- -
Stage 2	547	-		-	-	- -
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	206	509		-	-	986 -
Mov Cap-2 Maneuver	206	-		-	-	- -
Stage 1	555	-		-	-	- -
Stage 2	544	-		-	-	- -
Approach	WB		NB		SB	
HCM Control Delay, s	16.4		0		0.1	
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	
Capacity (veh/h)	-	-	320	986	-	
HCM Lane V/C Ratio	-	-	0.017	0.004	-	
HCM Control Delay (s)	-	-	16.4	8.7	0	
HCM Lane LOS	-	-	C	A	A	
HCM 95th %tile Q(veh)	-	-	0.1	0	-	

HCM 2010 TWSC  
4: Jackson Creek Pkwy & Harness Rd

Short-Term Total Traffic  
AM Peak Hour

Intersection						
Int Delay, s/veh	3.4					
Movement	WBL	WBR		NBT	NBR	SBL SBT
Vol, veh/h	42	180		362	24	67 481
Conflicting Peds, #/hr	0	0		0	0	0 0
Sign Control	Stop	Stop		Free	Free	Free Free
RT Channelized	-	None		-	None	- None
Storage Length	0	0		-	155	255 -
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	46	196		393	26	73 523
Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1061	393		0	0	393 0
Stage 1	393	-		-	-	- -
Stage 2	668	-		-	-	- -
Critical Hdwy	6.42	6.22		-	-	4.12 -
Critical Hdwy Stg 1	5.42	-		-	-	- -
Critical Hdwy Stg 2	5.42	-		-	-	- -
Follow-up Hdwy	3.518	3.318		-	-	2.218 -
Pot Cap-1 Maneuver	248	656		-	-	1166 -
Stage 1	682	-		-	-	- -
Stage 2	510	-		-	-	- -
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	232	656		-	-	1166 -
Mov Cap-2 Maneuver	232	-		-	-	- -
Stage 1	682	-		-	-	- -
Stage 2	478	-		-	-	- -
Approach	WB		NB		SB	
HCM Control Delay, s	15		0		1	
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	232	656	1166	-
HCM Lane V/C Ratio	-	-	0.197	0.298	0.062	-
HCM Control Delay (s)	-	-	24.3	12.8	8.3	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.7	1.2	0.2	-

HCM 2010 TWSC  
6: Harness Rd & Site Access

Short-Term Total Traffic  
AM Peak Hour

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	4	79	212	0	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	25	-	-	-	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	4	86	230	0	0	3
Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	230	0	-	0	325	230
Stage 1	-	-	-	-	230	-
Stage 2	-	-	-	-	95	-
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	-	-	-	669	809
Stage 1	-	-	-	-	808	-
Stage 2	-	-	-	-	929	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	1338	-	-	-	667	809
Mov Cap-2 Maneuver	-	-	-	-	692	-
Stage 1	-	-	-	-	808	-
Stage 2	-	-	-	-	926	-
Approach	EB		WB		SB	
HCM Control Delay, s	0.4		0		9.5	
HCM LOS					A	
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1338	-	-	-	809	
HCM Lane V/C Ratio	0.003	-	-	-	0.004	
HCM Control Delay (s)	7.7	-	-	-	9.5	
HCM Lane LOS	A	-	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0	

HCM 2010 TWSC  
3: Jackson Creek Pkwy & Site Access

Short-Term Total Traffic  
PM Peak Hour

Intersection						
Int Delay, s/veh	0.2					
Movement	WBL	WBR		NBT	NBR	SBL SBT
Vol, veh/h	5	6		807	4	5 676
Conflicting Peds, #/hr	0	0		0	0	0 0
Sign Control	Stop	Stop		Free	Free	Free Free
RT Channelized	-	None		-	None	- None
Storage Length	0	-		-	-	- -
Veh in Median Storage, #	0	-		0	-	- 0
Grade, %	0	-		0	-	- 0
Peak Hour Factor	92	92		92	92	92 92
Heavy Vehicles, %	2	2		2	2	2 2
Mvmt Flow	5	7		877	4	5 735
Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1625	879		0	0	882 0
Stage 1	879	-		-	-	- -
Stage 2	746	-		-	-	- -
Critical Hdwy	6.42	6.22		-	-	4.12 -
Critical Hdwy Stg 1	5.42	-		-	-	- -
Critical Hdwy Stg 2	5.42	-		-	-	- -
Follow-up Hdwy	3.518	3.318		-	-	2.218 -
Pot Cap-1 Maneuver	113	347		-	-	767 -
Stage 1	406	-		-	-	- -
Stage 2	469	-		-	-	- -
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	112	347		-	-	767 -
Mov Cap-2 Maneuver	112	-		-	-	- -
Stage 1	406	-		-	-	- -
Stage 2	464	-		-	-	- -
Approach	WB		NB		SB	
HCM Control Delay, s	26.7		0		0.1	
HCM LOS	D					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	
Capacity (veh/h)	-	-	178	767	-	
HCM Lane V/C Ratio	-	-	0.067	0.007	-	
HCM Control Delay (s)	-	-	26.7	9.7	0	
HCM Lane LOS	-	-	D	A	A	
HCM 95th %tile Q(veh)	-	-	0.2	0	-	



HCM 2010 TWSC  
4: Jackson Creek Pkwy & Harness Rd

Short-Term Total Traffic  
PM Peak Hour

Intersection						
Int Delay, s/veh	4.3					
Movement	WBL	WBR		NBT	NBR	SBL SBT
Vol, veh/h	34	118		693	65	178 503
Conflicting Peds, #/hr	0	0		0	0	0 0
Sign Control	Stop	Stop		Free	Free	Free Free
RT Channelized	-	None		-	None	- None
Storage Length	0	0		-	155	255 -
Veh in Median Storage, #	0	-		0	-	- 0
Grade, %	0	-		0	-	- 0
Peak Hour Factor	92	92		92	92	92 92
Heavy Vehicles, %	2	2		2	2	2 2
Mvmt Flow	37	128		753	71	193 547
Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1687	753		0	0	753 0
Stage 1	753	-		-	-	- -
Stage 2	934	-		-	-	- -
Critical Hdwy	6.42	6.22		-	-	4.12 -
Critical Hdwy Stg 1	5.42	-		-	-	- -
Critical Hdwy Stg 2	5.42	-		-	-	- -
Follow-up Hdwy	3.518	3.318		-	-	2.218 -
Pot Cap-1 Maneuver	103	410		-	-	857 -
Stage 1	465	-		-	-	- -
Stage 2	382	-		-	-	- -
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	80	410		-	-	857 -
Mov Cap-2 Maneuver	80	-		-	-	- -
Stage 1	465	-		-	-	- -
Stage 2	296	-		-	-	- -
Approach	WB		NB		SB	
HCM Control Delay, s	32.5		0		2.7	
HCM LOS	D					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	80	410	857	-
HCM Lane V/C Ratio	-	-	0.462	0.313	0.226	-
HCM Control Delay (s)	-	-	83.9	17.7	10.4	-
HCM Lane LOS	-	-	F	C	B	-
HCM 95th %tile Q(veh)	-	-	1.9	1.3	0.9	-

HCM 2010 TWSC  
6: Harness Rd & Site Access

Short-Term Total Traffic  
PM Peak Hour

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	4	224	132	0	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	25	-	-	-	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	4	243	143	0	0	5
Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	143	0	-	0	395	143
Stage 1	-	-	-	-	143	-
Stage 2	-	-	-	-	252	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1440	-	-	-	610	905
Stage 1	-	-	-	-	884	-
Stage 2	-	-	-	-	790	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	1440	-	-	-	608	905
Mov Cap-2 Maneuver	-	-	-	-	654	-
Stage 1	-	-	-	-	884	-
Stage 2	-	-	-	-	788	-
Approach	EB		WB		SB	
HCM Control Delay, s	0.1		0		9	
HCM LOS					A	
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1440	-	-	-	905	
HCM Lane V/C Ratio	0.003	-	-	-	0.006	
HCM Control Delay (s)	7.5	-	-	-	9	
HCM Lane LOS	A	-	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0	

HCM 2010 TWSC  
3: Jackson Creek Pkwy & Site Access

2040 Background Traffic (Full Access)  
AM Peak Hour





















Intersection						
Int Delay, s/veh	0.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	12	5	809	4	1	867
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	5	852	4	1	913
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	1312	428	0	0	856	0
Stage 1	854	-	-	-	-	-
Stage 2	458	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	150	575	-	-	780	-
Stage 1	377	-	-	-	-	-
Stage 2	604	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	150	575	-	-	780	-
Mov Cap-2 Maneuver	150	-	-	-	-	-
Stage 1	377	-	-	-	-	-
Stage 2	603	-	-	-	-	-
Approach	WB		NB		SB	
HCM Control Delay, s	25.7		0		0	
HCM LOS	D					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	- 192	780	-		
HCM Lane V/C Ratio	-	- 0.096	0.001	-		
HCM Control Delay (s)	-	- 25.7	9.6	-		
HCM Lane LOS	-	- D	A	-		
HCM 95th %tile Q(veh)	-	- 0.3	0	-		

# Timings

## 4: Jackson Creek Pkwy & Harness Rd

# 2040 Background Traffic (Full Access)

AM Peak Hour

										
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Volume (vph)	25	15	231	59	105	673	78	48	722	110
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4		8		2			6	
Permitted Phases	4		8		2		2	6		6
Detector Phase	4	4	8	8	2	2	2	6	6	6
Switch Phase										
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	25.0	25.0	25.0	25.0	65.0	65.0	65.0	65.0	65.0	65.0
Total Split (%)	27.8%	27.8%	27.8%	27.8%	72.2%	72.2%	72.2%	72.2%	72.2%	72.2%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	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
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag										
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min	C-Min	C-Min
Act Effect Green (s)	22.0	22.0	22.0	22.0	58.0	58.0	58.0	58.0	58.0	58.0
Actuated g/C Ratio	0.24	0.24	0.24	0.24	0.64	0.64	0.64	0.64	0.64	0.64
v/c Ratio	0.10	0.10	0.73	0.38	0.27	0.31	0.08	0.12	0.33	0.11
Control Delay	24.7	13.2	44.0	14.4	10.6	8.3	2.2	7.0	6.7	1.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.7	13.2	44.0	14.4	10.6	8.3	2.2	7.0	6.7	1.4
LOS	C	B	D	B	B	A	A	A	A	A
Approach Delay		17.6		31.3		8.0			6.0	
Approach LOS		B		C		A			A	

## Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 83 (92%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 40

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.73

Intersection Signal Delay: 11.8

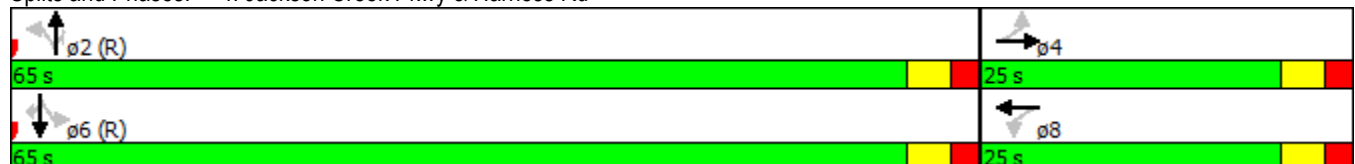
Intersection LOS: B

Intersection Capacity Utilization 58.6%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 4: Jackson Creek Pkwy & Harness Rd



HCM 2010 TWSC  
3: Jackson Creek Pkwy & Three-Quarter Access

2040 Background Traffic (3/4 Access)  
AM Peak Hour





















Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR		NBT	NBR	SBL SBT
Vol, veh/h	0	5		809	4	1 880
Conflicting Peds, #/hr	0	0		0	0	0 0
Sign Control	Stop	Stop		Free	Free	Free Free
RT Channelized	-	None		-	None	- None
Storage Length	-	0		-	-	150 -
Veh in Median Storage, #	0	-		0	-	- 0
Grade, %	0	-		0	-	- 0
Peak Hour Factor	92	92		95	95	95 95
Heavy Vehicles, %	2	2		2	2	2 2
Mvmt Flow	0	5		852	4	1 926
Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1319	428		0	0	856 0
Stage 1	854	-		-	-	- -
Stage 2	465	-		-	-	- -
Critical Hdwy	6.84	6.94		-	-	4.14 -
Critical Hdwy Stg 1	5.84	-		-	-	- -
Critical Hdwy Stg 2	5.84	-		-	-	- -
Follow-up Hdwy	3.52	3.32		-	-	2.22 -
Pot Cap-1 Maneuver	149	575		-	-	780 -
Stage 1	377	-		-	-	- -
Stage 2	599	-		-	-	- -
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	149	575		-	-	780 -
Mov Cap-2 Maneuver	149	-		-	-	- -
Stage 1	377	-		-	-	- -
Stage 2	598	-		-	-	- -
Approach	WB		NB		SB	
HCM Control Delay, s	11.3		0		0	
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	
Capacity (veh/h)	-	-	575	780	-	
HCM Lane V/C Ratio	-	-	0.009	0.001	-	
HCM Control Delay (s)	-	-	11.3	9.6	-	
HCM Lane LOS	-	-	B	A	-	
HCM 95th %tile Q(veh)	-	-	0	0	-	

# Timings

## 4: Jackson Creek Pkwy & Harness Rd

2040 Background Traffic (3/4 Access)

AM Peak Hour

										
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Volume (vph)	25	15	231	59	105	673	78	48	722	110
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4		8		2			6	
Permitted Phases	4		8		2		2	6		6
Detector Phase	4	4	8	8	2	2	2	6	6	6
Switch Phase										
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	25.0	25.0	25.0	25.0	65.0	65.0	65.0	65.0	65.0	65.0
Total Split (%)	27.8%	27.8%	27.8%	27.8%	72.2%	72.2%	72.2%	72.2%	72.2%	72.2%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	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
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag										
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min	C-Min	C-Min
Act Effect Green (s)	22.0	22.0	22.0	22.0	58.0	58.0	58.0	58.0	58.0	58.0
Actuated g/C Ratio	0.24	0.24	0.24	0.24	0.64	0.64	0.64	0.64	0.64	0.64
v/c Ratio	0.10	0.10	0.73	0.38	0.27	0.31	0.08	0.12	0.33	0.11
Control Delay	24.7	13.2	44.0	14.4	10.6	8.3	2.2	6.3	6.1	1.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.7	13.2	44.0	14.4	10.6	8.3	2.2	6.3	6.1	1.4
LOS	C	B	D	B	B	A	A	A	A	A
Approach Delay		17.6		31.3		8.0			5.5	
Approach LOS		B		C		A			A	

### Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 83 (92%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 40

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.73

Intersection Signal Delay: 11.6

Intersection LOS: B

Intersection Capacity Utilization 58.6%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 4: Jackson Creek Pkwy & Harness Rd



HCM 2010 TWSC  
3: Jackson Creek Pkwy & Site Access

2040 Background Traffic (Full Access)  
PM Peak Hour

Intersection						
Int Delay, s/veh	0.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	7	3	1181	17	5	1074
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	3	1243	18	5	1131
Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1828	631	0	0	1261	0
Stage 1	1252	-	-	-	-	-
Stage 2	576	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	68	424	-	-	547	-
Stage 1	233	-	-	-	-	-
Stage 2	525	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	67	424	-	-	547	-
Mov Cap-2 Maneuver	67	-	-	-	-	-
Stage 1	233	-	-	-	-	-
Stage 2	520	-	-	-	-	-
Approach	WB		NB		SB	
HCM Control Delay, s	50.4		0		0.1	
HCM LOS	F					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	- 90	547	-		
HCM Lane V/C Ratio	-	- 0.121	0.01	-		
HCM Control Delay (s)	-	- 50.4	11.6	-		
HCM Lane LOS	-	- F	B	-		
HCM 95th %tile Q(veh)	-	- 0.4	0	-		

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Two Way Analysis cannot be performed on Signalized Intersection.



HCM 2010 TWSC  
3: Jackson Creek Pkwy & Three-Quarter Access





















2040 Background Traffic (3/4 Access)  
PM Peak Hour

Intersection						
Int Delay, s/veh	0.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	0	3	1181	17	5	1080
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	3	1243	18	5	1137
Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1831	631	0	0	1261	0
Stage 1	1252	-	-	-	-	-
Stage 2	579	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	68	424	-	-	547	-
Stage 1	233	-	-	-	-	-
Stage 2	524	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	67	424	-	-	547	-
Mov Cap-2 Maneuver	67	-	-	-	-	-
Stage 1	233	-	-	-	-	-
Stage 2	519	-	-	-	-	-
Approach	WB		NB		SB	
HCM Control Delay, s	13.6		0		0.1	
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	- 424	547	-		
HCM Lane V/C Ratio	-	- 0.008	0.01	-		
HCM Control Delay (s)	-	- 13.6	11.6	-		
HCM Lane LOS	-	- B	B	-		
HCM 95th %tile Q(veh)	-	- 0	0	-		

# Timings 4: Jackson Creek Pkwy & Harness Rd

2040 Background Traffic (3/4 Access)

PM Peak Hour

										
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Volume (vph)	110	55	189	25	40	1003	300	135	905	40
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4		8		2			6	
Permitted Phases	4		8		2		2	6		6
Detector Phase	4	4	8	8	2	2	2	6	6	6
Switch Phase										
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	25.0	25.0	25.0	25.0	65.0	65.0	65.0	65.0	65.0	65.0
Total Split (%)	27.8%	27.8%	27.8%	27.8%	72.2%	72.2%	72.2%	72.2%	72.2%	72.2%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	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
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag										
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min	C-Min	C-Min
Act Effect Green (s)	21.3	21.3	21.3	21.3	58.7	58.7	58.7	58.7	58.7	58.7
Actuated g/C Ratio	0.24	0.24	0.24	0.24	0.65	0.65	0.65	0.65	0.65	0.65
v/c Ratio	0.39	0.37	0.78	0.25	0.13	0.46	0.28	0.51	0.41	0.04
Control Delay	32.5	14.5	54.8	10.7	7.8	8.9	1.4	18.1	8.1	2.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.5	14.5	54.8	10.7	7.8	8.9	1.4	18.1	8.1	2.0
LOS	C	B	D	B	A	A	A	B	A	A
Approach Delay		21.7		38.7		7.2			9.1	
Approach LOS		C		D		A			A	

## Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 83 (92%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.78

Intersection Signal Delay: 12.3

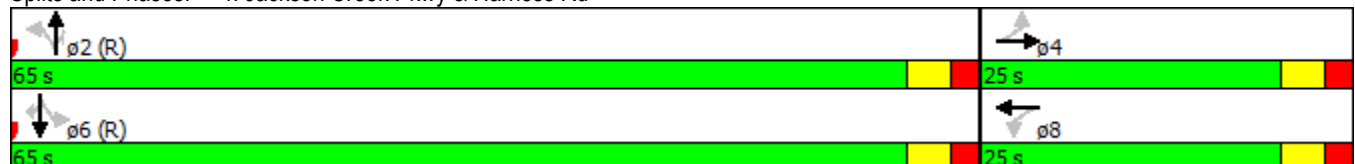
Intersection LOS: B

Intersection Capacity Utilization 72.0%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 4: Jackson Creek Pkwy & Harness Rd



HCM 2010 TWSC  
3: Jackson Creek Pkwy & Site Access

2040 Total Traffic (Full Access)  
AM Peak Hour

Intersection						
Int Delay, s/veh	0.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	12	9	1182	21	10	1075
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	10	1244	22	11	1132
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	1842	633	0	0	1266	0
Stage 1	1255	-	-	-	-	-
Stage 2	587	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	67	422	-	-	545	-
Stage 1	232	-	-	-	-	-
Stage 2	519	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	66	422	-	-	545	-
Mov Cap-2 Maneuver	66	-	-	-	-	-
Stage 1	232	-	-	-	-	-
Stage 2	509	-	-	-	-	-
Approach	WB		NB		SB	
HCM Control Delay, s	49.6		0		0.1	
HCM LOS	E					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	- 103	545	-		
HCM Lane V/C Ratio	-	- 0.222	0.019	-		
HCM Control Delay (s)	-	- 49.6	11.7	-		
HCM Lane LOS	-	- E	B	-		
HCM 95th %tile Q(veh)	-	- 0.8	0.1	-		

HCM 2010 TWSC  
6: Harness Rd & Site Access

2040 Total Traffic (Full Access)  
AM Peak Hour





















Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	4	478	287	0	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	25	-	-	-	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	4	520	312	0	0	5
Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	312	0	-	0	840	312
Stage 1	-	-	-	-	312	-
Stage 2	-	-	-	-	528	-
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	1248	-	-	-	335	728
Stage 1	-	-	-	-	742	-
Stage 2	-	-	-	-	592	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	1248	-	-	-	334	728
Mov Cap-2 Maneuver	-	-	-	-	448	-
Stage 1	-	-	-	-	742	-
Stage 2	-	-	-	-	590	-
Approach	EB		WB		SB	
HCM Control Delay, s	0.1		0		10	
HCM LOS					B	
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1248	-	-	-	728	
HCM Lane V/C Ratio	0.003	-	-	-	0.007	
HCM Control Delay (s)	7.9	-	-	-	10	
HCM Lane LOS	A	-	-	-	B	
HCM 95th %tile Q(veh)	0	-	-	-	0	

# Timings

## 4: Jackson Creek Pkwy & Harness Rd

2040 Total Traffic (Full Access)

AM Peak Hour

										
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Volume (vph)	25	15	234	59	105	676	82	48	724	110
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4		8		2			6	
Permitted Phases	4		8		2		2	6		6
Detector Phase	4	4	8	8	2	2	2	6	6	6
Switch Phase										
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	25.0	25.0	25.0	25.0	65.0	65.0	65.0	65.0	65.0	65.0
Total Split (%)	27.8%	27.8%	27.8%	27.8%	72.2%	72.2%	72.2%	72.2%	72.2%	72.2%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	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
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag										
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min	C-Min	C-Min
Act Effect Green (s)	22.2	22.2	22.2	22.2	57.8	57.8	57.8	57.8	57.8	57.8
Actuated g/C Ratio	0.25	0.25	0.25	0.25	0.64	0.64	0.64	0.64	0.64	0.64
v/c Ratio	0.10	0.10	0.73	0.37	0.28	0.31	0.08	0.12	0.34	0.11
Control Delay	24.5	13.1	43.7	14.3	10.8	8.4	2.2	6.5	6.3	1.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.5	13.1	43.7	14.3	10.8	8.4	2.2	6.5	6.3	1.4
LOS	C	B	D	B	B	A	A	A	A	A
Approach Delay		17.5		31.2		8.1			5.7	
Approach LOS		B		C		A			A	

### Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 83 (92%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 40

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.73

Intersection Signal Delay: 11.7

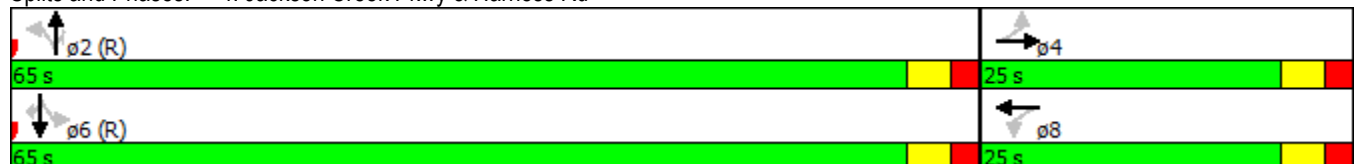
Intersection LOS: B

Intersection Capacity Utilization 58.8%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 4: Jackson Creek Pkwy & Harness Rd



HCM 2010 TWSC  
3: Jackson Creek Pkwy & Three-Quarter Access

2040 Total Traffic (3/4 Access)  
AM Peak Hour

Intersection						
Int Delay, s/veh	0.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	0	8	809	7	5	880
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	9	852	7	5	926
Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1329	429	0	0	859	0
Stage 1	855	-	-	-	-	-
Stage 2	474	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	146	574	-	-	778	-
Stage 1	377	-	-	-	-	-
Stage 2	592	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	145	574	-	-	778	-
Mov Cap-2 Maneuver	145	-	-	-	-	-
Stage 1	377	-	-	-	-	-
Stage 2	588	-	-	-	-	-
Approach	WB		NB		SB	
HCM Control Delay, s	11.4		0		0.1	
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	- 574	778	-		
HCM Lane V/C Ratio	-	- 0.015	0.007	-		
HCM Control Delay (s)	-	- 11.4	9.7	-		
HCM Lane LOS	-	- B	A	-		
HCM 95th %tile Q(veh)	-	- 0	0	-		

HCM 2010 TWSC  
6: Harness Rd & Site Access

2040 Total Traffic (3/4 Access)  
AM Peak Hour





















Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	4	135	400	0	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	25	-	-	-	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	4	147	435	0	0	5
Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	435	0	-	0	590	435
Stage 1	-	-	-	-	435	-
Stage 2	-	-	-	-	155	-
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	1125	-	-	-	470	621
Stage 1	-	-	-	-	653	-
Stage 2	-	-	-	-	873	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	1125	-	-	-	468	621
Mov Cap-2 Maneuver	-	-	-	-	543	-
Stage 1	-	-	-	-	653	-
Stage 2	-	-	-	-	870	-
Approach	EB		WB		SB	
HCM Control Delay, s	0.2		0		10.8	
HCM LOS					B	
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1125	-	-	-	621	
HCM Lane V/C Ratio	0.004	-	-	-	0.009	
HCM Control Delay (s)	8.2	-	-	-	10.8	
HCM Lane LOS	A	-	-	-	B	
HCM 95th %tile Q(veh)	0	-	-	-	0	

# Timings

## 4: Jackson Creek Pkwy & Harness Rd

2040 Total Traffic (3/4 Access)

AM Peak Hour

										
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Volume (vph)	25	15	236	59	105	676	82	48	722	110
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4		8		2			6	
Permitted Phases	4		8		2		2	6		6
Detector Phase	4	4	8	8	2	2	2	6	6	6
Switch Phase										
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	25.0	25.0	25.0	25.0	65.0	65.0	65.0	65.0	65.0	65.0
Total Split (%)	27.8%	27.8%	27.8%	27.8%	72.2%	72.2%	72.2%	72.2%	72.2%	72.2%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	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
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag										
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min	C-Min	C-Min
Act Effect Green (s)	22.4	22.4	22.4	22.4	57.6	57.6	57.6	57.6	57.6	57.6
Actuated g/C Ratio	0.25	0.25	0.25	0.25	0.64	0.64	0.64	0.64	0.64	0.64
v/c Ratio	0.10	0.10	0.73	0.37	0.28	0.31	0.08	0.12	0.34	0.11
Control Delay	24.4	13.1	43.5	14.2	10.8	8.5	2.2	6.5	6.4	1.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.4	13.1	43.5	14.2	10.8	8.5	2.2	6.5	6.4	1.4
LOS	C	B	D	B	B	A	A	A	A	A
Approach Delay		17.4		31.1		8.2			5.8	
Approach LOS		B		C		A			A	

### Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 83 (92%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 40

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.73

Intersection Signal Delay: 11.7

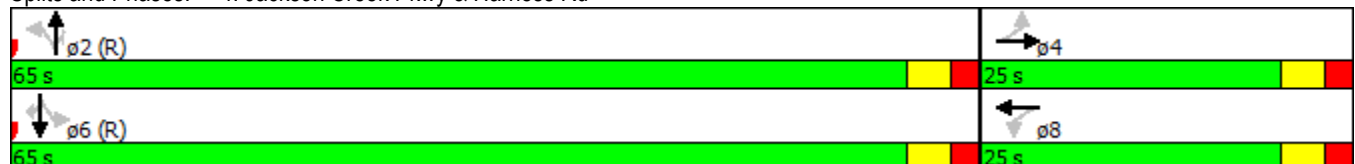
Intersection LOS: B

Intersection Capacity Utilization 58.8%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 4: Jackson Creek Pkwy & Harness Rd





HCM 2010 TWSC  
3: Jackson Creek Pkwy & Site Access

2040 Total Traffic (Full Access)  
PM Peak Hour

Intersection						
Int Delay, s/veh	0.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	12	9	1182	21	10	1075
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	10	1244	22	11	1132
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	1842	633	0	0	1266	0
Stage 1	1255	-	-	-	-	-
Stage 2	587	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	67	422	-	-	545	-
Stage 1	232	-	-	-	-	-
Stage 2	519	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	66	422	-	-	545	-
Mov Cap-2 Maneuver	66	-	-	-	-	-
Stage 1	232	-	-	-	-	-
Stage 2	509	-	-	-	-	-
Approach	WB		NB		SB	
HCM Control Delay, s	49.6		0		0.1	
HCM LOS	E					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	- 103	545	-		
HCM Lane V/C Ratio	-	- 0.222	0.019	-		
HCM Control Delay (s)	-	- 49.6	11.7	-		
HCM Lane LOS	-	- E	B	-		
HCM 95th %tile Q(veh)	-	- 0.8	0.1	-		

HCM 2010 TWSC  
6: Harness Rd & Site Access

2040 Total Traffic (Full Access)  
PM Peak Hour





















Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	4	478	287	0	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	25	-	-	-	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	4	520	312	0	0	5
Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	312	0	-	0	840	312
Stage 1	-	-	-	-	312	-
Stage 2	-	-	-	-	528	-
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	1248	-	-	-	335	728
Stage 1	-	-	-	-	742	-
Stage 2	-	-	-	-	592	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	1248	-	-	-	334	728
Mov Cap-2 Maneuver	-	-	-	-	448	-
Stage 1	-	-	-	-	742	-
Stage 2	-	-	-	-	590	-
Approach	EB		WB		SB	
HCM Control Delay, s	0.1		0		10	
HCM LOS					B	
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1248	-	-	-	728	
HCM Lane V/C Ratio	0.003	-	-	-	0.007	
HCM Control Delay (s)	7.9	-	-	-	10	
HCM Lane LOS	A	-	-	-	B	
HCM 95th %tile Q(veh)	0	-	-	-	0	

# Timings

## 4: Jackson Creek Pkwy & Harness Rd

2040 Total Traffic (Full Access)

PM Peak Hour

										
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Volume (vph)	110	55	194	25	40	1007	304	136	910	40
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4		8		2			6	
Permitted Phases	4		8		2		2	6		6
Detector Phase	4	4	8	8	2	2	2	6	6	6
Switch Phase										
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	25.0	25.0	25.0	25.0	65.0	65.0	65.0	65.0	65.0	65.0
Total Split (%)	27.8%	27.8%	27.8%	27.8%	72.2%	72.2%	72.2%	72.2%	72.2%	72.2%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	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
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag										
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min	C-Min	C-Min
Act Effect Green (s)	21.9	21.9	21.9	21.9	58.1	58.1	58.1	58.1	58.1	58.1
Actuated g/C Ratio	0.24	0.24	0.24	0.24	0.65	0.65	0.65	0.65	0.65	0.65
v/c Ratio	0.38	0.36	0.78	0.25	0.13	0.46	0.28	0.52	0.42	0.04
Control Delay	31.9	14.3	53.3	10.5	8.1	9.2	1.4	19.2	8.5	2.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.9	14.3	53.3	10.5	8.1	9.2	1.4	19.2	8.5	2.2
LOS	C	B	D	B	A	A	A	B	A	A
Approach Delay		21.3		37.7		7.4			9.6	
Approach LOS		C		D		A			A	

### Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 83 (92%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.78

Intersection Signal Delay: 12.5

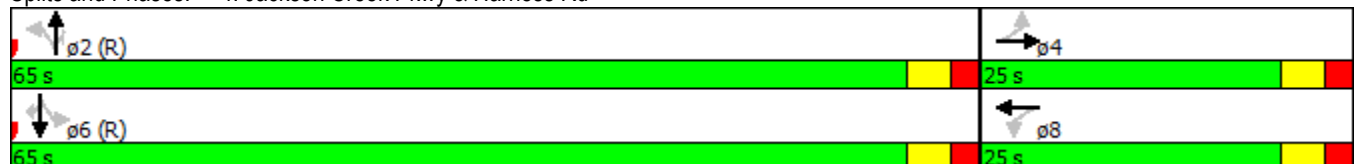
Intersection LOS: B

Intersection Capacity Utilization 72.4%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 4: Jackson Creek Pkwy & Harness Rd



HCM 2010 TWSC  
3: Jackson Creek Pkwy & Three-Quarter Access

2040 Total Traffic (3/4 Access)  
PM Peak Hour

Intersection						
Int Delay, s/veh	0.1					
Movement	WBL	WBR		NBT	NBR	SBL SBT
Vol, veh/h	0	9		1182	21	10 1081
Conflicting Peds, #/hr	0	0		0	0	0 0
Sign Control	Stop	Stop		Free	Free	Free Free
RT Channelized	-	None		-	None	- None
Storage Length	-	0		-	-	150 -
Veh in Median Storage, #	0	-		0	-	- 0
Grade, %	0	-		0	-	- 0
Peak Hour Factor	92	92		95	95	95 95
Heavy Vehicles, %	2	2		2	2	2 2
Mvmt Flow	0	10		1244	22	11 1138
Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1845	633		0	0	1266 0
Stage 1	1255	-		-	-	- -
Stage 2	590	-		-	-	- -
Critical Hdwy	6.84	6.94		-	-	4.14 -
Critical Hdwy Stg 1	5.84	-		-	-	- -
Critical Hdwy Stg 2	5.84	-		-	-	- -
Follow-up Hdwy	3.52	3.32		-	-	2.22 -
Pot Cap-1 Maneuver	66	422		-	-	545 -
Stage 1	232	-		-	-	- -
Stage 2	517	-		-	-	- -
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	65	422		-	-	545 -
Mov Cap-2 Maneuver	65	-		-	-	- -
Stage 1	232	-		-	-	- -
Stage 2	507	-		-	-	- -
Approach	WB		NB		SB	
HCM Control Delay, s	13.7			0	0.1	
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	
Capacity (veh/h)	-	-	422	545	-	
HCM Lane V/C Ratio	-	-	0.023	0.019	-	
HCM Control Delay (s)	-	-	13.7	11.7	-	
HCM Lane LOS	-	-	B	B	-	
HCM 95th %tile Q(veh)	-	-	0.1	0.1	-	

HCM 2010 TWSC  
6: Harness Rd & Site Access

2040 Total Traffic (3/4 Access)  
PM Peak Hour





















Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	4	478	287	0	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	25	-	-	-	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	4	520	312	0	0	11
Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	312	0	-	0	840	312
Stage 1	-	-	-	-	312	-
Stage 2	-	-	-	-	528	-
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	1248	-	-	-	335	728
Stage 1	-	-	-	-	742	-
Stage 2	-	-	-	-	592	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	1248	-	-	-	334	728
Mov Cap-2 Maneuver	-	-	-	-	448	-
Stage 1	-	-	-	-	742	-
Stage 2	-	-	-	-	590	-
Approach	EB		WB		SB	
HCM Control Delay, s	0.1		0		10	
HCM LOS					B	
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1248	-	-	-	728	
HCM Lane V/C Ratio	0.003	-	-	-	0.015	
HCM Control Delay (s)	7.9	-	-	-	10	
HCM Lane LOS	A	-	-	-	B	
HCM 95th %tile Q(veh)	0	-	-	-	0	

# Timings

## 4: Jackson Creek Pkwy & Harness Rd

2040 Total Traffic (3/4 Access)

PM Peak Hour

										
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Volume (vph)	110	55	199	25	40	1007	304	136	905	40
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4		8		2			6	
Permitted Phases	4		8		2		2	6		6
Detector Phase	4	4	8	8	2	2	2	6	6	6
Switch Phase										
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	25.0	25.0	25.0	25.0	65.0	65.0	65.0	65.0	65.0	65.0
Total Split (%)	27.8%	27.8%	27.8%	27.8%	72.2%	72.2%	72.2%	72.2%	72.2%	72.2%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	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
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag										
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min	C-Min	C-Min
Act Effect Green (s)	22.5	22.5	22.5	22.5	57.5	57.5	57.5	57.5	57.5	57.5
Actuated g/C Ratio	0.25	0.25	0.25	0.25	0.64	0.64	0.64	0.64	0.64	0.64
v/c Ratio	0.36	0.35	0.77	0.24	0.14	0.47	0.28	0.54	0.42	0.04
Control Delay	31.3	14.1	51.8	10.3	8.2	9.5	1.5	20.1	8.9	2.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.3	14.1	51.8	10.3	8.2	9.5	1.5	20.1	8.9	2.2
LOS	C	B	D	B	A	A	A	C	A	A
Approach Delay		20.9		36.9		7.7			10.1	
Approach LOS		C		D		A			B	

### Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 83 (92%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.77

Intersection Signal Delay: 12.7

Intersection LOS: B

Intersection Capacity Utilization 72.7%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 4: Jackson Creek Pkwy & Harness Rd



# **MONUMENT HEIGHTS TRAFFIC IMPACT ANALYSIS**

***Prepared for:***

NES  
619 N. Cascade Avenue  
Colorado Springs, CO 80903

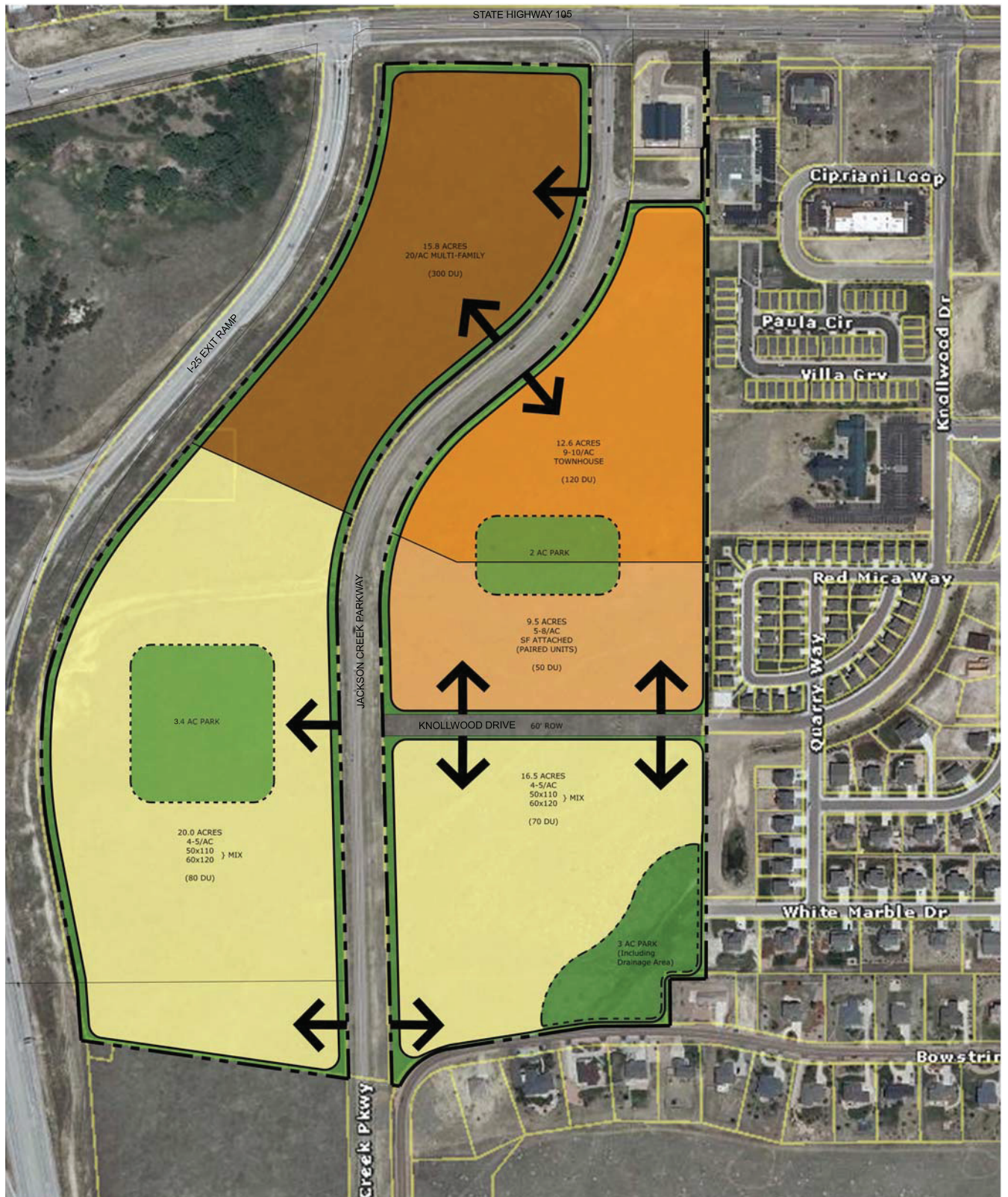
***Prepared by:***

Felsburg Holt & Ullevig  
508 S. Tejon Street  
Colorado Springs, CO 80903  
719-314-1800

Project Manager: Todd Frisbie, PE, PTOE  
Project Engineer: Colleen Guillotte, PE

FHU Reference No. 114394-01  
February 2015





**Figure 2**  
Site Plan

**NORTH**



## B. Site Trip Generation

The number of vehicle-trips that will be generated by the proposed development was forecast based on trip rates and information documented in Trip Generation (Institute of Transportation Engineers, Ninth Edition, 2011). **Table 1** shows the estimated trip generation for the development. The development is anticipated to generate approximately 4,400 new daily trips on the surrounding roadway network with 355 trips during the AM peak hour and 442 trips during the PM peak hour.

**Table 1. Trip Generation Summary**

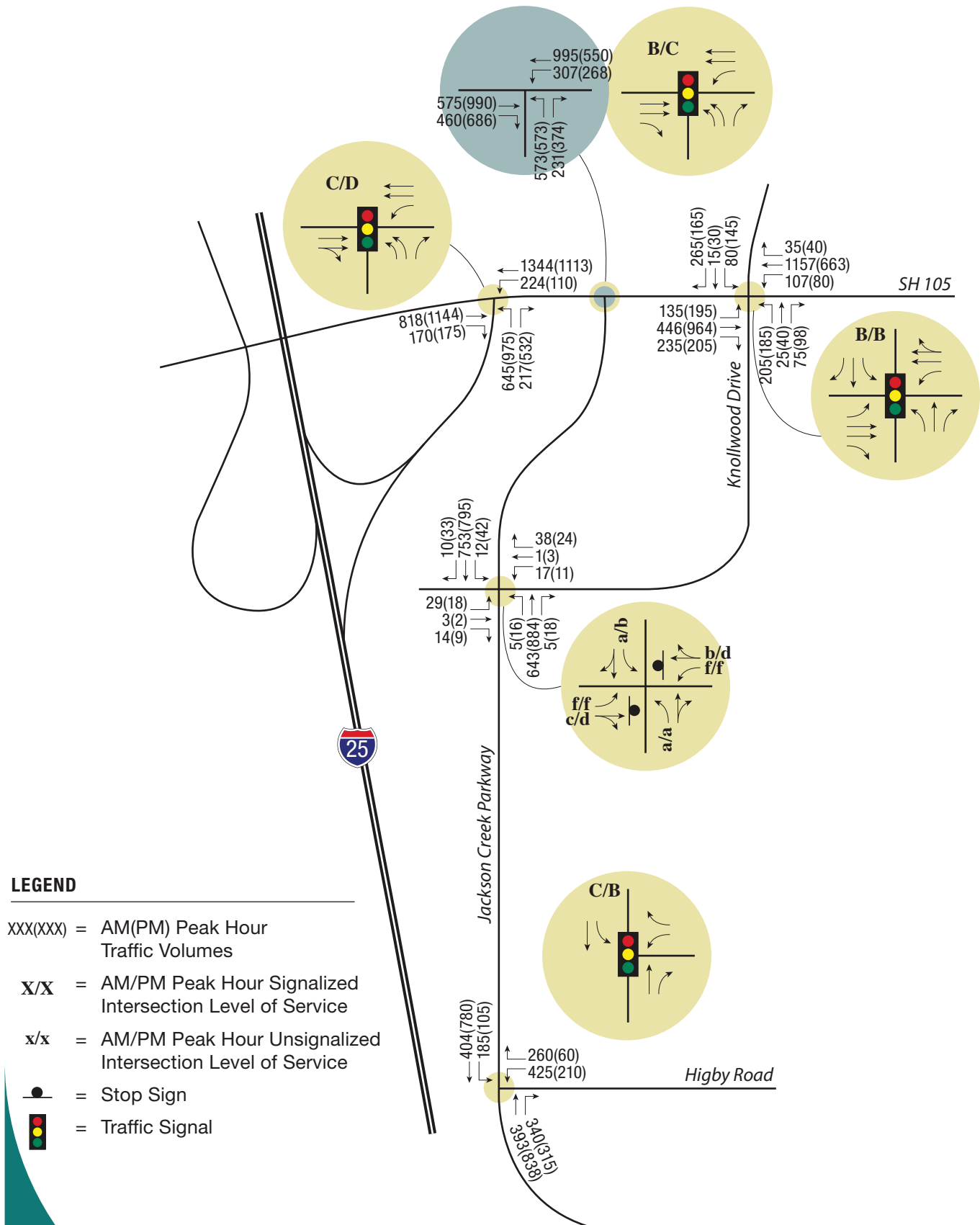
ITE Code	Land Use	Size	Units	Daily	AM Peak Hour			PM Peak Hour		
					In	Out	Total	In	Out	Total
210	Single family detached housing	150	DU	1,436	30	86	116	98	55	153
230	Townhouse	170	DU	988	14	61	75	57	31	88
220	Apartment	300	DU	1,995	48	117	165	123	78	201
<b>Total New Site Generated Traffic</b>				<b>4,419</b>	<b>92</b>	<b>263</b>	<b>355</b>	<b>277</b>	<b>165</b>	<b>442</b>

## C. Trip Distribution and Traffic Assignment

The distribution assumptions for the development and site generated traffic estimates are shown on **Figure 5**. The site trip distribution for Monument Heights was developed from the existing travel patterns observed in the count data and the site's relative location to employment areas and the overall Pikes Peak region. The trip distribution assumptions used in this report are as follows:

- 10 percent to and from the west of I-25
- 10 percent to and from the east
- 15 percent to and from the north on I-25
- 35 percent from south on I-25
- 30 percent from south on Jackson Creek

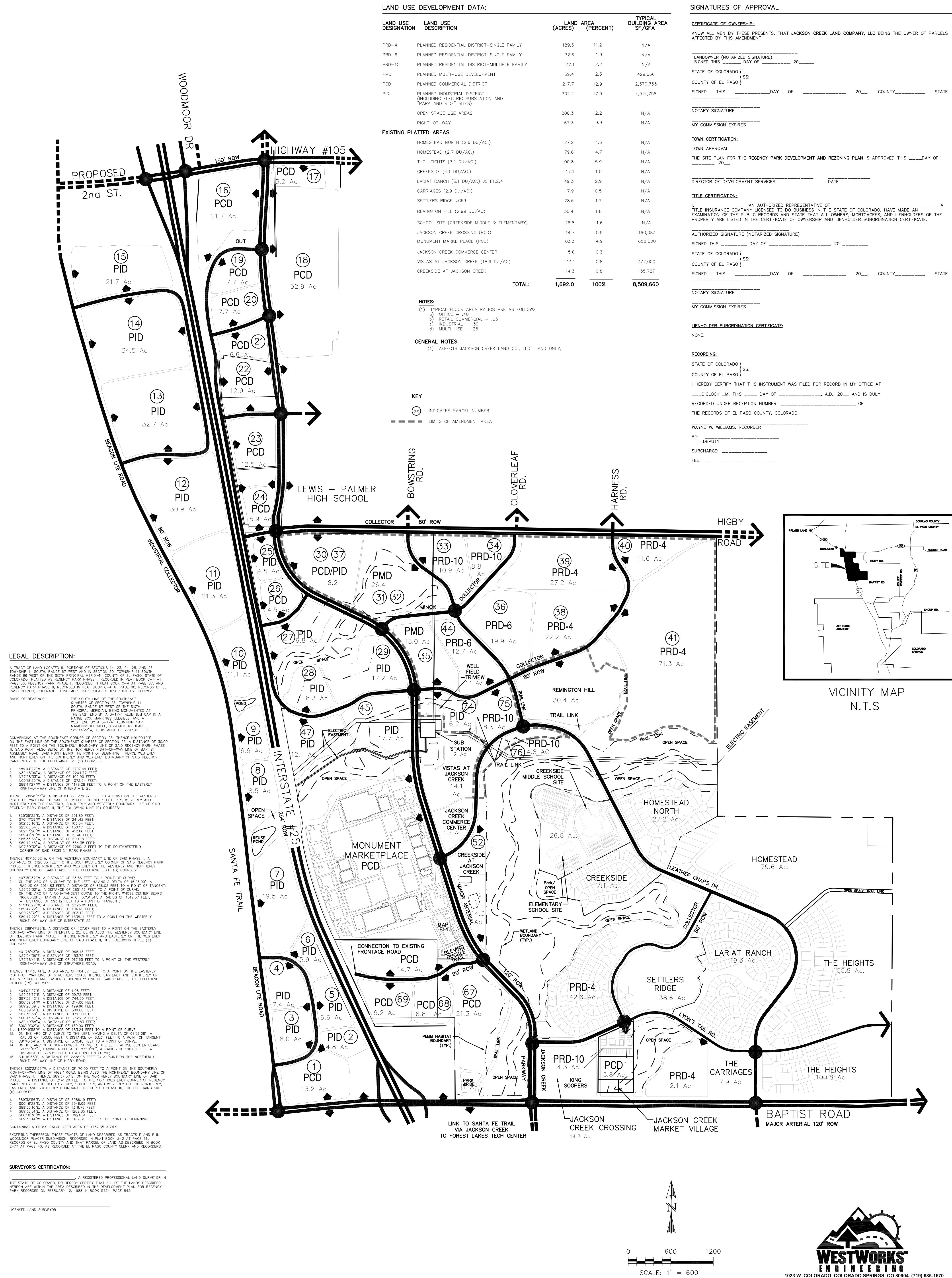
Trips to and from the site were assigned to the roadway system based on the above trip distribution percentages. **Figure 5** provides the trip distribution and site generated traffic for the site.



**Figure 7**  
Long Term Total Traffic Volumes  
and Levels of Service

Table 1 Regency Park Trip Generation Estimate																						
Land Use Data									Trip Generation Rates <sup>(1)</sup>						Raw ITE Trip Generation (Individual Driveway Trips)						Pass-by Trips	Total New External Trips
Parcel	Name	Master Plan Des.	Area (Acres)	Density (DU/Acre) or FAR	ITE Code	ITE Land Use	Quantity	Unit	Daily	AM Peak Hour		PM Peak Hour		Daily	AM Peak Hour		PM Peak Hour		Pass-by <sup>(2)</sup> (%)	Daily	Daily	
										In	Out	In	Out		In	Out	In	Out				
Currently Unplatted Master Plan Areas (East of Interstate-25)																						
16		PCD	- - -	- - -	220	Apartment	300	DU	6.65	0.10	0.41	0.40	0.22	1,995	31	122	121	65	0%	0	1,995	
					230	Residential Condominium/Townhouse	170	DU	5.81	0.07	0.37	0.35	0.17	988	13	62	59	29	0%	0	988	
18		PCD	- - -	- - -	210	Single-Family Detached Housing	70	DU	9.52	0.19	0.56	0.63	0.37	666	13	39	44	26	0%	0	666	
19	PCD North of Higby Rd	PCD	7.7	0.25	820	Shopping Center	83.9	KSF	29.19	0.38	0.23	1.30	1.41	2,447	32	19	109	118	34%	832	1,615	
20		PCD	- - -	- - -	210	Single-Family Detached Housing	80	DU	9.52	0.19	0.56	0.63	0.37	762	15	45	50	30	0%	0	762	
21		PCD	6.6	0.25	820	Shopping Center	71.9	KSF	29.19	0.38	0.23	1.30	1.41	2,098	27	17	93	101	34%	713	1,385	
22		PCD	12.9	0.25	820	Shopping Center	140.5	KSF	29.19	0.38	0.23	1.30	1.41	4,100	53	32	182	197	34%	1,394	2,706	
23		PCD	12.5	0.25	820	Shopping Center	136.1	KSF	29.19	0.38	0.23	1.30	1.41	3,973	51	31	177	191	34%	1,351	2,622	
24		PCD	5.9	0.25	820	Shopping Center	64.3	KSF	29.19	0.38	0.23	1.30	1.41	1,875	24	15	83	90	34%	638	1,237	
25	PID East of I-25	PID	4.5	- - -	130	Industrial Park	5	acres	54.69	5.38	1.10	1.33	5.02	246	24	5	6	23	0%	0	246	
27		PID	6.8	- - -	130	Industrial Park	6.8	acres	54.69	5.38	1.10	1.33	5.02	372	37	7	9	34	0%	0	372	
28		PID	8.3	- - -	130	Industrial Park	8.3	acres	54.69	5.38	1.10	1.33	5.02	454	45	9	11	42	0%	0	454	
29		PID	17.2	- - -	130	Industrial Park	17.2	acres	54.69	5.38	1.10	1.33	5.02	941	92	19	23	86	0%	0	941	
30		PID	9.1	- - -	130	Industrial Park	9.1	acres	54.69	5.38	1.10	1.33	5.02	498	49	10	12	46	0%	0	498	
45		PID	17.7	- - -	130	Industrial Park	17.7	acres	54.69	5.38	1.10	1.33	5.02	968	95	19	24	89	0%	0	968	
47		PID	12.1	- - -	130	Industrial Park	12.1	acres	54.69	5.38	1.10	1.33	5.02	662	65	13	16	61	0%	0	662	
26		PCD	4.5	0.25	820	Shopping Center	49	KSF	42.70	0.60	0.36	1.78	1.93	2,092	29	18	87	95	34%	711	1,381	
37		PCD	9.1	0.25	820	Shopping Center	99	KSF	42.70	0.60	0.36	1.78	1.93	4,227	59	36	176	191	34%	1,437	2,790	
31		PMD	26.4	0.25	820	Shopping Center	144	KSF	42.70	0.60	0.36	1.78	1.93	6,149	86	53	256	278	34%	2,091	4,058	
32						18	220	Apartment	238	DU <sup>(4)</sup>	6.65	0.10	0.41	0.40	0.22	1,583	24	97	96	52	0%	0
33		PRD-10	10.9	10	230	Residential Condominium/Townhouse	109	DU	5.81	0.07	0.37	0.35	0.17	633	8	40	38	19	0%	0	633	
34					PRD-10	8.8	10	230	Residential Condominium/Townhouse	88	DU	5.81	0.07	0.37	0.35	0.17	511	7	32	31	15	0%
35		PMD	13.0	0.25	820	Shopping Center	71	KSF	42.70	0.60	0.36	1.78	1.93	3,032	42	26	126	137	34%	1,031	2,001	
						18	220	Apartment	117	DU	6.65	0.10	0.41	0.40	0.22	778	12	48	47	25	0%	0
36		PRD-6	19.9	6	210	Single-Family Detached Housing	119	DU	9.52	0.19	0.56	0.63	0.37	1,133	22	67	75	44	0%	0	1,133	
38		PRD-4	22.2	4	210	Single-Family Detached Housing	89	DU	9.52	0.19	0.56	0.63	0.37	847	17	50	56	33	0%	0	847	
39		PRD-4	27.2	4	210	Single-Family Detached Housing	109	DU	9.52	0.19	0.56	0.63	0.37	1,038	20	61	69	40	0%	0	1,038	
40		PRD-4	11.6	4	210	Single-Family Detached Housing	46	DU	9.52	0.19	0.56	0.63	0.37	438	9	26	29	17	0%	0	438	
41		PRD-4	71.3	4	210	Single-Family Detached Housing	285	DU	9.52	0.19	0.56	0.63	0.37	2,713	53	160	180	105	0%	0	2,713	
44		PRD-6	12.7	6	210	Single-Family Detached Housing	51	DU	9.52	0.19	0.56	0.63	0.37	486	10	29	32	19	0%	0	486	
74		PMD	6.2		151	Mini-Warehouse	6.2	acres	35.43	1.16	1.42	1.79	1.79	220	7	9	11	11	0%	0	220	
75		PRD-6	8.3	6	210	Single-Family Detached Housing	32	DU	9.52	0.19	0.56	0.63	0.37	305	6	18	20	12	0%	0	305	
76	PRD-6	4.8	6	210	Single-Family Detached Housing	29	DU	9.52	0.19	0.56	0.63	0.37	276	5	16	18	11	0%	0	276		
52	Creeside at Jackson Creek	---	7.2	---	710	General Office Building	28	KSF	11.03	1.37	0.19	0.25	1.24	307	38	5	7	34	0%	0	307	
932					High-Turnover Sit-Down Restaurant	3	KSF	127.15	5.95	4.86	5.91	3.94	381	18	15	18	12	43%	164	217		
948					Automated Car Wash	4	KSF	155.71	6.15	5.91	7.06	7.06	548	22	21	25	25	50%	274	274		
934					Fast-Food Restaurant with Drive-Through Window	3	KSF	496.12	23.16	22.26	16.98	15.67	1,687	79	76	58	53	50%	843	844		
67		PCD	21.3	0.25	820	Shopping Center	232	KSF	35.12	0.46	0.28	1.54	1.67	8,148	108	66	358	388	34%	2,770	5,378	
68		PCD	6.8	0.25	820	Shopping Center	74	KSF	35.12	0.46	0.28	1.54	1.67	2,599	34	21	114	124	34%	884	1,715	
69		PCD	9.2	0.25	820	Shopping Center	100	KSF	35.12	0.46	0.28	1.54	1.67	3,512	46	28	154	167	34%	1,194	2,318	
70		PCD	14.7	0.25	820	Shopping Center	160	KSF	35.12	0.46	0.28	1.54	1.67	5,619	74	45	247	268	34%	1,910	3,709	
Existing/Platted Master Plan Areas (East of Interstate-25)																						
101	Vistas at Jackson Creek	PMD	14.1	- - -	220	Apartment	267	DU	6.65	0.10	0.41	0.40	0.22	1,776	27	109	108	58	0%	0	1,776	
					820	Shopping Center	8.40	KSF	161.60	2.54	1.56	6.51	7.06	1,357	21	13	55	59	34%	462	895	
102	Jackson Creek Commere Center	PMD	5.6		934	Fast-Food Restaurant with Drive-Through Window	1.49	KSF	496.12	23.16	22.26	16.98	15.67	739	35	33	25	23	50%	370	369	
				710	General Office Building	21.3	KSF	11.03	1.37	0.19	0.25	1.24	235	29	4	5	26	0%	0	235		
				912	Drive-in Bank	3	DIL <sup>(5)</sup>	139.25	5.57	3.72	16.29	16.95	418	17	11	49	51	35%	146	272		
103	Creeside at Jackson Creek	---	6.9	---	720	Medical-Dental Office Building	16	KSF	27.28	1.89	0.50	0.98	2.52	431	30	8	16	40	0%	0	431	
					N/A <sup>(6)</sup>	Goodwill Store	23,522	KSF	74.41	0.94	0.44	3.25	3.25	1,750	22	10	76	76	10%	175	1,575	
					945	Gasoline/Service Station with Convenience Market	16	VFP <sup>(7)</sup>	162.78	5.08	5.08	6.76	6.76	2,604	81	81	108	108	66%	1,719	885	
104	Monument Marketplace	PCD	83.3	0.18	820	Shopping Center	658	KSF	35.12	0.46	0.28	1.54	1.67	23,109	305	187	1,016	1,101	34%	7,857	15,252	
105</																						

REGENCY PARK  
TOWN OF MONUMENT  
EL PASO COUNTY, COLORADO



SIXTH AMENDED DEVELOPMENT AND REZONING PLAN

OCTOBER 28, 2014

REPLACES REGENCY PARK FIFTH AMENDED  
DEVELOPMENT AND REZONING PLAN DATED NOVEMBER 14, 2013

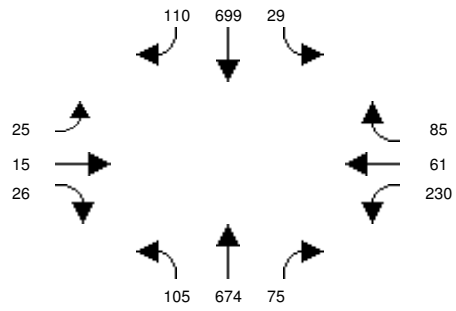
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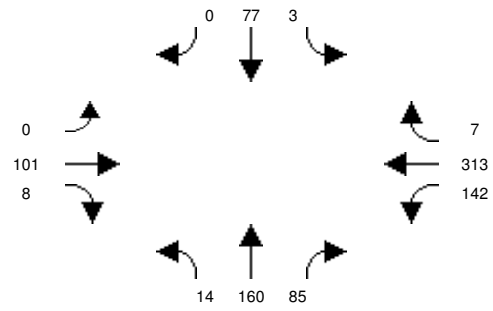
Intersection Graphic Report  
Final Volume (Future Alternative)  
2035 AM

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Intersection #12: J.C./South Collector



Intersection #31: S Collector/Bowstring

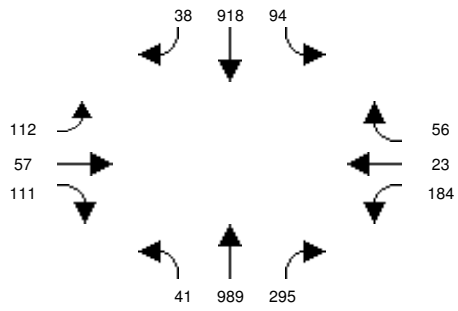


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Intersection Graphic Report  
Final Volume (Future Alternative)  
2035 PM

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Intersection #12: J.C./South Collector



Intersection #31: S Collector/Bowstring

