

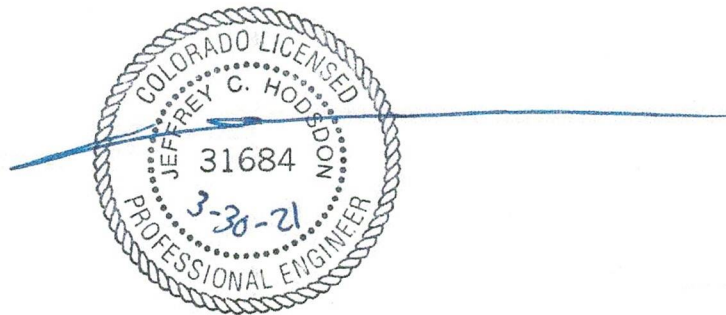


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The Glen at Widefield Filing No. 11  
Updated Transportation Memorandum  
PCD File No.: SF204  
(LSC #194800)  
March 30, 2021

Traffic Engineer's Statement

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



Developer's Statement

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

  
\_\_\_\_\_

March 30<sup>th</sup> 2021  
Date



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March 30, 2021

Mr. J. Ryan Watson  
Widefield Investment Group  
3 Widefield Boulevard  
Colorado Springs, CO 80911

RE: The Glen at Widefield Filing No. 11  
Updated Transportation Memorandum  
El Paso County, Colorado  
PCD File No.: SF204  
LSC #194800

Dear Mr. Watson:

In response to your request, LSC Transportation Consultants, Inc. has prepared this transportation memorandum for The Glen at Widefield Filing No. 11. As shown in Figure 1, the site is located west of the Marksheffel Road/Poa Annu Street intersection in El Paso County, Colorado. Filing 11 is planned to contain 103 lots for single-family homes. This memorandum is a supplement to the overall Glen at Widefield East Preliminary Plan traffic report dated January 18, 2016.

## **REPORT CONTENTS**

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

- Updated traffic count data;
- Projections of short-term (2022) baseline/background traffic volumes at the key area intersections;
- The projected average weekday and peak-hour vehicle trips to be generated by Filing No. 11;
- The assignment of the Filing No. 11 projected trips to the key area intersections;
- The short-term level of service at these intersections;
- The short-term level of service and queuing analysis at the intersection of Powers Boulevard/Mesa Ridge Parkway;
- Evaluation of the existing and short-term level of service at Mesa Ridge Parkway/Marksheffel Road;
- Findings and recommendations; and
- Signal escrow analysis tables.

## RECENT AREA TRAFFIC STUDIES

Appendix Table 1 includes a list of other recent traffic studies conducted by LSC in the vicinity of the site.

## LAND USE AND ACCESS

Since completion of the 2016 Glen at Widefield East Preliminary Plan Traffic Report, 356 of the 578 proposed lots for single-family homes within the preliminary plan area have been platted as The Glen at Widefield Filing Nos. 7, 8, and 9. At the time traffic counts were conducted in September 2019, about 144 homes had been constructed in The Glen at Widefield Filing No. 7 and about 32 homes had been constructed in Filing No. 8. Note: There is currently significant home construction activity within Filing No. 8, so these figures will change rapidly. None of the homes in Filing No. 9 had been constructed at the time of the counts.

The Glen at Widefield Filing No. 10, currently under review, is planned to contain 40 lots for single-family homes. The currently proposed Glen at Widefield Filing No. 11 is planned to contain 103 lots for single-family homes. Figure 2 shows the location of The Glen at Widefield Filing Nos. 7 through 11 and the anticipated future filing(s).

Access for The Glen at Widefield Filing Nos. 7 through 10 is via the intersection of Spring Glen Drive/Mesa Ridge Parkway and via the recently completed west leg of the intersection of Marksheffel/Peaceful Valley Road. This leg is planned to be restricted to right-in/right-out only with Filing No. 10. This restriction should remain in place until a traffic signal is warranted and installed. This will not likely happen until further development occurs east of Marksheffel Road. An additional right-in/right-out only access to Marksheffel Road aligning with Poa Annua Street is proposed as part of Filing No. 11. Filing No. 11 also includes a future potential connection through the property to the north to an extension of Lorson Boulevard. This future connection was shown in the *Corvallis Traffic Impact Study* by Matrix Design Group Inc. dated January 8, 2021 that was submitted to the City of Fountain. As the timing of the Corvallis development is unknown, this study assumes no connection to the north in the short-term.

## 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 of each.

**Powers Boulevard** is a four-lane Expressway extending north from Mesa Ridge Parkway. In the future, Powers Boulevard is planned to be extended south to connect to Interstate 25 (I-25), potentially at Exit 122. In the vicinity of the site, Powers Boulevard has two through lanes in each direction and a posted speed limit of 55 miles per hour (mph). The Colorado Department of

Transportation has been collecting escrow funds from the previous Glen at Widefield filings as participation toward the recently-installed traffic signal at the intersection of Mesa Ridge/Powers.

**Marksheffel Road** extends north from the Link Road/C&S Road intersection in Fountain, Colorado to north of Woodmen Road. Marksheffel has recently been upgraded to an interim three-lane facility between Mesa Ridge Parkway and Bradley Road as part of a PPRTA project. Marksheffel Road is shown as a future four-lane Expressway on the El Paso County *Major Transportation Corridors Plan (MTCP)*. The posted speed limit on Marksheffel Road is 55 mph north of Mesa Ridge Parkway and 45 mph south of Mesa Ridge Parkway.

**Mesa Ridge Parkway** is a four-lane median-divided Principal Arterial extending east from I-25 to Powers Boulevard. A half-section of Mesa Ridge Parkway with one through lane in each direction has been constructed east from Powers Boulevard to Marksheffel Road. It is our understanding that the construction of the other half-section is not the applicant's responsibility. LSC estimates that Mesa Ridge Parkway will likely need to be widened to provide two lanes in each direction once the average weekday traffic volumes reach 14,000 to 18,000 vehicles per day. Mesa Ridge Parkway improvements are listed as an "A-List" PPRTA project. The posted speed limit in the vicinity of the site is 45 mph.

**Peaceful Valley Road** is a two-lane City of Fountain street that extends east from Marksheffel Road for about two-and-a-half miles to the location of a future extension of Meridian Road. The posted speed limit on Peaceful Valley Road is 30 mph. Most of Peaceful Valley Road is located within the City of Fountain.

**Poa Annua Street** is a two-lane City of Fountain street that extends east from Marksheffel Road for about 850 feet, ending in a cul-de-sac. The posted speed limit on Poa Annua is 25 mph.

#### **Notable Recent Area Roadway-System Improvements**

The Marksheffel South project has been completed, a traffic signal has been installed at the intersection of Mesa Ridge Parkway and Powers, and it is our understanding that this signal has only been fully operational since early January 2018. The temporary Roanfield Drive street connection to Powers Boulevard has been closed. Also, the southbound left-turn lane at the Mesa Ridge/Powers intersection was lengthened as required with The Glen at Widefield Filing No. 7. The Marksheffel painted center median at the intersection of Peaceful Valley Road/Marksheffel Road that was originally striped as a channelized-T configuration (with southbound left-turn deceleration and left-turn acceleration lanes) has recently been restriped to provide a northbound left-turn lane approaching Peaceful Valley Road. The original channelized-T configuration striping is planned to be reinstalled with The Glen at Widefield Filing No 10.

## EXISTING TRAFFIC VOLUMES

Figure 3a shows the existing peak-hour traffic volumes and Figure 3b shows the existing lane geometries and traffic controls. The traffic volumes are based on traffic counts conducted by LSC in September 2019, February 2020, and February 2021. The traffic count reports are attached.

## EXISTING LEVEL OF SERVICE

Level of service (LOS) is a quantitative measure of the level of 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.

**Table 1: Intersection Levels of Service Delay Ranges**

Level of Service	Signalized Intersections	Unsignalized Intersections
	Average Control Delay (seconds per vehicle)	Average Control Delay (seconds per vehicle) <sup>(1)</sup>
A	10.0 sec or less	10.0 sec or less
B	10.1-20.0 sec	10.1-15.0 sec
C	20.1-35.0 sec	15.1-25.0 sec
D	35.1-55.0 sec	25.1-35.0 sec
E	55.1-80.0 sec	35.1-50.0 sec
F	80.1 sec or more	50.1 sec or more
(1) For unsignalized intersections, if V/C ratio is greater than 1.0 the level of service is LOS F, regardless of the projected average control delay per vehicle.		

The intersections of Powers/Mesa Ridge, Marksheffel/Mesa Ridge, Marksheffel/Peaceful Valley, and Marksheffel/Poa Annua were analyzed to determine the existing levels of service. The intersection of Powers/Mesa Ridge was analyzed using Synchro. The intersections of Marksheffel/Mesa Ridge, Marksheffel/Peaceful Valley, and Marksheffel/Poa Annua were analyzed using the unsignalized method of analysis procedures outlined in the *Highway Capacity Manual, 6th Edition* by the Transportation Research Board. The results of the analysis are shown in Figure 3b.

The intersection of Powers/Mesa Ridge currently operates at an overall LOS B or better during the peak hours. The westbound left-turn movement at this intersection is operating at LOS D during the peak hours.

The eastbound approach at the stop-sign-controlled intersection of Marksheffel/Peaceful Valley is currently operating at LOS D during the morning peak hour and LOS E during the afternoon peak hour. The westbound approach is currently operating at LOS C or better during the peak hours.

All movements at the stop-sign-controlled intersections of Marksheffel/Mesa Ridge and Marksheffel/Poa Annua are currently operating at LOS C or better during the peak hours.

### **SHORT-TERM (YEAR 2022) BACKGROUND TRAFFIC**

Figure 4a shows the short-term (Year 2022) background traffic volumes at the key area intersections. Background traffic is the traffic estimated to be on the roadways without the Glen at Widefield Filing Nos. 10 and 11 traffic.

Background traffic includes the existing traffic volume (from Figure 3) plus increases in through traffic of about 2 percent per year, due to regional growth, plus traffic estimated to be generated by buildout of existing and currently-proposed subdivisions in the vicinity of the site including traffic projected to be generated by the development of the 180 single-family homes within The Glen at Widefield Filing Nos. 7, 8, and 9 that were unoccupied when traffic counts were conducted in September 2019. The existing northbound left-turn and eastbound left-turn movements at the intersection of Marksheffel/Peaceful Valley were rerouted with the restriction of the west leg to right-in/right-out only, planned as part of Filing No 10.

Figure 4b shows the lane geometry, traffic control, and level of service at the key area intersections, based on the short-term background volumes.

### **TRIP GENERATION**

The Filing No. 11 site-generated vehicle trips have been estimated using the nationally published trip-generation rates from *Trip Generation, 10th Edition, 2017* by the Institute of Transportation Engineers (ITE). Table 2 shows the trip-generation estimates for these filings. Table 2 also shows estimates of the additional traffic expected to be generated due to buildout of the approved Filings 7, 8, 9, and 10 and future filing(s) within the Glen at Widefield East Preliminary Plan area.

Filing 11 is expected to generate 972 vehicle trips on the average weekday, with about half entering and half exiting the site during a 24-hour period. During the morning peak hour, which generally occurs for one hour between 6:30 and 8:30 a.m., about 19 vehicles would enter and 57 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 64 vehicles would enter and 38 vehicles would exit the site.

### **TRIP DISTRIBUTION AND ASSIGNMENT**

The directional distribution of the site-generated traffic volumes on the street and roadway system serving the site is an important factor in determining the site's traffic impacts. Figure 5 shows the short-term distribution estimates. The directional distribution estimates have been based on the following factors: the location of the site with respect to the regional employment, commercial, and activity centers; the land use proposed for the site; the proposed access system

for the site; and the roadway system serving the site. The short-term distribution assumes the existing street network.

When the estimated site trips (from Table 2) are directionally distributed according to the LSC-estimated percentages shown in Figure 5 and assigned/routed on the internal and area street network (according to LSC estimates), the resulting projected site-generated traffic volumes can be determined.

Figures 6 and 7 show the projected short-term site-generated traffic volumes at the site access points and at key area intersections due to the Glen at Widefield Filing No. 10 that is currently under review and the currently-proposed Glen at Widefield Filing No. 11, respectively. The figures show the projected site-generated traffic volumes with and without the street network through the future development area just west of the Glen at Widefield Filing No. 11. The short-term site-generated traffic volumes assume the street network through the property to the north (Corvallis) has **not** been constructed.

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

Figure 8a shows the projected short-term total traffic volumes at the key area intersections. The short-term total traffic volumes are the sum of the short-term background traffic volumes (from Figure 4a) plus the Filing Nos. 10 short-term site-generated traffic volumes (from Figure 6) and the Filing No. 11 short-term site-generated traffic volumes (from Figure 7).

Figure 8b shows the lane geometry, traffic control, and level of service at the key area intersections, based on the short-term total volumes.

#### **LONG-TERM TOTAL TRAFFIC**

Please refer to the master traffic report (the January 18, 2016 *Glen at Widefield East Preliminary Plan Traffic Report*) for the long-term peak-hour traffic-volume projections and level of service analysis. The original report is for the entire Glen at Widefield East preliminary plan area. No significant changes are projected to the results of this study.

#### **SHORT-TERM LEVEL OF SERVICE**

The intersections of Spring Glen/Mesa Ridge, Marksheffel/Mesa Ridge, Marksheffel/Peaceful Valley, and Marksheffel/Poa Annu were analyzed to determine the projected levels of service, based on the short-term background and total traffic volumes, using the unsignalized method of analysis procedures outlined in the *Highway Capacity Manual, 6th Edition* by the Transportation Research Board. The results of the analysis are shown in Figures 4b and 8b.

### **Spring Glen Drive/Mesa Ridge Parkway**

The southbound left-turn movement at the intersection of Mesa Ridge Parkway/Spring Glen Drive is projected to operate at LOS C during the morning peak hour and LOS F during the afternoon peak hour as a stop-sign-controlled intersection, based on the projected short-term total peak-hour traffic volumes. This intersection is planned to be signalized in the future. However, based on the projected peak-hour volumes shown in Figure 8a, it is unlikely that traffic-signal warrant(s) will be met following buildout of the Glen at Widefield Filing Nos. 8 through 11. It is common for the minor side street to operate at LOS E or F as the intersection volumes approach the volumes needed to satisfy a traffic-signal warrant.

### **Marksheffel Road/Mesa Ridge Parkway**

It is our understanding that the intersection of Marksheffel/Mesa Ridge is planned to be converted to traffic-signal control in the short-term. As a signalized intersection, all movements are projected to operate at LOS D or better during the peak hours, based on the projected short-term total traffic volumes.

### **Marksheffel Road/Peaceful Valley Road**

The west leg of the intersection of Marksheffel/Peaceful Valley will be restricted to right-in/right-out only, with Filing 10. With this restriction, all movements are projected to operate at LOS C or better during the peak hours, based on the short-term total traffic volumes following development of the Glen at Widefield Filing No. 11. The plan is for this restriction to remain in place until the intersection is signalized in the future (likely driven by additional background traffic on the east leg).

### **Marksheffel Road/Poa Annua Street**

The new west leg of the intersection of Marksheffel/Poa Annua is planned to be restricted to right-in/right-out only. All movements at this intersection are projected to operate at LOS C or better during the peak hours, based on the projected short-term total traffic volumes.

## **TRAFFIC-SIGNAL WARRANT ANALYSIS**

### **Vehicular-Volume Traffic-Signal Warrants**

The intersection of Marksheffel/Mesa Ridge was analyzed to determine if either an Eight-Hour Vehicular-Volume Traffic-Signal Warrant or a Four-Hour Vehicular-Volume Traffic-Signal Warrant would be met or be close to being met, based on the projected existing traffic volume.

Table 3 shows the results of the analysis for Marksheffel/Mesa Ridge. As shown in the table, the existing traffic volumes, during seven of the ten hours studied, currently meet the thresholds for the Eight-Hour Vehicular-Volume Traffic-Signal Warrant. Six of the ten hours studied currently



meet the Four-Hour Vehicular-Volume Traffic-Signal Warrant. An additional two of the hours analyzed are projected to meet the threshold for an Eight-Hour Vehicular-Volume Warrant, based on the short-term total traffic volumes. The satisfaction of warrants does not indicate that a signal must be installed. The decision to require a signal to be installed at this location rests with the County. This intersection may be signalized in the short term. It is our understanding that the county intends to convert this intersection to signal control in the short-term future.

### **Crash Experience**

The Colorado State Patrol provided LSC with crash data for the intersection of Marksheffel/Mesa Ridge from 2017 through February 2020. There was one reported crash at this intersection in 2017. In order to meet the criteria for Traffic-Signal Warrant 7 – Crash Experience, there need to be five or more reported crashes of a type susceptible to correction by a traffic-control signal within a 12-month period. Based on the provided crash history data, this warrant is not currently met. A copy of these data is attached for reference.

## **CONCLUSIONS AND RECOMMENDATIONS**

### **Trip Generation**

- Filing 11 is expected to generate 972 vehicle trips on the average weekday, with about half entering and half exiting the site during a 24-hour period. During the morning peak hour, about 19 vehicles would enter and 57 vehicles would exit the site. During the afternoon peak hour, about 64 vehicles would enter and 38 vehicles would exit the site.

### **Level of Service**

- It is our understanding that the intersection of Marksheffel/Mesa Ridge is planned to be converted to traffic-signal control in the short-term. As a signalized intersection, all movements are projected to operate at LOS D or better during the peak hours, based on the projected short-term total traffic volumes.
- The southbound left-turn movement at the intersection of Mesa Ridge Parkway/Spring Glen Drive is projected to operate at LOS C during the morning peak hour and LOS F during the afternoon peak hour as a stop-sign-controlled intersection, based on the projected short-term-total peak-hour traffic volumes. This intersection is planned to be signalized in the future. However, based on the projected peak-hour volumes shown in Figure 8a, it is unlikely that traffic-signal warrant(s) will be met following buildout of the Glen at Widefield Filing Nos. 8 through 11. It is common for the minor side street to operate at LOS E or F as the intersection volumes approach the volumes needed to satisfy a traffic-signal warrant. The developer is escrowing funds toward a future signal with each filing.

- The west leg of the intersection of Marksheffel/Peaceful Valley will be restricted to right-in/right-out only, and the striping will be modified to reinstall the southbound left-turn acceleration lane for westbound left-turning traffic from Peaceful Valley Road to southbound Marksheffel. With this restriction, all intersection turning movements are projected to operate at LOS C or better during the peak hours, based on the short-term total traffic volumes following development of the Glen at Widefield Filing Nos. 10 and 11. This restriction should remain in place until a traffic signal is warranted and installed. This will not likely occur until further development occurs east of Marksheffel Road.
- The currently proposed west leg of the intersection of Marksheffel/Poa Annuia is planned to be restricted to right-in/right-out only. All movements at this intersection are projected to operate at LOS C or better during the peak hours, based on the projected short-term total traffic volumes.

### Intersection Lane Configurations

- Table 4 shows a summary of the recommended short-term improvements in the vicinity of the site.
- A 475-foot left-turn lane approaching Spring Glen Drive has been installed with the construction of Mesa Ridge Parkway.
- Mesa Ridge Parkway has been constructed and striped with 10-foot paved shoulders in the vicinity of Spring Glen Drive. Once the full four-lane Principal Arterial section is completed, it is anticipated that the acceleration lane will be implemented at that time. The width for a future westbound right-turn acceleration lane on Mesa Ridge Parkway will become available, as the half-section to be built with the initial Mesa Ridge construction will be sufficiently wide. This has been shown on the Mesa Ridge Parkway design plans.
- A westbound right-turn deceleration lane will be required on Mesa Ridge Parkway at Spring Glen Drive when the east leg of the intersection of Marksheffel/Peaceful Valley is restricted to right-in/right-out only (with this Filing). Based on a design speed of 50 mph, the prescribed lane length for this lane is 235 feet plus a 200-foot taper.
- The painted center median on Marksheffel Road at the Peaceful Valley Road intersection was previously striped for a dedicated southbound left-turn lane and a dedicated southbound left-turn acceleration lane. Recently, the west leg of this intersection was completed to provide a second access to the Glen at Widefield East and the center median was restriped to remove the southbound left-turn acceleration lane and instead provide a northbound left-turn lane. The west leg will be restricted to right-in/right-out only, **as recommended with Filing No. 10**. The painted center median on Marksheffel will be restriped back to the original configuration with a southbound left-turn acceleration lane. Based on a design speed of 60 mph, the prescribed lane length for this lane would be

1,170 feet plus a 300-foot taper. The right-turn restriction will be accomplished by installing a right-turn “island”, pavement markings, and signs on the west leg.

- Based on the projected short-term total traffic volumes and the criteria contained in the El Paso County *Engineering Criteria Manual (ECM)* for Minor (or Principal) Arterials, a southbound right-turn deceleration lane is projected to be warranted on Marksheffel Road approaching Peaceful Valley Road. Based on a design speed of 60 mph, the prescribed lane length for this lane would be 290 feet plus a 240-foot taper.
- Based on the projected Preliminary Plan TIS report 2040 total traffic volumes, the classification of Marksheffel Road as an Expressway, and the criteria contained in the *ECM*, a southbound right-turn deceleration lane is projected to be warranted on Marksheffel Road at Poa Annua Street. This criteria for a right-turn deceleration lane are also projected to be met, once the planned street connections through Filing No. 12 is constructed. Based on a design speed of 60 mph, the prescribed lane length for this lane would be 290 feet plus a 240-foot taper.
- Based on the projected short-term total traffic volumes, the classification of Marksheffel Road as an Expressway, and the criteria contained in the *ECM*, a southbound right-turn acceleration lane is projected to be warranted on Marksheffel Road at Peaceful Valley Road and Poa Annua Street. Although Marksheffel Road is classified as an Expressway, it has recently been upgraded from a two-lane roadway to a Rural Minor Arterial cross section, instead of an Expressway cross section. Based on a Rural Minor Arterial classification, right-turn acceleration lanes would not be required. LSC recommends right-of-way be reserved for these lanes, should Marksheffel be upgraded to an Expressway cross section in the future.

#### **Proposed Subdivision Street Classifications**

- Figure 8 shows the recommended street classifications for the proposed street sections within Filing No. 11.

#### **Mesa Ridge Parkway/Powers Boulevard Intersection**

- CDOT has agreed to a signal escrow amount of \$107,018 for all of Glen at Widefield East. The number of total lots in the Preliminary Plan has been reduced to 578 and, therefore, the corresponding escrow amount would be \$103,960 for all of Glen at Widefield East. For purposes of the Filing 11 access permit, the amount would be \$18,596. Table 5 presents the signal escrow analysis, including the previously-identified amount for Filings 7 through 10, the amount for the currently-proposed Filing No. 11, and the remaining amount for future filing(s).
- Access permit applications will be submitted to CDOT for these filings, for purposes of processing the signal escrow and for work in the CDOT right-of-way to construct the

westbound dual left-turn lanes and any associated traffic-signal modifications. A new access permit and associated Notice-to-Proceed will be required.

#### **Mesa Ridge Parkway/Spring Glen Drive Signal Escrow**

- The Glen East Preliminary Plan traffic report contains an estimated signal escrow amount for the entire Preliminary Plan and states that the developer's percentage contribution toward this signal will be calculated and a proportional contribution made toward the signal construction with each filing. The estimated proportional contribution is \$5,859 for Filing No. 11. Table 6 presents the signal escrow analysis for this intersection, including the previously-identified amounts for Filings 7 through 10, the amount for the currently-proposed Filing No. 11, and the remaining amount for future filing(s).

#### **Marksheffel Road/Peaceful Valley Road**

- The Glen at Widefield East Preliminary Plan traffic report contains an estimated escrow amount for the Preliminary Plan and states that the developer's percentage contribution toward this signal will be calculated and a proportional contribution made toward the signal construction with each filing. The estimated proportional contribution is \$6,489 for Filing No. 11. Table 7 presents the signal escrow analysis for this intersection, including the previously-identified amounts for Filings 7 through 10, the amount for the currently-proposed Filing No. 11, and the remaining amounts for future filing(s).

#### **Marksheffel Road/Mesa Ridge Parkway**

- It is our understanding that the County intends to convert the intersection of Marksheffel/Mesa Ridge to traffic-signal control in the short-term. No escrow will be required from the Glen at Widefield, as this intersection is considered eligible under the EPC Fee Program.

#### **Roadway Improvement Fee Program**

- This project will be required to participate in the El Paso County Road Improvement Fee Program. The Glen at Widefield Filing No. 11 will join the ten-mil PID. The ten-mil PID building permit fee portion associated with this option is \$1,221 per single-family dwelling unit. The total building permit fee would be \$125,763 for the 103 lots within Filing No. 11. Note: This is based on the current rate, which is subject to change. El Paso County updates this rate periodically.

Please contact me if you have any questions regarding this report.

Sincerely,

LSC TRANSPORTATION CONSULTANTS, INC.

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

JCH:KDF:jas

Enclosures: Tables 2-7  
Figures 1-8  
Traffic Count Reports  
Level of Service Reports  
Crash History  
Appendix Table 1

## Tables 2-8

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**Table 2**  
**Trip Generation Estimate**  
**The Glen at Widefield Filing 11**

Filing	Land Use Code	Land Use Description	Trip Generation Units				Trip Generation Rates <sup>(1)</sup>					Future Total Trips Generated				
							Average Weekday Traffic	Morning Peak Hour		Afternoon Peak Hour		Average Weekday Traffic	Morning Peak Hour		Afternoon Peak Hour	
			Existing	Future	Total			In	Out	In	Out		In	Out	In	Out
<b>Approved Filings</b>																
7	210	Single-Family Detached Housing	144	4	148	DU <sup>(2)</sup>	9.44	0.19	0.56	0.62	0.37	38	1	2	2	1
8	210	Single-Family Detached Housing	32	69	101	DU	9.44	0.19	0.56	0.62	0.37	651	13	38	43	25
9	210	Single-Family Detached Housing	0	107	107	DU	9.44	0.19	0.56	0.62	0.37	1,010	20	59	67	39
<b>Total Filings 7-9</b>			<b>176</b>	<b>180</b>	<b>356</b>	<b>DU</b>						<b>1,699</b>	<b>34</b>	<b>99</b>	<b>112</b>	<b>65</b>
<b>Filing Currently Under Review</b>																
10	210	Single-Family Detached Housing	0	40	40	DU	9.44	0.19	0.56	0.62	0.37	378	7	22	25	15
<b>Total Filings 7-10</b>			<b>176</b>	<b>220</b>	<b>396</b>	<b>DU</b>						<b>2,077</b>	<b>41</b>	<b>121</b>	<b>137</b>	<b>80</b>
<b>Currently Proposed Filing</b>																
11	210	Single-Family Detached Housing	0	103	103	DU	9.44	0.19	0.56	0.62	0.37	972	19	57	64	38
<b>Total Filings 7-11</b>			<b>176</b>	<b>323</b>	<b>499</b>	<b>DU</b>						<b>3,049</b>	<b>60</b>	<b>178</b>	<b>201</b>	<b>118</b>
<b>Future Filings</b>																
12	210	Single-Family Detached Housing	0	79	79	DU	9.44	0.19	0.56	0.62	0.37	746	15	44	49	29
<b>Total Filings 7-12</b>			<b>176</b>	<b>402</b>	<b>578</b>	<b>DU</b>						<b>3,795</b>	<b>75</b>	<b>222</b>	<b>250</b>	<b>147</b>

Notes:

(1) Source: "Trip Generation, 10th Edition, 2017" by the Institute of Transportation Engineers (ITE)

(2) DU = dwelling unit

Source: LSC Transportation Consultants, Inc.

Jul-20

**Table 3**

**The Glen at Widefield Filing 10  
Traffic Signal Warrant Analysis of Mesa Ridge Pkwy/Marksheffel Rd**

Hour	Traffic Volumes		Warrant Analysis <sup>(1)</sup>							
			Warrant 1, Eight Hour Vehicular Volume Evaluation						Warrant 2, Four Hour Vehicular Volume Evaluation	
			Warrant Thresholds				Warrant Threshold Met?			Warrant Threshold Met?
			Condition A (70%)		Condition B (70%)		West Leg		70% Warrant Threshold Minor Minimum	West Leg
	Major <sup>(2)</sup>	Minor <sup>(3)</sup>	Major	Minor	Major	Minor	A	B		
<b>Existing<sup>(4)</sup></b>										
<b>6:30 AM<sup>(5)</sup></b>	691	112	420	105	630	53	Yes	Yes	103	Yes
<b>7:30 AM<sup>(5)</sup></b>	659	126	420	105	630	53	Yes	Yes	112	Yes
<b>8:30 AM</b>	492	115	420	105	630	53	Yes	No	169	No
<b>11:00 AM</b>	340	177	420	105	630	53	No	No	245	No
<b>12:00 PM</b>	425	203	420	105	630	53	Yes	No	203	Yes
<b>2:00 PM<sup>(6)</sup></b>	371	174	420	105	630	53	No	No	230	No
<b>3:00 PM</b>	584	269	420	105	630	53	Yes	No	136	Yes
<b>4:30 PM</b>	627	368	420	105	630	53	Yes	No	122	Yes
<b>5:30 PM</b>	476	345	420	105	630	53	Yes	No	177	Yes
<b>6:30 PM</b>	356	225	420	105	630	53	No	No	237	No
							7	2		6

**Notes:**

(1) Thresholds are based on 2 or more lanes on the major approach and 1 lane on the minor approach with the 70% factor used as the posted speed limit on Marksheffel Rd exceeds 40 mph.

(2) The major street traffic includes all northbound and southbound movements (left, through and right) on Marksheffel Rd.

(3) The minor street traffic includes the eastbound left-turn traffic only on Mesa Ridge Pkwy

(4) Based on traffic counts by LSC Transportation Consultants, Inc in February 2021 except where noted below

(5) Based on traffic counts by LSC Transportation Consultants, Inc in September 2019 and February 2021

(6) Based on traffic counts by LSC Transportation Consultants, Inc in September 2019

Source: LSC Transportation Consultants, Inc.

Mar-21



<p><b>Table 4</b>  <b>Recommended Short-Term Improvements</b>  <b>The Glen at Widefield Filing No. 11</b></p>		
Description	Trigger	Timing
Westbound right-turn deceleration Lane on Mesa Ridge Parkway approaching Spring Glen Drive	Eastbound right-turn volume of 25 vehicles per hour	With The Glen at Widefield Filing No. 10
Westbound right-turn acceleration lane on Mesa Ridge Parkway at Spring Glen Drive	Southbound right-turn volume of 50 vehicles per hour (Existing southbound right-turn volume is 68 vehicles per hour)	Once the full four-lane Principal Arterial section is completed, it is anticipated that the acceleration lane will be implemented at that time. The width for a future westbound right-turn acceleration lane on Mesa Ridge Parkway will become available as the half-section to be built with the initial Mesa Ridge construction will be sufficiently wide. This has been shown on the Mesa Ridge Parkway design plans
Restrict the west leg of Marksheffel/Peaceful Valley to right-in/right-out only. The right-turn restriction will be accomplished by installing a right-turn "island", pavement markings and signs on the west leg.	When the level of service for the eastbound left-turn movement at the intersection of Marksheffel/Peaceful Valley drops below an acceptable level (LOS D)	With The Glen at Widefield Filing No. 10
Convert the intersection of Marksheffel Road/Mesa Ridge Parkway to traffic signal control	When Traffic Signal Warrants are Met	Anticipated in the short term
Marksheffel Road/Peaceful Valley Road: Restripe the painted center median on Marksheffel Road in the vicinity of and south of Peaceful Valley Road to for a southbound left turn acceleration lane (as was in-place previously). Please refer to the report text for lane dimensions and other details.	With The Glen at Widefield Filing No. 10	With The Glen at Widefield Filing No. 10
Southbound right-turn deceleration lane on Marksheffel Road approaching Poa Annua Street. Based on a design speed of 60 mph, the prescribed lane length for this deceleration lane is 290 feet plus a 240-foot taper.	Based on Expressway Classification: Southbound right-turn volume of 10 vehicles per hour  Based on Minor Arterial Classification: Southbound right-turn volume of 25 vehicles per hour	With The Glen at Widefield Filing No. 11
Southbound right-turn acceleration lane on Marksheffel Road at Poa Annua	Based on Expressway Classification: Eastbound right-turn volume of 10 vehicles per hour  Based on Minor Arterial Classification: Generally not required	LSC recommends right-of-way be reserved for this improvement to be constructed if/when Marksheffel Road is upgraded to an Expressway cross section
Southbound right-turn deceleration lane on Marksheffel Road approaching Peaceful Valley Road. Based on a design speed of 60 mph, the prescribed lane length for this deceleration lane is 290 feet plus a 240-foot taper.	Based on Expressway Classification: Southbound right-turn volume of 10 vehicles per hour  Based on Minor Arterial Classification: Southbound right-turn volume of 25 vehicles per hour	With The Glen at Widefield Filing No. 11
Southbound right-turn acceleration lane on Marksheffel Road at Peaceful Valley Road	Based on Expressway Classification: Eastbound right-turn volume of 10 vehicles per hour  Based on Minor Arterial Classification: Generally not required	LSC recommends right-of-way be reserved for this improvement to be constructed if/when Marksheffel Road is upgraded to an Expressway cross section
Mesa Ridge Parkway should be widened approaching Powers Boulevard to provide dual westbound left-turn lanes. Based on the queueing analysis, dual 475-foot left turn lanes (plus transition taper) would be adequate to accommodate the projected queues. Deceleration distance would not be necessary, as Powers/Mesa Ridge is a T-intersection. New redirect tapers would be required east of the dual left turn lanes to transition to the existing cross section. The taper ratio should be 45:1.	Once the westbound left-turn queue regularly exceeds the length of the existing single left-turn lane	With The Glen at Widefield Filing No. 10
Source: LSC Transportation Consultants, Inc.		Mar-21

**Table 5**  
**Glen East Preliminar Plan CDOT Access Permit and Escrow Analysis**  
**Mesa Ridge & Powers (SH 21)**  
**The Glen at Widefield Filing 10**

Subdivisions Currently Proposed			Currently Proposed Separate Access Permits and Escrow Amounts per Access Permit			
Subdivision Name	Number of Lots	Status	Portion of total Escrow of \$103,960	Access Permits	Access Permit Escrow Amt.	Escrow to be deposited in Account with CDOT
Filing 7	148	Recorded	\$26,648	Permit No. 216057	\$26,648	Completed
Filing 8	101	Recorded	\$18,166	Permit No. 218055	\$18,166	Completed
Filing 9	107	Plat Approved - not recorded	\$19,065	Permit No. 218056	\$19,065	Completed
Filing 10	40	Pending	\$7,222	Application to be submitted soon	\$7,222	Prior to issuance of NTP
Filing 11	103	Future	\$18,596	Application to be submitted soon	\$18,596	Prior to issuance of NTP
Remaining Filings	79	Future	\$14,263	Application(s) not submitted	TBD	

Source: LSC Transportation Consultants, Inc.

**Table 6**  
**Glen East Preliminary Plan County Intersection Escrow Analysis**  
**Mesa Ridge Parkway & Spring Glen Drive Intersection**  
**The Glen at Widefield Filings 10 & 11**

Subdivisions Currently Proposed			Signal Escrow Amounts
Subdivision Name	Number of Lots	Status	Portion of Total Escrow of \$33,750
Filing 7	148	Platted	\$8,875
Filing 8	101	Platted	\$6,057
Filing 9	107	Plat Approved - not recorded	\$6,189
Filing 10	40	Pending	\$2,276
Filing 11	103	Pending	\$5,859
Remaining Filings	79	Future	\$4,494
			<b>\$33,750</b>

*Source: LSC Transportation Consultants, Inc. August 24, 2016*

**Table 7**  
**Glen East Preliminary Plan County Intersection Escrow Analysis**  
**Peaceful Valley Road & Marksheffel Road Intersection**  
**The Glen at Widefield Filings 10 & 11**

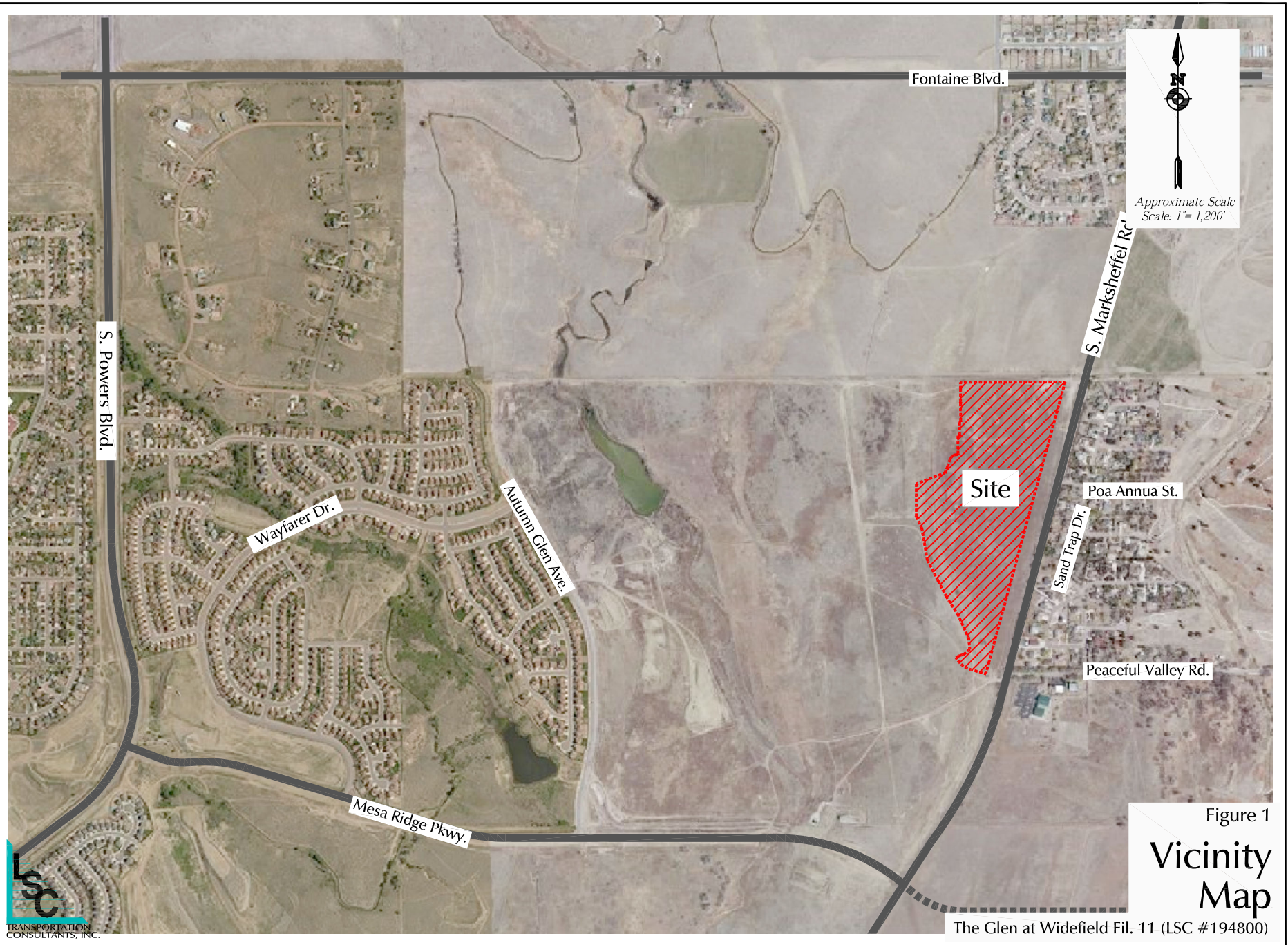
Subdivisions Currently Proposed			Signal Escrow Amounts
Subdivision Name	Number of Lots	Status	Portion of Total Escrow of \$36,250
Filing 7	148	Platted	Deferred to Fil 8
Filing 8	101	Platted	\$15,615
Filing 9	107	Plat Approved - not recorded	\$6,648
Filing 10	40	Pending	\$2,521
Filing 11	103	Pending	\$6,489
Remaining Filings	79	Future	\$4,977
			<b>\$36,250</b>

Note: The escrow amount for Filing 8 includes the deferred amount for Filing 7

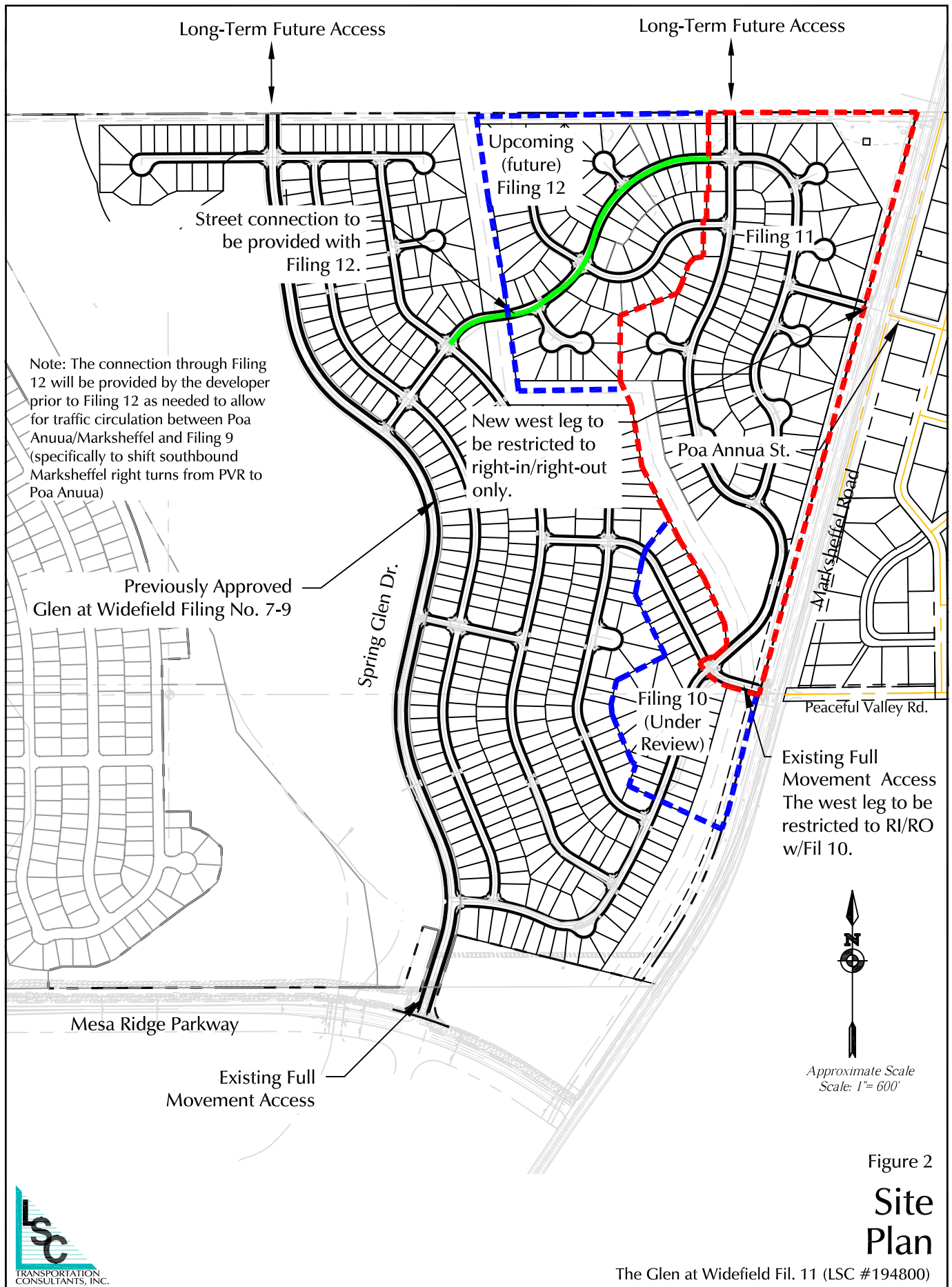
Source: LSC Transportation Consultants, Inc. August 24, 2016

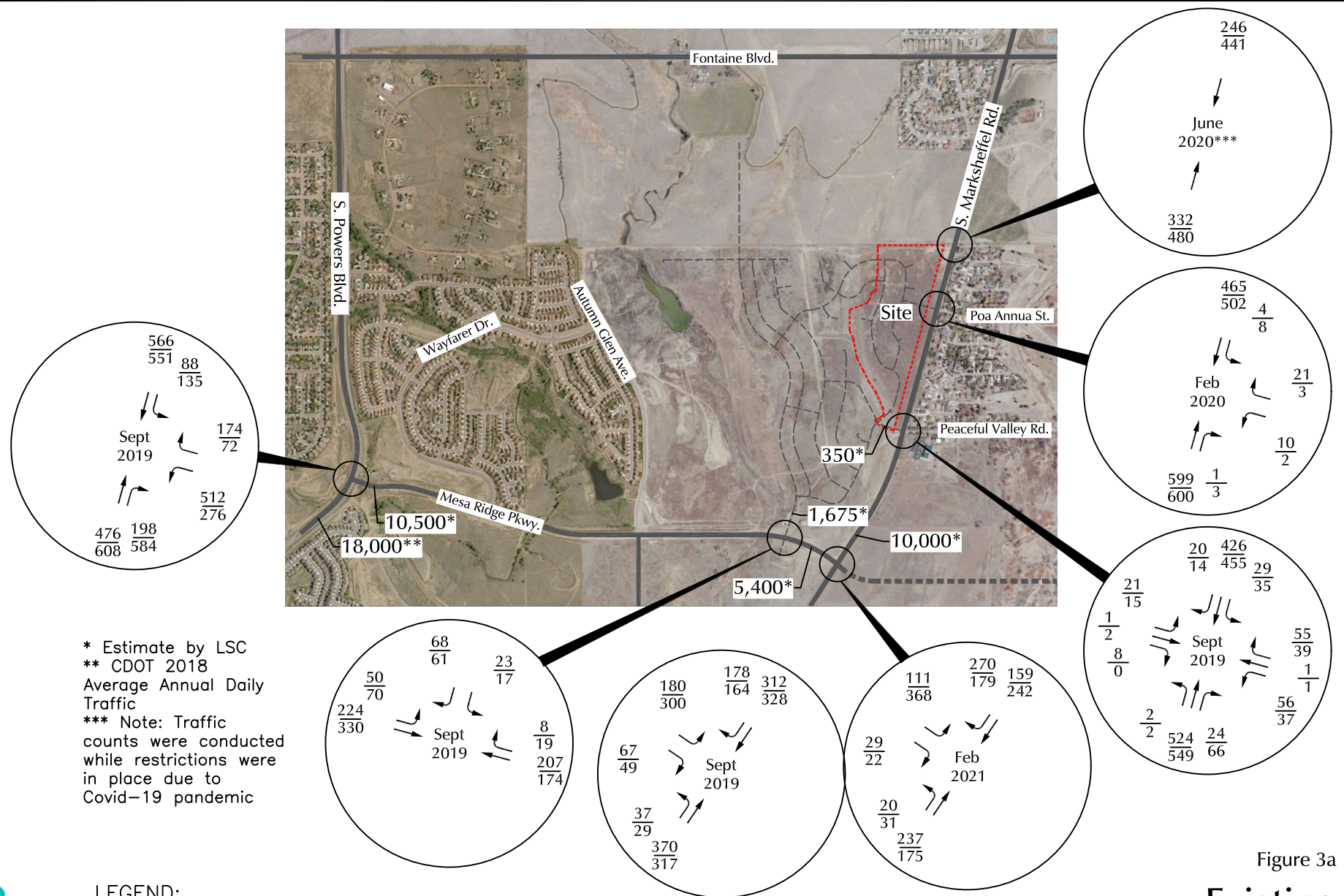
## Figures 1-8

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LEGEND:

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

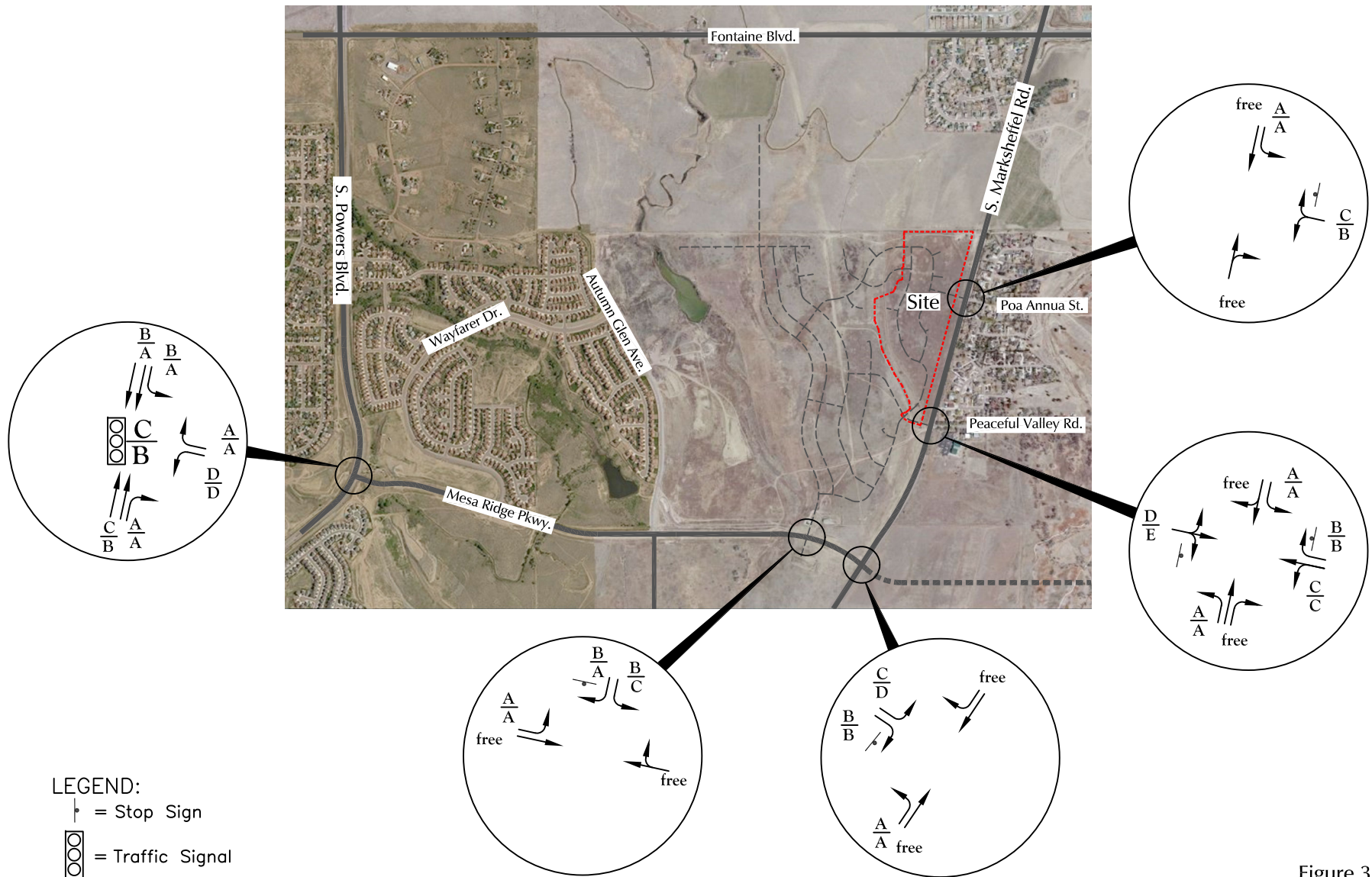
X,XXX = Average Weekday Traffic (vehicles per day) \*Estimates by LSC

Figure 3a

# Existing Traffic

The Glen at Widefield Fil. 11 (LSC #194800)





LEGEND:

⊥ = Stop Sign

⬢ = Traffic Signal

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

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

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

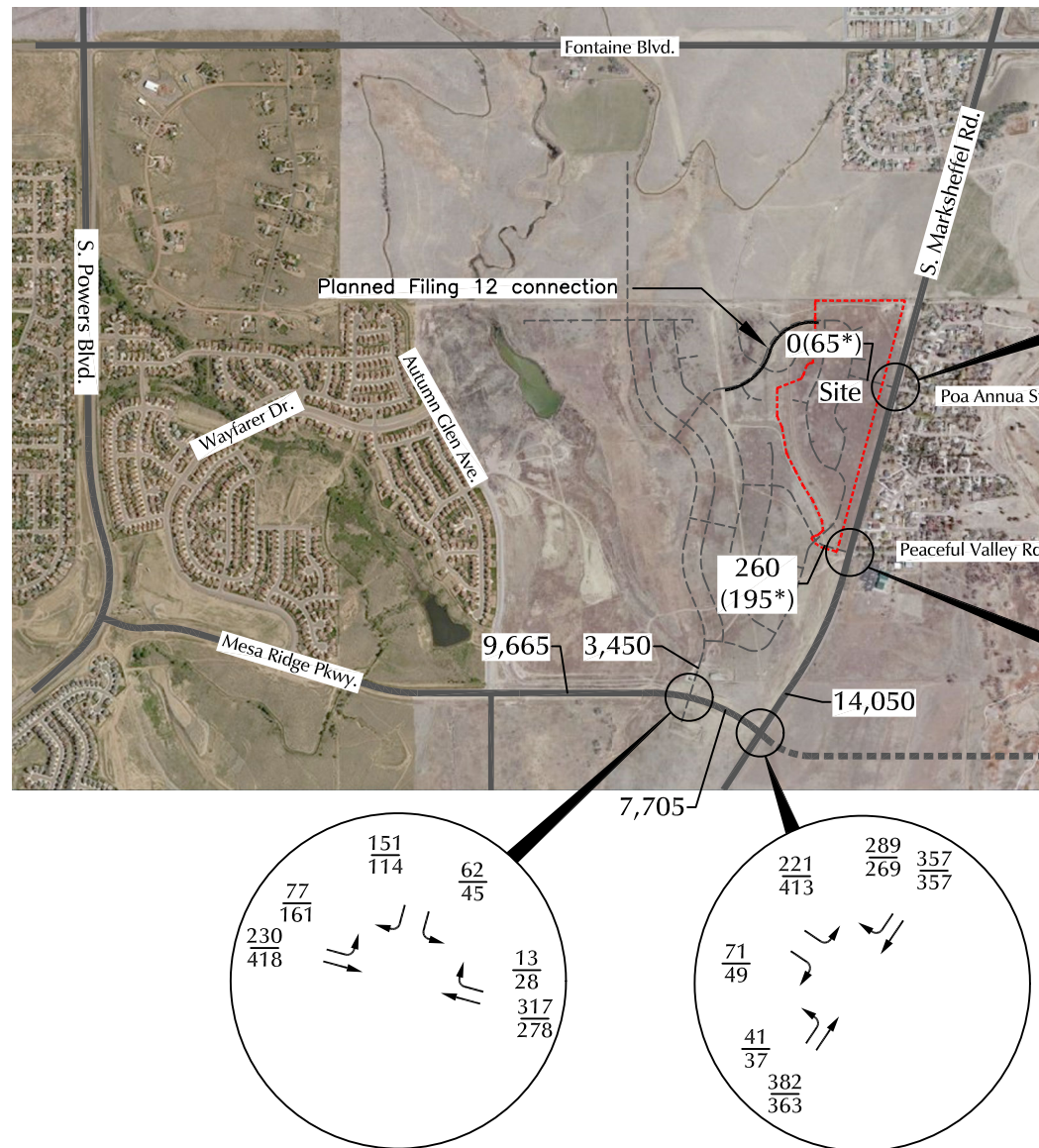
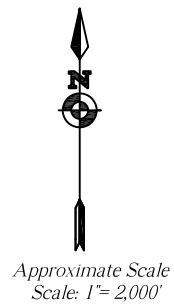
$\frac{D}{C}$  = PM Entire Intersection Peak-Hour Level of Service



Figure 3b

# Existing Lane Geometry, Traffic Control and Level of Service

The Glen at Widefield Fil. 11 (LSC #194800)



\*Volumes with Filing 12 street connections. (See Figure 2 for details)

#### 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)

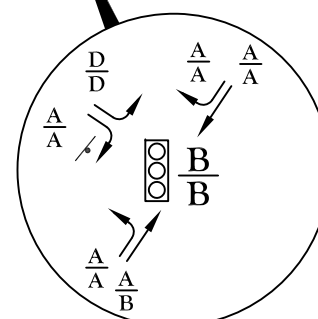
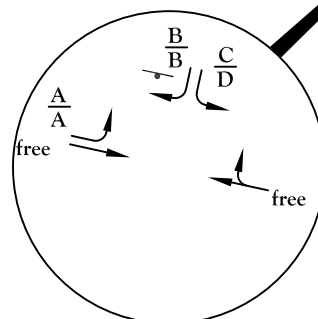
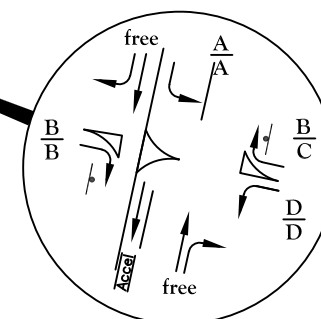
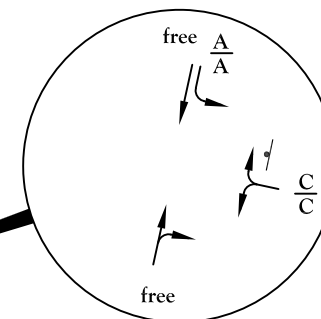
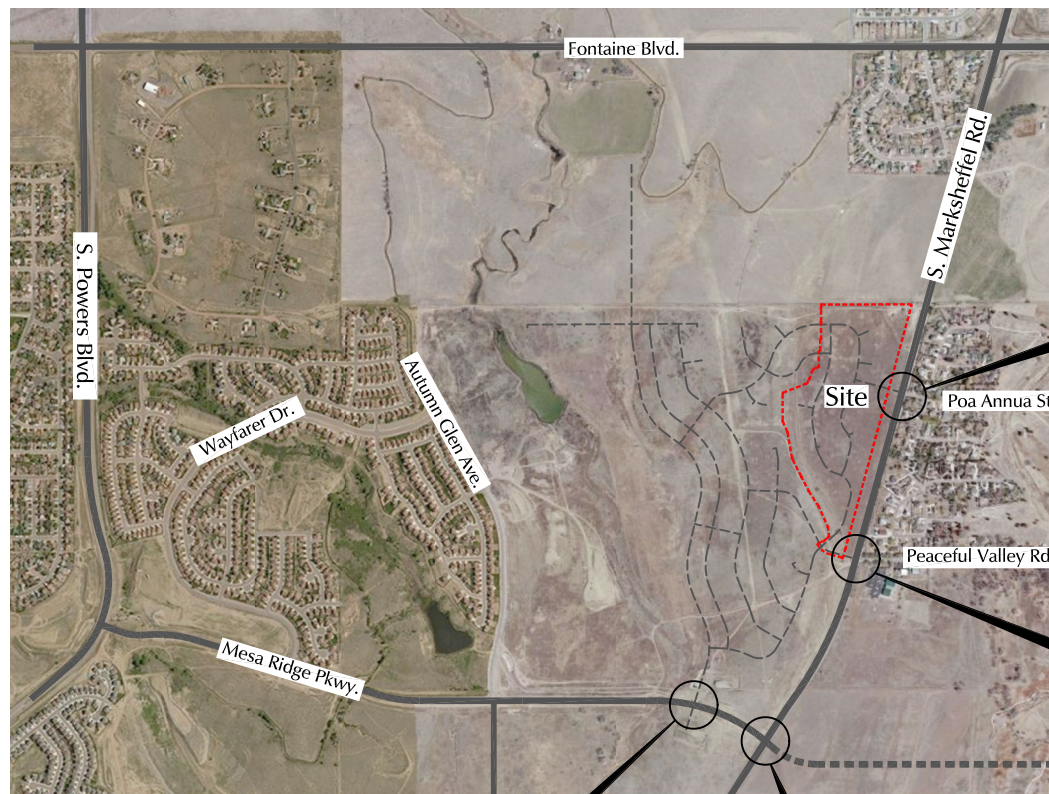
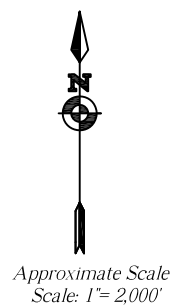


Figure 4a

## Short-Term Background Traffic

The Glen at Widefield Fil. 11 (LSC #194800)





LEGEND:  
 = Stop Sign  
 = Traffic Signal

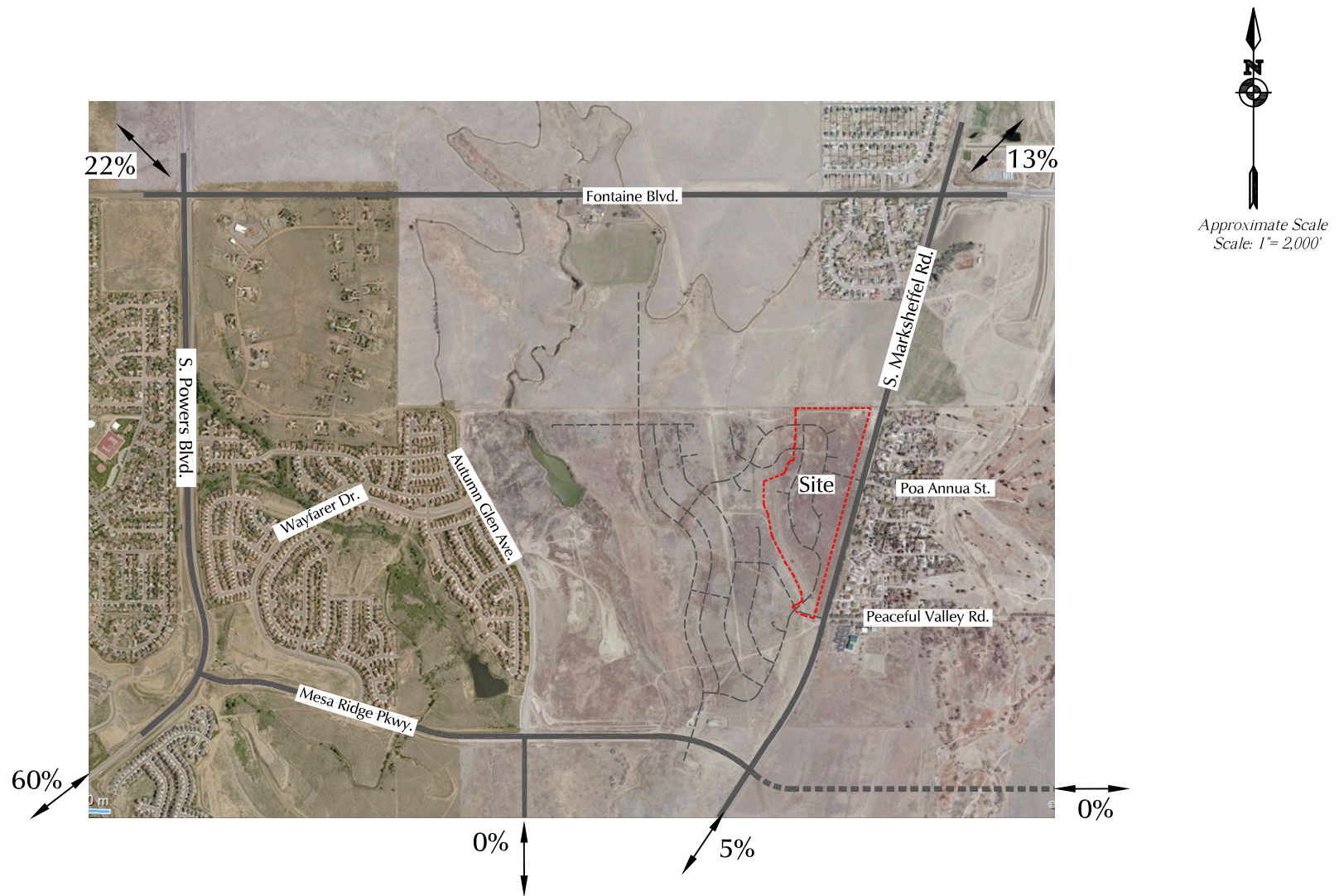
$\frac{A}{B}$  = AM Individual Movement Peak-Hour Level of Service  
 PM Individual Movement Peak-Hour Level of Service  
 $\frac{C}{D}$  = AM Entire Intersection Peak-Hour Level of Service  
 PM Entire Intersection Peak-Hour Level of Service



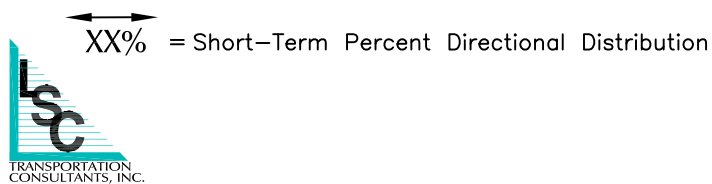
## Short-Term Background Lane Geometry, Traffic Control and Level of Service

Figure 4b

The Glen at Widefield Fil. 11 (LSC #194800)



LEGEND:

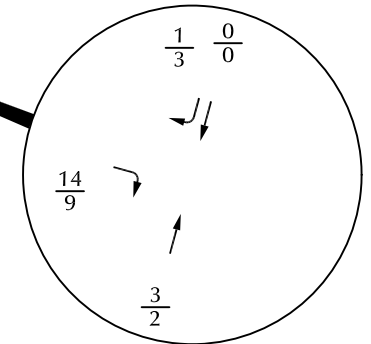
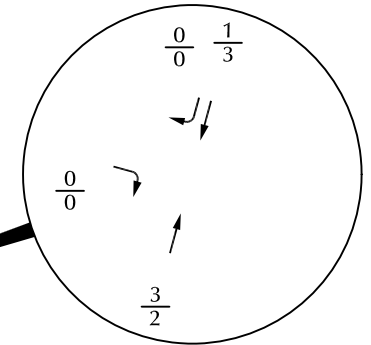
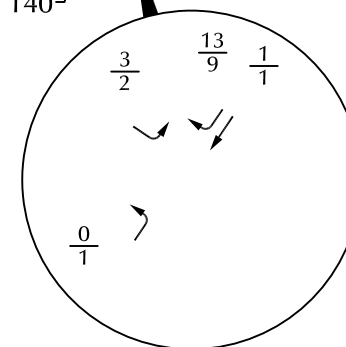
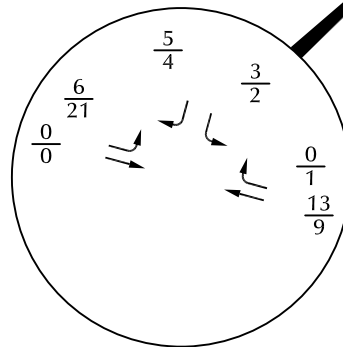
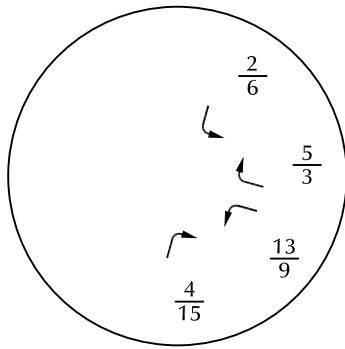
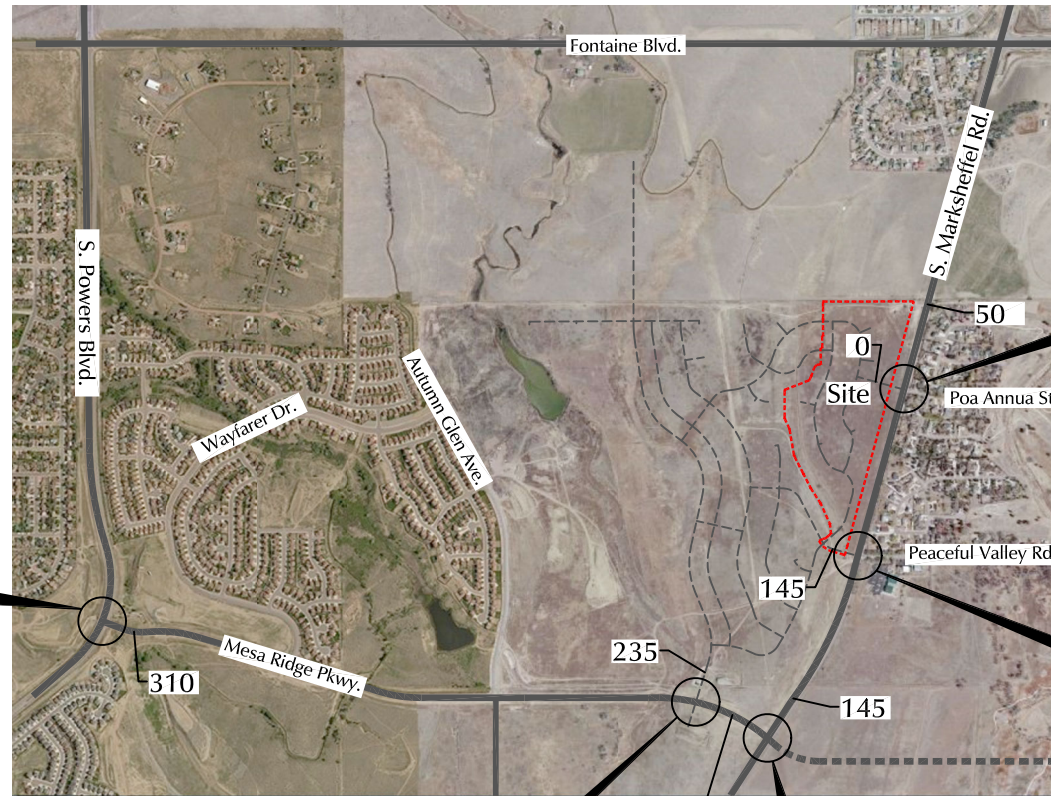
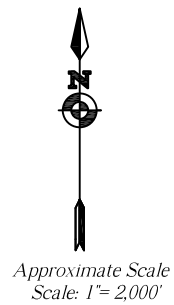


## Estimated Directional Distribution of Site-Generated Traffic

The Glen at Widefield Fil. 11 (LSC #194800)

Figure 5





LEGEND:

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

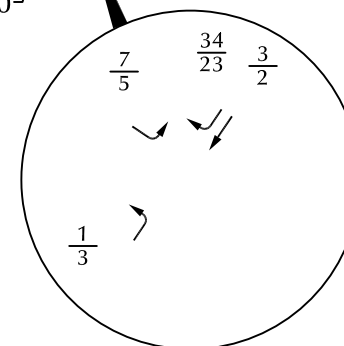
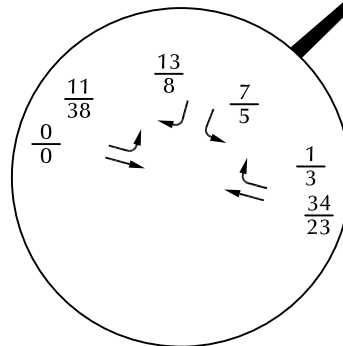
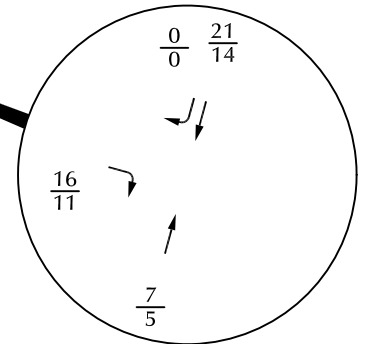
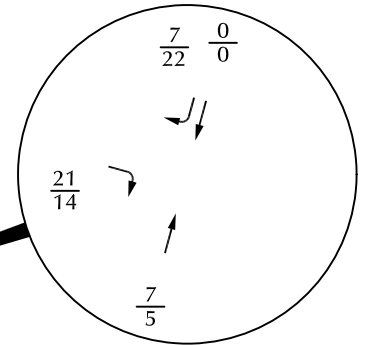
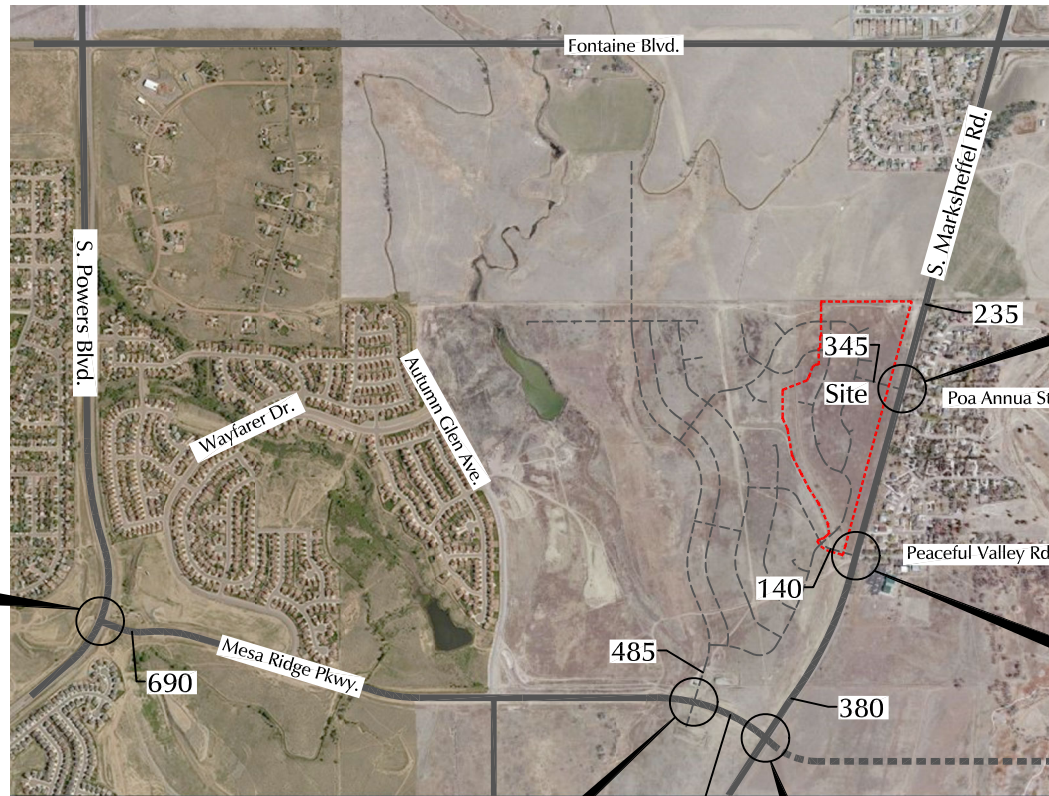
XXX = Average Weekday Traffic (vehicles per day)



# Figure 6 Assignment of Filing 10 Site-Generated Traffic

The Glen at Widefield Fil. 11 (LSC #194800)

Approximate Scale  
Scale: 1"= 2,000'



#### 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)

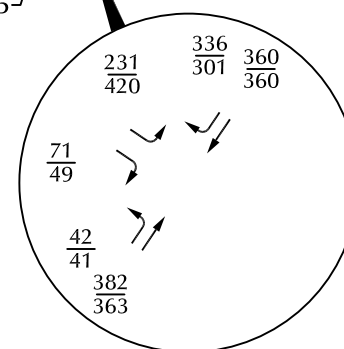
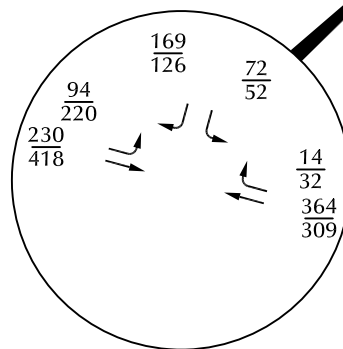
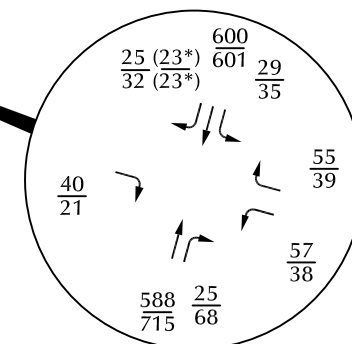
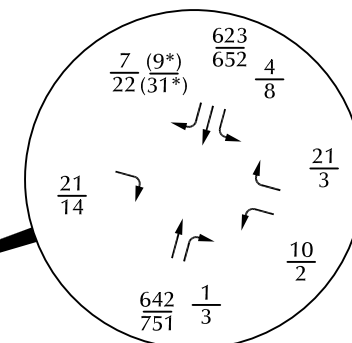
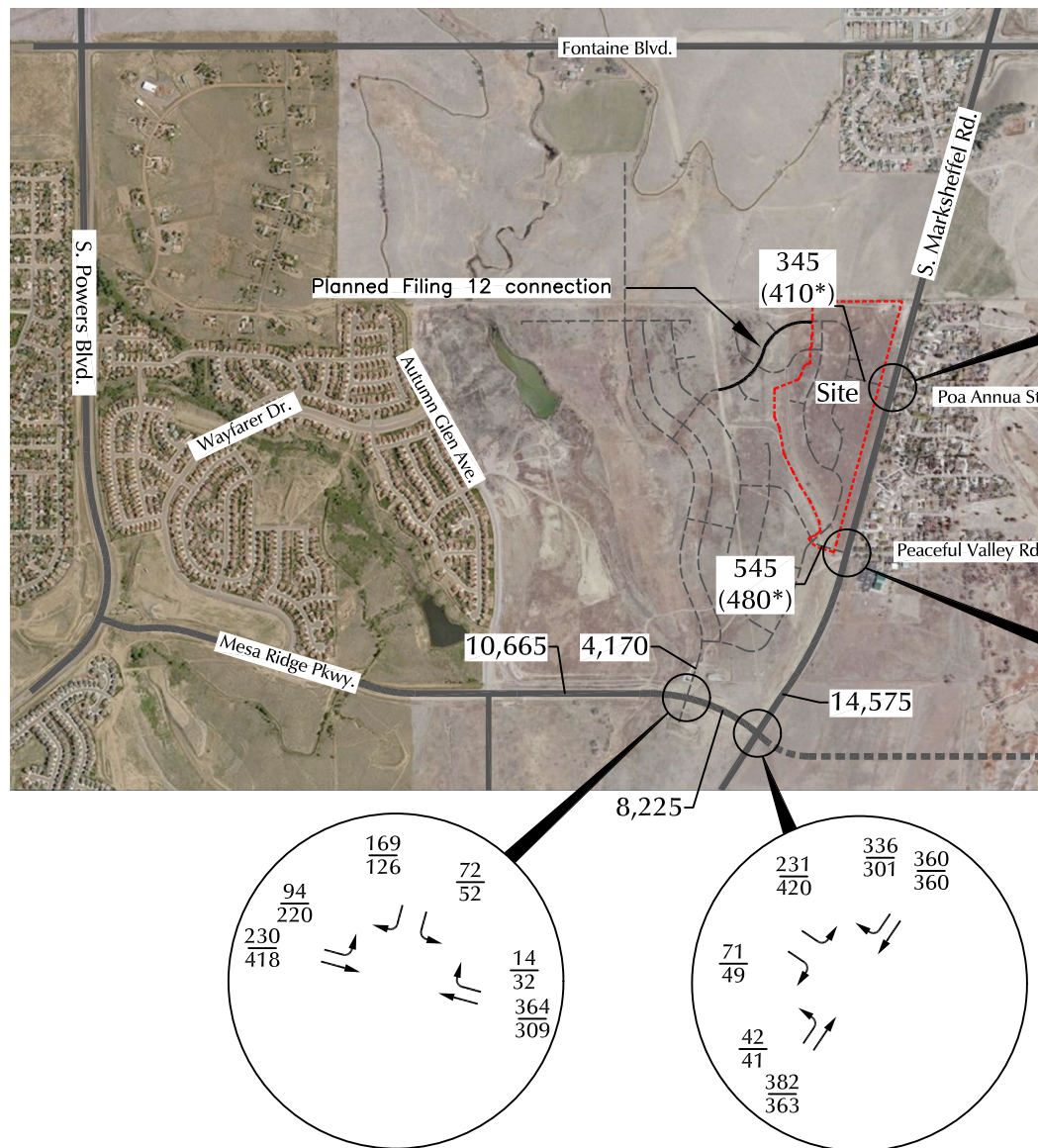
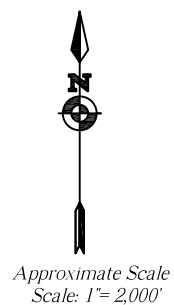


Figure 7

## Assignment of Filing 11 Site-Generated Traffic

The Glen at Widefield Fil. 11 (LSC #194800)





\*Volumes with Filing  
12 connection  
(shown here and in  
Figure 2)

#### 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)

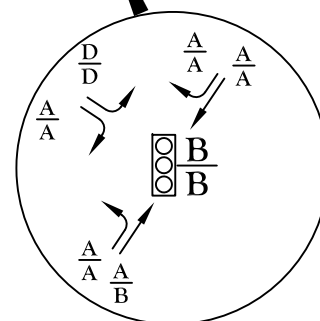
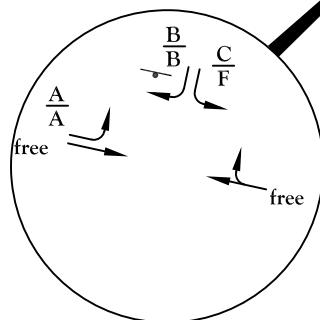
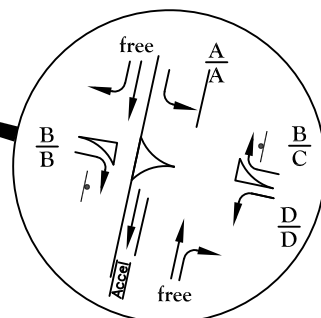
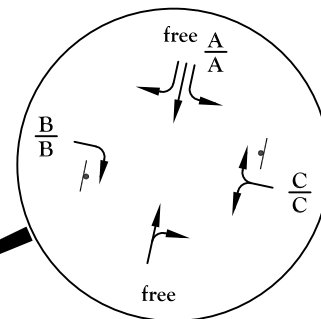
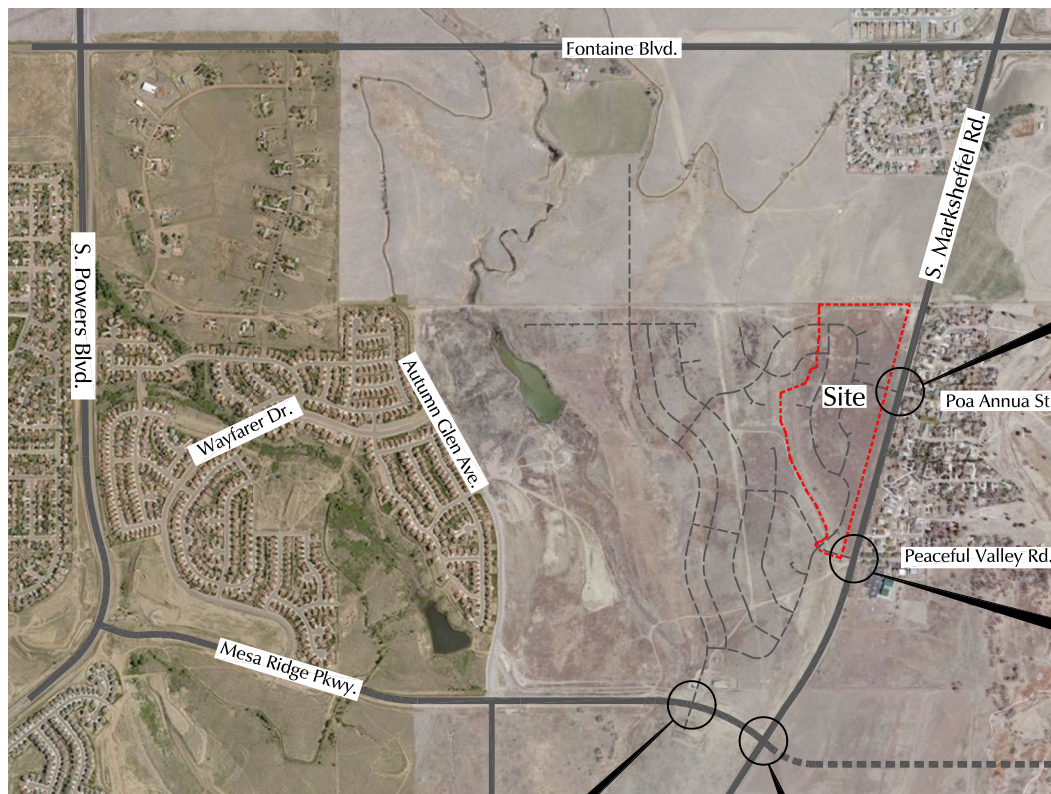


Figure 8a

## Short-Term Total Traffic

The Glen at Widefield Fil. 11 (LSC #194800)

Approximate Scale  
Scale: 1"= 2,000'



#### LEGEND:

— = Stop Sign

⬢ = Traffic Signal

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

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

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

$\frac{D}{D}$  = PM Entire Intersection Peak-Hour Level of Service



Figure 8b

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

The Glen at Widefield Fil. 11 (LSC #194800)



# Traffic Counts

---



# LSC Transportation Consultants, Inc.

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

File Name : Powers Blvd - Mesa Ridge Parkway AM 9-19

Site Code : 00194800

Start Date : 9/25/2019

Page No : 1

## Groups Printed- Unshifted

	Powers Blvd Southbound					Mesa Ridge Pkwy Westbound					Powers Blvd Northbound					Eastbound					
Start Time	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Int. Total
06:30 AM	9	137	0	0	146	114	0	32	0	146	0	109	29	0	138	0	0	0	0	0	430
06:45 AM	21	170	0	0	191	171	0	34	0	205	0	109	43	0	152	0	0	0	0	0	548
Total	30	307	0	0	337	285	0	66	0	351	0	218	72	0	290	0	0	0	0	0	978
07:00 AM	24	159	0	0	183	143	0	56	0	199	0	130	38	0	168	0	0	0	0	0	550
07:15 AM	18	115	0	0	133	112	0	48	0	160	0	119	65	0	184	0	0	0	0	0	477
07:30 AM	25	122	0	0	147	86	0	36	0	122	0	118	52	0	170	0	0	0	0	0	439
07:45 AM	14	118	0	0	132	94	0	41	0	135	0	96	46	0	142	0	0	0	0	0	409
Total	81	514	0	0	595	435	0	181	0	616	0	463	201	0	664	0	0	0	0	0	1875
08:00 AM	21	144	0	0	165	82	0	29	0	111	0	99	59	0	158	0	0	0	0	0	434
08:15 AM	14	151	0	0	165	105	0	23	0	128	0	70	43	0	113	0	0	0	0	0	406
Grand Total	146	1116	0	0	1262	907	0	299	0	1206	0	850	375	0	1225	0	0	0	0	0	3693
Apprch %	11.6	88.4	0	0		75.2	0	24.8	0		0	69.4	30.6	0		0	0	0	0	0	
Total %	4	30.2	0	0	34.2	24.6	0	8.1	0	32.7	0	23	10.2	0	33.2	0	0	0	0	0	

# LSC Transportation Consultants, Inc.

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

File Name : Marksheffel Rd - Mesa Ridge Pkwy AM 2-21  
Site Code : 194800  
Start Date : 2/16/2021  
Page No : 1

## Groups Printed- Unshifted

	Marksheffel Rd Southbound					Westbound					Marksheffel Rd Northbound					Mesa Ridge Pkwy Eastbound					
Start Time	L	T	R	U	App. Total	L	T	R	U	App. Total	L	T	R	U	App. Total	L	T	R	U	App. Total	Int. Total
06:45 AM	0	36	54	0	90	0	0	0	0	0	3	84	0	0	87	27	0	8	0	35	212
Total	0	36	54	0	90	0	0	0	0	0	3	84	0	0	87	27	0	8	0	35	212
07:00 AM	0	35	53	0	88	0	0	0	0	0	3	71	0	0	74	29	0	10	0	39	201
07:15 AM	0	36	51	0	87	0	0	0	0	0	8	64	0	0	72	29	0	8	0	37	196
07:30 AM	0	36	92	0	128	0	0	0	0	0	3	59	0	0	62	19	0	3	0	22	212
07:45 AM	0	52	74	2	128	0	0	0	0	0	6	43	0	0	49	34	0	8	0	42	219
Total	0	159	270	2	431	0	0	0	0	0	20	237	0	0	257	111	0	29	0	140	828
Grand Total	0	195	324	2	521	0	0	0	0	0	23	321	0	0	344	138	0	37	0	175	1040
Apprch %	0	37.4	62.2	0.4		0	0	0	0		6.7	93.3	0	0		78.9	0	21.1	0		
Total %	0	18.8	31.2	0.2	50.1	0	0	0	0	0	2.2	30.9	0	0	33.1	13.3	0	3.6	0	16.8	

# LSC Transportation Consultants, Inc.

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

File Name : Marksheffel Rd - Mesa Ridge Pkwy Mid 2-21  
Site Code : 00194800  
Start Date : 2/17/2021  
Page No : 1

## Groups Printed- Unshifted

Start Time	Marksheffel Rd Southbound					Westbound					Marksheffel Rd Northbound					Mesa Ridge Pkwy Eastbound					Int. Total
	L	T	R	U	App. Total	L	T	R	U	App. Total	L	T	R	U	App. Total	L	T	R	U	App. Total	
11:00 AM	0	16	25	0	41	0	0	0	0	0	5	20	0	0	25	43	0	4	0	47	113
11:15 AM	0	20	28	0	48	0	0	0	0	0	6	28	0	0	34	36	0	6	0	42	124
11:30 AM	0	31	44	0	75	0	0	0	0	0	6	28	0	0	34	43	0	8	0	51	160
11:45 AM	0	30	29	0	59	0	0	0	0	0	4	20	0	0	24	55	0	10	0	65	148
Total	0	97	126	0	223	0	0	0	0	0	21	96	0	0	117	177	0	28	0	205	545
12:00 PM	0	25	35	0	60	0	0	0	0	0	4	26	0	0	30	44	0	6	0	50	140
12:15 PM	0	30	40	0	70	0	0	0	0	0	4	29	0	0	33	58	0	9	0	67	170
12:30 PM	0	33	51	0	84	0	0	0	0	0	5	32	0	0	37	52	0	7	0	59	180
12:45 PM	0	42	36	0	78	0	0	0	0	0	4	29	0	0	33	49	0	8	0	57	168
Total	0	130	162	0	292	0	0	0	0	0	17	116	0	0	133	203	0	30	0	233	658
Grand Total	0	227	288	0	515	0	0	0	0	0	38	212	0	0	250	380	0	58	0	438	1203
Apprch %	0	44.1	55.9	0		0	0	0	0		15.2	84.8	0	0		86.8	0	13.2	0		
Total %	0	18.9	23.9	0	42.8	0	0	0	0		3.2	17.6	0	0	20.8	31.6	0	4.8	0	36.4	

# LSC Transportation Consultants, Inc.

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

File Name : Marksheffel Rd - Mesa Ridge Pkwy AM-PM 2-21

Site Code : 194800

Start Date : 2/16/2021

Page No : 1

## Groups Printed- Unshifted

Start Time	Marksheffel Rd Southbound					Westbound					Marksheffel Rd Northbound					Mesa Ridge Pkwy Eastbound					Int. Total
	L	T	R	U	App. Total	L	T	R	U	App. Total	L	T	R	U	App. Total	L	T	R	U	App. Total	
08:30 AM	0	43	109	0	152	0	0	0	0	0	5	47	0	0	52	26	0	24	0	50	254
08:45 AM	0	24	48	0	72	0	0	0	0	0	5	21	0	0	26	31	0	14	0	45	143
Total	0	67	157	0	224	0	0	0	0	0	10	68	0	0	78	57	0	38	0	95	397
09:00 AM	0	29	42	0	71	0	0	0	0	0	3	31	0	0	34	27	0	8	0	35	140
09:15 AM	0	21	36	0	57	0	0	0	0	0	5	22	0	0	27	31	0	10	0	41	125
*** BREAK ***																					
Total	0	50	78	0	128	0	0	0	0	0	8	53	0	0	61	58	0	18	0	76	265
*** BREAK ***																					
03:00 PM	0	41	45	0	86	0	0	0	0	0	7	30	0	0	37	56	0	8	0	64	187
03:15 PM	0	47	52	0	99	0	0	0	0	0	11	45	0	0	56	56	0	7	0	63	218
03:30 PM	0	56	46	0	102	0	0	0	0	0	5	48	0	0	53	73	0	11	0	84	239
03:45 PM	0	45	50	0	95	0	0	0	0	0	6	50	0	0	56	84	0	8	0	92	243
Total	0	189	193	0	382	0	0	0	0	0	29	173	0	0	202	269	0	34	0	303	887
*** BREAK ***																					
04:30 PM	0	51	43	0	94	0	0	0	0	0	5	42	0	0	47	98	0	5	0	103	244
04:45 PM	0	77	47	0	124	0	0	0	0	0	6	46	0	0	52	101	0	7	0	108	284
Total	0	128	90	0	218	0	0	0	0	0	11	88	0	0	99	199	0	12	0	211	528
05:00 PM	0	56	37	0	93	0	0	0	0	0	11	47	0	0	58	88	0	4	0	92	243
05:15 PM	0	58	52	0	110	0	0	0	0	0	9	40	0	0	49	81	0	6	0	87	246
05:30 PM	0	48	50	0	98	0	0	0	0	0	11	44	0	0	55	72	0	14	0	86	239
05:45 PM	0	47	42	0	89	0	0	0	0	0	4	42	0	0	46	90	0	11	0	101	236
Total	0	209	181	0	390	0	0	0	0	0	35	173	0	0	208	331	0	35	0	366	964
06:00 PM	0	30	30	0	60	0	0	0	0	0	7	32	0	0	39	103	0	4	0	107	206
06:15 PM	0	31	27	0	58	0	0	0	0	0	7	24	0	0	31	80	0	10	0	90	179
Grand Total	0	704	756	0	1460	0	0	0	0	0	107	611	0	0	718	1097	0	151	0	1248	3426
Apprch %	0	48.2	51.8	0		0	0	0	0		14.9	85.1	0	0		87.9	0	12.1	0		
Total %	0	20.5	22.1	0	42.6	0	0	0	0	0	3.1	17.8	0	0	21	32	0	4.4	0	36.4	

# LSC Transportation Consultants, Inc.

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

File Name : Marksheffel Rd - Mesa Ridge Pkwy PM 2-21

Site Code : 00194800

Start Date : 2/23/2021

Page No : 1

## Groups Printed- Unshifted

Start Time	Marksheffel Rd Southbound					Westbound					Marksheffel Rd Northbound					Mesa Ridge Pkwy Eastbound					Int. Total
	L	T	R	U	App. Total	L	T	R	U	App. Total	L	T	R	U	App. Total	L	T	R	U	App. Total	
06:30 PM	0	27	46	0	73	0	0	0	0	0	4	41	0	0	45	74	0	6	0	80	198
06:45 PM	0	36	33	0	69	0	0	0	0	0	6	23	0	0	29	57	0	6	0	63	161
Total	0	63	79	0	142	0	0	0	0	0	10	64	0	0	74	131	0	12	0	143	359
07:00 PM	0	25	26	0	51	0	0	0	0	0	0	19	0	0	19	47	0	4	0	51	121
07:15 PM	0	22	22	0	44	0	0	0	0	0	5	21	0	0	26	47	0	11	0	58	128
Grand Total	0	110	127	0	237	0	0	0	0	0	15	104	0	0	119	225	0	27	0	252	608
Apprch %	0	46.4	53.6	0		0	0	0	0		12.6	87.4	0	0		89.3	0	10.7	0		
Total %	0	18.1	20.9	0	39	0	0	0	0	0	2.5	17.1	0	0	19.6	37	0	4.4	0	41.4	

# LSC Transportation Consultants, Inc.

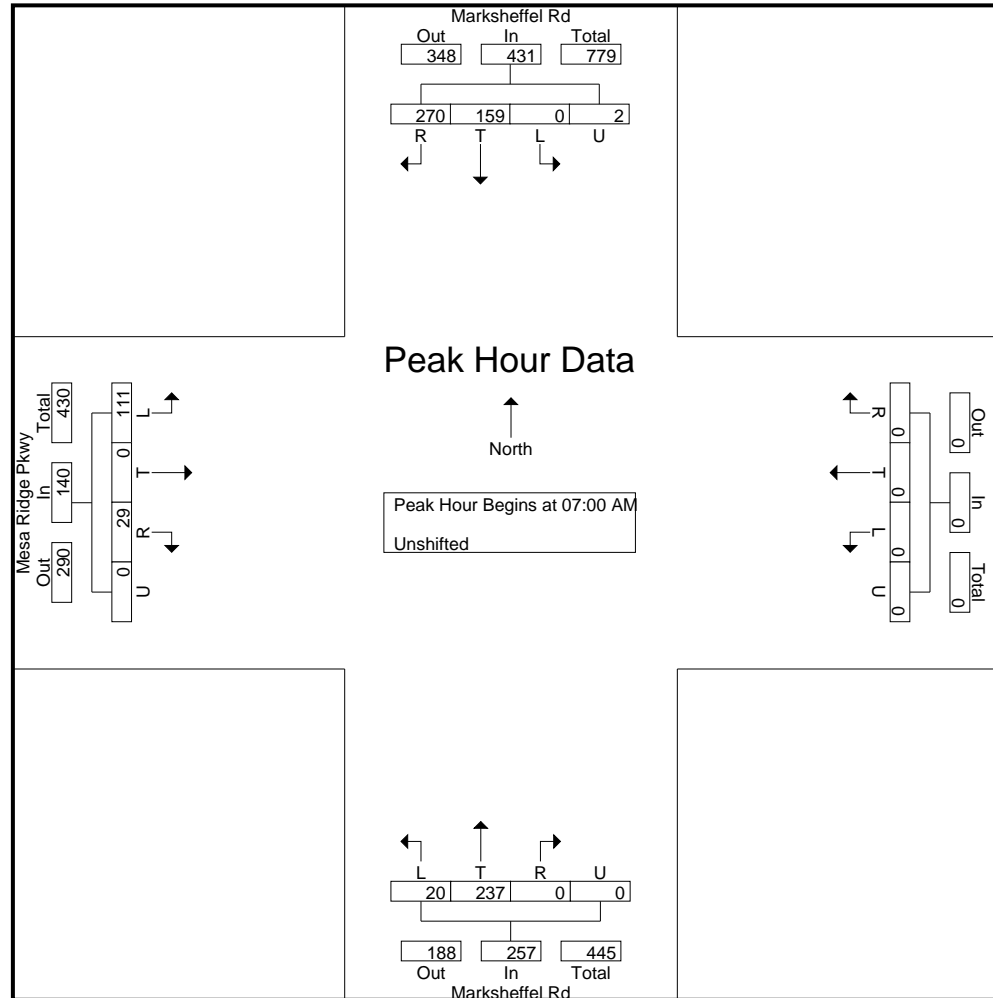
545 E Pikes Peak Ave, Suite 210  
Colorado Springs, CO 80905  
719-633-2868

File Name : Marksheffel Rd - Mesa Ridge Pkwy AM 2-21

Site Code : 194800

Start Date : 2/16/2021

Page No : 3



# LSC Transportation Consultants, Inc.

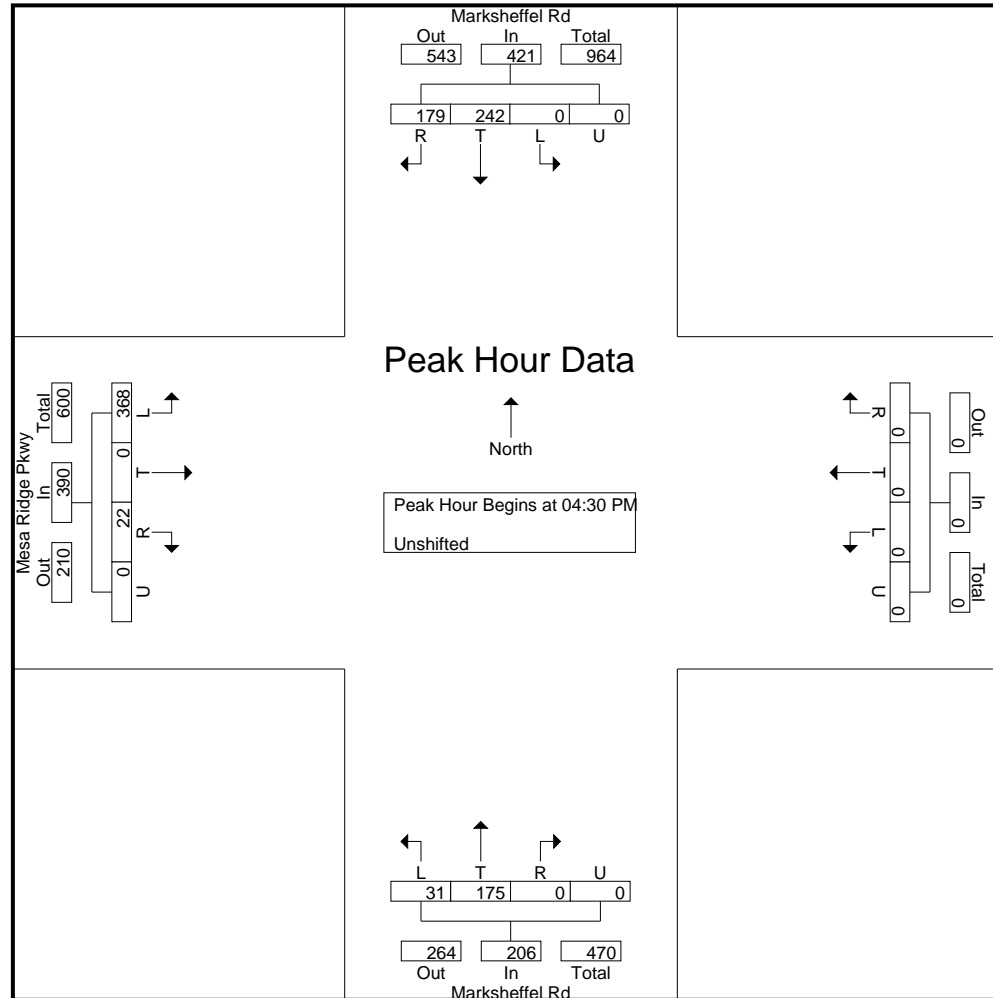
545 E Pikes Peak Ave, Suite 210  
Colorado Springs, CO 80905  
719-633-2868

File Name : Marksheffel Rd - Mesa Ridge Pkwy AM-PM 2-21

Site Code : 194800

Start Date : 2/16/2021

Page No : 3







File Name : marksheffel rd - mesa ridge pkwy am 9-19

Site Code : 00194800

Start Date : 9/25/2019

Page No : 1

Groups Printed- Unshifted

	Marksheffel Rd Southbound					Westbound					Marksheffel Rd Northbound					Mesa Ridge Pkwy Eastbound					
06:30 AM	0	63	55	1	119	0	0	0	0	0	4	71	0	0	75	27	0	7	0	34	228
06:45 AM	0	64	53	0	117	0	0	0	0	0	9	93	0	0	102	43	0	13	0	56	275
Total	0	127	108	1	236	0	0	0	0	0	13	164	0	0	177	70	0	20	0	90	503
07:00 AM	0	66	52	0	118	0	0	0	0	0	7	97	0	0	104	35	0	20	0	55	277
07:15 AM	0	60	38	0	98	0	0	0	0	0	13	86	0	0	99	48	0	18	0	66	263
07:30 AM	0	53	35	0	88	0	0	0	0	0	8	81	0	0	89	43	0	16	0	59	236
07:45 AM	0	53	36	0	89	0	0	0	0	0	6	61	0	0	67	37	0	12	0	49	205
Total	0	232	161	0	393	0	0	0	0	0	34	325	0	0	359	163	0	66	0	229	981
08:00 AM	0	32	48	0	80	0	0	0	0	0	10	68	0	0	78	37	0	8	0	45	203
08:15 AM	0	34	54	0	88	0	0	0	0	0	4	44	0	0	48	36	0	3	0	39	175
	0	425	371	1	797	0	0	0	0	0	61	601	0	0	662	306	0	97	0	403	1862
Apprch %	0			0.1		0	0	0	0	0	9.2		0	0			0		0		
Total %	0			0.1	42.8	0	0	0	0	0	3.3		0	0	35.6		0	5.2	0	21.6	

# LSC Transportation Consultants, Inc.

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

File Name : Marksheffel Rd - Mesa Ridge Pkwy Noon  
Site Code : 00194800  
Start Date : 2/20/2020  
Page No : 1

## Groups Printed- Unshifted

Start Time	Marksheffel Rd Southbound					Westbound					Marksheffel Rd Northbound					Mesa Ridge Pkwy Eastbound					Int. Total
	L	T	R	U	App. Total	L	T	R	U	App. Total	L	T	R	U	App. Total	L	T	R	U	App. Total	
11:30 AM	0	20	17	0	37	0	0	0	0	0	7	43	0	0	50	43	0	5	0	48	135
11:45 AM	0	29	28	0	57	0	0	0	0	0	1	34	0	0	35	50	0	10	0	60	152
Total	0	49	45	0	94	0	0	0	0	0	8	77	0	0	85	93	0	15	0	108	287
12:00 PM	0	28	23	0	51	0	0	0	0	0	10	41	0	0	51	47	0	10	0	57	159
12:15 PM	0	34	26	0	60	0	0	0	0	0	4	44	0	0	48	36	0	6	0	42	150
12:30 PM	0	27	30	0	57	0	0	0	0	0	5	33	0	0	38	36	0	9	0	45	140
12:45 PM	0	23	27	0	50	0	0	0	0	0	5	27	0	0	32	28	0	8	0	36	118
Total	0	112	106	0	218	0	0	0	0	0	24	145	0	0	169	147	0	33	0	180	567
01:00 PM	0	23	29	0	52	0	0	0	0	0	9	29	0	0	38	34	0	11	0	45	135
01:15 PM	0	25	30	1	56	0	0	0	0	0	6	39	0	0	45	31	0	4	0	35	136
Grand Total	0	209	210	1	420	0	0	0	0	0	47	290	0	0	337	305	0	63	0	368	1125
Apprch %	0	49.8	50	0.2		0	0	0	0		13.9	86.1	0	0		82.9	0	17.1	0		
Total %	0	18.6	18.7	0.1	37.3	0	0	0	0	0	4.2	25.8	0	0	30	27.1	0	5.6	0	32.7	

# LSC Transportation Consultants, Inc.

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

File Name : Marksheffel Rd - Mesa Ridge Pkwy Mid  
Site Code : 00194800  
Start Date : 2/19/2020  
Page No : 1

## Groups Printed- Unshifted

Start Time	Meridian Rd Southbound					Westbound					Meridian Rd Northbound					Mesa Ridge Pkwy Eastbound					Int. Total
	L	T	R	U	App. Total	L	T	R	U	App. Total	L	T	R	U	App. Total	L	T	R	U	App. Total	
01:30 PM	0	19	28	0	47	0	0	0	0	0	6	32	0	0	38	46	0	3	0	49	134
01:45 PM	0	24	14	0	38	0	0	0	0	0	6	19	0	0	25	45	0	9	0	54	117
Total	0	43	42	0	85	0	0	0	0	0	12	51	0	0	63	91	0	12	0	103	251
02:00 PM	0	32	33	0	65	0	0	0	0	0	4	26	0	0	30	34	0	9	0	43	138
02:15 PM	0	25	28	0	53	0	0	0	0	0	7	18	0	0	25	45	0	3	0	48	126
02:30 PM	0	38	29	0	67	0	0	0	0	0	11	22	0	0	33	40	0	10	0	50	150
02:45 PM	0	35	26	0	61	0	0	0	0	0	9	28	0	0	37	55	0	7	0	62	160
Total	0	130	116	0	246	0	0	0	0	0	31	94	0	0	125	174	0	29	0	203	574
03:00 PM	0	49	31	0	80	0	0	0	0	0	10	29	0	0	39	59	0	4	0	63	182
03:15 PM	0	50	31	0	81	0	0	0	0	0	7	41	0	0	48	67	0	8	0	75	204
Grand Total	0	272	220	0	492	0	0	0	0	0	60	215	0	0	275	391	0	53	0	444	1211
Apprch %	0	55.3	44.7	0		0	0	0	0		21.8	78.2	0	0		88.1	0	11.9	0		
Total %	0	22.5	18.2	0	40.6	0	0	0	0	0	5	17.8	0	0	22.7	32.3	0	4.4	0	36.7	



# LSC Transportation Consultants, Inc.

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

File Name : Marksheffel Rd - Mesa Ridge Pkwy PM 9-19

Site Code : 00194800

Start Date : 9/25/2019

Page No : 1

## Groups Printed- Unshifted

Start Time	Marksheffel Rd Southbound					Westbound					Marksheffel Rd Northbound					Mesa Ridge Pkwy Eastbound					Int. Total
	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	
04:00 PM	0	56	39	0	95	0	0	0	0	0	5	76	0	0	81	67	0	11	0	78	254
04:15 PM	0	76	43	0	119	0	0	0	0	0	8	37	0	0	45	70	0	11	0	81	245
04:30 PM	0	66	41	0	107	0	0	0	0	0	12	51	0	0	63	76	0	12	0	88	258
04:45 PM	0	77	51	0	128	0	0	0	0	0	5	53	0	0	58	83	0	5	0	88	274
Total	0	275	174	0	449	0	0	0	0	0	30	217	0	0	247	296	0	39	0	335	1031
05:00 PM	0	70	39	0	109	0	0	0	0	0	8	52	0	0	60	60	0	7	0	67	236
05:15 PM	0	85	33	0	118	0	0	0	0	0	4	73	0	0	77	66	0	8	0	74	269
05:30 PM	0	57	45	0	102	0	0	0	0	0	10	52	0	0	62	62	0	9	0	71	235
05:45 PM	0	60	36	0	96	0	0	0	0	0	9	41	0	0	50	60	0	14	0	74	220
Total	0	272	153	0	425	0	0	0	0	0	31	218	0	0	249	248	0	38	0	286	960
Grand Total	0	547	327	0	874	0	0	0	0	0	61	435	0	0	496	544	0	77	0	621	1991
Apprch %	0	62.6	37.4	0		0	0	0	0		12.3	87.7	0	0		87.6	0	12.4	0		
Total %	0	27.5	16.4	0	43.9	0	0	0	0	0	3.1	21.8	0	0	24.9	27.3	0	3.9	0	31.2	



# LSC Transportation Consultants, Inc.

545 E Pikes Peak Ave, Suite 210

Colorado Springs, CO 80905

719-633-2868

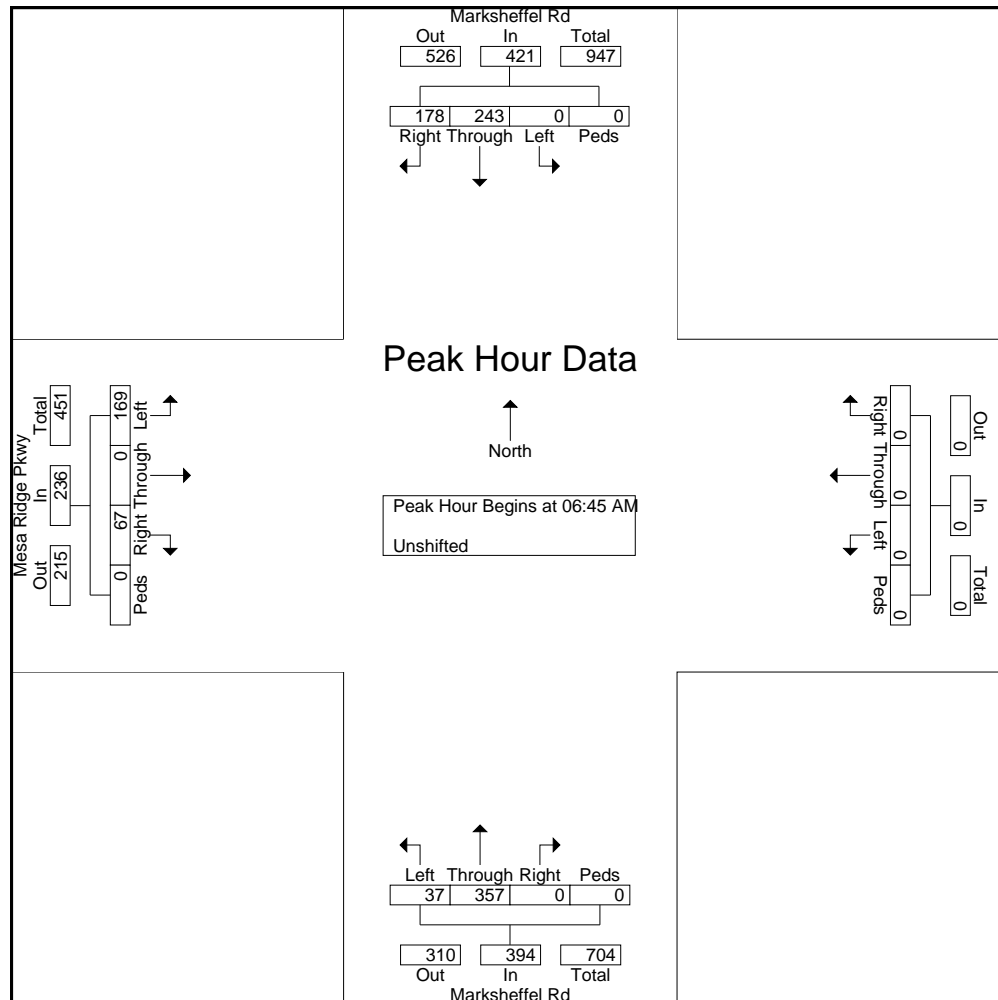
File Name : marksheffel rd - mesa ridge pkwy am 9-19

Site Code : 00194800

Start Date : 9/25/2019

Page No : 2

	Marksheffel Rd Southbound					Westbound					Marksheffel Rd Northbound					Mesa Ridge Pkwy Eastbound					
Start Time	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Int. Total
<b>Peak Hour Analysis From 06:30 AM to 08:15 AM - Peak 1 of 1</b>																					
Peak Hour for Entire Intersection Begins at 06:45 AM																					
06:45 AM	0	64	53	0	117	0	0	0	0	0	9	93	0	0	102	43	0	13	0	56	275
07:00 AM	0	66	52	0	118	0	0	0	0	0	7	97	0	0	104	35	0	20	0	55	277
07:15 AM	0	60	38	0	98	0	0	0	0	0	13	86	0	0	99	48	0	18	0	66	263
07:30 AM	0	53	35	0	88	0	0	0	0	0	8	81	0	0	89	43	0	16	0	59	236
Total Volume	0	243	178	0	421	0	0	0	0	0	37	357	0	0	394	169	0	67	0	236	1051
% App. Total	0	57.7	42.3	0		0	0	0	0		9.4	90.6	0	0		71.6	0	28.4	0		
PHF	.000	.920	.840	.000	.892	.000	.000	.000	.000	.000	.712	.920	.000	.000	.947	.880	.000	.838	.000	.894	.949





# LSC Transportation Consultants, Inc.

545 E Pikes Peak Ave, Suite 210

Colorado Springs, CO 80905

719-633-2868

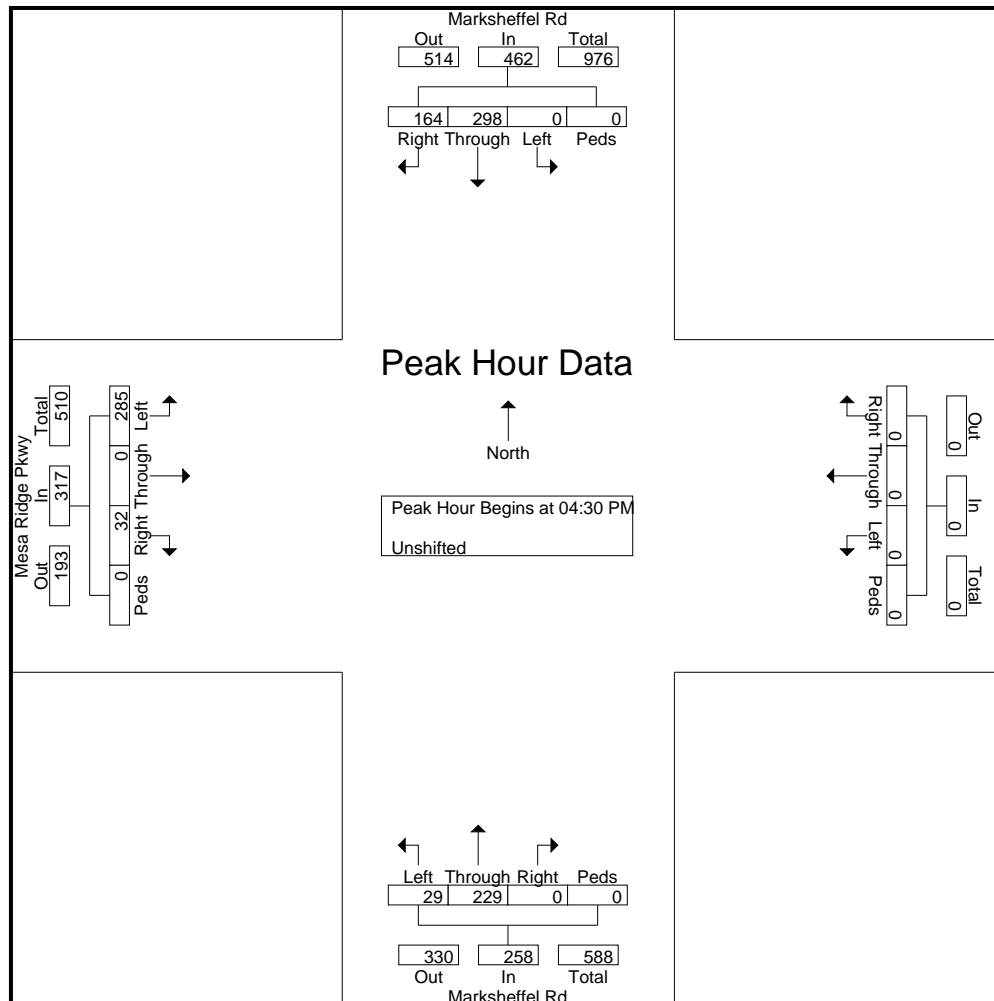
File Name : Marksheffel Rd - Mesa Ridge Pkwy PM 9-19

Site Code : 00194800

Start Date : 9/25/2019

Page No : 2

	Marksheffel Rd Southbound					Westbound					Marksheffel Rd Northbound					Mesa Ridge Pkwy Eastbound					
Start Time	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Int. Total
<b>Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1</b>																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	0	66	41	0	107	0	0	0	0	0	12	51	0	0	63	76	0	12	0	88	258
04:45 PM	0	77	51	0	128	0	0	0	0	0	5	53	0	0	58	83	0	5	0	88	274
05:00 PM	0	70	39	0	109	0	0	0	0	0	8	52	0	0	60	60	0	7	0	67	236
05:15 PM	0	85	33	0	118	0	0	0	0	0	4	73	0	0	77	66	0	8	0	74	269
Total Volume	0	298	164	0	462	0	0	0	0	0	29	229	0	0	258	285	0	32	0	317	1037
% App. Total	0	64.5	35.5	0		0	0	0	0		11.2	88.8	0	0		89.9	0	10.1	0		
PHF	.000	.876	.804	.000	.902	.000	.000	.000	.000	.000	.604	.784	.000	.000	.838	.858	.000	.667	.000	.901	.946





# LSC Transportation Consultants, Inc.

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

File Name : Marksheffel Rd - Peaceful Valley Rd AM 9-19

Site Code : 194800

Start Date : 9/12/2019

Page No : 1

## Groups Printed- Unshifted

	Marksheffel Rd Southbound					Peaceful Valley Rd Westbound					Marksheffel Rd Northbound					Peaceful Valley Rd Eastbound					
Start Time	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Int. Total
06:30 AM	3	72	4	0	79	8	0	7	0	15	0	94	3	0	97	7	0	1	0	8	199
06:45 AM	5	110	5	0	120	13	1	12	0	26	0	107	6	0	113	4	0	2	0	6	265
Total	8	182	9	0	199	21	1	19	0	41	0	201	9	0	210	11	0	3	0	14	464
07:00 AM	6	112	2	0	120	25	0	12	0	37	0	139	2	0	141	1	0	2	0	3	301
07:15 AM	7	92	5	0	104	12	0	12	0	24	2	147	9	0	158	13	1	3	0	17	303
07:30 AM	11	108	8	0	127	6	0	19	0	25	0	131	7	0	138	3	0	1	0	4	294
07:45 AM	13	77	3	0	93	6	0	6	0	12	0	98	12	0	110	3	0	1	0	4	219
Total	37	389	18	0	444	49	0	49	0	98	2	515	30	0	547	20	1	7	0	28	1117
08:00 AM	15	68	12	0	95	17	0	10	0	27	0	93	16	0	109	1	1	0	0	2	233
08:15 AM	23	69	2	0	94	24	0	16	0	40	0	45	25	0	70	1	0	0	0	1	205
Grand Total	83	708	41	0	832	111	1	94	0	206	2	854	80	0	936	33	2	10	0	45	2019
Apprch %	10	85.1	4.9	0		53.9	0.5	45.6	0		0.2	91.2	8.5	0		73.3	4.4	22.2	0		
Total %	4.1	35.1	2	0	41.2	5.5	0	4.7	0	10.2	0.1	42.3	4	0	46.4	1.6	0.1	0.5	0	2.2	



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719-633-2868

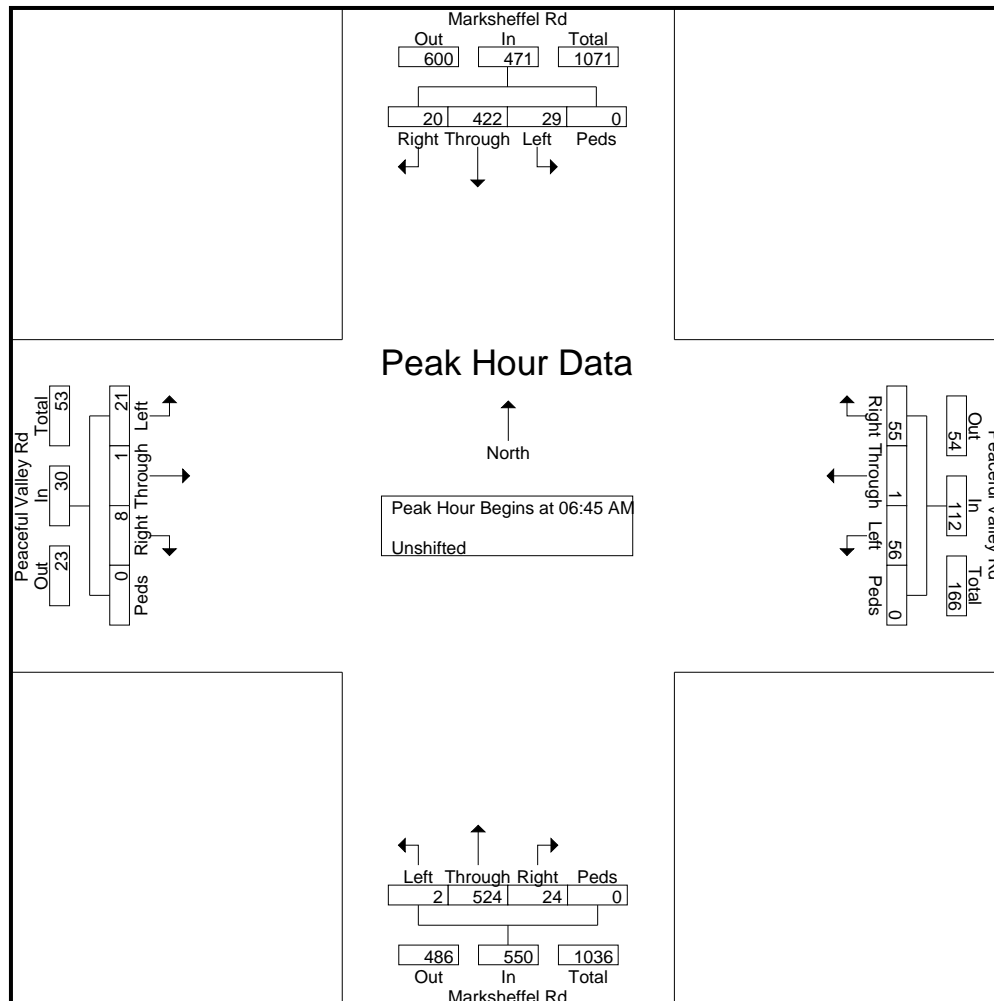
File Name : Marksheffel Rd - Peaceful Valley Rd AM 9-19

Site Code : 194800

Start Date : 9/12/2019

Page No : 2

	Marksheffel Rd Southbound					Peaceful Valley Rd Westbound					Marksheffel Rd Northbound					Peaceful Valley Rd Eastbound					
Start Time	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Int. Total
<b>Peak Hour Analysis From 06:30 AM to 08:15 AM - Peak 1 of 1</b>																					
Peak Hour for Entire Intersection Begins at 06:45 AM																					
06:45 AM	5	110	5	0	120	13	1	12	0	26	0	107	6	0	113	4	0	2	0	6	265
07:00 AM	6	112	2	0	120	25	0	12	0	37	0	139	2	0	141	1	0	2	0	3	301
07:15 AM	7	92	5	0	104	12	0	12	0	24	2	147	9	0	158	13	1	3	0	17	303
07:30 AM	11	108	8	0	127	6	0	19	0	25	0	131	7	0	138	3	0	1	0	4	294
Total Volume	29	422	20	0	471	56	1	55	0	112	2	524	24	0	550	21	1	8	0	30	1163
% App. Total	6.2	89.6	4.2	0		50	0.9	49.1	0		0.4	95.3	4.4	0		70	3.3	26.7	0		
PHF	.659	.942	.625	.000	.927	.560	.250	.724	.000	.757	.250	.891	.667	.000	.870	.404	.250	.667	.000	.441	.960







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File Name : Marksheffel Rd - Peaceful Valley Rd PM 9-19

Site Code : 00194800

Start Date : 9/12/2019

Page No : 1

## Groups Printed- Unshifted

	Marksheffel Rd Southbound					Peaceful Valley Rd Westbound					Marksheffel Rd Northbound					Peaceful Valley Rd Eastbound					
Start Time	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Int. Total
04:00 PM	9	94	2	0	105	5	0	6	0	11	1	107	9	0	117	1	0	0	0	1	234
04:15 PM	19	120	3	0	142	5	0	7	0	12	0	118	14	0	132	5	1	0	0	6	292
04:30 PM	7	91	2	0	100	10	1	13	0	24	1	130	15	0	146	3	1	0	0	4	274
04:45 PM	3	110	6	0	119	11	0	8	0	19	1	109	20	0	130	3	0	0	0	3	271
Total	38	415	13	0	466	31	1	34	0	66	3	464	58	0	525	12	2	0	0	14	1071
05:00 PM	6	105	3	0	114	11	0	11	0	22	0	104	17	0	121	4	0	0	0	4	261
05:15 PM	7	94	4	0	105	9	0	8	0	17	0	121	22	0	143	1	0	0	0	1	266
05:30 PM	8	98	2	0	108	7	0	7	0	14	0	97	9	0	106	0	0	0	0	0	228
05:45 PM	6	98	1	0	105	6	0	9	0	15	1	100	11	0	112	3	1	1	0	5	237
Total	27	395	10	0	432	33	0	35	0	68	1	422	59	0	482	8	1	1	0	10	992
Grand Total	65	810	23	0	898	64	1	69	0	134	4	886	117	0	1007	20	3	1	0	24	2063
Apprch %	7.2	90.2	2.6	0		47.8	0.7	51.5	0		0.4	88	11.6	0		83.3	12.5	4.2	0		
Total %	3.2	39.3	1.1	0	43.5	3.1	0	3.3	0	6.5	0.2	42.9	5.7	0	48.8	1	0.1	0	0	1.2	



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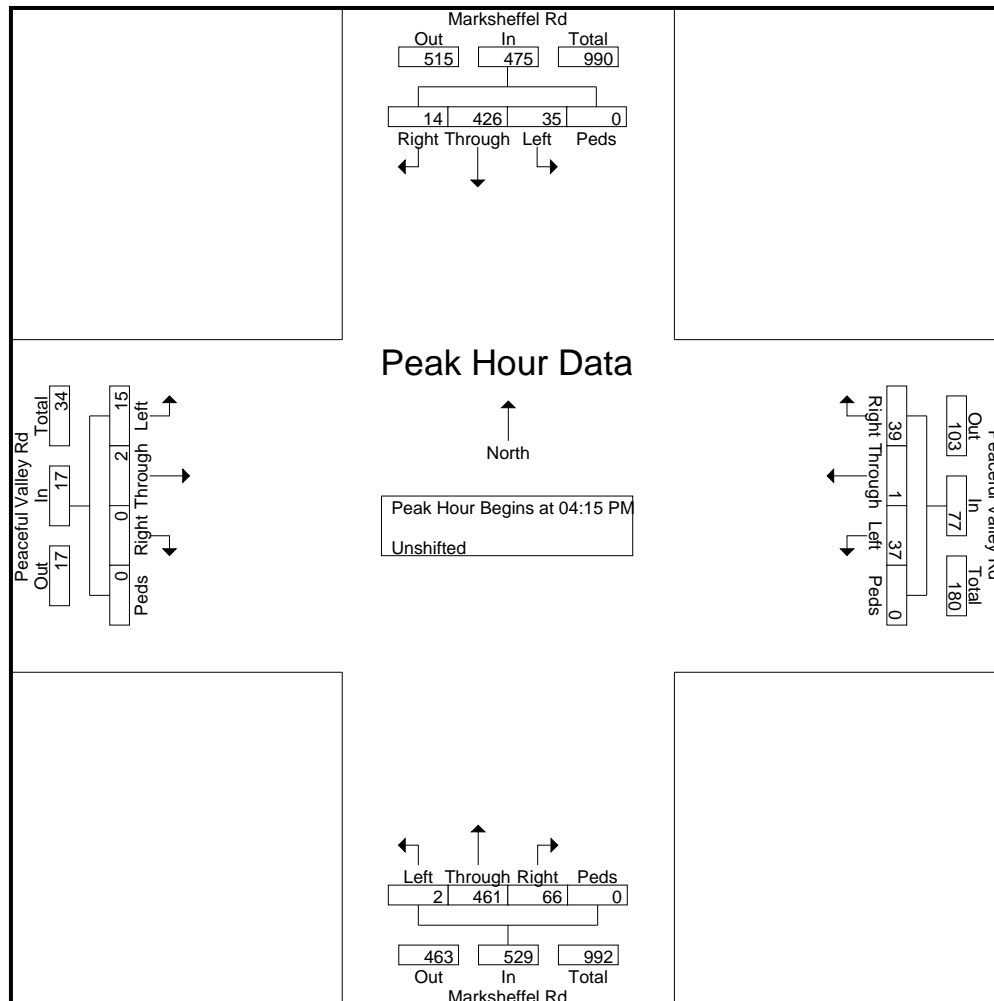
File Name : Marksheffel Rd - Peaceful Valley Rd PM 9-19

Site Code : 00194800

Start Date : 9/12/2019

Page No : 2

	Marksheffel Rd Southbound					Peaceful Valley Rd Westbound					Marksheffel Rd Northbound					Peaceful Valley Rd Eastbound					
Start Time	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Int. Total
<b>Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1</b>																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
04:15 PM	19	120	3	0	142	5	0	7	0	12	0	118	14	0	132	5	1	0	0	6	292
04:30 PM	7	91	2	0	100	10	1	13	0	24	1	130	15	0	146	3	1	0	0	4	274
04:45 PM	3	110	6	0	119	11	0	8	0	19	1	109	20	0	130	3	0	0	0	3	271
05:00 PM	6	105	3	0	114	11	0	11	0	22	0	104	17	0	121	4	0	0	0	4	261
Total Volume	35	426	14	0	475	37	1	39	0	77	2	461	66	0	529	15	2	0	0	17	1098
% App. Total	7.4	89.7	2.9	0		48.1	1.3	50.6	0		0.4	87.1	12.5	0		88.2	11.8	0	0		
PHF	.461	.888	.583	.000	.836	.841	.250	.750	.000	.802	.500	.887	.825	.000	.906	.750	.500	.000	.000	.708	.940



# LSC Transportation Consultants, Inc.

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File Name : Marksheffel Rd - Poa Annua St AM

Site Code : 00194800

Start Date : 2/27/2020

Page No : 1

## Groups Printed- Unshifted

Start Time	Marksheffel Rd Southbound					Poa Annua St Westbound					Marksheffel Rd Northbound					Eastbound					Int. Total
	L	T	R	U	App. Total	L	T	R	U	App. Total	L	T	R	U	App. Total	L	T	R	U	App. Total	
06:30 AM	0	96	0	0	96	1	0	1	0	2	0	111	0	0	111	0	0	0	0	0	209
06:45 AM	0	129	0	0	129	3	0	4	0	7	0	130	0	0	130	0	0	0	0	0	266
Total	0	225	0	0	225	4	0	5	0	9	0	241	0	0	241	0	0	0	0	0	475
07:00 AM	0	118	0	0	118	3	0	5	0	8	0	174	0	0	174	0	0	0	0	0	300
07:15 AM	2	110	0	0	112	1	0	7	0	8	0	150	1	0	151	0	0	0	0	0	271
07:30 AM	2	108	0	0	110	3	0	5	0	8	0	125	0	0	125	0	0	0	0	0	243
07:45 AM	2	104	0	0	106	1	0	5	0	6	0	107	0	0	107	0	0	0	0	0	219
Total	6	440	0	0	446	8	0	22	0	30	0	556	1	0	557	0	0	0	0	0	1033
08:00 AM	3	107	0	0	110	2	0	1	0	3	0	90	0	0	90	0	0	0	0	0	203
08:15 AM	0	92	0	0	92	0	0	2	0	2	0	85	0	0	85	0	0	0	0	0	179
Grand Total	9	864	0	0	873	14	0	30	0	44	0	972	1	0	973	0	0	0	0	0	1890
Apprch %	1	99	0	0		31.8	0	68.2	0		0	99.9	0.1	0		0	0	0	0		
Total %	0.5	45.7	0	0	46.2	0.7	0	1.6	0	2.3	0	51.4	0.1	0	51.5	0	0	0	0	0	

# LSC Transportation Consultants, Inc.

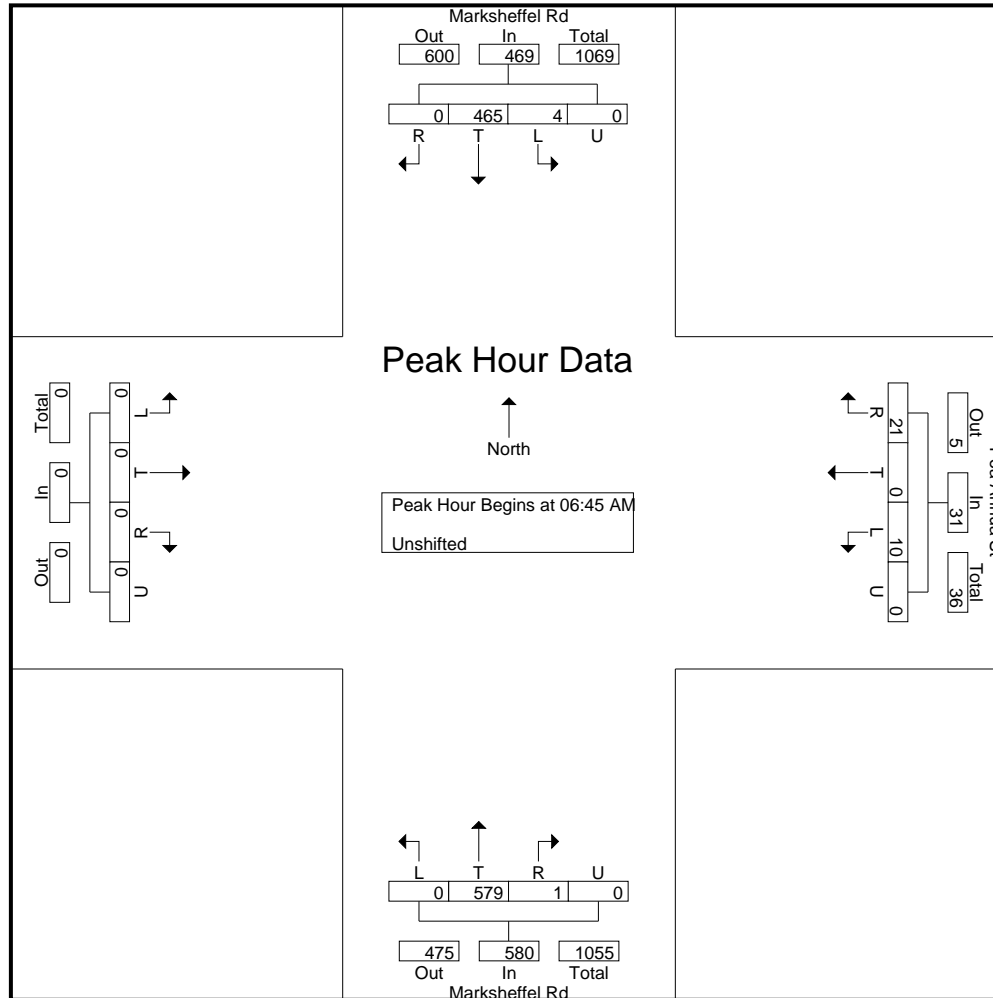
545 E Pikes Peak Ave, Suite 210  
Colorado Springs, CO 80905  
719-633-2868

File Name : Marksheffel Rd - Poa Annua St AM

Site Code : 00194800

Start Date : 2/27/2020

Page No : 3



# LSC Transportation Consultants, Inc.

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

File Name : Marksheffel Rd - Poa Annua St PM  
Site Code : 00194800  
Start Date : 2/27/2020  
Page No : 1

## Groups Printed- Unshifted

	Marksheffel Rd Southbound					Poa Annua St Westbound					Marksheffel Rd Northbound					Eastbound					
Start Time	L	T	R	U	App. Total	L	T	R	U	App. Total	L	T	R	U	App. Total	L	T	R	U	App. Total	Int. Total
04:00 PM	4	123	0	0	127	0	0	3	0	3	0	135	2	0	137	0	0	0	0	0	267
04:15 PM	5	134	0	0	139	0	0	0	0	0	0	141	0	0	141	0	0	0	0	0	280
04:30 PM	4	117	0	0	121	0	0	0	0	0	0	165	0	0	165	0	0	0	0	0	286
04:45 PM	2	125	0	0	127	1	0	0	0	1	0	152	1	0	153	0	0	0	0	0	281
Total	15	499	0	0	514	1	0	3	0	4	0	593	3	0	596	0	0	0	0	0	1114
05:00 PM	1	118	0	0	119	0	0	2	0	2	0	145	0	0	145	0	0	0	0	0	266
05:15 PM	1	142	0	0	143	1	0	1	0	2	0	138	2	0	140	0	0	0	0	0	285
05:30 PM	3	112	0	0	115	0	0	2	0	2	0	136	0	0	136	0	0	0	0	0	253
05:45 PM	2	105	0	0	107	1	0	1	0	2	0	127	1	0	128	0	0	0	0	0	237
Total	7	477	0	0	484	2	0	6	0	8	0	546	3	0	549	0	0	0	0	0	1041
Grand Total	22	976	0	0	998	3	0	9	0	12	0	1139	6	0	1145	0	0	0	0	0	2155
Apprch %	2.2	97.8	0	0		25	0	75	0		0	99.5	0.5	0		0	0	0	0		
Total %	1	45.3	0	0	46.3	0.1	0	0.4	0	0.6	0	52.9	0.3	0	53.1	0	0	0	0	0	

# LSC Transportation Consultants, Inc.

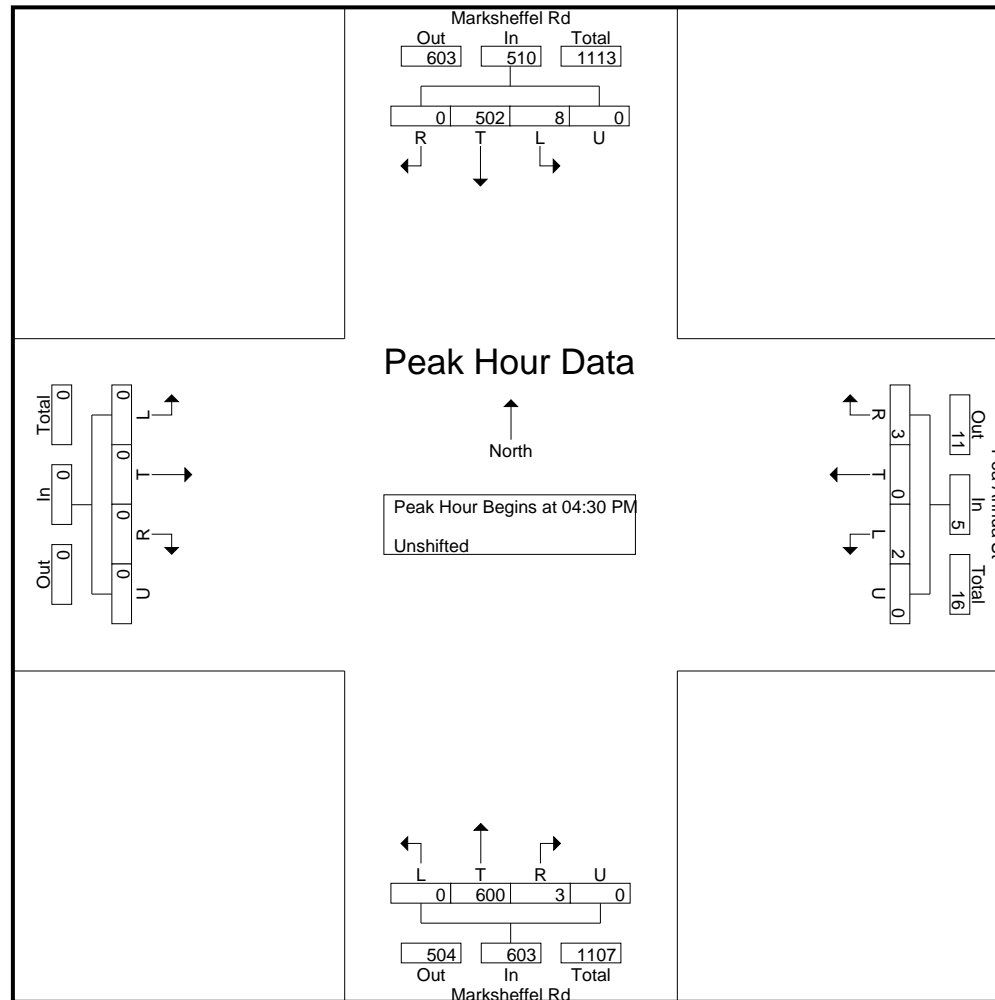
545 E Pikes Peak Ave, Suite 210  
Colorado Springs, CO 80905  
719-633-2868

File Name : Marksheffel Rd - Poa Annua St PM

Site Code : 00194800

Start Date : 2/27/2020

Page No : 3





# LSC Transportation Consultants, Inc.

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719-633-2868

File Name : Spring Glen Dr - Mesa Ridge Pkwy AM

Site Code : 00194800

Start Date : 9/18/2019

Page No : 1

## Groups Printed- Unshifted

Start Time	Spring Glen Dr Southbound					Mesa Ridge Pkwy Westbound					Northbound					Mesa Ridge Pkwy Eastbound					Int. Total
	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	
06:30 AM	6	0	15	0	21	0	51	1	0	52	0	0	0	0	0	9	38	0	0	47	120
06:45 AM	4	0	21	0	25	0	47	4	0	51	0	0	0	0	0	10	58	0	0	68	144
Total	10	0	36	0	46	0	98	5	0	103	0	0	0	0	0	19	96	0	0	115	264
07:00 AM	7	0	21	0	28	0	58	1	0	59	0	0	0	0	0	12	52	0	0	64	151
07:15 AM	4	0	16	0	20	0	39	3	0	42	0	0	0	0	0	13	67	0	0	80	142
07:30 AM	8	0	11	0	19	0	38	1	0	39	0	0	0	0	0	7	52	0	0	59	117
07:45 AM	4	0	20	0	24	0	50	3	0	53	0	0	0	0	0	18	53	0	0	71	148
Total	23	0	68	0	91	0	185	8	0	193	0	0	0	0	0	50	224	0	0	274	558
08:00 AM	4	0	16	0	20	0	53	1	0	54	0	0	0	0	0	17	50	0	0	67	141
08:15 AM	0	0	13	0	13	0	38	1	0	39	0	0	0	0	0	14	53	0	0	67	119
Grand Total	37	0	133	0	170	0	374	15	0	389	0	0	0	0	0	100	423	0	0	523	1082
Apprch %	21.8	0	78.2	0		0	96.1	3.9	0		0	0	0	0		19.1	80.9	0	0		
Total %	3.4	0	12.3	0	15.7	0	34.6	1.4	0	36	0	0	0	0	0	9.2	39.1	0	0	48.3	



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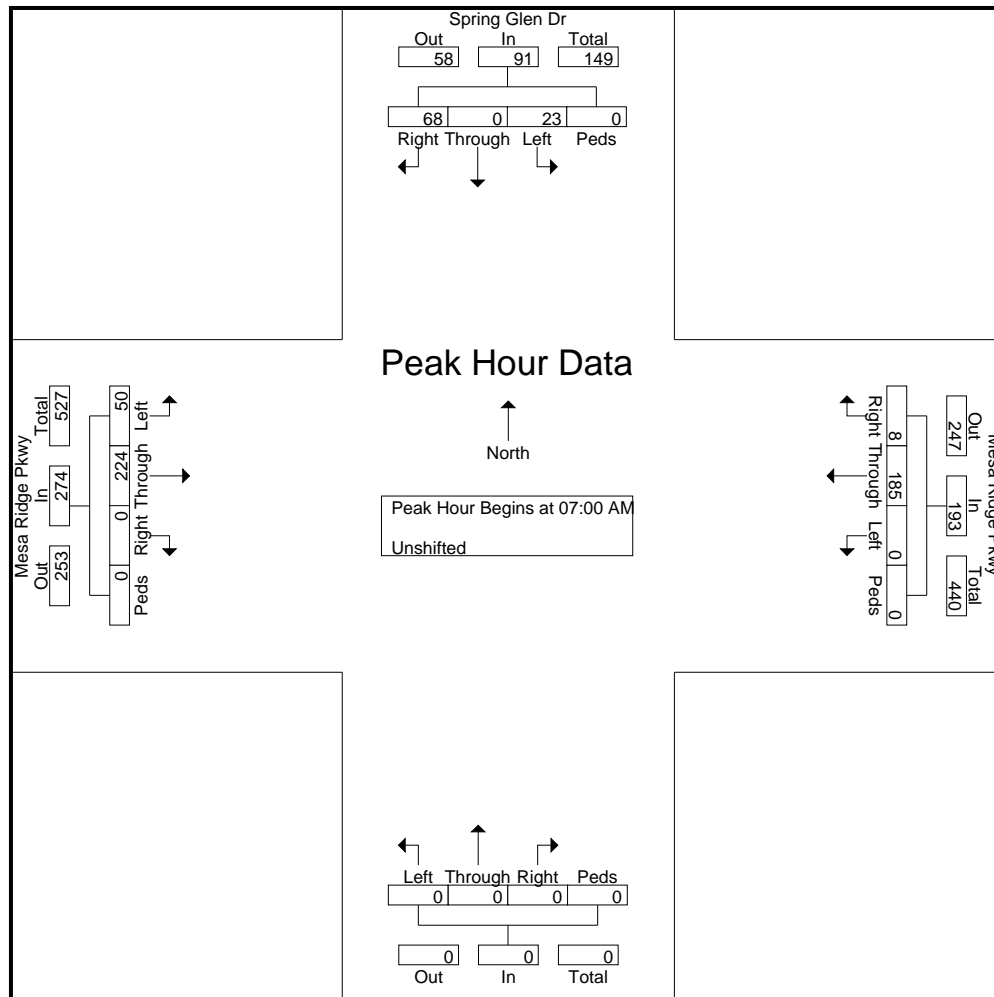
File Name : Spring Glen Dr - Mesa Ridge Pkwy AM

Site Code : 00194800

Start Date : 9/18/2019

Page No : 2

	Spring Glen Dr Southbound					Mesa Ridge Pkwy Westbound					Northbound					Mesa Ridge Pkwy Eastbound					
Start Time	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Int. Total
<b>Peak Hour Analysis From 06:30 AM to 08:15 AM - Peak 1 of 1</b>																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	7	0	21	0	28	0	58	1	0	59	0	0	0	0	0	12	52	0	0	64	151
07:15 AM	4	0	16	0	20	0	39	3	0	42	0	0	0	0	0	13	67	0	0	80	142
07:30 AM	8	0	11	0	19	0	38	1	0	39	0	0	0	0	0	7	52	0	0	59	117
07:45 AM	4	0	20	0	24	0	50	3	0	53	0	0	0	0	0	18	53	0	0	71	148
Total Volume	23	0	68	0	91	0	185	8	0	193	0	0	0	0	0	50	224	0	0	274	558
% App. Total	25.3	0	74.7	0		0	95.9	4.1	0		0	0	0	0		18.2	81.8	0	0		
PHF	.719	.000	.810	.000	.813	.000	.797	.667	.000	.818	.000	.000	.000	.000	.000	.694	.836	.000	.000	.856	.924







# LSC Transportation Consultants, Inc.

545 E Pikes Peak Ave, Suite 210

Colorado Springs, CO 80905

719-633-2868

File Name : Spring Glen Dr - Mesa Ridge Pkwy PM

Site Code : 00194800

Start Date : 9/18/2019

Page No : 1

## Groups Printed- Unshifted

	Spring Glen Dr Southbound					Mesa Ridge Pkwy Westbound					Northbound					Mesa Ridge Pkwy Eastbound					
Start Time	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Int. Total
04:00 PM	5	0	10	0	15	0	41	1	0	42	0	0	0	0	0	22	67	0	0	89	146
04:15 PM	2	0	10	0	12	0	25	3	0	28	0	0	0	0	0	18	59	0	0	77	117
04:30 PM	1	0	16	0	17	0	32	5	0	37	0	0	0	0	0	20	77	0	0	97	151
04:45 PM	4	0	13	0	17	0	48	3	0	51	0	0	0	0	0	14	83	0	0	97	165
Total	12	0	49	0	61	0	146	12	0	158	0	0	0	0	0	74	286	0	0	360	579
05:00 PM	4	0	18	0	22	0	41	2	0	43	0	0	0	0	0	19	80	0	0	99	164
05:15 PM	5	0	16	0	21	0	38	8	0	46	0	0	0	0	0	13	85	0	0	98	165
05:30 PM	4	0	14	0	18	0	30	6	0	36	0	0	0	0	0	24	82	0	0	106	160
05:45 PM	2	0	13	0	15	0	52	5	0	57	0	0	0	0	0	20	67	0	0	87	159
Total	15	0	61	0	76	0	161	21	0	182	0	0	0	0	0	76	314	0	0	390	648
Grand Total	27	0	110	0	137	0	307	33	0	340	0	0	0	0	0	150	600	0	0	750	1227
Apprch %	19.7	0	80.3	0		0	90.3	9.7	0		0	0	0	0		20	80	0	0		
Total %	2.2	0	9	0	11.2	0	25	2.7	0	27.7	0	0	0	0		12.2	48.9	0	0	61.1	



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545 E Pikes Peak Ave, Suite 210  
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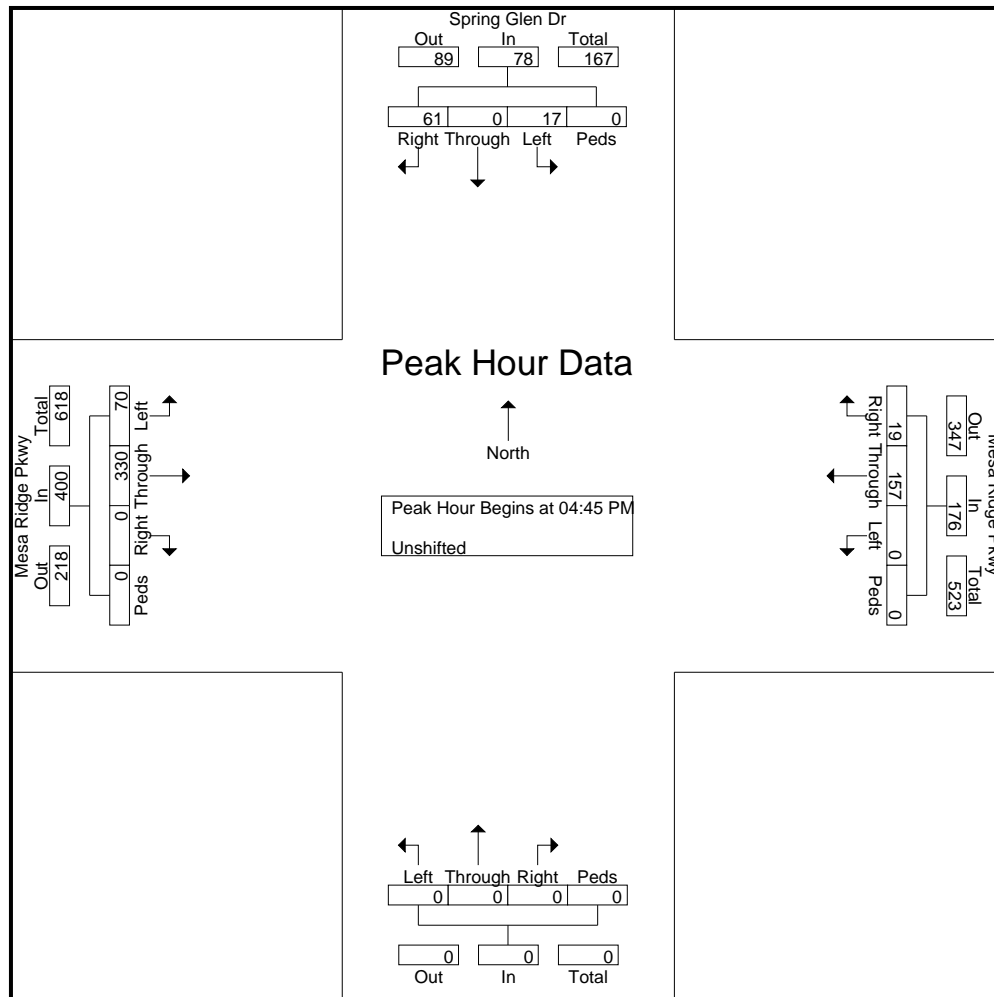
File Name : Spring Glen Dr - Mesa Ridge Pkwy PM

Site Code : 00194800

Start Date : 9/18/2019

Page No : 2

	Spring Glen Dr Southbound					Mesa Ridge Pkwy Westbound					Northbound					Mesa Ridge Pkwy Eastbound					
Start Time	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Int. Total
<b>Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1</b>																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	4	0	13	0	17	0	<b>48</b>	3	0	<b>51</b>	0	0	0	0	0	14	83	0	0	97	<b>165</b>
05:00 PM	4	0	<b>18</b>	0	<b>22</b>	0	41	2	0	43	0	0	0	0	0	19	80	0	0	99	164
05:15 PM	<b>5</b>	0	16	0	21	0	38	<b>8</b>	0	46	0	0	0	0	0	13	<b>85</b>	0	0	98	165
05:30 PM	4	0	14	0	18	0	30	6	0	36	0	0	0	0	0	<b>24</b>	82	0	0	<b>106</b>	160
Total Volume	17	0	61	0	78	0	157	19	0	176	0	0	0	0	0	70	330	0	0	400	654
% App. Total	21.8	0	78.2	0		0	89.2	10.8	0		0	0	0	0		17.5	82.5	0	0		
PHF	.850	.000	.847	.000	.886	.000	.818	.594	.000	.863	.000	.000	.000	.000	.000	.729	.971	.000	.000	.943	.991



# LSC Transportation Consultants, Inc.

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

File Name : Marksheffel Rd - Lorson Blvd AM  
Site Code : 00204050  
Start Date : 5/28/2020  
Page No : 1

## Groups Printed- Unshifted

Start Time	Marksheffel Rd Southbound					Lorson Blvd Westbound					Marksheffel Rd Northbound					Eastbound					Int. Total
	L	T	R	U	App. Total	L	T	R	U	App. Total	L	T	R	U	App. Total	L	T	R	U	App. Total	
06:30 AM	1	32	0	0	33	7	0	7	0	14	0	74	6	0	80	0	0	0	0	0	127
06:45 AM	2	33	0	0	35	18	0	4	0	22	0	63	4	0	67	0	0	0	0	0	124
Total	3	65	0	0	68	25	0	11	0	36	0	137	10	0	147	0	0	0	0	0	251
07:00 AM	0	54	0	0	54	15	0	3	0	18	0	64	10	0	74	0	0	0	0	0	146
07:15 AM	0	52	0	0	52	15	0	4	0	19	0	80	4	0	84	0	0	0	0	0	155
07:30 AM	1	46	0	0	47	22	0	7	0	29	0	91	12	0	103	0	0	0	0	0	179
07:45 AM	0	56	0	0	56	17	0	5	0	22	0	74	8	0	82	0	0	0	0	0	160
Total	1	208	0	0	209	69	0	19	0	88	0	309	34	0	343	0	0	0	0	0	640
08:00 AM	1	66	0	0	67	22	0	4	0	26	0	55	8	0	63	0	0	0	0	0	156
08:15 AM	1	63	0	0	64	12	0	5	0	17	0	58	10	0	68	0	0	0	0	0	149
Grand Total	6	402	0	0	408	128	0	39	0	167	0	559	62	0	621	0	0	0	0	0	1196
Apprch %	1.5	98.5	0	0		76.6	0	23.4	0		0	90	10	0		0	0	0	0		
Total %	0.5	33.6	0	0	34.1	10.7	0	3.3	0	14	0	46.7	5.2	0	51.9	0	0	0	0	0	

# LSC Transportation Consultants, Inc.

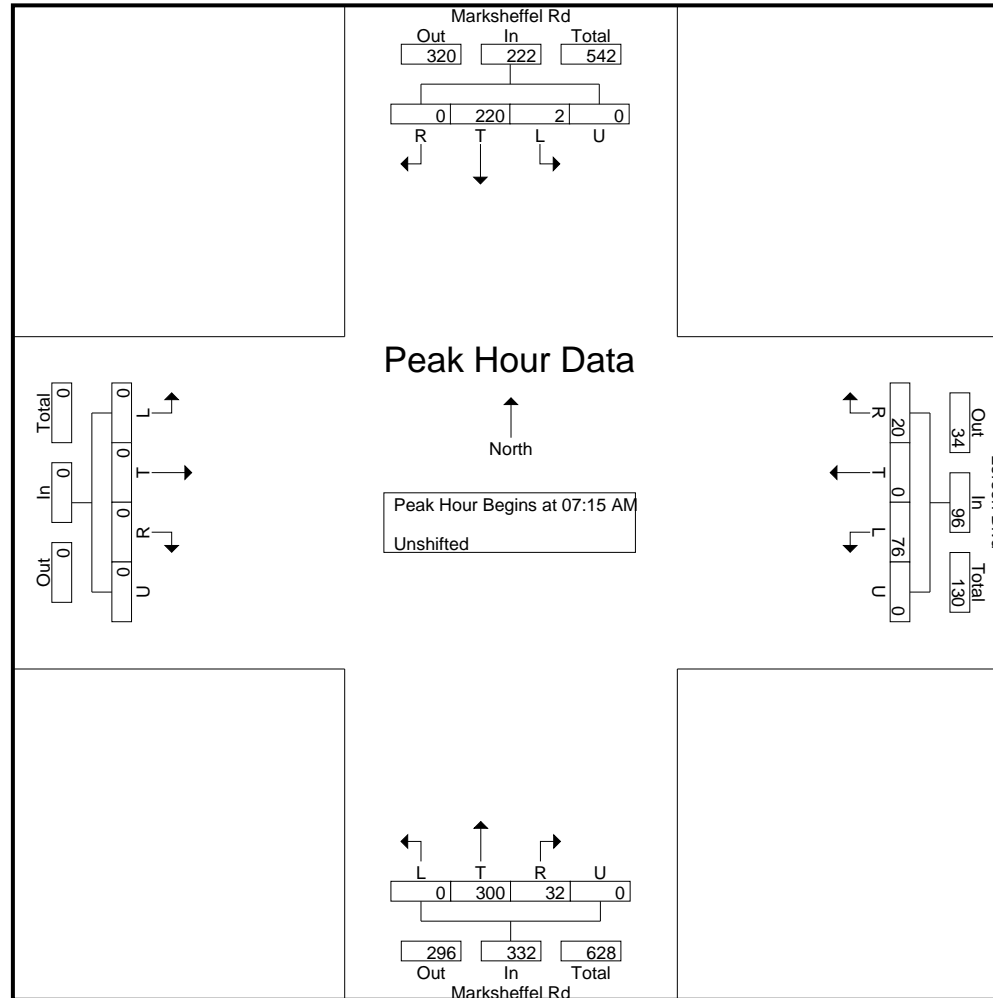
545 E Pikes Peak Ave, Suite 210  
Colorado Springs, CO 80905  
719-633-2868

File Name : Marksheffel Rd - Lorson Blvd AM

Site Code : 00204050

Start Date : 5/28/2020

Page No : 3



# LSC Transportation Consultants, Inc.

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

File Name : Marksheffel Rd - Lorson Blvd PM  
Site Code : 00204050  
Start Date : 5/28/2020  
Page No : 1

## Groups Printed- Unshifted

	Marksheffel Rd Southbound					Lorson Blvd Westbound					Marksheffel Rd Northbound					Eastbound					
Start Time	L	T	R	U	App. Total	L	T	R	U	App. Total	L	T	R	U	App. Total	L	T	R	U	App. Total	Int. Total
04:00 PM	3	71	0	0	74	12	0	2	0	14	0	98	23	0	121	0	0	0	0	0	209
04:15 PM	5	94	0	0	99	14	0	6	0	20	0	98	31	0	129	0	0	0	0	0	248
04:30 PM	4	95	0	0	99	9	0	3	0	12	0	98	27	0	125	0	0	0	0	0	236
04:45 PM	2	91	0	0	93	15	0	4	0	19	0	83	29	0	112	0	0	0	0	0	224
Total	14	351	0	0	365	50	0	15	0	65	0	377	110	0	487	0	0	0	0	0	917
05:00 PM	2	94	0	0	96	20	0	4	0	24	0	94	28	0	122	0	0	0	0	0	242
05:15 PM	6	88	0	0	94	13	0	4	0	17	0	97	25	0	122	0	0	0	0	0	233
05:30 PM	6	97	0	0	103	12	0	4	0	16	0	92	41	0	133	0	0	0	0	0	252
05:45 PM	4	98	0	0	102	19	0	4	0	23	0	69	34	0	103	0	0	0	0	0	228
Total	18	377	0	0	395	64	0	16	0	80	0	352	128	0	480	0	0	0	0	0	955
Grand Total	32	728	0	0	760	114	0	31	0	145	0	729	238	0	967	0	0	0	0	0	1872
Apprch %	4.2	95.8	0	0		78.6	0	21.4	0		0	75.4	24.6	0		0	0	0	0		
Total %	1.7	38.9	0	0	40.6	6.1	0	1.7	0	7.7	0	38.9	12.7	0	51.7	0	0	0	0	0	

# LSC Transportation Consultants, Inc.

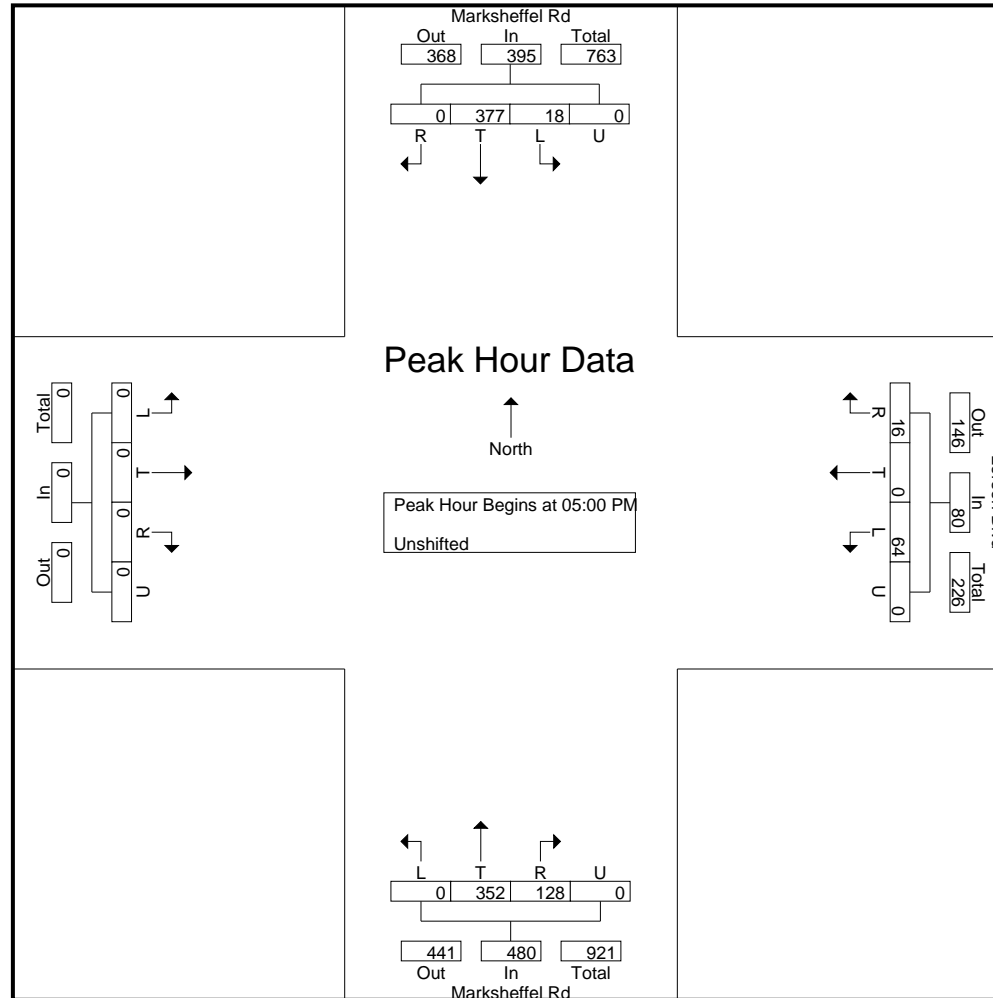
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Colorado Springs, CO 80905  
719-633-2868

File Name : Marksheffel Rd - Lorson Blvd PM

Site Code : 00204050

Start Date : 5/28/2020

Page No : 3







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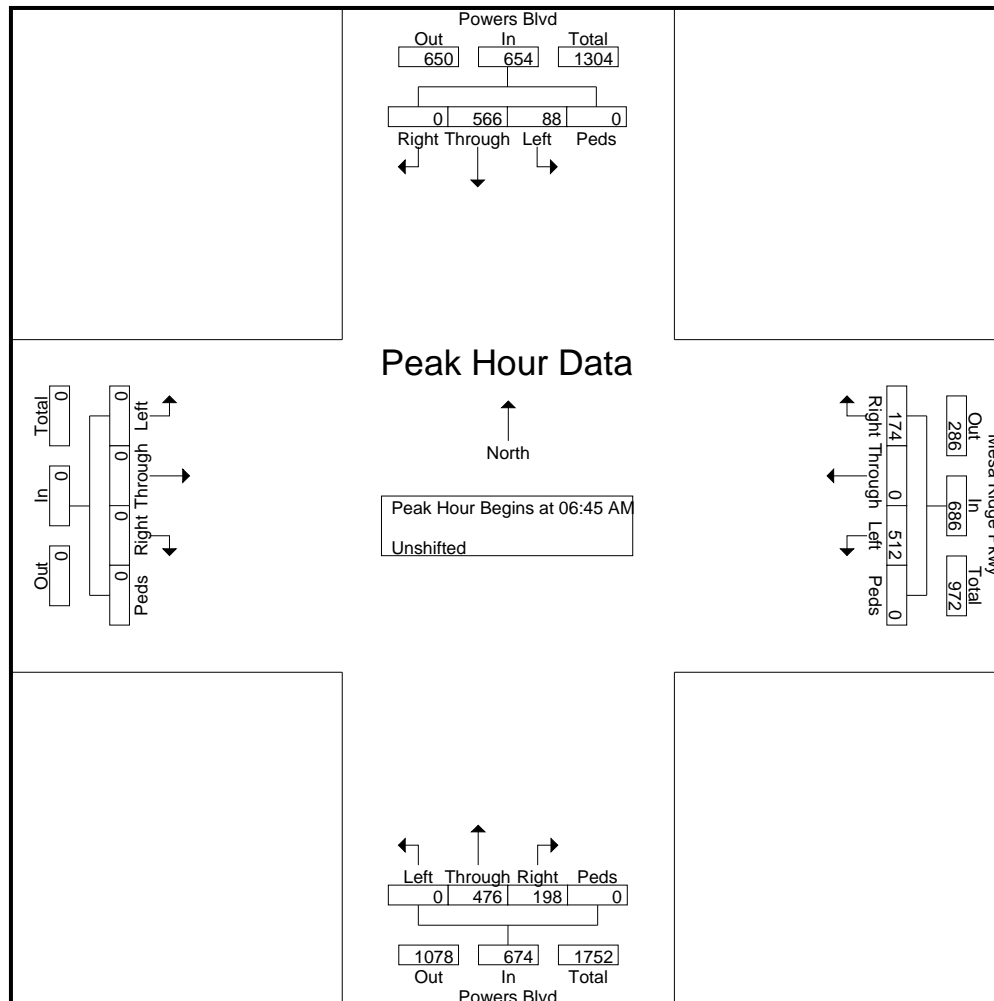
File Name : Powers Blvd - Mesa Ridge Parkway AM 9-19

Site Code : 00194800

Start Date : 9/25/2019

Page No : 2

	Powers Blvd Southbound					Mesa Ridge Pkwy Westbound					Powers Blvd Northbound					Eastbound					
Start Time	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Int. Total
<b>Peak Hour Analysis From 06:30 AM to 08:15 AM - Peak 1 of 1</b>																					
Peak Hour for Entire Intersection Begins at 06:45 AM																					
06:45 AM	21	170	0	0	191	171	0	34	0	205	0	109	43	0	152	0	0	0	0	0	548
07:00 AM	24	159	0	0	183	143	0	56	0	199	0	130	38	0	168	0	0	0	0	0	550
07:15 AM	18	115	0	0	133	112	0	48	0	160	0	119	65	0	184	0	0	0	0	0	477
07:30 AM	25	122	0	0	147	86	0	36	0	122	0	118	52	0	170	0	0	0	0	0	439
Total Volume	88	566	0	0	654	512	0	174	0	686	0	476	198	0	674	0	0	0	0	0	2014
% App. Total	13.5	86.5	0	0		74.6	0	25.4	0		0	70.6	29.4	0		0	0	0	0	0	
PHF	.880	.832	.000	.000	.856	.749	.000	.777	.000	.837	.000	.915	.762	.000	.916	.000	.000	.000	.000	.000	.915





# LSC Transportation Consultants, Inc.

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

File Name : Powers Blvd - Mesa Ridge Parkway PM 9-19

Site Code : 00194800

Start Date : 9/25/2019

Page No : 1

## Groups Printed- Unshifted

	Powers Blvd Southbound					Mesa Ridge Pkwy Westbound					Powers Blvd Northbound					Eastbound					
Start Time	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Int. Total
04:00 PM	35	109	0	0	144	70	0	19	0	89	0	152	137	0	289	0	0	0	0	0	522
04:15 PM	37	137	0	0	174	61	0	24	0	85	0	146	145	0	291	0	0	0	0	0	550
04:30 PM	37	140	0	0	177	62	0	23	0	85	0	171	141	0	312	0	0	0	0	0	574
04:45 PM	29	138	0	0	167	77	0	14	0	91	0	147	140	0	287	0	0	0	0	0	545
Total	138	524	0	0	662	270	0	80	0	350	0	616	563	0	1179	0	0	0	0	0	2191
05:00 PM	30	112	0	0	142	78	0	18	0	96	0	160	137	0	297	0	0	0	0	0	535
05:15 PM	39	161	0	0	200	59	0	17	0	76	0	130	166	0	296	0	0	0	0	0	572
05:30 PM	33	147	0	0	180	61	0	17	0	78	0	161	128	0	289	0	0	0	0	0	547
05:45 PM	20	89	0	0	109	75	0	17	0	92	0	148	150	0	298	0	0	0	0	0	499
Total	122	509	0	0	631	273	0	69	0	342	0	599	581	0	1180	0	0	0	0	0	2153
Grand Total	260	1033	0	0	1293	543	0	149	0	692	0	1215	1144	0	2359	0	0	0	0	0	4344
Apprch %	20.1	79.9	0	0		78.5	0	21.5	0		0	51.5	48.5	0		0	0	0	0	0	
Total %	6	23.8	0	0	29.8	12.5	0	3.4	0	15.9	0	28	26.3	0	54.3	0	0	0	0	0	



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719-633-2868

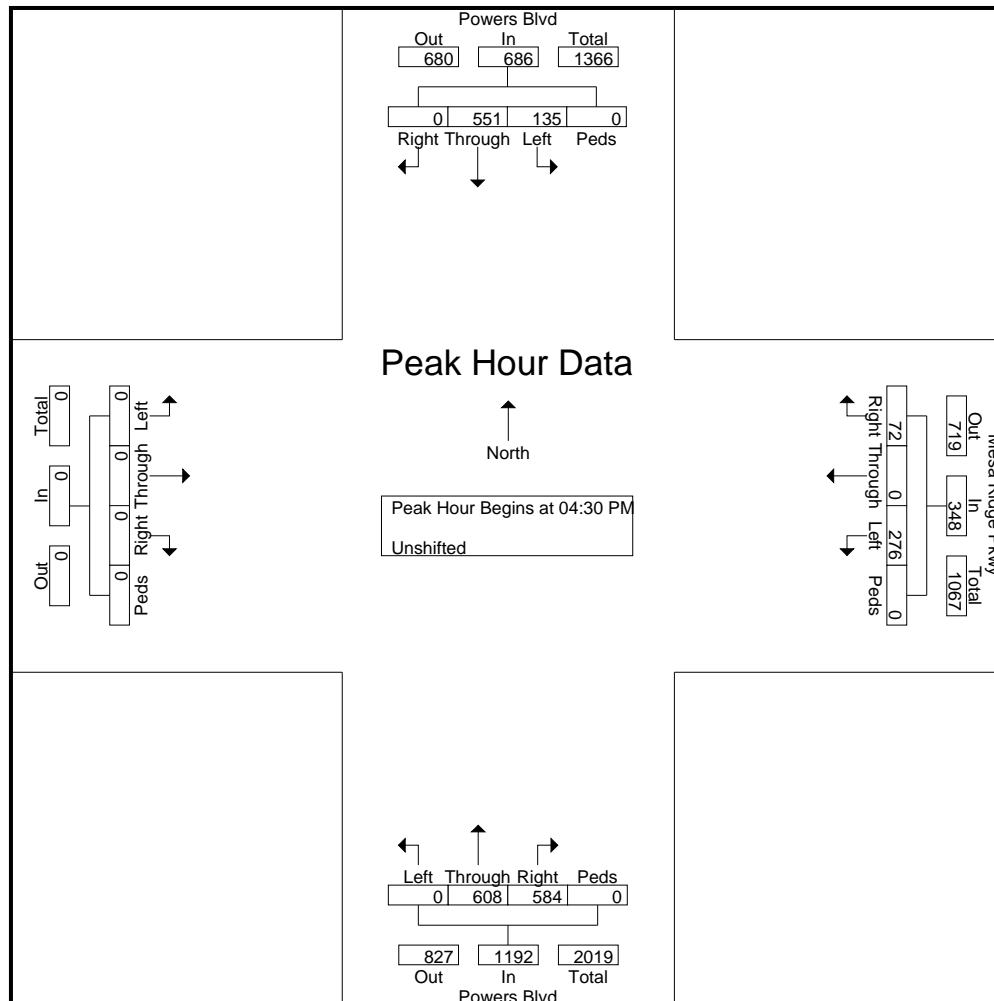
File Name : Powers Blvd - Mesa Ridge Parkway PM 9-19

Site Code : 00194800

Start Date : 9/25/2019

Page No : 2

	Powers Blvd Southbound					Mesa Ridge Pkwy Westbound					Powers Blvd Northbound					Eastbound					
Start Time	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Int. Total
<b>Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1</b>																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	37	140	0	0	177	62	0	23	0	85	0	171	141	0	312	0	0	0	0	0	574
04:45 PM	29	138	0	0	167	77	0	14	0	91	0	147	140	0	287	0	0	0	0	0	545
05:00 PM	30	112	0	0	142	78	0	18	0	96	0	160	137	0	297	0	0	0	0	0	535
05:15 PM	39	161	0	0	200	59	0	17	0	76	0	130	166	0	296	0	0	0	0	0	572
Total Volume	135	551	0	0	686	276	0	72	0	348	0	608	584	0	1192	0	0	0	0	0	2226
% App. Total	19.7	80.3	0	0		79.3	0	20.7	0		0	51	49	0		0	0	0	0	0	
PHF	.865	.856	.000	.000	.858	.885	.000	.783	.000	.906	.000	.889	.880	.000	.955	.000	.000	.000	.000	.000	.970







# Levels of Service

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HCM 6th TWSC  
4: Marksheffel Rd & Poa Annua St

Short-Term Background Traffic  
AM Peak Hour

Intersection						
Int Delay, s/veh	0.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	21	632	1	4	622
Future Vol, veh/h	10	21	632	1	4	622
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	-	-	-	290	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	78	78	83	83	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	27	761	1	4	676
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1446	762	0	0	762	0
Stage 1	762	-	-	-	-	-
Stage 2	684	-	-	-	-	-
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	145	405	-	-	850	-
Stage 1	461	-	-	-	-	-
Stage 2	501	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	144	405	-	-	850	-
Mov Cap-2 Maneuver	284	-	-	-	-	-
Stage 1	461	-	-	-	-	-
Stage 2	498	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	16.4	0	0.1			
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	356	850	-	
HCM Lane V/C Ratio	-	-	0.112	0.005	-	
HCM Control Delay (s)	-	-	16.4	9.3	-	
HCM Lane LOS	-	-	C	A	-	
HCM 95th %tile Q(veh)	-	-	0.4	0	-	

HCM 6th TWSC  
5: Marksheffel Rd & Peaceful Valley Rd

Short-Term Background Traffic  
AM Peak Hour

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	0	0	10	57	0	55	0	578	25	29	579	24
Future Vol, veh/h	0	0	10	57	0	55	0	578	25	29	579	24
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Stop	-	-	None	-	-	None
Storage Length	-	-	0	0	-	0	-	-	290	340	-	0
Veh in Median Storage, #	-	0	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	83	83	83	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	13	69	0	66	0	664	29	33	666	28













Major/Minor	Minor2		Minor1		Major1		Major2	
Conflicting Flow All	-	-	666	1417	-	664	-	0
Stage 1	-	-	-	664	-	-	-	-
Stage 2	-	-	-	753	-	-	-	-
Critical Hdwy	-	-	6.22	7.12	-	6.22	-	4.12
Critical Hdwy Stg 1	-	-	-	6.12	-	-	-	-
Critical Hdwy Stg 2	-	-	-	6.12	-	-	-	-
Follow-up Hdwy	-	-	3.318	3.518	-	3.318	-	2.218
Pot Cap-1 Maneuver	0	0	459	115	0	461	0	902
Stage 1	0	0	-	450	0	-	-	-
Stage 2	0	0	-	402	0	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	459	109	-	461	-	902
Mov Cap-2 Maneuver	-	-	-	236	-	-	-	-
Stage 1	-	-	-	450	-	-	-	-
Stage 2	-	-	-	376	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.1	20.4	0	0.4
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR
Capacity (veh/h)	-	-	459 236 461	902	-	-
HCM Lane V/C Ratio	-	-	0.028 0.291 0.144	0.037	-	-
HCM Control Delay (s)	-	-	13.1 26.4 14.1	9.1	-	-
HCM Lane LOS	-	-	B D B	A	-	-
HCM 95th %tile Q(veh)	-	-	0.1 1.2 0.5	0.1	-	-

# Timings 6: Marksheffel Rd & Mesa Ridge Pkwy

Short-Term Background Traffic  
AM Peak Hour

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	221	71	41	382	357	289
Future Volume (vph)	221	71	41	382	357	289
Turn Type	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	7			2	6	
Permitted Phases		4	2			6
Detector Phase	7	4	2	2	6	6
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	9.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	30.0	30.0	60.0	60.0	60.0	60.0
Total Split (%)	33.3%	33.3%	66.7%	66.7%	66.7%	66.7%
Yellow Time (s)	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
Lost Time Adjust (s)	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
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Max	C-Max	C-Max	C-Max
Act Effect Green (s)	18.1	18.1	61.9	61.9	61.9	61.9
Actuated g/C Ratio	0.20	0.20	0.69	0.69	0.69	0.69
v/c Ratio	0.72	0.21	0.07	0.31	0.31	0.27
Control Delay	44.6	7.8	6.1	7.1	6.4	1.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.6	7.8	6.1	7.1	6.4	1.5
LOS	D	A	A	A	A	A
Approach Delay	35.6			7.0	4.2	
Approach LOS	D			A	A	

## Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 57 (63%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 40

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.72

Intersection Signal Delay: 12.0

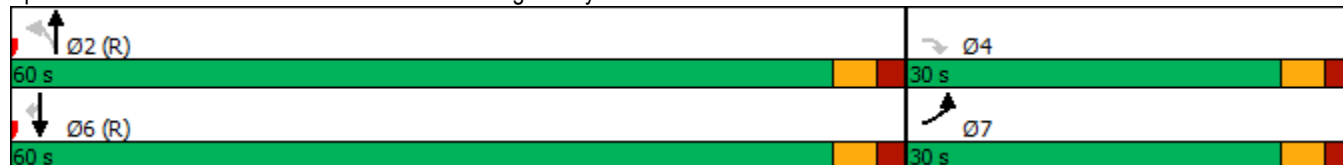
Intersection LOS: B

Intersection Capacity Utilization 46.9%

ICU Level of Service A







Analysis Period (min) 15

Splits and Phases: 6: Marksheffel Rd & Mesa Ridge Pkwy



HCM 6th TWSC  
7: Mesa Ridge Pkwy & Spring Glen Dr





Short-Term Background Traffic  
AM Peak Hour

Intersection						
Int Delay, s/veh	4.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	77	230	317	13	62	151
Future Vol, veh/h	77	230	317	13	62	151
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	390	-	-	290	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	91	271	373	15	73	178
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	388	0	-	0	826	373
Stage 1	-	-	-	-	373	-
Stage 2	-	-	-	-	453	-
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	1170	-	-	-	342	673
Stage 1	-	-	-	-	696	-
Stage 2	-	-	-	-	640	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1170	-	-	-	315	673
Mov Cap-2 Maneuver	-	-	-	-	315	-
Stage 1	-	-	-	-	642	-
Stage 2	-	-	-	-	640	-
Approach	EB	WB		SB		
HCM Control Delay, s	2.1	0		14.5		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1170	-	-	-	315	673
HCM Lane V/C Ratio	0.077	-	-	-	0.232	0.264
HCM Control Delay (s)	8.3	-	-	-	19.8	12.3
HCM Lane LOS	A	-	-	-	C	B
HCM 95th %tile Q(veh)	0.3	-	-	-	0.9	1.1











HCM 6th TWSC  
4: Marksheffel Rd & Poa Annua St

Short-Term Background Traffic  
PM Peak Hour

Intersection						
Int Delay, s/veh	0.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	3	744	3	8	648
Future Vol, veh/h	2	3	744	3	8	648
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	-	-	-	290	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	78	78	91	91	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	4	818	3	9	704
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	1542	820	0	0	821	0
Stage 1	820	-	-	-	-	-
Stage 2	722	-	-	-	-	-
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	127	375	-	-	808	-
Stage 1	433	-	-	-	-	-
Stage 2	481	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	126	375	-	-	808	-
Mov Cap-2 Maneuver	264	-	-	-	-	-
Stage 1	433	-	-	-	-	-
Stage 2	476	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	16.4	0		0.1		
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	-	321	808	-	
HCM Lane V/C Ratio	-	-	0.02	0.011	-	
HCM Control Delay (s)	-	-	16.4	9.5	-	
HCM Lane LOS	-	-	C	A	-	
HCM 95th %tile Q(veh)	-	-	0.1	0	-	

HCM 6th TWSC  
5: Marksheffel Rd & Peaceful Valley Rd

Short-Term Background Traffic  
PM Peak Hour

Intersection												
Int Delay, s/veh	1.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	1	38	0	39	0	708	68	35	587	28
Future Vol, veh/h	0	0	1	38	0	39	0	708	68	35	587	28
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Stop	-	-	None	-	-	None
Storage Length	-	-	0	0	-	0	-	-	290	340	-	200
Veh in Median Storage, #	-	0	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	71	71	71	78	78	78	92	92	92	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	1	49	0	50	0	770	74	42	699	33













Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	-	-	699	1570	-	770	-	0	0	844	0	0
Stage 1	-	-	-	770	-	-	-	-	-	-	-	-
Stage 2	-	-	-	800	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.22	7.12	-	6.22	-	-	-	4.12	-	-
Critical Hdwy Stg 1	-	-	-	6.12	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	6.12	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.318	3.518	-	3.318	-	-	-	2.218	-	-
Pot Cap-1 Maneuver	0	0	440	90	0	401	0	-	-	792	-	-
Stage 1	0	0	-	393	0	-	0	-	-	-	-	-
Stage 2	0	0	-	379	0	-	0	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	440	86	-	401	-	-	-	792	-	-
Mov Cap-2 Maneuver	-	-	-	210	-	-	-	-	-	-	-	-
Stage 1	-	-	-	393	-	-	-	-	-	-	-	-
Stage 2	-	-	-	358	-	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	13.2		21.2		0		0.5	
HCM LOS	B		C					

Minor Lane/Major Mvmt	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR
Capacity (veh/h)	-	-	440 210 401	792	-	-
HCM Lane V/C Ratio	-	-	0.003 0.232 0.125	0.053	-	-
HCM Control Delay (s)	-	-	13.2 27.2 15.3	9.8	-	-
HCM Lane LOS	-	-	B D C	A	-	-
HCM 95th %tile Q(veh)	-	-	0 0.9 0.4	0.2	-	-

# Timings 6: Marksheffel Rd & Mesa Ridge Pkwy

Short-Term Background Traffic  
PM Peak Hour

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	413	49	37	363	357	269
Future Volume (vph)	413	49	37	363	357	269
Turn Type	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	7			2	6	
Permitted Phases		4	2			6
Detector Phase	7	4	2	2	6	6
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	9.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	35.0	35.0	55.0	55.0	55.0	55.0
Total Split (%)	38.9%	38.9%	61.1%	61.1%	61.1%	61.1%
Yellow Time (s)	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
Lost Time Adjust (s)	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
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Max	C-Max	C-Max	C-Max
Act Effect Green (s)	26.9	26.9	53.1	53.1	53.1	53.1
Actuated g/C Ratio	0.30	0.30	0.59	0.59	0.59	0.59
v/c Ratio	0.87	0.11	0.08	0.38	0.36	0.28
Control Delay	47.3	6.7	9.7	11.7	9.4	1.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.3	6.7	9.7	11.7	9.4	1.5
LOS	D	A	A	B	A	A
Approach Delay	43.0			11.5	6.0	
Approach LOS	D			B	A	

## Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green

Natural Cycle: 40

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.87

Intersection Signal Delay: 18.9

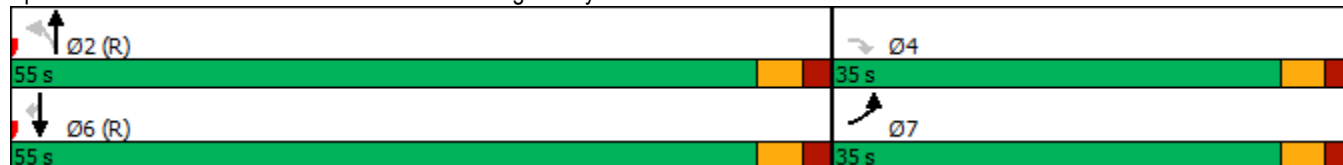
Intersection LOS: B

Intersection Capacity Utilization 57.5%

ICU Level of Service B







Analysis Period (min) 15

Splits and Phases: 6: Marksheffel Rd & Mesa Ridge Pkwy



HCM 6th TWSC  
7: Mesa Ridge Pkwy & Spring Glen Dr

Short-Term Background Traffic  
PM Peak Hour

Intersection						
Int Delay, s/veh	4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	161	418	278	28	45	114
Future Vol, veh/h	161	418	278	28	45	114
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	390	-	-	290	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	87	87	86	86	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	185	480	323	33	53	134







Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	356	0	0 1173 323
Stage 1	-	-	- 323 -
Stage 2	-	-	- 850 -
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	1203	-	- 212 718
Stage 1	-	-	- 734 -
Stage 2	-	-	- 419 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1203	-	- 179 718
Mov Cap-2 Maneuver	-	-	- 179 -
Stage 1	-	-	- 621 -
Stage 2	-	-	- 419 -

Approach	EB	WB	SB
HCM Control Delay, s	2.4	0	17.5
HCM LOS	C		

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1203	-	-	-	179	718
HCM Lane V/C Ratio	0.154	-	-	-	0.296	0.187
HCM Control Delay (s)	8.5	-	-	-	33.3	11.2
HCM Lane LOS	A	-	-	-	D	B
HCM 95th %tile Q(veh)	0.5	-	-	-	1.2	0.7

HCM 6th TWSC  
4: Marksheffel Rd & Poa Annua St

Short-Term Total Traffic  
AM Peak Hour

Intersection												
Int Delay, s/veh	0.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	21	10	0	21	0	642	1	4	623	7
Future Vol, veh/h	0	0	21	10	0	21	0	642	1	4	623	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	-	-	-	290	-	290
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	78	92	78	92	83	83	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	23	13	0	27	0	773	1	4	677	8

Major/Minor	Minor2		Minor1		Major1		Major2	
Conflicting Flow All	-	-	677	1475	1467	774	-	0
Stage 1	-	-	-	774	774	-	-	-
Stage 2	-	-	-	701	693	-	-	-
Critical Hdwy	-	-	6.22	7.12	6.52	6.22	-	-
Critical Hdwy Stg 1	-	-	-	6.12	5.52	-	-	-
Critical Hdwy Stg 2	-	-	-	6.12	5.52	-	-	-
Follow-up Hdwy	-	-	3.318	3.518	4.018	3.318	-	-
Pot Cap-1 Maneuver	0	0	453	104	128	398	0	-
Stage 1	0	0	-	391	408	-	0	-
Stage 2	0	0	-	429	445	-	0	-
Platoon blocked, %	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	453	98	127	398	-	-
Mov Cap-2 Maneuver	-	-	-	226	252	-	-	-
Stage 1	-	-	-	391	408	-	-	-
Stage 2	-	-	-	405	443	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.4	17.8	0	0.1
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	-	-	453	320	842	-	-
HCM Lane V/C Ratio	-	-	0.05	0.124	0.005	-	-
HCM Control Delay (s)	-	-	13.4	17.8	9.3	-	-
HCM Lane LOS	-	-	B	C	A	-	-
HCM 95th %tile Q(veh)	-	-	0.2	0.4	0	-	-

HCM 6th TWSC  
5: Marksheffel Rd & Peaceful Valley Rd

Short-Term Total Traffic  
AM Peak Hour

Intersection												
Int Delay, s/veh	2.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↗	↗		↗		↗	↗	↗	↗	↗
Traffic Vol, veh/h	0	0	40	57	0	55	0	588	25	29	600	25
Future Vol, veh/h	0	0	40	57	0	55	0	588	25	29	600	25
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Stop	-	-	None	-	-	None
Storage Length	-	-	0	0	-	0	-	-	290	340	-	290
Veh in Median Storage, #	-	0	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	83	83	83	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	51	69	0	66	0	676	29	33	690	29













Major/Minor	Minor2		Minor1		Major1		Major2	
Conflicting Flow All	-	-	690	1472	-	676	-	0
Stage 1	-	-	-	676	-	-	-	-
Stage 2	-	-	-	796	-	-	-	-
Critical Hdwy	-	-	6.22	7.12	-	6.22	-	4.12
Critical Hdwy Stg 1	-	-	-	6.12	-	-	-	-
Critical Hdwy Stg 2	-	-	-	6.12	-	-	-	-
Follow-up Hdwy	-	-	3.318	3.518	-	3.318	-	2.218
Pot Cap-1 Maneuver	0	0	445	105	0	453	0	893
Stage 1	0	0	-	443	0	-	-	-
Stage 2	0	0	-	380	0	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	445	90	-	453	-	893
Mov Cap-2 Maneuver	-	-	-	211	-	-	-	-
Stage 1	-	-	-	443	-	-	-	-
Stage 2	-	-	-	324	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14.1	22.3	0	0.4
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR
Capacity (veh/h)	-	-	445 211 453	893	-	-
HCM Lane V/C Ratio	-	-	0.115 0.325 0.146	0.037	-	-
HCM Control Delay (s)	-	-	14.1 30.1 14.3	9.2	-	-
HCM Lane LOS	-	-	B D B	A	-	-
HCM 95th %tile Q(veh)	-	-	0.4 1.3 0.5	0.1	-	-

# Timings 6: Marksheffel Rd & Mesa Ridge Pkwy

Short-Term Total Traffic  
AM Peak Hour

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	231	71	42	382	360	336
Future Volume (vph)	231	71	42	382	360	336
Turn Type	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	7			2	6	
Permitted Phases		4	2			6
Detector Phase	7	4	2	2	6	6
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	9.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	30.0	30.0	60.0	60.0	60.0	60.0
Total Split (%)	33.3%	33.3%	66.7%	66.7%	66.7%	66.7%
Yellow Time (s)	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
Lost Time Adjust (s)	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
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Max	C-Max	C-Max	C-Max
Act Effect Green (s)	18.7	18.7	61.3	61.3	61.3	61.3
Actuated g/C Ratio	0.21	0.21	0.68	0.68	0.68	0.68
v/c Ratio	0.73	0.21	0.07	0.32	0.32	0.32
Control Delay	44.4	7.5	6.4	7.4	6.8	1.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.4	7.5	6.4	7.4	6.8	1.7
LOS	D	A	A	A	A	A
Approach Delay	35.7			7.3	4.4	
Approach LOS	D			A	A	

## Intersection Summary

Cycle Length: 90  
Actuated Cycle Length: 90  
Offset: 57 (63%), Referenced to phase 2:NBTL and 6:SBT, Start of Green  
Natural Cycle: 40  
Control Type: Actuated-Coordinated  
Maximum v/c Ratio: 0.73  
Intersection Signal Delay: 12.1  
Intersection Capacity Utilization 47.6%  
Analysis Period (min) 15

Intersection LOS: B







ICU Level of Service A

Splits and Phases: 6: Marksheffel Rd & Mesa Ridge Pkwy



HCM 6th TWSC  
7: Mesa Ridge Pkwy & Spring Glen Dr







Short-Term Total Traffic  
AM Peak Hour

Intersection						
Int Delay, s/veh	5.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	94	230	364	14	72	169
Future Vol, veh/h	94	230	364	14	72	169
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	390	-	-	290	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	111	271	428	16	85	199
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	444	0	-	0	921	428
Stage 1	-	-	-	-	428	-
Stage 2	-	-	-	-	493	-
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	1116	-	-	-	300	627
Stage 1	-	-	-	-	657	-
Stage 2	-	-	-	-	614	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1116	-	-	-	270	627
Mov Cap-2 Maneuver	-	-	-	-	270	-
Stage 1	-	-	-	-	592	-
Stage 2	-	-	-	-	614	-
Approach	EB	WB		SB		
HCM Control Delay, s	2.5	0		16.7		
HCM LOS	C					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1116	-	-	-	270	627
HCM Lane V/C Ratio	0.099	-	-	-	0.314	0.317
HCM Control Delay (s)	8.6	-	-	-	24.3	13.4
HCM Lane LOS	A	-	-	-	C	B
HCM 95th %tile Q(veh)	0.3	-	-	-	1.3	1.4



HCM 6th TWSC  
4: Marksheffel Rd & Poa Annua St

Short-Term Total Traffic  
PM Peak Hour

Intersection												
Int Delay, s/veh	0.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	14	2	0	3	0	751	3	8	652	22
Future Vol, veh/h	0	0	14	2	0	3	0	751	3	8	652	22
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	-	-	-	290	-	290
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	78	92	78	92	91	91	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	15	3	0	4	0	825	3	9	709	24









Major/Minor	Minor2		Minor1		Major1		Major2	
Conflicting Flow All	-	-	709	1574	1578	827	-	0
Stage 1	-	-	-	827	827	-	-	-
Stage 2	-	-	-	747	751	-	-	-
Critical Hdwy	-	-	6.22	7.12	6.52	6.22	-	-
Critical Hdwy Stg 1	-	-	-	6.12	5.52	-	-	-
Critical Hdwy Stg 2	-	-	-	6.12	5.52	-	-	-
Follow-up Hdwy	-	-	3.318	3.518	4.018	3.318	-	-
Pot Cap-1 Maneuver	0	0	434	89	109	371	0	-
Stage 1	0	0	-	366	386	-	0	-
Stage 2	0	0	-	405	418	-	0	-
Platoon blocked, %	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	434	85	108	371	-	-
Mov Cap-2 Maneuver	-	-	-	210	231	-	-	-
Stage 1	-	-	-	366	386	-	-	-
Stage 2	-	-	-	386	413	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.6	18	0	0.1
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	-	-	434 284	803	-	-
HCM Lane V/C Ratio	-	-	0.035 0.023	0.011	-	-
HCM Control Delay (s)	-	-	13.6 18	9.5	-	-
HCM Lane LOS	-	-	B C	A	-	-
HCM 95th %tile Q(veh)	-	-	0.1 0.1	0	-	-

HCM 6th TWSC  
5: Marksheffel Rd & Peaceful Valley Rd

Short-Term Total Traffic  
PM Peak Hour

Intersection												
Int Delay, s/veh	1.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	21	38	0	39	0	715	68	35	601	32
Future Vol, veh/h	0	0	21	38	0	39	0	715	68	35	601	32
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Stop	-	-	None	-	-	None
Storage Length	-	-	0	0	-	0	-	-	290	340	-	290
Veh in Median Storage, #	-	0	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	71	71	71	78	78	78	92	92	92	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	30	49	0	50	0	777	74	42	715	38













Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	-	-	715	1610	-	777	-	0	0	851	0	0
Stage 1	-	-	-	777	-	-	-	-	-	-	-	-
Stage 2	-	-	-	833	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.22	7.12	-	6.22	-	-	-	4.12	-	-
Critical Hdwy Stg 1	-	-	-	6.12	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	6.12	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.318	3.518	-	3.318	-	-	-	2.218	-	-
Pot Cap-1 Maneuver	0	0	431	84	0	397	0	-	-	788	-	-
Stage 1	0	0	-	390	0	-	0	-	-	-	-	-
Stage 2	0	0	-	363	0	-	0	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	431	75	-	397	-	-	-	788	-	-
Mov Cap-2 Maneuver	-	-	-	194	-	-	-	-	-	-	-	-
Stage 1	-	-	-	390	-	-	-	-	-	-	-	-
Stage 2	-	-	-	320	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14	22.5	0	0.5
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR
Capacity (veh/h)	-	-	431 194 397	788	-	-
HCM Lane V/C Ratio	-	-	0.069 0.251 0.126	0.053	-	-
HCM Control Delay (s)	-	-	14 29.7 15.4	9.8	-	-
HCM Lane LOS	-	-	B D C	A	-	-
HCM 95th %tile Q(veh)	-	-	0.2 1 0.4	0.2	-	-

# Timings 6: Marksheffel Rd & Mesa Ridge Pkwy

Short-Term Total Traffic  
PM Peak Hour

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	420	49	41	363	360	301
Future Volume (vph)	420	49	41	363	360	301
Turn Type	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	7			2	6	
Permitted Phases		4	2			6
Detector Phase	7	4	2	2	6	6
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	9.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	35.0	35.0	55.0	55.0	55.0	55.0
Total Split (%)	38.9%	38.9%	61.1%	61.1%	61.1%	61.1%
Yellow Time (s)	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
Lost Time Adjust (s)	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
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Max	C-Max	C-Max	C-Max
Act Effect Green (s)	27.2	27.2	52.8	52.8	52.8	52.8
Actuated g/C Ratio	0.30	0.30	0.59	0.59	0.59	0.59
v/c Ratio	0.87	0.10	0.09	0.38	0.37	0.31
Control Delay	47.8	6.7	9.8	11.8	9.7	1.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.8	6.7	9.8	11.8	9.7	1.6
LOS	D	A	A	B	A	A
Approach Delay	43.6			11.6	6.0	
Approach LOS	D			B	A	

## Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green

Natural Cycle: 40

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.87

Intersection Signal Delay: 18.9

Intersection LOS: B







Intersection Capacity Utilization 58.0%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 6: Marksheffel Rd & Mesa Ridge Pkwy



Intersection						
Int Delay, s/veh	5.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	220	418	309	32	52	126
Future Vol, veh/h	220	418	309	32	52	126
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	390	-	-	290	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	87	87	86	86	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	253	480	359	37	61	148
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	396	0	-	0	1345	359
Stage 1	-	-	-	-	359	-
Stage 2	-	-	-	-	986	-
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	1163	-	-	-	167	685
Stage 1	-	-	-	-	707	-
Stage 2	-	-	-	-	361	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1163	-	-	-	131	685
Mov Cap-2 Maneuver	-	-	-	-	131	-
Stage 1	-	-	-	-	553	-
Stage 2	-	-	-	-	361	-
Approach	EB	WB		SB		
HCM Control Delay, s	3.1	0		24.2		
HCM LOS	C					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1163	-	-	-	131	685
HCM Lane V/C Ratio	0.217	-	-	-	0.467	0.216
HCM Control Delay (s)	9	-	-	-	54.5	11.7
HCM Lane LOS	A	-	-	-	F	B
HCM 95th %tile Q(veh)	0.8	-	-	-	2.1	0.8

# Crash History

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AccidentDate	AccidentTime	NumberInjured	FIP	ReferencePointName	ReferencePointAtName	SuspectedAlcohol	AccidentNarrative
9/17/17	0:55	1	Injury	Mesa Ridge Parkway	Marksheffel Road	Yes	Vehicle #1 was eastbound on Mesa Ridge Parkway approaching a "T" style intersection with S. Marksheffel Road. Vehicle #1 disregarded a stop sign and continued straight across the intersection and off the end of the "T" intersection. Vehicle #1 traveled off road for about 24.3' and the front of the vehicle collided with a dirt embankment. After impact, vehicle #1 continued east for about 11.7' and the front of the vehicle collided with a barbed wire fence. Vehicle #1 traveled another 11.9' and came to rest in a field, on its wheels, facing east.

## Appendix Table 1

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<b>Appendix Table 1</b> <b>Area Traffic Impact Studies by LSC</b> <b>The Glen at Widefield Filing No. 11</b>	
<b>Study</b>	<b>Date</b>
<b>The Glen at Widefield</b>	
The Glen at Widefield East Preliminary Plan	January 18, 2016
The Glen at Widefield Filing No. 7 Updated Transportation Memorandum	January 18, 2016
The Glen at Widefield Filing No. 8 Transportation Memorandum	August 25, 2016
The Glen at Widefield Filing No. 9 Updated Transportation Memorandum	September 18, 2018
The Glen at Widefield Filing Nos. 10 and 11 Updated Transportation Memorandum	March 11, 2020
The Glen at Widefield Filing No. 10 Updated Transportation Memorandum	January 11, 2021
<b>Corvallis</b>	
Corvallis Traffic Impact Study (by Matrix Design Group, Inc.)	January 8, 2021
<b>Lorson Ranch</b>	
Lorson Ranch Sketch Plan Amendment 2 Traffic Impact and Access Analysis	December 17, 2018
Carriage Meadows South at Lorson Ranch Filing No. 1 Updated Traffic Impact Analysis	August 14, 2017
Carriage Meadows North at Lorson Ranch Filing No. 1 Updated Traffic Impact Analysis	January 29, 2017
Lorson Ranch East Updated Traffic Impact and Access Analysis	November 9, 2017
Lorson Ranch East Filing No. 1 Transportation Memorandum	May 2, 2018
Lorson Ranch East Filing No. 2 Transportation Memorandum	September 24, 2018
Lorson Ranch East Filing No. 3 Transportation Memorandum	January 22, 2019
Lorson Ranch East Filing No. 4 Transportation Memorandum	March 12, 2019
Lorson Ranch PK-8 School Traffic Impact and Access Analysis	October 4, 2018
Creekside at Lorson Ranch Filing No. 1 Traffic Impact and Access Analysis	October 28, 2018
Creekside at Lorson Ranch Filing No. 1 Transportation Memorandum	April 26, 2019
Carriage Meadows Townhomes Traffic Impact Analysis	February 25, 2020
Fontaine/Old Glory Intersection Analysis	February 27, 2020
Ponderosa at Lorson Ranch Filing No. 3 Transportation Memorandum	September 2, 2020
Creekside South at Lorson Ranch Updated Transportation Memorandum	May 5, 2020
The Hills at Lorson Ranch Full Traffic Impact Analysis	October 26, 2020
Skyline at Lorson Ranch Traffic Impact Analysis	January 21, 2021
<i>Source: LSC Transportation Consultants, Inc. (February 2021)</i>	