

The Glen at Widefield Filing No. 12

Transportation Memorandum

Prepared for:
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MAY 23, 2022

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LSC #S214610



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Queuing Reports

DRAFT



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May 23, 2022

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

RE: The Glen at Widefield Filing No. 12
Transportation Memorandum
El Paso County, Colorado
LSC #S214610

Dear Mr. Watson:

In response to your request, LSC Transportation Consultants, Inc. has prepared this transportation memorandum for The Glen at Widefield Filing No. 12. As shown in Figure 1, the site is located west of the Marksheffel Road/Poa Annua Street intersection in El Paso County, Colorado. Filing 12 is planned to contain 79 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. 12;
- The assignment of the Filing No. 12 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

The most recent Glen at Widefield subdivision filings include Filing No. 10 (40 lots) and Filing No. 11 (103 lots). The currently-proposed Glen at Widefield Filing 12 is planned to contain 79 lots for single-family homes. Filing 12 will be the final filing within the Glen at Widefield East Preliminary Plan Area. Figure 2 shows the location of The Glen at Widefield Filing Nos. 7 through 12.

Access for The Glen at Widefield Filing Nos. 7 through 10 is via the intersection of Spring Glen Drive/Mesa Ridge Parkway and west leg of the intersection of Marksheffel/Peaceful Valley Road. This west leg has an interim restriction to right-in/right-out only. This restriction is planned to remain in place until a traffic signal is warranted and installed at this intersection. This will likely not likely happen until further development occurs east of Marksheffel Road. An additional access to Marksheffel Road aligning with Poa Annua Street is being constructed as part of Filing No. 11.

Interim Full-Movement Intersection – Poa Annua/Marksheffel

The new west leg of the intersection of Marksheffel/Poa Annua, planned as part of the Filing 11 development, will be an interim full-movement intersection. This is to avoid two right-in/right-out restricted intersections on Marksheffel Road north of Mesa Ridge Parkway. This interim full movement would remain until either a connection becomes available through the property to the north to the intersection of Lorson Boulevard/Marksheffel Road via an extension of Spring Glen Drive or a signal becomes warranted and is installed at the Peaceful Valley Road/Marksheffel intersection.

Please also include the following:
or safety or operational problems arise which necessitate proceeding with the right-in-right-out intersection improvements.

ROADWAY AND TRAFFIC CONDITIONS

Area Roadways

This is part of the condition of approval for filing 11.

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 is a three-lane facility between Furlong Circle and about three-quarters of a mile south of Bradley Road. 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 (CDOT – SH 16) is a four-lane median-divided Principal Arterial extending east from I-25 to the Mesa Ridge Parkway/Powers Boulevard intersection. The CDOT roadway continues north as SH 21 (Powers Boulevard).

Mesa Ridge Parkway (El Paso County portion) extends east from Powers Boulevard to Marksheffel Road. A half-section of Mesa Ridge Parkway with one through lane in each direction exists 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 Annu Street is a two-lane local street that extends east from Marksheffel Road for about 850 feet, ending in a cul-de-sac. The posted speed limit on Poa Annu is 25 mph.

Area Roadway-System Improvement Notes

The intersection of Mesa Ridge & Marksheffel is planned to be signalized in the short term by El Paso County. The intersection of Marksheffel/Lorson Boulevard will also likely be signalized in the short term.

Spring Glen will be extended north in the future as development occurs within Corvalis to the north (City of Fountain). Street connections will become available to Fontaine Boulevard to the north and to Marksheffel Road (at what will become the west leg of the Marksheffel/Lorson Boulevard intersection).

TRAFFIC VOLUME COUNTS

Figure 3a shows the results of numerous peak-hour traffic-volume counts, the most recent of which is from spring 2022. and Figure 3b shows the existing lane geometries and traffic controls. The traffic-count reports are attached.

SHORT-TERM (YEAR 2025) BACKGROUND TRAFFIC

Figure 4a shows the short-term (Year 2025) 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 No. 12 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, 9, 10, and 11 that were unoccupied when traffic counts were conducted in September 2019. The previous volume counted for the northbound left-turn and eastbound left-turn movements at the intersection of Marksheffel/Peaceful Valley were rerouted to account for the now-restricted west leg (to right-in/right-out only).

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 Glen at Widefield Filing No. 12 site-generated vehicle trips have been estimated using the nationally-published trip-generation rates from *Trip Generation, 11th Edition, 2021* by the Institute of Transportation Engineers (ITE). Table 1 shows the trip-generation estimates for this filing. Table 1 also shows estimates of the additional traffic expected to be generated due to buildout of the approved Glen at Widefield Filings 7 through 11.

Filing 12 is expected to generate 745 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 14 vehicles would enter and 41 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 47 vehicles would enter and 27 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.

Figure 6 shows 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. 12. The short-term site-generated traffic volumes assume the intersection of Poa Annua/Marksheffel allowed as an interim full-movement intersection.

SHORT-TERM TOTAL TRAFFIC

Figure 7a 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. 12 short-term site-generated traffic volumes (from Figure 6).

Figure 7b 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

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 2: 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) ⁽¹⁾
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 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 or Synchro. The results of the analysis are shown in Figures 4b and 7b.

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 7a, it is unlikely that traffic-signal warrant(s) will be met following buildout of the Glen at Widefield Filing Nos. 8 through 12. 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 upstream signal at Marksheffel/Mesa Ridge will create gaps in westbound traffic. The HCM unsignalized method of analysis allows for the effect of an upstream signal. However, the southbound delay calculated by the HCM procedures at Spring Glen may be conservative. A SimTraffic simulation was run to better analyze the operational effects of the adjacent signal-controlled intersection. The projected short-term afternoon peak-hour volumes were entered into the model and the model was run five times. The results were then averaged. The average projected delay for the southbound left-turn movement at the intersection of Spring Glen/Mesa Ridge was about 32.8 seconds per vehicle during the afternoon peak hour. Based on the SimTraffic simulation results and on the Level of Service delay ranges shown in Table 2, this movement would be considered to operate at LOS D during the peak hours.

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 has been restricted to right-in/right-out only. 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. 12. 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 Annu Street

The new west leg of the intersection of Marksheffel/Poa Annu, planned as part of the Filing 11 development, will be opened with an interim full-movement condition (until a connection becomes available through the Corvalis development to the north to the intersection of Lorson Boulevard/Marksheffel Road (or Fontaine Boulevard) or a signal becomes warranted and is installed at the Peaceful Valley Road/Marksheffel intersection). ← see comment above.

The eastbound approach at this intersection is projected to operate at LOS F during the peak hours, based on the projected short-term total traffic volumes and the **HCM unsignalized method** of analysis. The planned upstream signals at Marksheffel/Mesa Ridge and Marksheffel/Lorson Boulevard will create gaps in northbound and southbound through traffic. The HCM unsignalized method of analysis allows for the effect of an upstream signal. However, the eastbound and westbound delay calculated by the HCM procedures at Poa Annu/Marksheffel may be conservative.

A SimTraffic simulation was run to better analyze the operational effects of upstream planned signal-controlled intersections. The projected Short Term Total peak-hour volumes were entered into the model and the model was run five times. The results were then averaged. The average projected delay for the eastbound approach at the intersection of Poa Annu/Marksheffel was about 28.2 seconds per vehicle during the morning peak hour and 20.5 seconds per vehicle during the afternoon peak hour.

Based on the SimTraffic simulation results and on the Level of Service delay ranges shown in Table 2, this movement would be considered to operate at LOS D during the morning peak hour and LOS C during the afternoon peak hour.

Please also identify the level of service (including glen 12 traffic) should this intersection become a right-in-right-out

Powers Boulevard/Mesa Ridge Parkway

All movements at the intersection of Powers/Mesa Ridge are projected to continue to operate at LOS D or better during the peak hours, based on the projected short-term background and total peak-hour traffic volumes. The short-term analysis assumes Mesa Ridge Parkway has been widened approaching Powers Boulevard to provide dual westbound left-turn lanes.

As discussed in the Preliminary Plan traffic report, the 2040 analysis indicates an overall LOS C during the peak hours. Individual southbound and westbound left-turn movements are projected to operate at LOS E during the afternoon peak hour, based on the projected 2040 background and total traffic volumes. LOS E does not necessarily indicate failure of the movement or the intersection or a traffic safety problem. Given a longer cycle length and the prioritization by CDOT of north/south through traffic on Powers, some left-turn and minor-street movements, especially with protected-only phasing, may experience delays in the LOS E range, as priority is given to the major street for traffic progression and for serving high volumes of through traffic.

QUEUEING ANALYSIS

A queuing analysis has been performed for the southbound and westbound left turn at Powers/Mesa Ridge. The analysis has been completed, based on dual left-turn lanes with existing length for the westbound Mesa Ridge left-turn lane, the recently-extended southbound left-turn lane, and projected short-term total traffic.

The maximum southbound left-turn queue on Powers Boulevard approaching Mesa Ridge Parkway is projected to be about 188 feet long, based on the projected short-term total traffic volumes. The southbound left-turn lane has recently been lengthened to 1,108 feet plus a 222-foot taper.

The maximum westbound left-turn queue on Mesa Ridge Parkway approaching Powers Boulevard is projected to be about 351 feet long, based on the projected short-term total traffic volumes, assuming dual westbound left-turn lanes. An additional queuing analysis was performed, based on the 2040 morning peak-hour traffic volumes shown in the overall *Glen at Widefield East Preliminary Plan* traffic report, dated January 18, 2016. The projected maximum westbound left-turn queue, based on the 2040 traffic volumes, is 469 feet.

TRAFFIC-SIGNAL WARRANT ANALYSIS

Vehicular-Volume Traffic-Signal Warrants

The intersections of Marksheffel/Mesa Ridge, Spring Glen/Mesa Ridge and Marksheffel/Poa Annu were 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. 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.

Table 4 shows the results of the analysis for Spring Glen/Mesa Ridge for the morning and afternoon peak hours only. As shown in Table 4, the thresholds for a Four-Hour Vehicular Volume Traffic-Signal Warrant are **not** projected to be met, in the short-term based on both the morning and afternoon peak-hour volumes. The thresholds for an Eight-Hour Vehicular-Volume Traffic-Signal Warrant are projected to be met during the projected short-term total afternoon peak hour but not the morning peak hour. However, in order for this warrant to be met, the traffic volumes would have to meet these thresholds during an additional seven hours. As the threshold is just met during the afternoon peak hour, it is unlikely that seven other hours could be found that would meet these thresholds.

Table 5 shows the results of the analysis for Poa Annua/Marksheffel for the morning and afternoon peak hours only. As shown in Table 4, the thresholds for a Four-Hour Vehicular-Volume Traffic-Signal Warrant are projected to be met four of the ten hours analyzed. The thresholds for an Eight-Hour Vehicular-Volume Traffic-Signal Warrant are projected to be met six of the ten hours analyzed. However, in order for this warrant to be met, the traffic volumes would have to meet these thresholds during an additional two hours.

Please state whether or not the warrant is met as done in the above paragraph

Crash Experience

The Colorado State Patrol provided LSC with crash data for the intersection of Marksheffel/Mesa Ridge from 2017 through February 2022. There was one reported crash at this intersection in 2017. No crashes were reported between 2018 and February 2022. 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.

how about the other intersections along marksheffel and mesa ridge. There was discussion at the previous hearing regarding incidents at the other intersections. Please identify any that have occurred. If none, then please state that.

CONCLUSIONS AND RECOMMENDATIONS

Trip Generation

- Filing 12 is expected to generate 745 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 14 vehicles would enter and 41 vehicles would exit the site. During the afternoon peak hour, about 47 vehicles would enter and 27 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 7a, it is unlikely that traffic-signal warrant(s) will be met following buildout of the Glen at Widefield Filing Nos. 8 through 12. 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 planned traffic signal at the intersection of Marksheffel/Mesa Ridge will likely create gaps in through traffic for this movement to more easily occur.
- The west leg of the intersection of Marksheffel/Peaceful Valley is restricted to right-in/right-out only, 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 buildout of The Glen at Widefield through Filing No. 12. This restriction is planned 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 west leg of the intersection of Marksheffel/Poa Annu, proposed as part of the development of the Glen at Widefield Filing No. 11, will be opened as an interim full-movement condition. The eastbound approach at this intersection is projected to operate at LOS D during the morning peak hour and LOS C during the afternoon peak hour based on a traffic simulation analysis. Please see the Level of Service section above for details.
- The signalized intersection of Mesa Ridge Parkway/Powers Boulevard is projected to continue to operate at a satisfactory level of service, based on the projected short-term background and total peak-hour traffic volumes.

Intersection Lane Configurations

- Table 6 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 as the east leg of the intersection of Marksheffel/Peaceful Valley has been restricted to right-in/right-out only. Based on a design speed of 50 mph, the prescribed lane length for this lane is 235 feet plus a 200-foot taper. This improvement is planned to be completed as part of The Glen at Widefield Filing No. 10.
- The west leg of the Marksheffel Road / Peaceful Valley Road intersection has been restricted to right-in/right-out only. There is an interim southbound left-turn acceleration lane for westbound to southbound left turning traffic from the east side of the intersection.
- 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. This improvement will be installed with the Glen at Widefield Filing No. 11.
- 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 deceleration lane is projected to be warranted on Marksheffel Road at Poa Annua Street. Based on a design speed of 60 mph, the prescribed lane length for this lane would be 290 feet plus a 240-foot taper. This improvement will be installed with the Glen at Widefield Filing No. 11.
- Based on the projected short-term total traffic volumes, the classification of Marksheffel Road as an Expressway, and the criteria contained in the *ECM*, an interim northbound left-turn deceleration lane is projected to be warranted on Marksheffel Road at Poa Annua Street (associated with the interim full-movement condition for the west leg of this intersection). Based on a design speed of 60 mph, the prescribed lane length for this lane would be 340 feet plus a 240-foot taper. This improvement can be accomplished through restriping of the center painted median and will be completed with The Glen at Widefield Filing No. 11.
- 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

This was not approved with Filing 11 and would not be supported by staff. Please remove.

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. 12.

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 12 access permit, the amount would be \$14,263. Table 6 presents the signal-escrow analysis, including the previously-identified amount for Filings 7 through 11. As shown in the table, the total required escrow amount for all of Glen at Widefield East will be satisfied with Filing No. 12.
- An access permit application will be submitted to CDOT for Filing 12 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 \$4,494 for Filing No. 12. Table 8 presents the signal-escrow analysis for this intersection, including the previously-identified amounts for Filings 7 through 11. As shown in the table, the total required escrow amount for all of the Glen East Preliminary Plan will be satisfied with Filing No. 12.

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 \$4,977 for Filing No. 12. Table 9 presents the signal escrow analysis for this intersection, including the previously-identified amounts for Filings 7 through 11. As shown in the table, the total required escrow amount for all of the Glen East Preliminary Plan will be satisfied with Filing No. 12.

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. 12 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 \$96,459 for the 79 lots within Filing No. 12. 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 2-9
Appendix Table 1
Crash History
Figures 1-8
Traffic Count Reports
Level of Service Reports
Queuing Reports

Tables 2-9

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**Table 2
Trip Generation Estimate
The Glen at Widefield Filing 12**

Filing	Land Use Code	Land Use Description	Trip Generation Units				Trip Generation Rates ⁽¹⁾					Future Total Trips Generated				
							Existing	Future	Total	DU ⁽²⁾	Average Weekday Traffic	Morning Peak Hour		Afternoon Peak Hour		Average Weekday Traffic
			In	Out	In	Out						In	Out	In	Out	
Approved Filings/Filings Currently Under Review																
7	210	Single-Family Detached Housing	144	4	148	DU ⁽²⁾	9.43	0.18	0.52	0.59	0.35	38	1	2	2	1
8	210	Single-Family Detached Housing	32	69	101	DU	9.43	0.18	0.52	0.59	0.35	651	13	36	41	24
9	210	Single-Family Detached Housing	0	107	107	DU	9.43	0.18	0.52	0.59	0.35	1,009	19	55	63	37
10	210	Single-Family Detached Housing	0	40	40	DU	9.43	0.18	0.52	0.59	0.35	377	7	21	24	14
11	210	Single-Family Detached Housing	0	103	103	DU	9.43	0.18	0.52	0.59	0.35	971	19	53	61	36
Total Filings 7-11			176	323	499	DU						3,046	59	167	191	112
Currently Proposed Filing																
12	210	Single-Family Detached Housing	0	79	79	DU	9.43	0.18	0.52	0.59	0.35	745	14	41	47	27
Total Filings 7-12			176	402	578	DU						3,791	73	208	238	139

Notes:

(1) Source: "Trip Generation, 11th Edition, 2021" by the Institute of Transportation Engineers (ITE)

(2) DU = dwelling unit

Table 3
The Glen at Widefield Filing 12
Traffic Signal Warrant Analysis of Mesa Ridge Pkwy/Marksheffel Rd

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

Table 4
The Glen at Widefield Filing 12
Traffic Signal Warrant Analysis of Mesa Ridge Pkwy/Spring Glen Dr

Hour	Traffic Volumes		Warrant Analysis ⁽¹⁾							
			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 Street Minimum	West Leg
	Major ⁽²⁾	Minor ⁽³⁾	Major	Minor	Major	Minor	A	B		
Short-Term Background Traffic										
AM Peak Hour	824	26	420	105	630	53	No	No	76	No
PM Peak Hour	1077	19	420	105	630	53	No	No	60	No
Short-Term Total Traffic										
AM Peak Hour	832	26	420	105	630	53	No	No	75	No
PM Peak Hour	1105	55	420	105	630	53	No	Yes	60	No
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 Mesa Ridge Pkwy exceeds 40 mph. (2) The major street traffic includes all eastbound and westbound movements (left, through and right) on Mesa Ridge Pkwy (3) The minor street traffic includes the southbound left-turn traffic only on Spring Glen Dr										
Source: LSC Transportation Consultants, Inc.										

Table 5
The Glen at Widefield Filing 12
Traffic Signal Warrant Analysis of Poa Annua St/Marksheffel Rd

Hour	Short-Term Total Traffic Volumes ⁽²⁾		Warrant Analysis ⁽¹⁾							
			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 ⁽³⁾	Minor ⁽⁴⁾	Major	Minor	Major	Minor		
6:30 AM	1333	91	420	105	630	53	No	Yes	60	Yes
7:30 AM	1292	77	420	105	630	53	No	Yes	60	Yes
8:30 AM	998	49	420	105	630	53	No	No	60	No
11:00 AM	878	45	420	105	630	53	No	No	68	No
12:00 PM	933	49	420	105	630	53	No	No	63	No
2:00 PM	800	55	420	105	630	53	No	Yes	80	No
3:00 PM	1261	53	420	105	630	53	No	No	60	No
4:30 PM	1475	66	420	105	630	53	No	Yes	60	Yes
5:30 PM	1215	65	420	105	630	53	No	Yes	60	Yes
6:30 PM	882	52	420	105	630	53	No	No	68	No
							0	5		4

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 off peak hour volumes for through traffic on Marksheffel Road were based on traffic counts conducted by LSC at the intersection of Marksheffel/Mesa Ridge in September 2019 and February 2021. The of peak hour volumes on Poa Annua were based on the Hourly Distribution of Entering and Exiting Vehicle Trips for Single Family Residential land uses published by the Institute of Transportation Engineers in 2018

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

(4) The minor street traffic includes the eastbound left-turn and through traffic plus one half of the right-turn traffic only on Poa Annua

Table 6
Recommended Short-Term Improvements
The Glen at Widefield Filing No. 12

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
Convert the intersection of Marksheffel Road/Mesa Ridge Parkway to traffic signal control	When Traffic Signal Warrants are Met	Anticipated in the short term
Construct the west leg of Poa Annua	With The Glen at Widefield Filing No. 11	With The Glen at Widefield Filing No. 11
Northbound left-turn lane on Marksheffel Road approaching Poa Annua Street. Based on a design speed of 60 mph, the prescribed lane length for this lane is 340 feet plus a 240-foot taper.	Based on Expressway Classification: Required for any access that allows left turn ingress Based on Minor Arterial Classification: Northbound left-turn volume of 25 vehicles per hour	With The Glen at Widefield Filing No. 11
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 50 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 50 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

see comment above and revise accordingly.

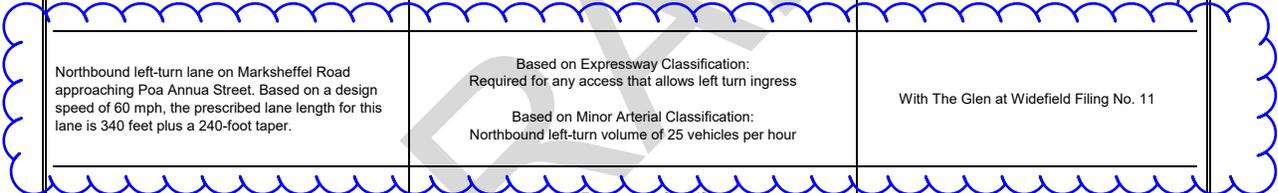


Table 7
Glen East Preliminar Plan CDOT Access Permit and Escrow Analysis
Mesa Ridge & Powers (SH 21)
The Glen at Widefield Filings 12

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	Platted	\$19,065	Permit No. 218056	\$19,065	Completed
Filing 10	40	Plat Approved - not recorded	\$7,222	Application to be submitted soon	\$7,222	Prior to issuance of NTP
Filing 11	103	Pending	\$18,596	Application to be submitted soon	\$18,596	Prior to issuance of NTP
Filing 12	79	Pending	\$14,263	Application to be submitted soon	\$14,263	Prior to issuance of NTP
					\$103,960.00	

Source: LSC Transportation Consultants, Inc.

Sep-21

Please update this table as filing 10 has already been recorded. Please update the access permits section also as necessary.

Table 8
Glen East Preliminary Plan County Intersection Escrow Analysis
Mesa Ridge Parkway & Spring Glen Drive Intersection
The Glen at Widefield Filing 12

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	Platted	\$6,189
Filing 10	40	Plat Approved - not recorded	\$2,276
Filing 11	103	Pending	\$5,859
Filing 12	79	Pending	\$4,494
			\$33,750
<i>Source: LSC Transportation Consultants, Inc.</i>			<i>Sep-21</i>

see comment above

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Table 9
Glen East Preliminary Plan County Intersection Escrow Analysis
Peaceful Valley Road & Marksheffel Road Intersection
The Glen at Widefield Filing 12

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	Platted	\$6,648
Filing 10	40	Plat Approved - not recorded	\$2,521
Filing 11	103	Pending	\$6,489
Filing 12	79	Pending	\$4,977
			\$36,250
Note: The escrow amount for Filing 8 includes the deferred amount for Filing 7			
Source: LSC Transportation Consultants, Inc.			Sep-21

see comment above

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Appendix Table 1

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**Appendix Table 1
Area Traffic Impact Studies by LSC
The Glen at Widefield Filing No. 12**

Study	Date
The Glen at Widefield	
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	February 23, 2021
The Glen at Widefield Filing No. 11 Updated Transportation Memorandum	June 24, 2021
Corvallis	
Corvallis Traffic Impact Study (by Matrix Design Group, Inc.)	January 8, 2021
Lorson Ranch	
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
The Hills at Lorson Ranch Transportation Memorandum	April 19, 2021
Skyline at Lorson Ranch Traffic Impact Analysis	June 29, 2021
Ridges at Lorson Ranch Traffic Impact Analysis	August 13, 2021
<i>Source: LSC Transportation Consultants, Inc. (August 2021)</i>	

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.

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Figures 1-8

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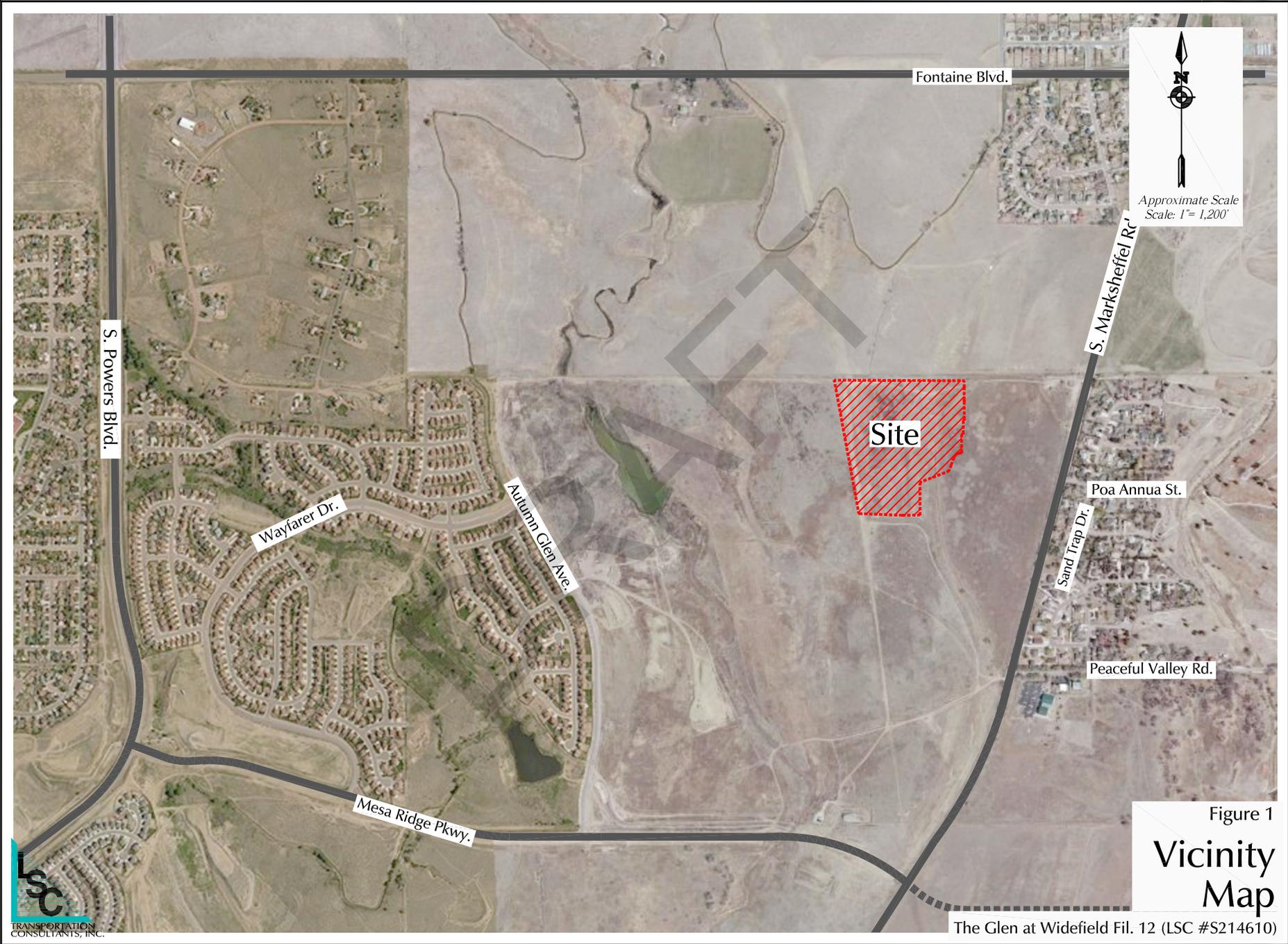


Figure 1
Vicinity
Map

The Glen at Widefield Fil. 12 (LSC #S214610)



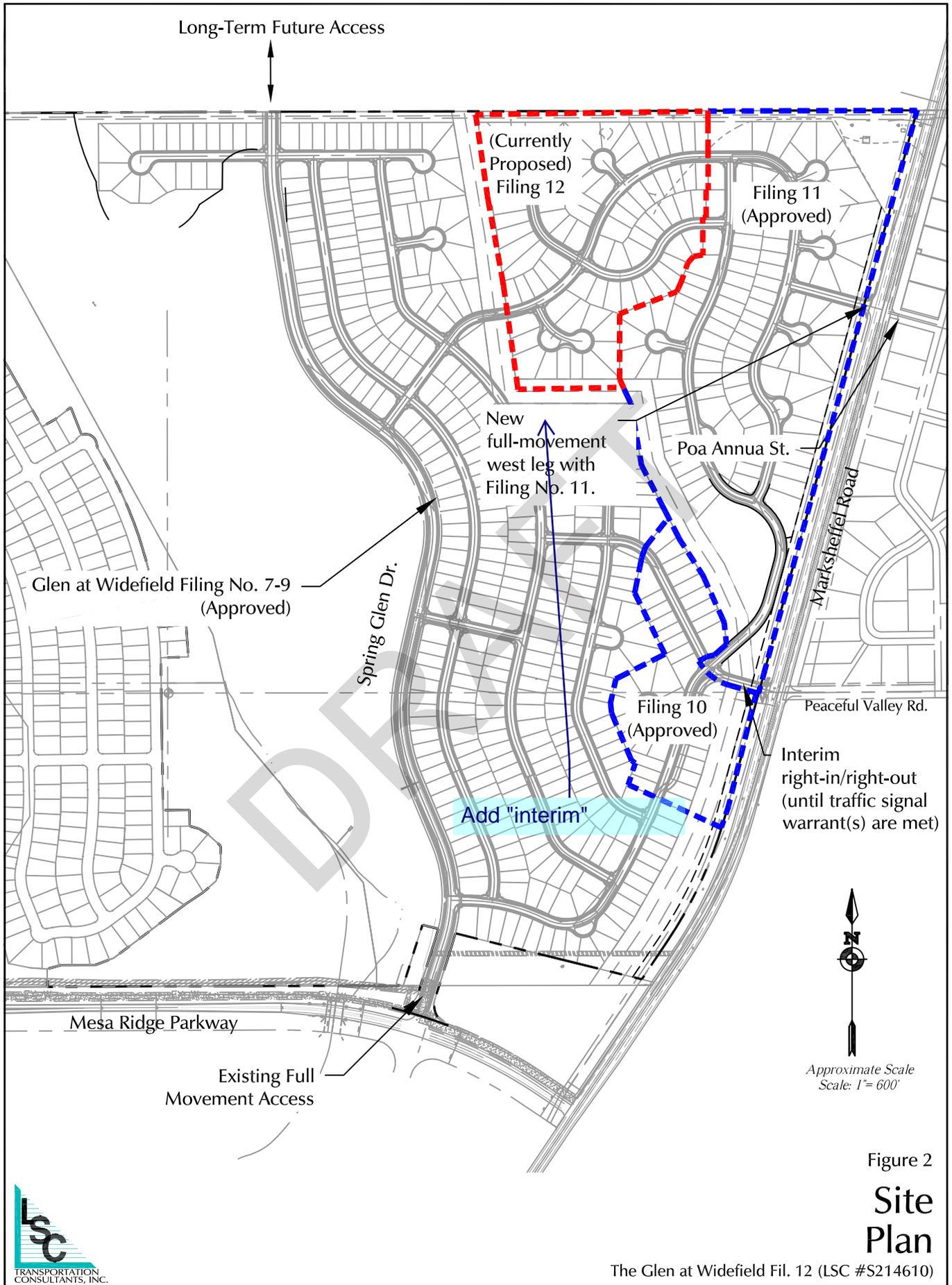
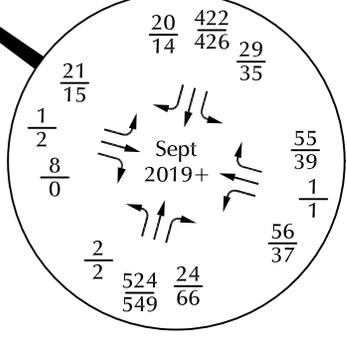
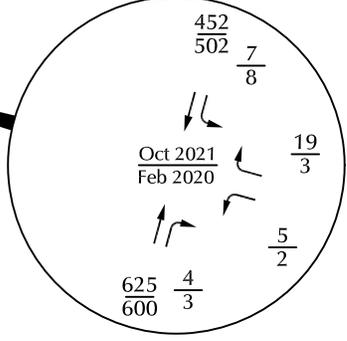
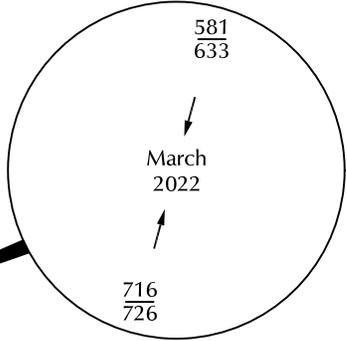
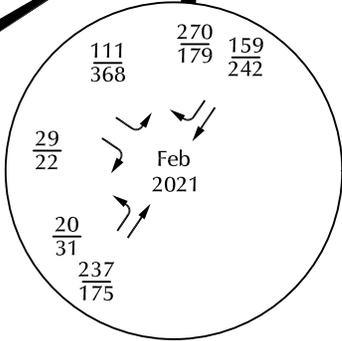
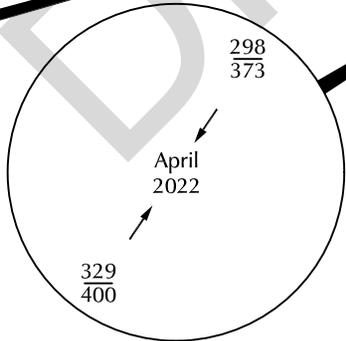
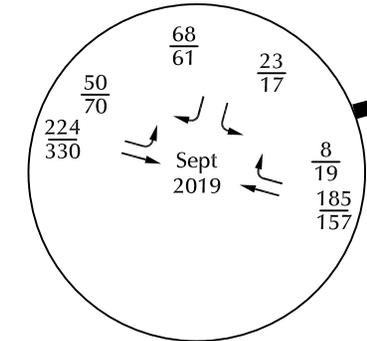
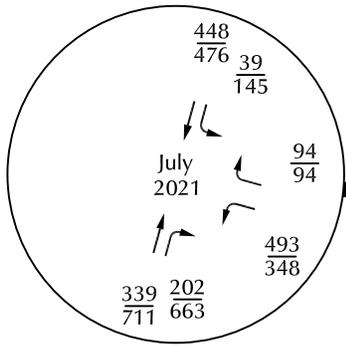
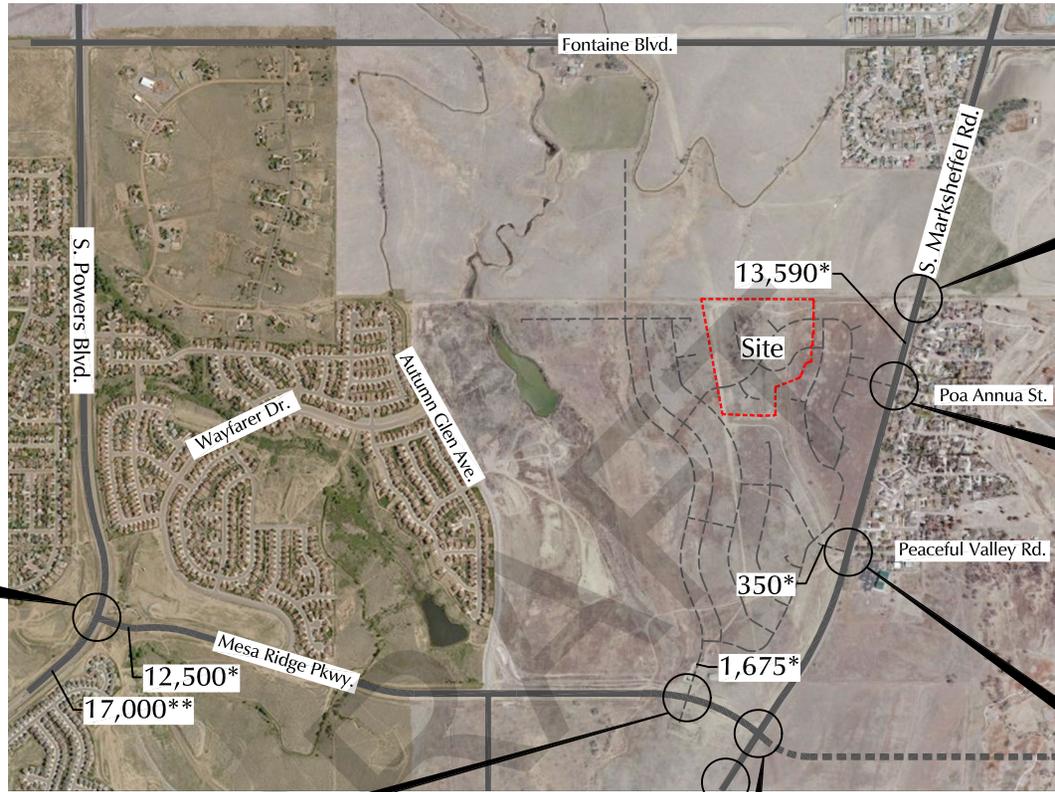


Figure 2
Site Plan

The Glen at Widefield Fil. 12 (LSC #S214610)





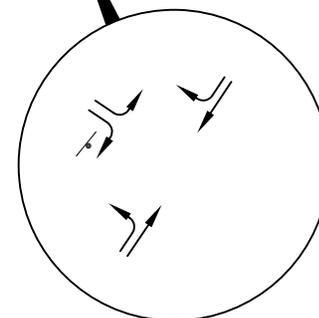
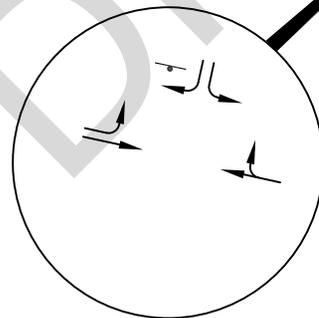
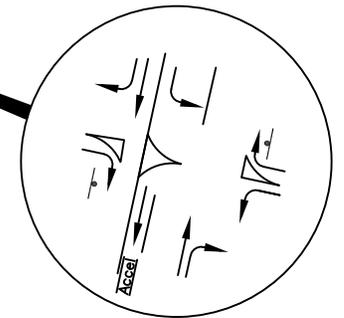
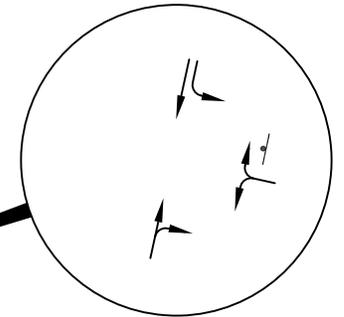
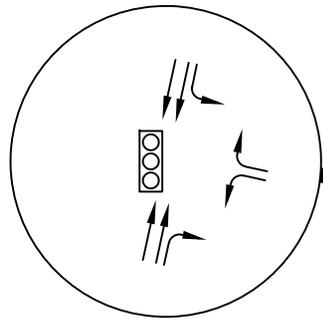
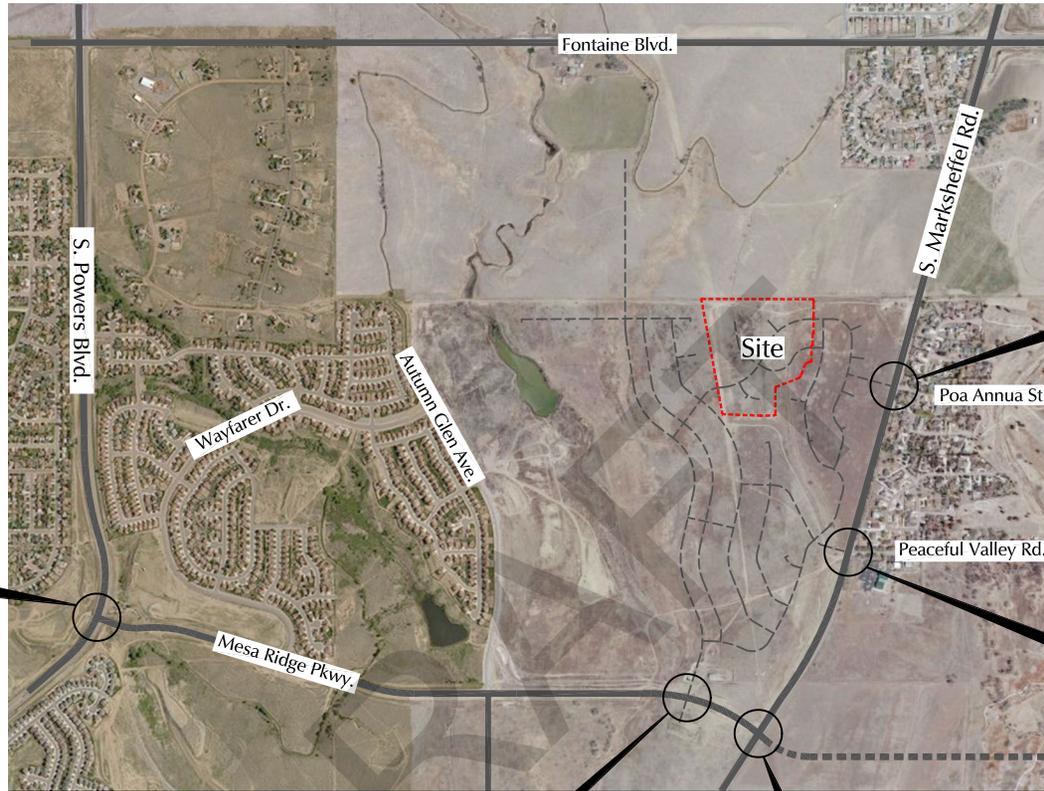
+ The west leg of this intersection has been restricted to right-in/right-out since completion of the 2019 counts.



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)

* Estimate by LSC
 ** CDOT 2020
 Average Annual Daily Traffic

Figure 3a
2019-2022 Traffic
 The Glen at Widefield Fil. 12 (LSC #S214610)



LEGEND:

-  = Stop Sign
-  = Traffic Signal

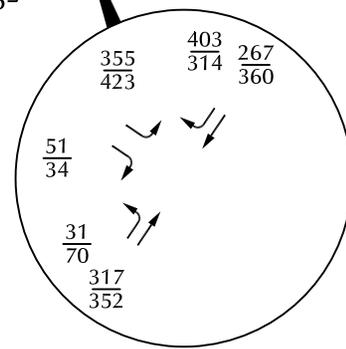
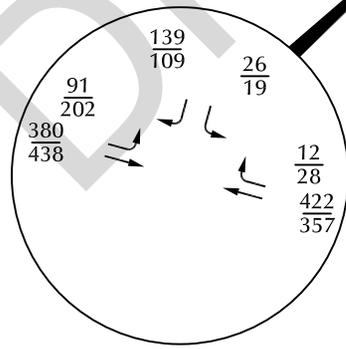
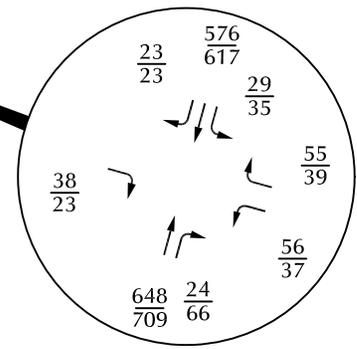
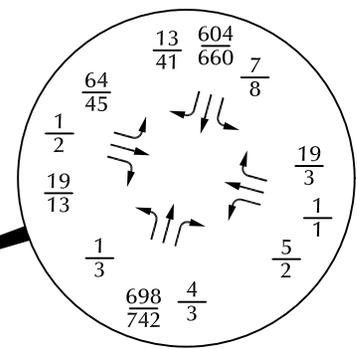
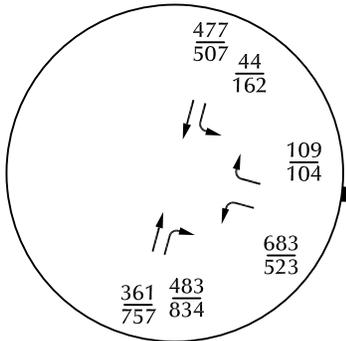
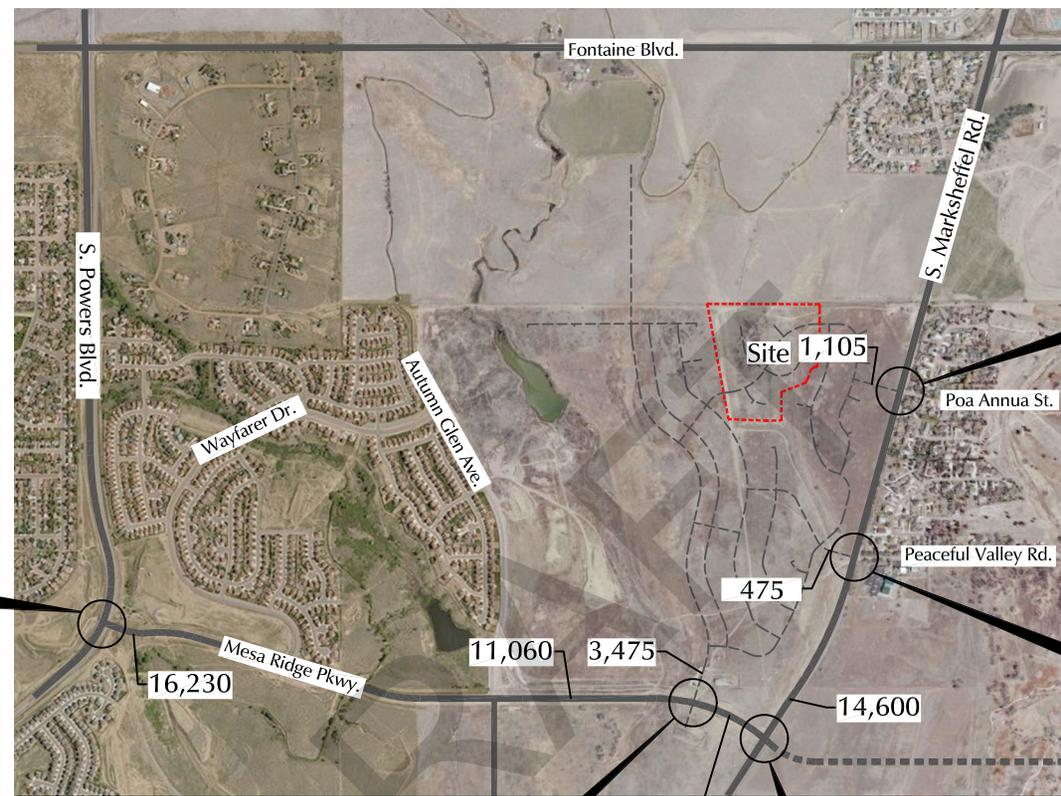
Figure 3b

Existing Lane Geometry and Traffic Control

The Glen at Widefield Fil. 12 (LSC #S214610)



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)

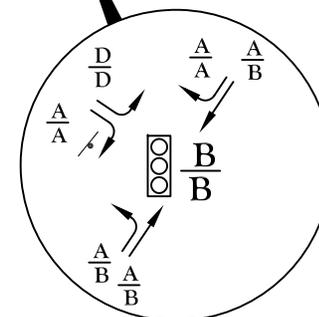
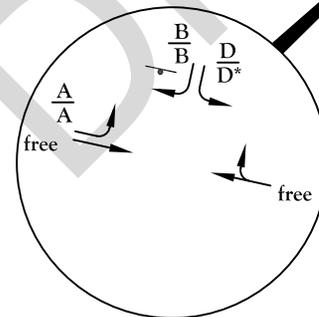
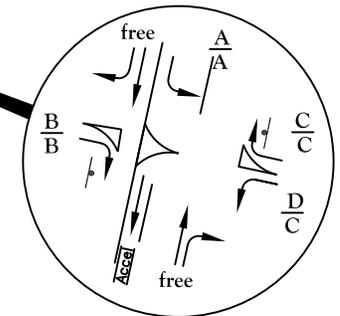
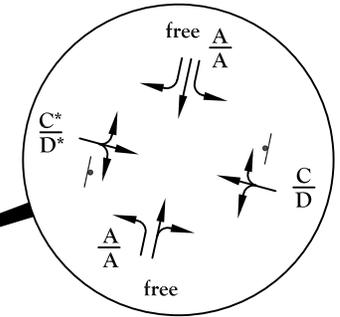
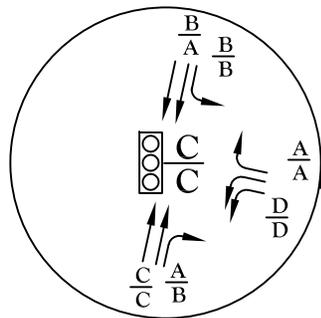
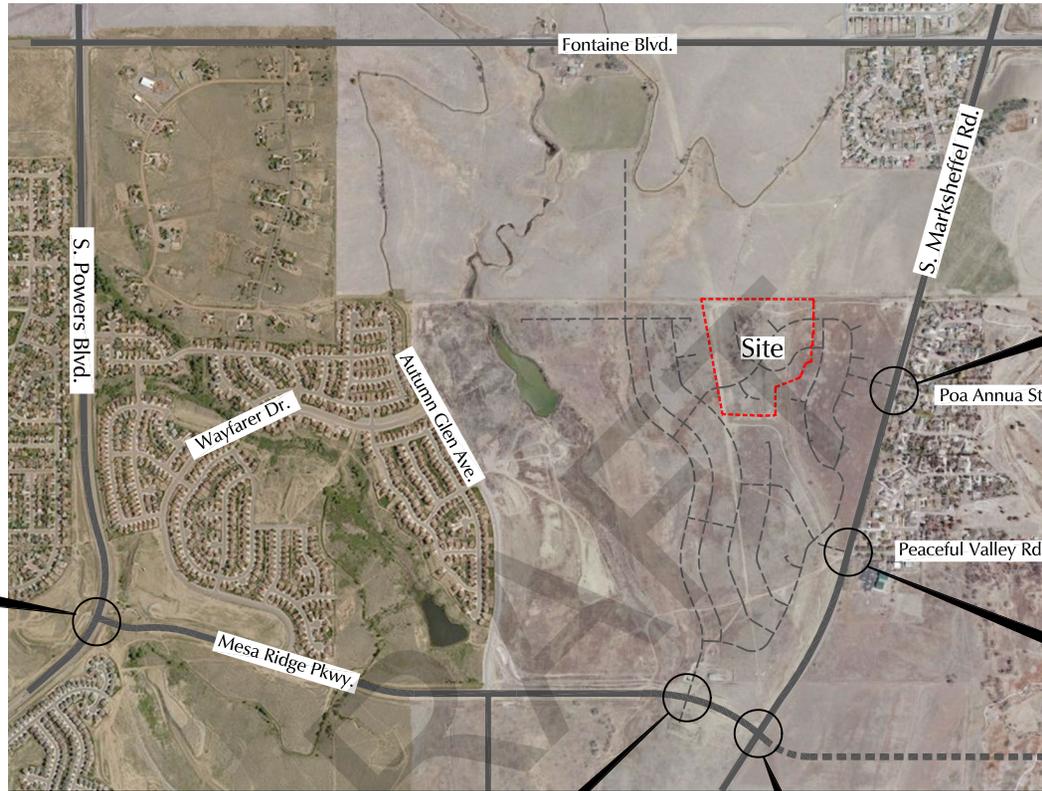
XXX = Average Weekday Traffic (vehicles per day)



Figure 4a
**Short-Term
 Background Traffic**
 The Glen at Widefield Fil. 12 (LSC #S214610)



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

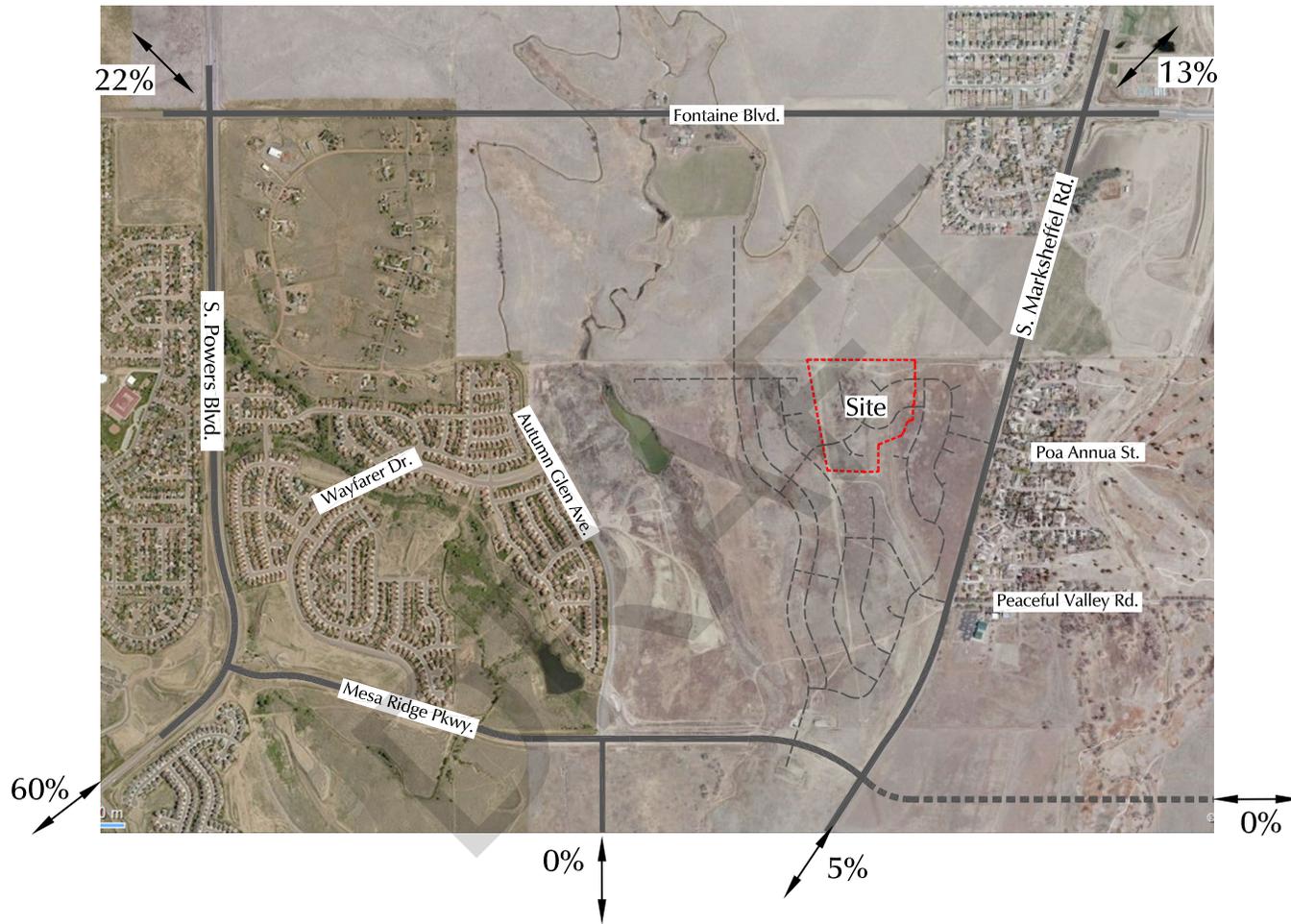
* The level of service shown is based on simulation analysis. The HCM unsignalized method of analysis results in a projected level of service E or F. Please refer to the report narrative for details.

Figure 4b

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

The Glen at Widefield Fil. 12 (LSC #S214610)






 Approximate Scale
 Scale: 1" = 2,000'

LEGEND:

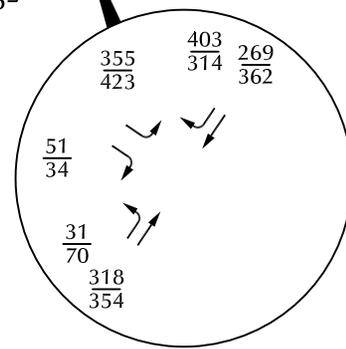
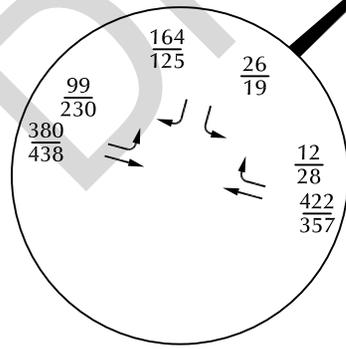
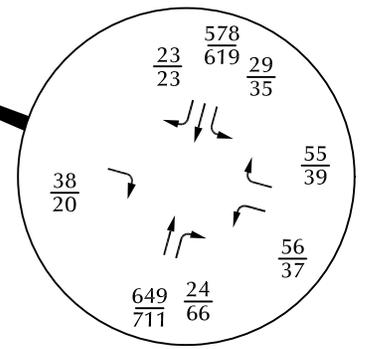
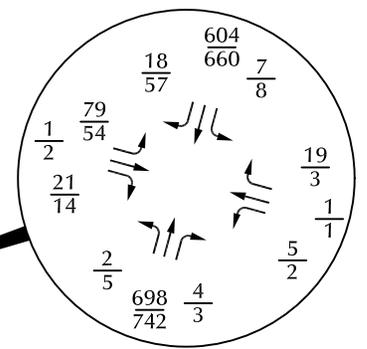
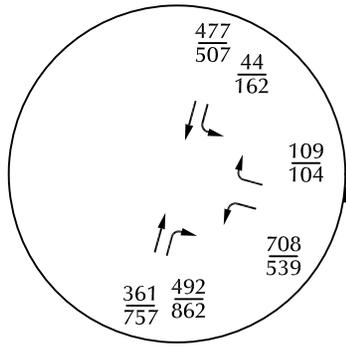
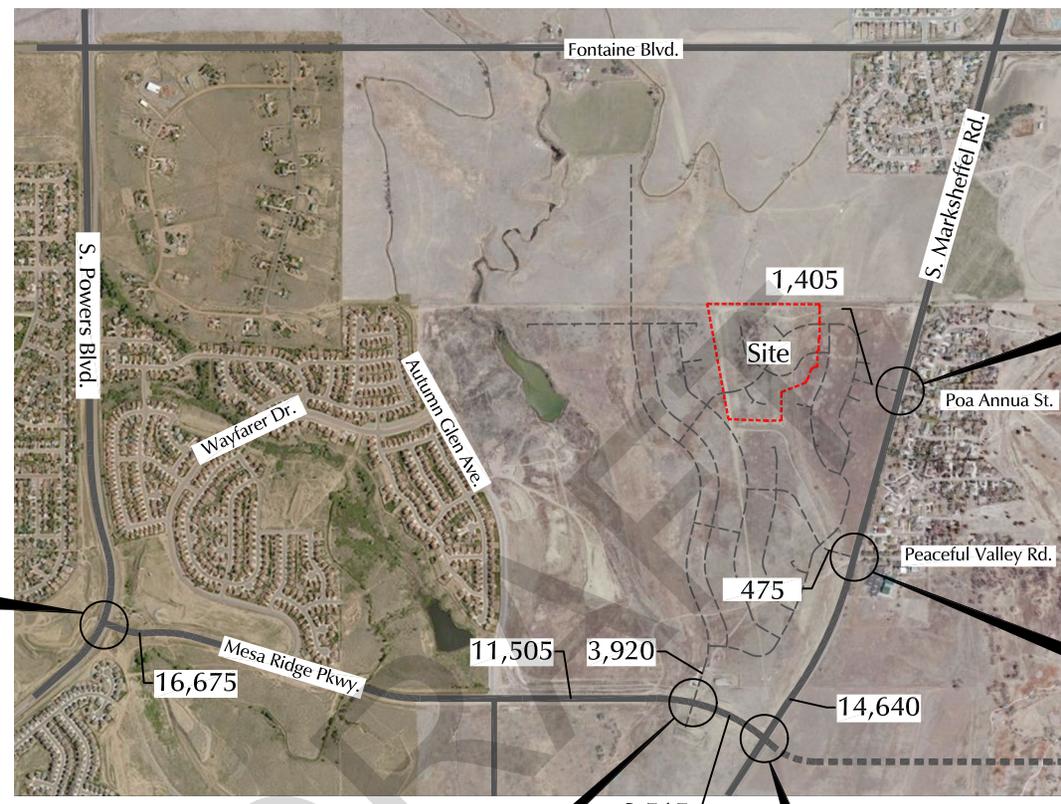
 = Short-Term Percent Directional Distribution



Figure 5
**Estimated Directional Distribution
 of Site-Generated Traffic**
 The Glen at Widefield Fil. 12 (LSC #S214610)



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)

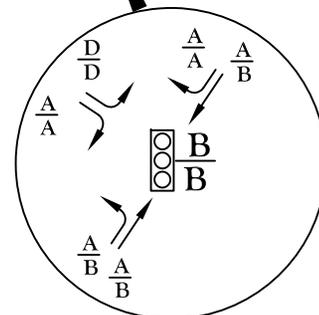
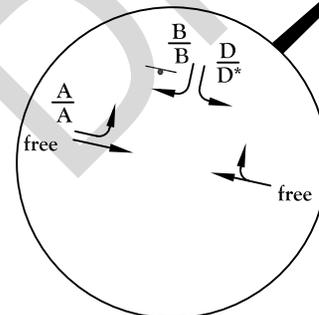
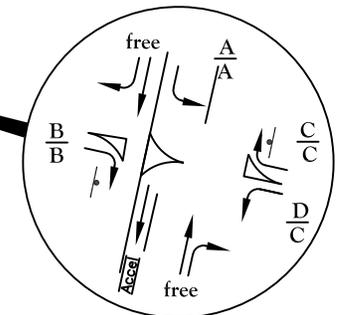
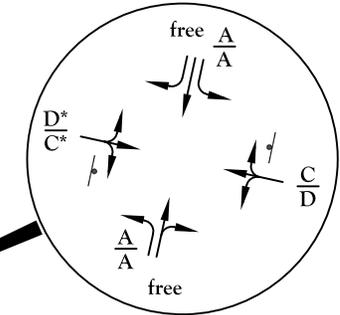
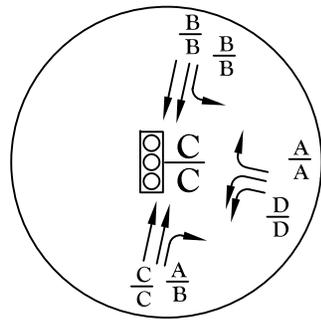
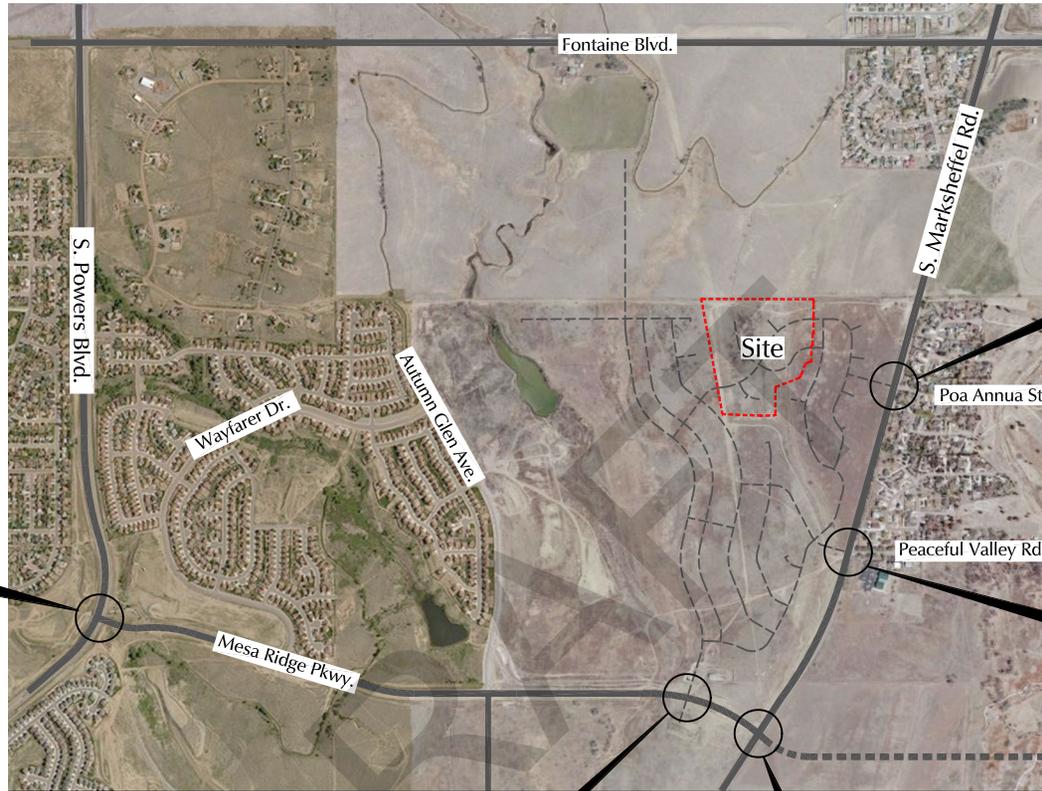


Figure 7a
**Short-Term
Total Traffic**

The Glen at Widefield Fil. 12 (LSC #S214610)



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

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

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

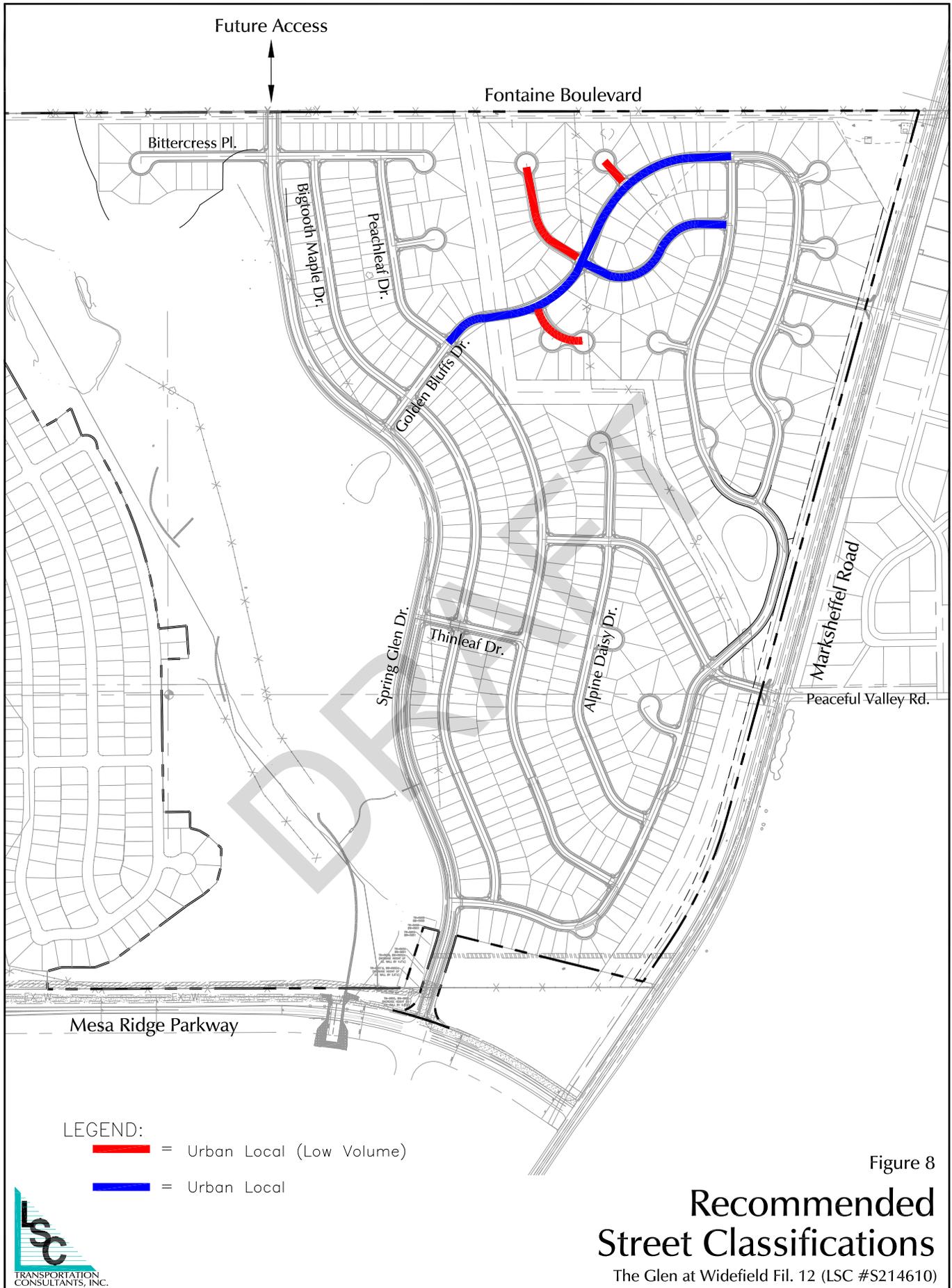
* The level of service shown is based on simulation analysis. The HCM unsignalized method of analysis results in a projected level of service E or F. Please refer to the report narrative for details.

Figure 7b

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

The Glen at Widefield Fil. 12 (LSC #S214610)





Traffic Counts

DRAFT



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2504 E Pikes Peak Ave, Suite 304
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 719-633-2868

File Name : Marksheffel Rd - Lorson Blvd AM 3-1 SW
 Site Code : S214080
 Start Date : 3/1/2022
 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	
06:00 AM	0	36	0	0	36	31	0	9	0	40	0	69	6	0	75	0	0	0	0	0	151
06:15 AM	4	55	0	0	59	34	0	10	0	44	0	85	8	0	93	0	0	0	0	0	196
06:30 AM	0	86	0	0	86	32	0	18	0	50	0	118	10	0	128	0	0	0	0	0	264
06:45 AM	9	90	0	0	99	51	0	20	0	71	0	114	21	0	135	0	0	0	0	0	305
Total	13	267	0	0	280	148	0	57	0	205	0	386	45	0	431	0	0	0	0	0	916
07:00 AM	11	92	0	0	103	50	0	32	0	82	0	153	18	0	171	0	0	0	0	0	356
07:15 AM	14	111	0	0	125	37	0	36	1	74	0	177	34	0	211	0	0	0	0	0	410
07:30 AM	14	104	0	0	118	41	0	28	0	69	0	144	37	0	181	0	0	0	0	0	368
07:45 AM	9	90	0	0	99	56	0	24	0	80	0	110	43	0	153	0	0	0	0	0	332
Total	48	397	0	0	445	184	0	120	1	305	0	584	132	0	716	0	0	0	0	0	1466
08:00 AM	10	96	0	0	106	45	0	13	0	58	0	73	31	0	104	0	0	0	0	0	268
08:15 AM	11	92	0	0	103	61	0	10	0	71	0	103	29	0	132	0	0	0	0	0	306
08:30 AM	5	72	0	0	77	58	0	13	1	72	0	80	22	0	102	0	0	0	0	0	251
08:45 AM	12	68	0	0	80	28	0	15	0	43	0	61	21	0	82	0	0	0	0	0	205
Total	38	328	0	0	366	192	0	51	1	244	0	317	103	0	420	0	0	0	0	0	1030
Grand Total	99	992	0	0	1091	524	0	228	2	754	0	1287	280	0	1567	0	0	0	0	0	3412
Apprch %	9.1	90.9	0	0		69.5	0	30.2	0.3		0	82.1	17.9	0		0	0	0	0	0	
Total %	2.9	29.1	0	0	32	15.4	0	6.7	0.1	22.1	0	37.7	8.2	0	45.9	0	0	0	0	0	

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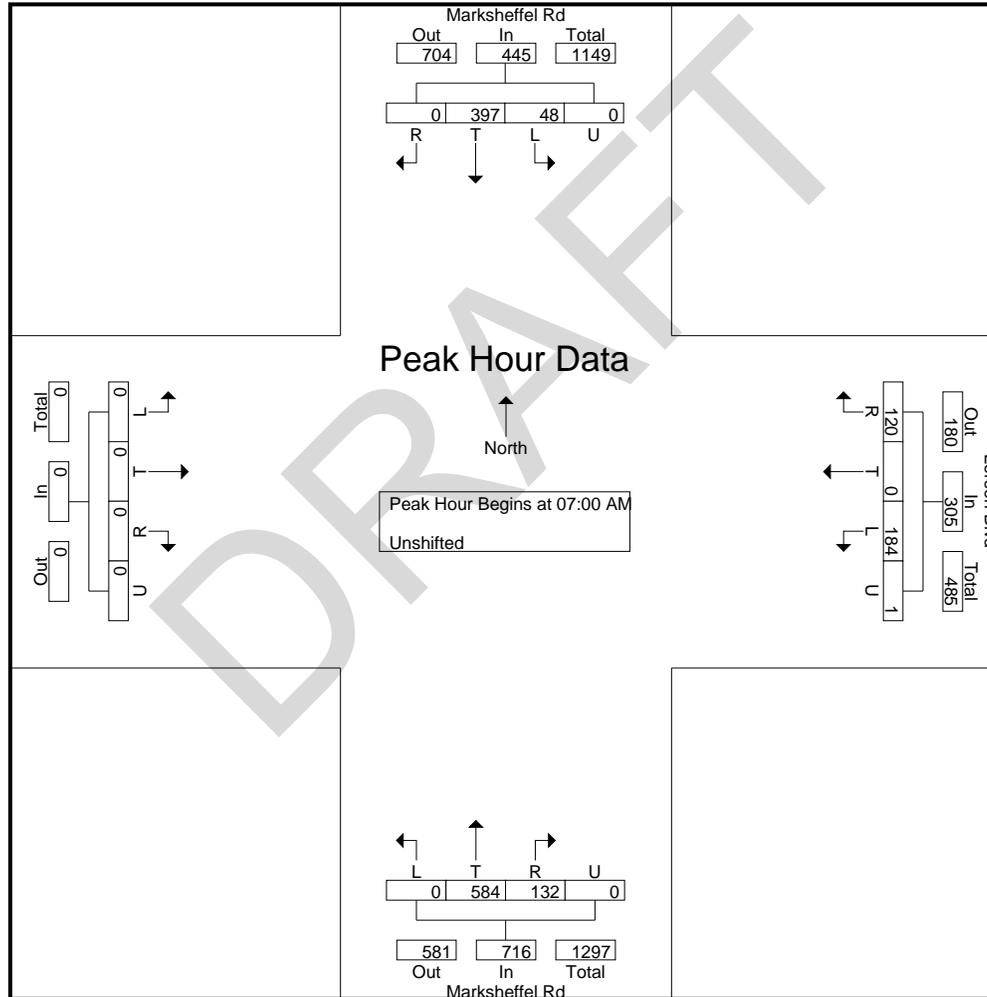
2504 E Pikes Peak Ave, Suite 304
 Colorado Springs, CO 80909
 719-633-2868

File Name : Marksheffel Rd - Lorson Blvd AM 3-1 SW

Site Code : S214080

Start Date : 3/1/2022

Page No : 3



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2504 E Pikes Peak Ave, Suite 304
 Colorado Springs, CO 80909
 719-633-2868

File Name : Marksheffel Rd - Lorson Blvd PM 3-1 SW
 Site Code : S214080
 Start Date : 3/1/2022
 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	
03:00 PM	9	85	0	0	94	25	0	16	0	41	0	91	48	0	139	0	0	0	0	0	274
03:15 PM	11	80	0	0	91	25	0	13	0	38	0	90	39	0	129	0	0	0	0	0	258
03:30 PM	10	108	0	0	118	29	0	10	0	39	0	115	43	0	158	0	0	0	0	0	315
03:45 PM	15	122	0	0	137	30	0	15	0	45	0	118	45	0	163	0	0	0	0	0	345
Total	45	395	0	0	440	109	0	54	0	163	0	414	175	0	589	0	0	0	0	0	1192
04:00 PM	11	110	0	0	121	22	0	13	0	35	0	102	63	0	165	0	0	0	0	0	321
04:15 PM	13	145	0	1	159	25	0	9	0	34	0	101	47	0	148	0	0	0	0	0	341
04:30 PM	20	121	0	0	141	23	0	16	0	39	0	91	50	0	141	0	0	0	0	0	321
04:45 PM	10	116	0	0	126	23	0	13	0	36	0	104	66	0	170	0	0	0	0	0	332
Total	54	492	0	1	547	93	0	51	0	144	0	398	226	0	624	0	0	0	0	0	1315
05:00 PM	10	126	0	0	136	29	0	14	0	43	0	132	84	0	216	0	0	0	0	0	395
05:15 PM	20	152	0	0	172	29	0	20	0	49	0	110	68	0	178	0	0	0	0	0	399
05:30 PM	14	118	0	0	132	40	0	13	0	53	0	103	59	0	162	0	0	0	0	0	347
05:45 PM	16	98	0	0	114	17	0	19	0	36	0	105	64	0	169	0	0	0	0	0	319
Total	60	494	0	0	554	115	0	66	0	181	0	450	275	0	725	0	0	0	0	0	1460
Grand Total	159	1381	0	1	1541	317	0	171	0	488	0	1262	676	0	1938	0	0	0	0	0	3967
Apprch %	10.3	89.6	0	0.1		65	0	35	0		0	65.1	34.9	0		0	0	0	0		
Total %	4	34.8	0	0	38.8	8	0	4.3	0	12.3	0	31.8	17	0	48.9	0	0	0	0	0	

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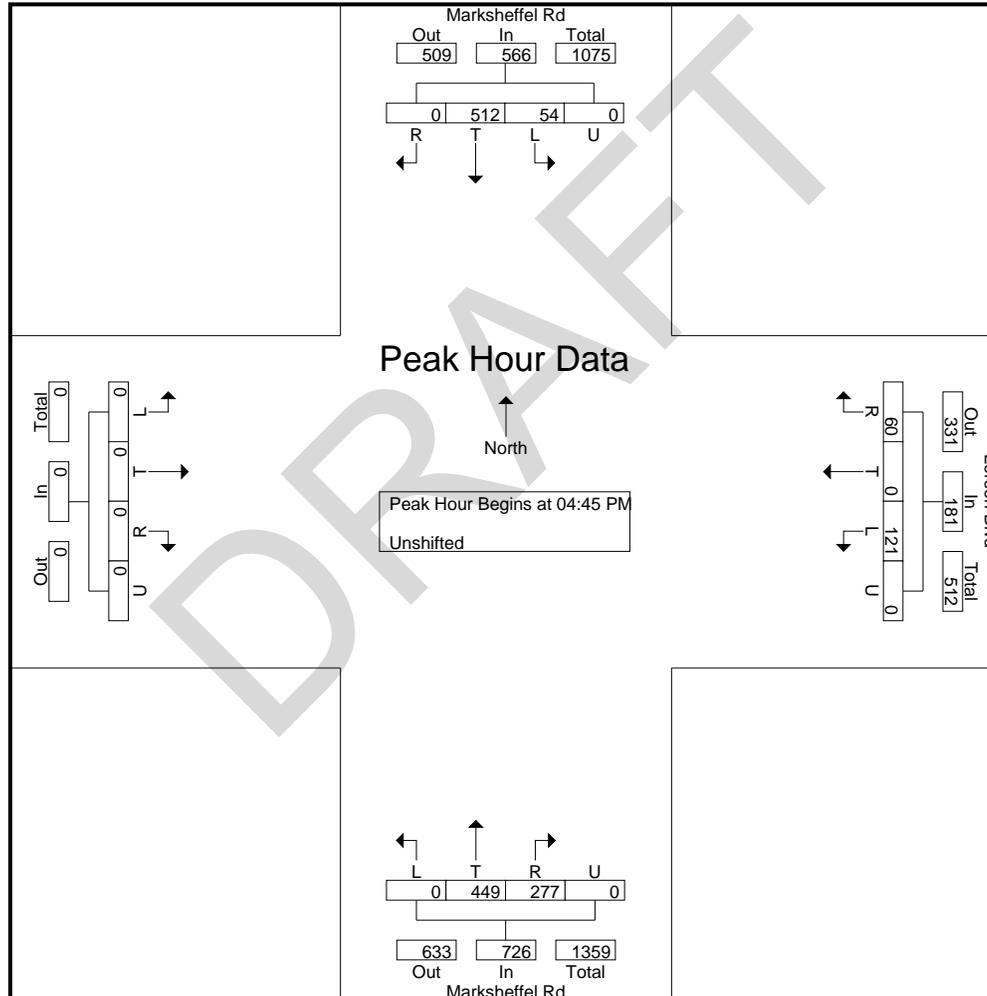
2504 E Pikes Peak Ave, Suite 304
 Colorado Springs, CO 80909
 719-633-2868

File Name : Marksheffel Rd - Lorson Blvd PM 3-1 SW

Site Code : S214080

Start Date : 3/1/2022

Page No : 3



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 Colorado Springs, CO 80909
 719-633-2868

File Name : Link Rd - C&S Rd AM
 Site Code : S224060
 Start Date : 4/13/2022
 Page No : 1

Groups Printed- Unshifted

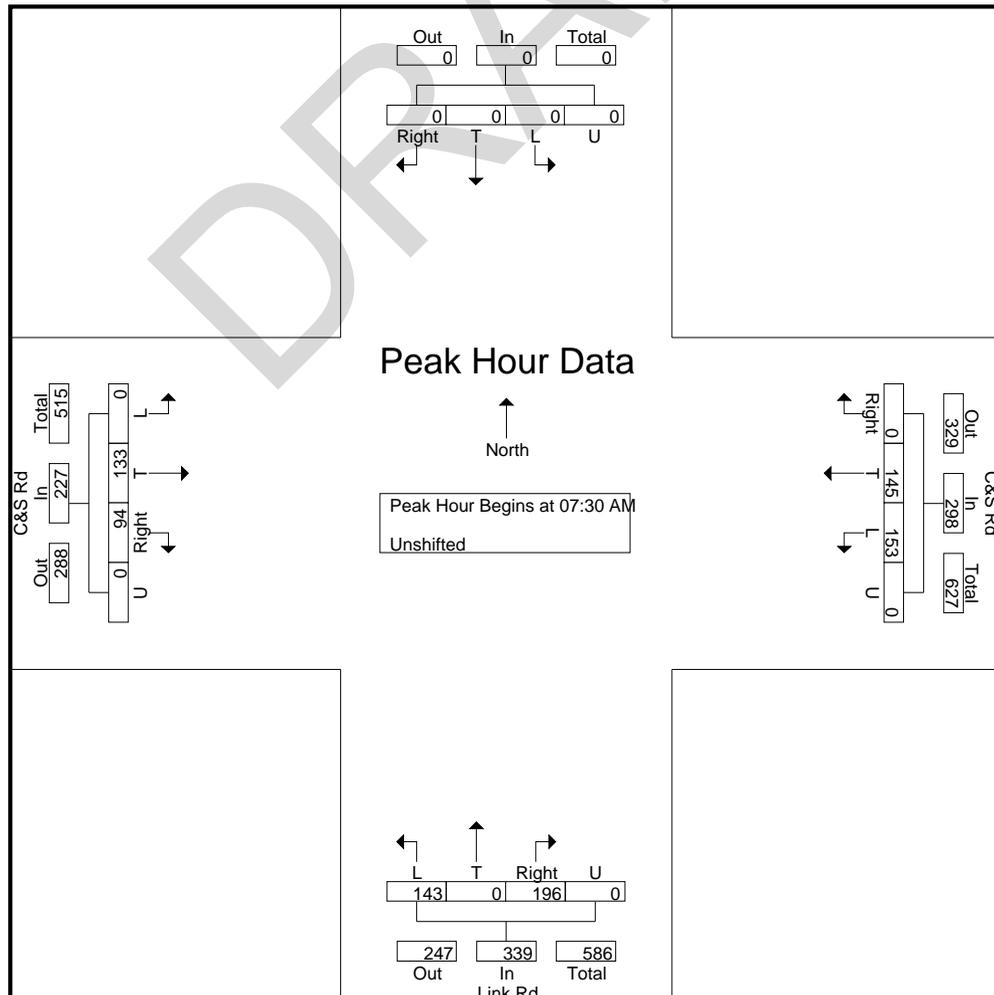
Start Time	Southbound					C&S Rd Westbound					Link Rd Northbound					C&S Rd Eastbound					Int. Total
	Right	T	L	U	App. Total	Right	T	L	U	App. Total	Right	T	L	U	App. Total	Right	T	L	U	App. Total	
07:30 AM	0	0	0	0	0	0	15	23	0	38	18	0	15	0	33	15	11	0	0	26	97
07:35 AM	0	0	0	0	0	0	14	18	0	32	26	0	14	0	40	13	16	0	0	29	101
07:40 AM	0	0	0	0	0	0	7	15	0	22	16	0	9	0	25	11	11	0	0	22	69
07:45 AM	0	0	0	0	0	0	22	19	0	41	16	0	12	0	28	7	15	0	0	22	91
07:50 AM	0	0	0	0	0	0	13	10	0	23	12	0	9	0	21	10	12	0	0	22	66
07:55 AM	0	0	0	0	0	0	13	9	0	22	17	0	9	0	26	8	10	0	0	18	66
Total	0	0	0	0	0	0	84	94	0	178	105	0	68	0	173	64	75	0	0	139	490
08:00 AM	0	0	0	0	0	0	9	9	0	18	15	0	13	0	28	7	8	0	0	15	61
08:05 AM	0	0	0	0	0	0	13	11	0	24	13	0	23	0	36	2	11	0	0	13	73
08:10 AM	0	0	0	0	0	0	8	7	0	15	11	0	9	0	20	6	9	0	0	15	50
08:15 AM	0	0	0	0	0	0	16	11	0	27	17	0	10	0	27	7	10	0	0	17	71
08:20 AM	0	0	0	0	0	0	9	10	0	19	16	0	11	0	27	3	7	0	0	10	56
08:25 AM	0	0	0	0	0	0	6	11	0	17	19	0	9	0	28	5	13	0	0	18	63
08:30 AM	0	0	0	0	0	0	10	14	0	24	14	0	7	0	21	5	14	0	0	19	64
08:35 AM	0	0	0	0	0	0	13	6	0	19	8	0	5	0	13	3	14	0	0	17	49
08:40 AM	0	0	0	0	0	0	9	8	0	17	13	0	7	0	20	4	5	0	0	9	46
08:45 AM	0	0	0	0	0	0	11	8	0	19	10	0	11	0	21	2	8	0	0	10	50
08:50 AM	0	0	0	0	0	0	3	12	0	15	5	0	14	0	19	6	3	0	0	9	43
08:55 AM	0	0	0	0	0	0	4	9	0	13	9	0	7	0	16	3	7	0	0	10	39
Total	0	0	0	0	0	0	111	116	0	227	150	0	126	0	276	53	109	0	0	162	665
09:00 AM	0	0	0	0	0	0	2	5	0	7	7	0	9	0	16	4	7	0	0	11	34
09:05 AM	0	0	0	0	0	0	4	3	0	7	6	0	6	0	12	10	0	0	0	10	29
09:10 AM	0	0	0	0	0	0	6	3	0	9	4	0	3	0	7	6	5	0	0	11	27
09:15 AM	0	0	0	0	0	0	2	3	0	5	7	0	4	0	11	6	11	0	0	17	33
09:20 AM	0	0	0	0	0	0	3	10	0	13	10	0	6	0	16	4	2	0	0	6	35
09:25 AM	0	0	0	0	0	0	8	7	0	15	10	0	7	0	17	9	8	0	0	17	49
Grand Total	0	0	0	0	0	0	220	241	0	461	299	0	229	0	528	156	217	0	0	373	1362
Apprch %	0	0	0	0	0	0	47.7	52.3	0		56.6	0	43.4	0		41.8	58.2	0	0		
Total %	0	0	0	0	0	0	16.2	17.7	0	33.8	22	0	16.8	0	38.8	11.5	15.9	0	0	27.4	

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2504 E. Pikes Peak Ave, Suite 304
 Colorado Springs, CO 80909
 719-633-2868

File Name : Link Rd - C&S Rd AM
 Site Code : S224060
 Start Date : 4/13/2022
 Page No : 2

Start Time	Southbound					C&S Rd Westbound					Link Rd Northbound					C&S Rd Eastbound					Int. Total
	Right	T	L	U	App. Total	Right	T	L	U	App. Total	Right	T	L	U	App. Total	Right	T	L	U	App. Total	
Peak Hour Analysis From 07:30 AM to 09:25 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	0	0	0	0	0	15	23	0	38	18	0	15	0	33	15	11	0	0	26	97
07:35 AM	0	0	0	0	0	0	14	18	0	32	26	0	14	0	40	13	16	0	0	29	101
07:40 AM	0	0	0	0	0	0	7	15	0	22	16	0	9	0	25	11	11	0	0	22	69
07:45 AM	0	0	0	0	0	0	22	19	0	41	16	0	12	0	28	7	15	0	0	22	91
07:50 AM	0	0	0	0	0	0	13	10	0	23	12	0	9	0	21	10	12	0	0	22	66
07:55 AM	0	0	0	0	0	0	13	9	0	22	17	0	9	0	26	8	10	0	0	18	66
08:00 AM	0	0	0	0	0	0	9	9	0	18	15	0	13	0	28	7	8	0	0	15	61
08:05 AM	0	0	0	0	0	0	13	11	0	24	13	0	23	0	36	2	11	0	0	13	73
08:10 AM	0	0	0	0	0	0	8	7	0	15	11	0	9	0	20	6	9	0	0	15	50
08:15 AM	0	0	0	0	0	0	16	11	0	27	17	0	10	0	27	7	10	0	0	17	71
08:20 AM	0	0	0	0	0	0	9	10	0	19	16	0	11	0	27	3	7	0	0	10	56
08:25 AM	0	0	0	0	0	0	6	11	0	17	19	0	9	0	28	5	13	0	0	18	63
Total Volume	0	0	0	0	0	0	145	153	0	298	196	0	143	0	339	94	133	0	0	227	864
% App. Total	0	0	0	0	0	0	48.7	51.3	0		57.8	0	42.2	0		41.4	58.6	0	0		
PHF	.000	.000	.000	.000	.000	.000	.549	.554	.000	.606	.628	.000	.518	.000	.706	.522	.693	.000	.000	.652	.713



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File Name : Link Rd - C&S Rd PM 4-22

Site Code : S224060

Start Date : 4/13/2022

Page No : 1

Groups Printed- Unshifted

Start Time	Southbound					Marksheffel Rd Westbound					Link Rd Northbound					C&S Rd Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
15:30	0	0	0	0	0	0	34	47	0	81	67	0	40	0	107	44	36	0	1	81	269
15:45	0	0	0	0	0	0	32	41	0	73	51	0	38	0	89	46	34	0	0	80	242
Total	0	0	0	0	0	0	66	88	0	154	118	0	78	0	196	90	70	0	1	161	511
16:00	0	0	0	0	0	0	35	48	0	83	43	0	19	0	62	44	45	0	0	89	234
16:15	0	0	0	0	0	0	36	46	0	82	56	0	21	0	77	59	58	0	0	117	276
16:30	0	0	0	0	0	0	38	53	0	91	42	0	36	0	78	41	47	0	0	88	257
16:45	0	0	0	0	0	0	44	43	0	87	43	0	29	0	72	55	50	1	0	106	265
Total	0	0	0	0	0	0	153	190	0	343	184	0	105	0	289	199	200	1	0	400	1032
17:00	0	0	0	0	0	0	38	73	0	111	53	0	28	0	81	63	59	0	0	122	314
17:15	0	0	0	0	0	0	49	35	0	84	43	0	34	0	77	55	63	0	0	118	279
Grand Total	0	0	0	0	0	0	306	386	0	692	398	0	245	0	643	407	392	1	1	801	2136
Apprch %	0	0	0	0	0	0	44.2	55.8	0		61.9	0	38.1	0		50.8	48.9	0.1	0.1		
Total %	0	0	0	0	0	0	14.3	18.1	0	32.4	18.6	0	11.5	0	30.1	19.1	18.4	0	0	37.5	

DRAWN

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2504 E. Pikes Peak Ave, Suite 304
 Colorado Springs, CO 80909
 719-633-2868

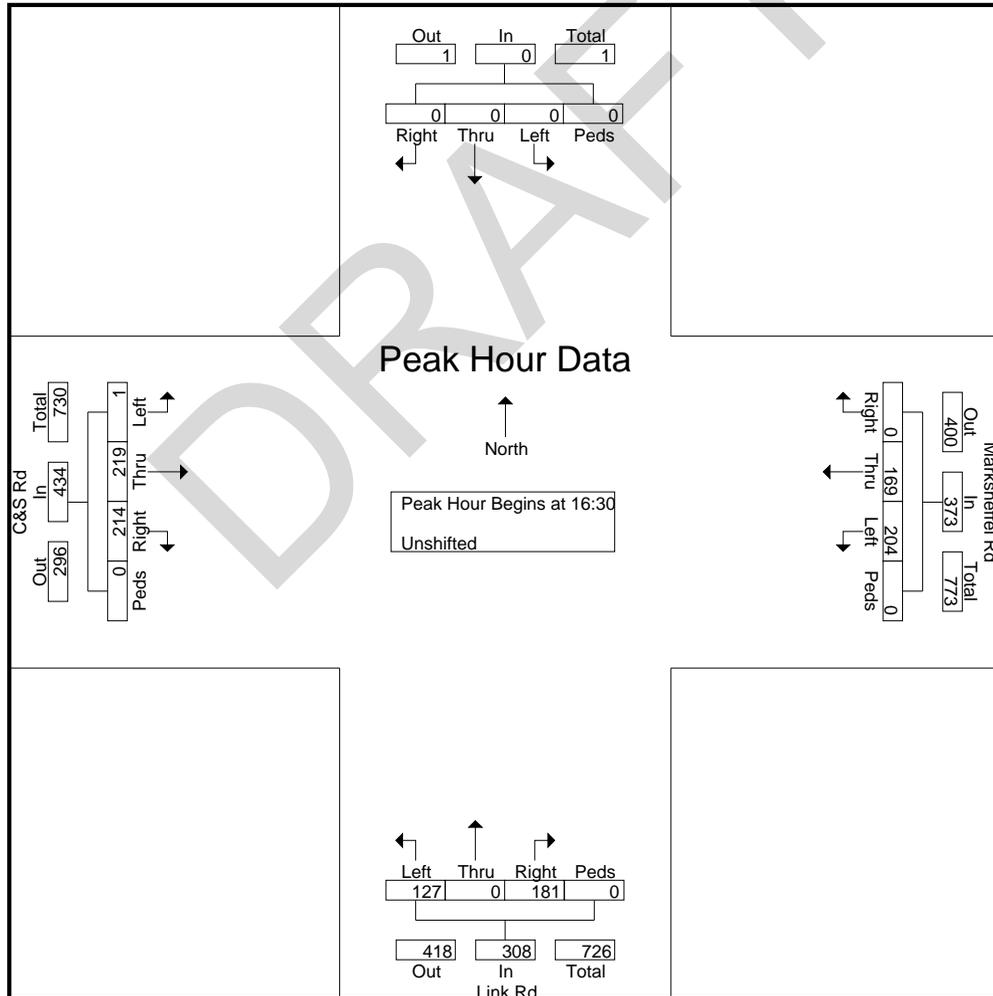
File Name : Link Rd - C&S Rd PM 4-22

Site Code : S224060

Start Date : 4/13/2022

Page No : 2

Start Time	Southbound					Marksheffel Rd Westbound					Link Rd Northbound					C&S Rd Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 3:30:00 PM to 5:15:00 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 4:30:00 PM																					
4:30:00 PM	0	0	0	0	0	0	38	53	0	91	42	0	36	0	78	41	47	0	0	88	257
4:45:00 PM	0	0	0	0	0	0	44	43	0	87	43	0	29	0	72	55	50	1	0	106	265
5:00:00 PM	0	0	0	0	0	0	38	73	0	111	53	0	28	0	81	63	59	0	0	122	314
5:15:00 PM	0	0	0	0	0	0	49	35	0	84	43	0	34	0	77	55	63	0	0	118	279
Total Volume	0	0	0	0	0	0	169	204	0	373	181	0	127	0	308	214	219	1	0	434	1115
% App. Total	0	0	0	0	0	0	45.3	54.7	0		58.8	0	41.2	0		49.3	50.5	0.2	0		
PHF	.000	.000	.000	.000	.000	.000	.862	.699	.000	.840	.854	.000	.882	.000	.951	.849	.869	.250	.000	.889	.888



LSC Transportation Consultants, Inc.

2504 E Pikes Peak Ave, Suite 304
 Colorado Springs, CO 80909
 719-633-2868

File Name : Powers Blvd - Mesa Ridge Pkwy AM
 Site Code : S214610
 Start Date : 7/15/2021
 Page No : 1

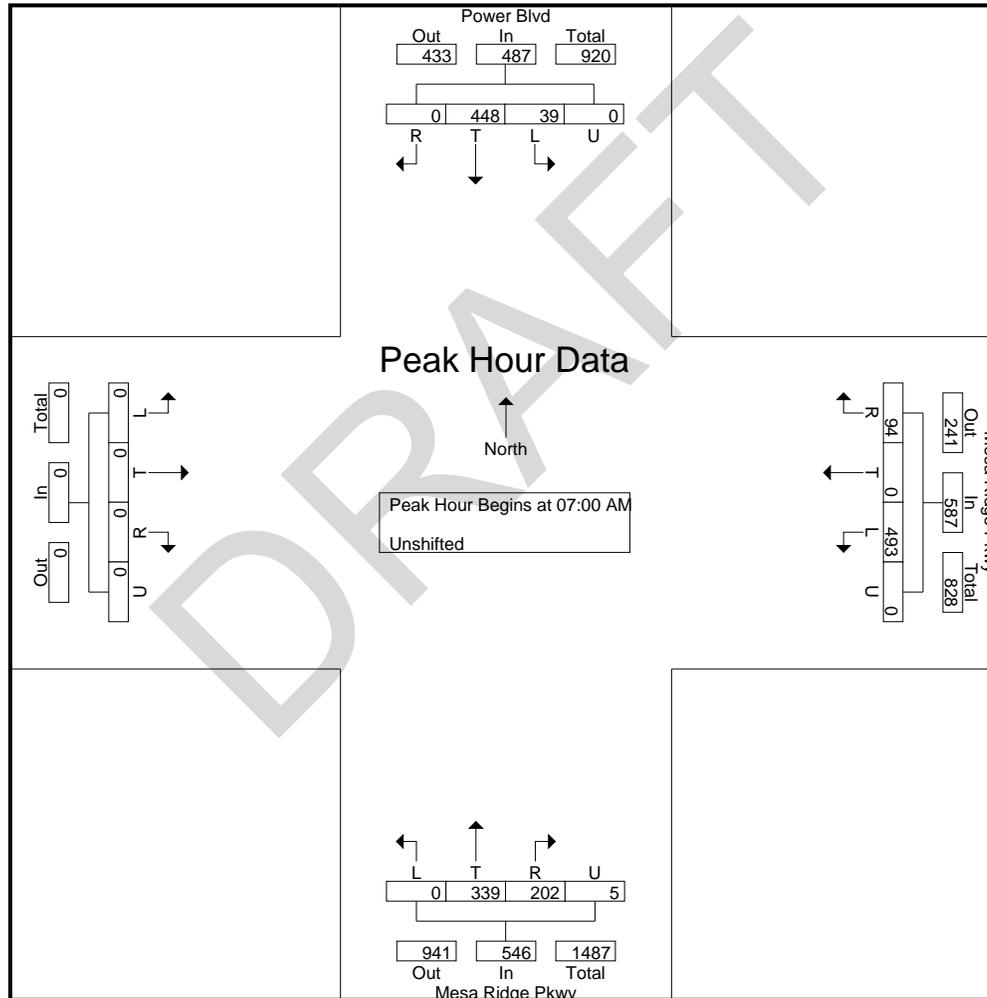
Groups Printed- Unshifted

Start Time	Power Blvd Southbound					Mesa Ridge Pkwy Westbound					Mesa Ridge Pkwy 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	5	107	0	0	112	118	0	6	0	124	0	91	38	0	129	0	0	0	0	0	365
06:45 AM	11	102	0	0	113	99	0	30	0	129	0	86	43	0	129	0	0	0	0	0	371
Total	16	209	0	0	225	217	0	36	0	253	0	177	81	0	258	0	0	0	0	0	736
07:00 AM	11	99	0	0	110	111	0	23	0	134	0	90	36	0	126	0	0	0	0	0	370
07:15 AM	13	129	0	0	142	125	0	20	0	145	0	85	46	0	131	0	0	0	0	0	418
07:30 AM	6	116	0	0	122	144	0	27	0	171	0	80	59	5	144	0	0	0	0	0	437
07:45 AM	9	104	0	0	113	113	0	24	0	137	0	84	61	0	145	0	0	0	0	0	395
Total	39	448	0	0	487	493	0	94	0	587	0	339	202	5	546	0	0	0	0	0	1620
08:00 AM	12	103	0	0	115	123	0	21	0	144	0	60	33	0	93	0	0	0	0	0	352
08:15 AM	12	118	0	0	130	116	0	12	0	128	0	83	63	0	146	0	0	0	0	0	404
Grand Total	79	878	0	0	957	949	0	163	0	1112	0	659	379	5	1043	0	0	0	0	0	3112
Apprch %	8.3	91.7	0	0		85.3	0	14.7	0		0	63.2	36.3	0.5		0	0	0	0	0	
Total %	2.5	28.2	0	0	30.8	30.5	0	5.2	0	35.7	0	21.2	12.2	0.2	33.5	0	0	0	0	0	

LSC Transportation Consultants, Inc.

2504 E Pikes Peak Ave, Suite 304
 Colorado Springs, CO 80909
 719-633-2868

File Name : Powers Blvd - Mesa Ridge Pkwy AM
 Site Code : S214610
 Start Date : 7/15/2021
 Page No : 3



LSC Transportation Consultants, Inc.

2504 E Pikes Peak Ave, Suite 304
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 719-633-2868

File Name : Powers Blvd - Mesa Ridge Pkwy PM
 Site Code : S214610
 Start Date : 7/29/2021
 Page No : 1

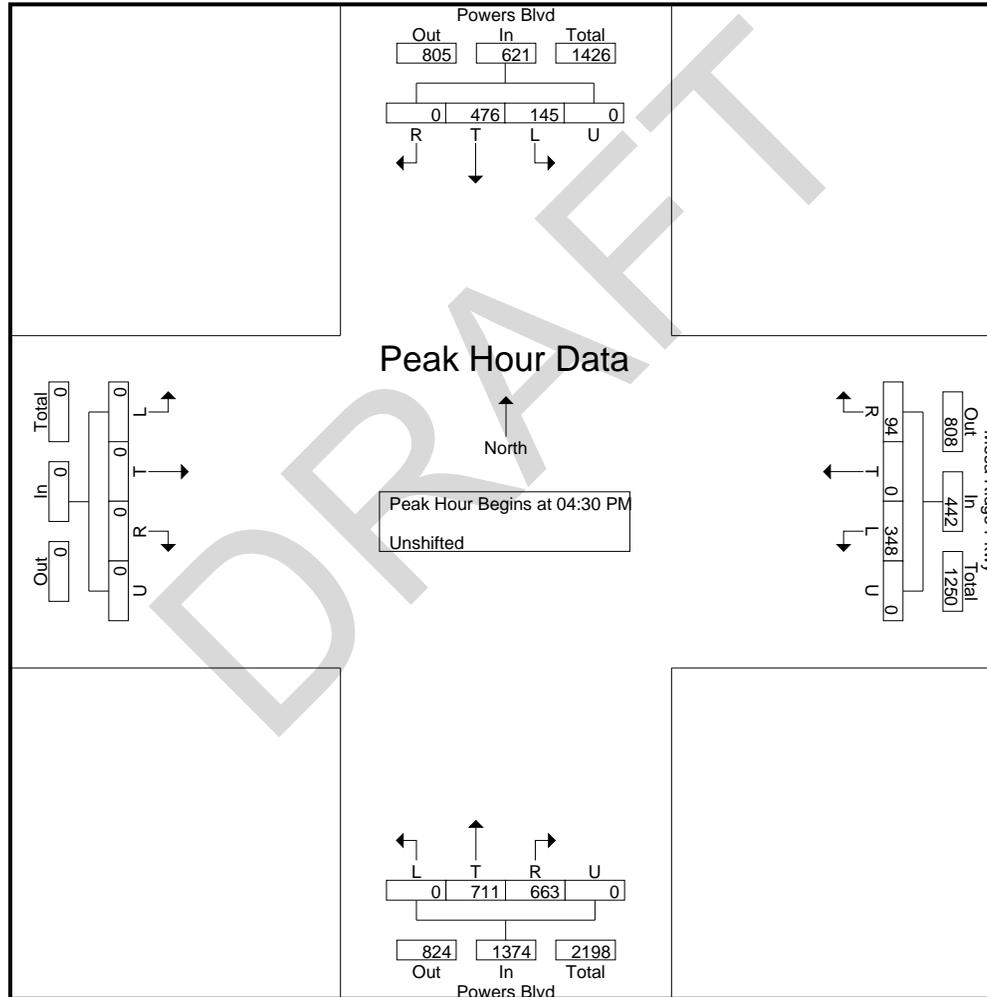
Groups Printed- Unshifted

Start Time	Powers Blvd Southbound					Mesa Ridge Pkwy Westbound					Powers Blvd 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	
04:00 PM	34	108	0	0	142	66	3	17	0	86	0	142	165	1	308	0	0	0	0	0	536
04:15 PM	30	112	8	0	150	84	0	20	0	104	0	149	175	0	324	0	0	0	0	0	578
04:30 PM	55	107	0	0	162	75	0	22	0	97	0	170	180	0	350	0	0	0	0	0	609
04:45 PM	24	119	0	0	143	86	0	22	0	108	0	181	161	0	342	0	0	0	0	0	593
Total	143	446	8	0	597	311	3	81	0	395	0	642	681	1	1324	0	0	0	0	0	2316
05:00 PM	27	113	0	0	140	88	0	20	0	108	0	178	154	0	332	0	0	0	0	0	580
05:15 PM	39	137	0	0	176	99	0	30	0	129	0	182	168	0	350	0	0	0	0	0	655
05:30 PM	40	113	0	0	153	89	0	23	0	112	0	154	161	0	315	0	0	0	0	0	580
Grand Total	249	809	8	0	1066	587	3	154	0	744	0	1156	1164	1	2321	0	0	0	0	0	4131
Apprch %	23.4	75.9	0.8	0		78.9	0.4	20.7	0		0	49.8	50.2	0		0	0	0	0	0	
Total %	6	19.6	0.2	0	25.8	14.2	0.1	3.7	0	18	0	28	28.2	0	56.2	0	0	0	0	0	

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File Name : Powers Blvd - Mesa Ridge Pkwy PM
 Site Code : S214610
 Start Date : 7/29/2021
 Page No : 3



LSC Transportation Consultants, Inc.

2504 E Pikes Peak Ave, Suite 304
 Colorado Springs, CO 80909
 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

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	
06:45 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	

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2504 E Pikes Peak Ave, Suite 304
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 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	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	0	3.2	17.6	0	0	20.8	31.6	0	4.8	0	36.4	

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2504 E Pikes Peak Ave, Suite 304
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 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	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	

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2504 E Pikes Peak Ave, Suite 304
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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	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	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	

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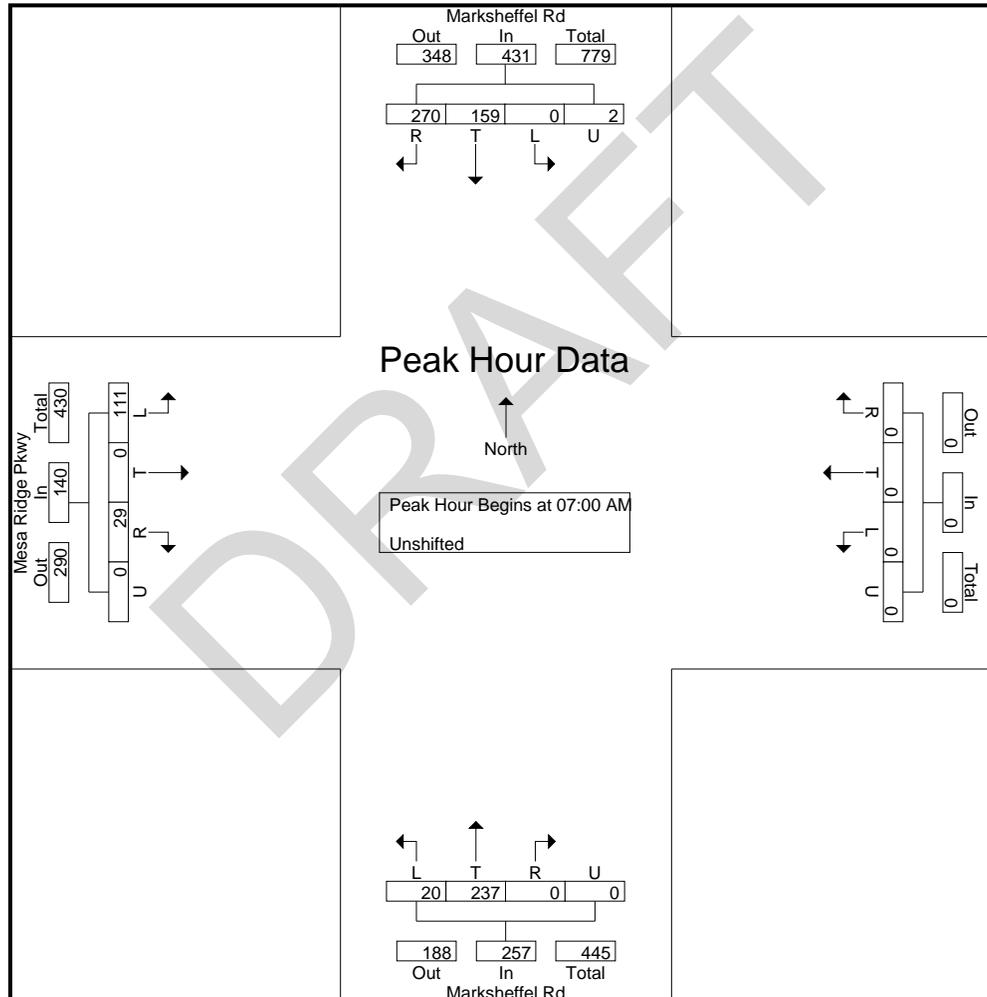
2504 E Pikes Peak Ave, Suite 304
 Colorado Springs, CO 80909
 719-633-2868

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

Site Code : 194800

Start Date : 2/16/2021

Page No : 3



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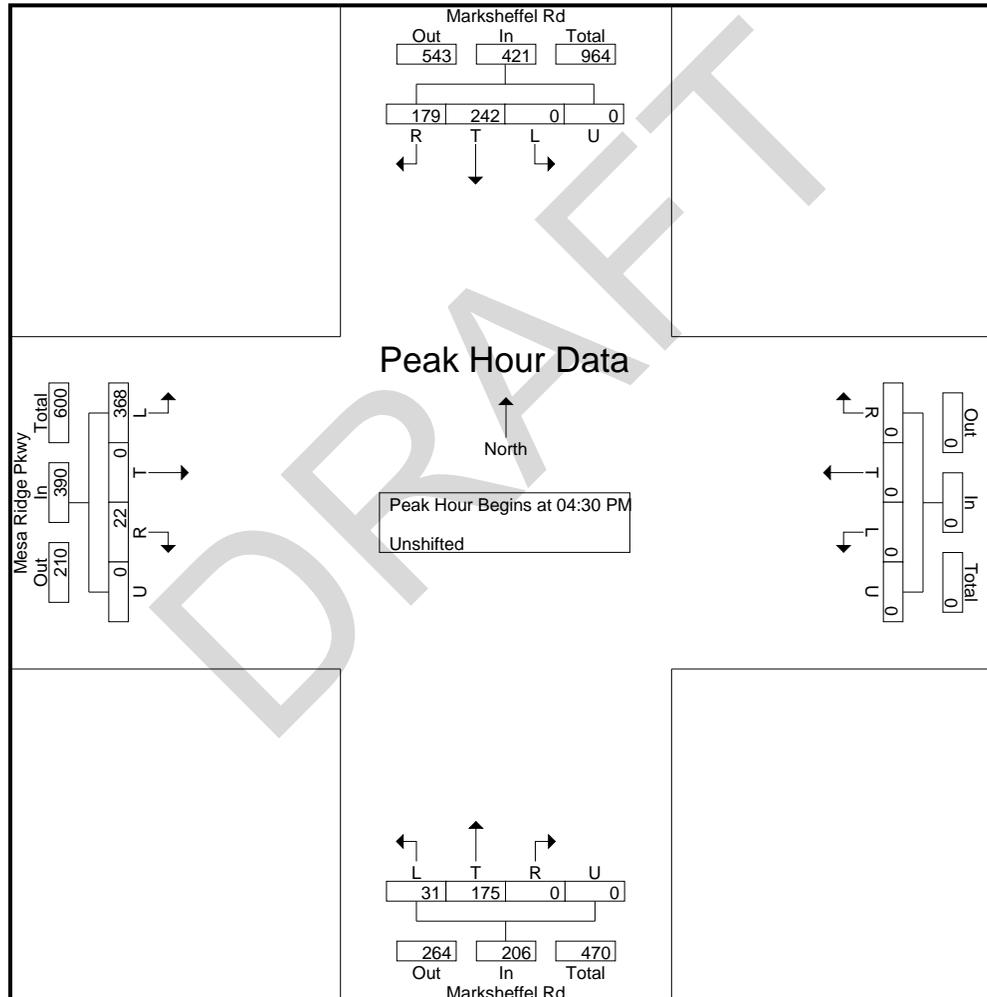
2504 E Pikes Peak Ave, Suite 304
 Colorado Springs, CO 80909
 719-633-2868

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

Site Code : 194800

Start Date : 2/16/2021

Page No : 3





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2504 E Pikes Peak Ave, Suite 304
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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 : 1

Groups Printed- Unshifted

Start Time	Marksheffel Rd Southbound					Peaceful Valley Rd Westbound					Marksheffel Rd Northbound					Peaceful Valley Rd 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	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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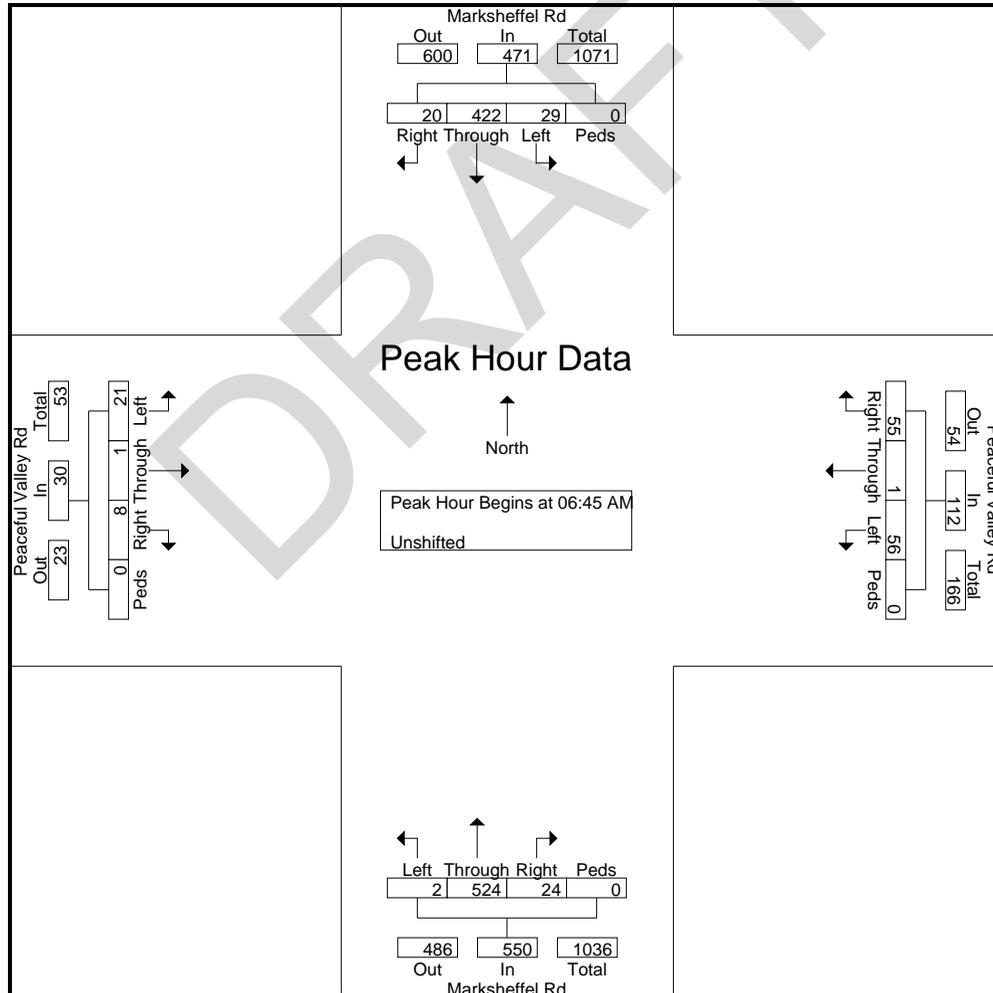


LSC Transportation Consultants, Inc.

2504 E Pikes Peak Ave, Suite 304
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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

Start Time	Marksheffel Rd Southbound					Peaceful Valley Rd Westbound					Marksheffel Rd Northbound					Peaceful Valley Rd 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	
Peak Hour Analysis From 06:30 AM to 08:15 AM - Peak 1 of 1																					
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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2504 E Pikes Peak Ave, Suite 304
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 719-633-2868

File Name : Marksheffel Rd - Peaceful Valley Rd PM 9-19
 Site Code : 00194800
 Start Date : 9/12/2019
 Page No : 1

Groups Printed- Unshifted

Start Time	Marksheffel Rd Southbound					Peaceful Valley Rd Westbound					Marksheffel Rd Northbound					Peaceful Valley Rd 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	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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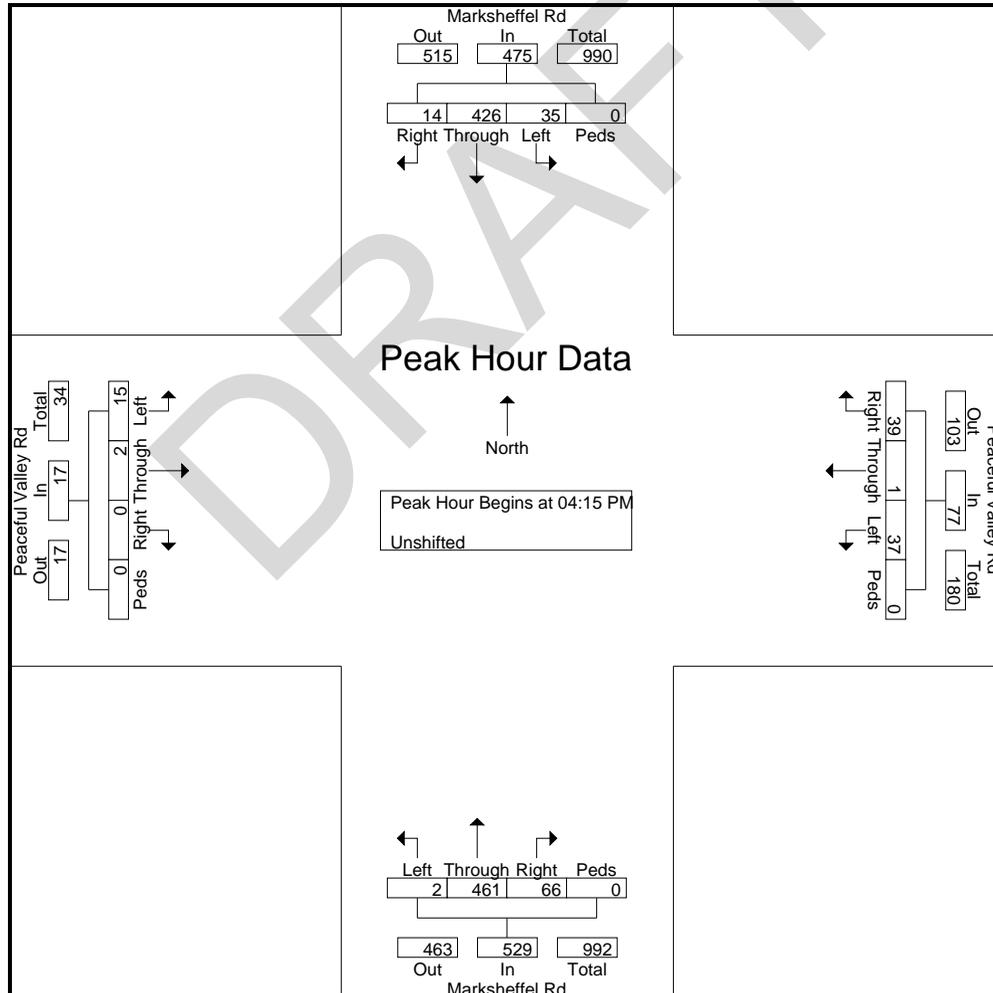


LSC Transportation Consultants, Inc.

2504 E Pikes Peak Ave, Suite 304
 Colorado Springs, CO 80909
 719-633-2868

File Name : Marksheffel Rd - Peaceful Valley Rd PM 9-19
 Site Code : 00194800
 Start Date : 9/12/2019
 Page No : 2

Start Time	Marksheffel Rd Southbound					Peaceful Valley Rd Westbound					Marksheffel Rd Northbound					Peaceful Valley Rd 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	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
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.

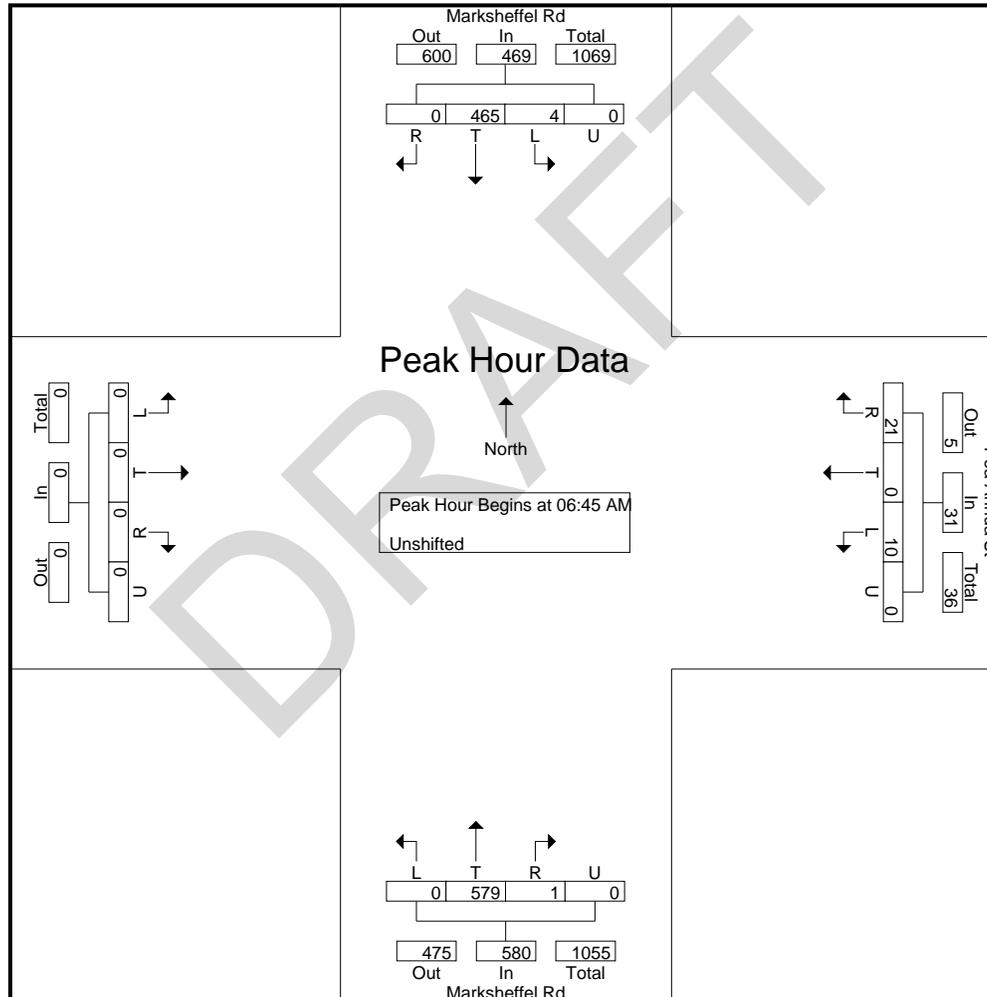
2504 E Pikes Peak Ave, Suite 304
 Colorado Springs, CO 80909
 719-633-2868

File Name : Marksheffel Rd - Poa Annua St AM

Site Code : 00194800

Start Date : 2/27/2020

Page No : 3



LSC Transportation Consultants, Inc.

2504 E Pikes Peak Ave, Suite 304
 Colorado Springs, CO 80909
 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

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	
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.

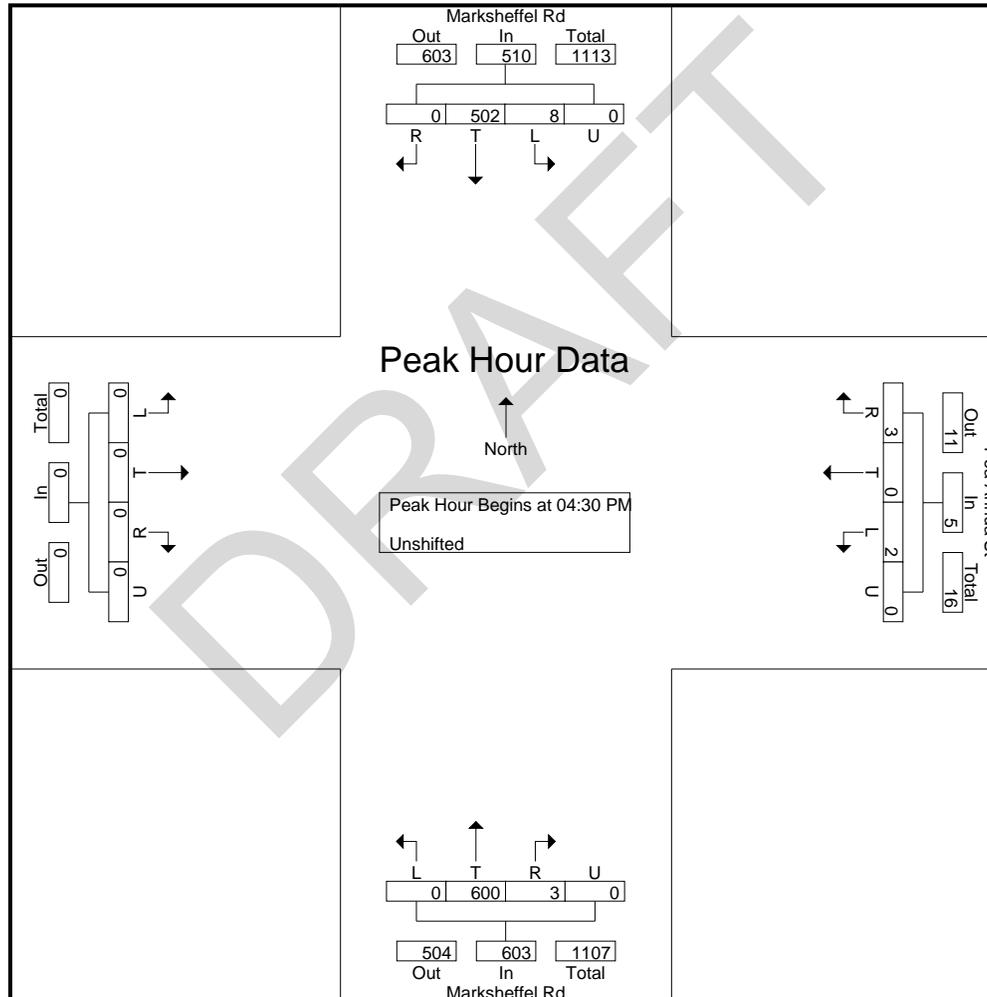
2504 E Pikes Peak Ave, Suite 304
 Colorado Springs, CO 80909
 719-633-2868

File Name : Marksheffel Rd - Poa Annua St PM

Site Code : 00194800

Start Date : 2/27/2020

Page No : 3



LSC Transportation Consultants, Inc.

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

File Name : Marksheffel Rd - Poa Annua St AM 10-21
 Site Code : 194800
 Start Date : 10/12/2021
 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	129	0	0	129	2	0	2	0	4	0	154	0	0	154	0	0	0	0	0	287
06:45 AM	1	119	0	0	120	2	0	2	0	4	0	137	0	0	137	0	0	0	0	0	261
Total	1	248	0	0	249	4	0	4	0	8	0	291	0	0	291	0	0	0	0	0	548
07:00 AM	0	97	0	0	97	1	0	6	0	7	0	187	1	0	188	0	0	0	0	0	292
07:15 AM	2	89	0	0	91	2	0	6	0	8	0	158	2	0	160	0	0	0	0	0	259
07:30 AM	3	134	0	0	137	1	0	4	0	5	0	148	1	0	149	0	0	0	0	0	291
07:45 AM	2	132	0	0	134	1	0	3	0	4	0	132	0	0	132	0	0	0	0	0	270
Total	7	452	0	0	459	5	0	19	0	24	0	625	4	0	629	0	0	0	0	0	1112
08:00 AM	2	120	0	0	122	1	0	4	0	5	0	108	0	0	108	0	0	0	0	0	235
08:15 AM	0	134	0	0	134	0	0	3	0	3	0	89	0	0	89	0	0	0	0	0	226
Grand Total	10	954	0	0	964	10	0	30	0	40	0	1113	4	0	1117	0	0	0	0	0	2121
Apprch %	1	99	0	0		25	0	75	0		0	99.6	0.4	0		0	0	0	0		
Total %	0.5	45	0	0	45.5	0.5	0	1.4	0	1.9	0	52.5	0.2	0	52.7	0	0	0	0	0	

LSC Transportation Consultants, Inc.

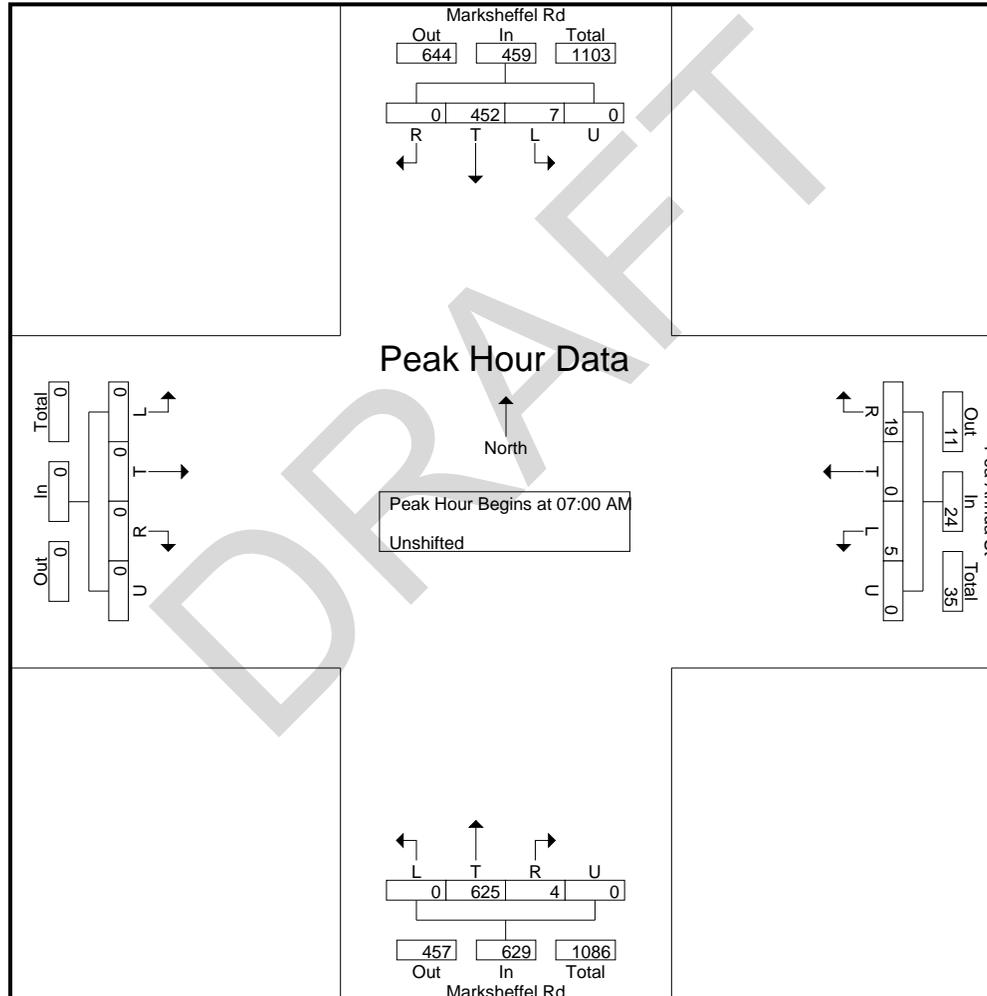
545 E Pikes Peak Ave, Suite 210
 Colorado Springs, CO 80905
 719-633-2868

File Name : Marksheffel Rd - Poa Annua St AM 10-21

Site Code : 194800

Start Date : 10/12/2021

Page No : 3





LSC Transportation Consultants, Inc.

2504 E Pikes Peak Ave, Suite 304
 Colorado Springs, CO 80909
 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		9.2	39.1	0	0	48.3	

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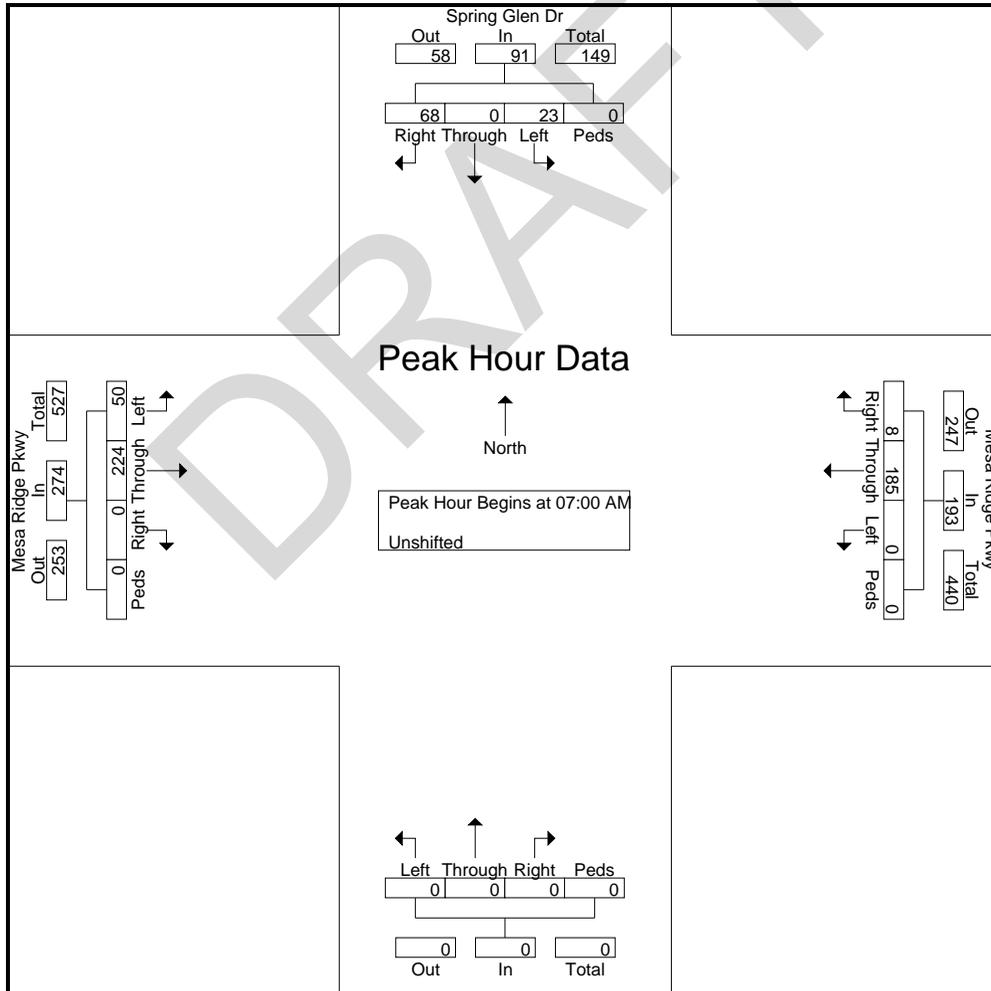


LSC Transportation Consultants, Inc.

2504 E Pikes Peak Ave, Suite 304
 Colorado Springs, CO 80909
 719-633-2868

File Name : Spring Glen Dr - Mesa Ridge Pkwy AM
 Site Code : 00194800
 Start Date : 9/18/2019
 Page No : 2

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	
Peak Hour Analysis From 06:30 AM to 08:15 AM - Peak 1 of 1																					
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.

2504 E Pikes Peak Ave, Suite 304
 Colorado Springs, CO 80909
 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

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	
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	0	20	80	0	0		
Total %	2.2	0	9	0	11.2	0	25	2.7	0	27.7	0	0	0	0	0	12.2	48.9	0	0	61.1	

DRAFT

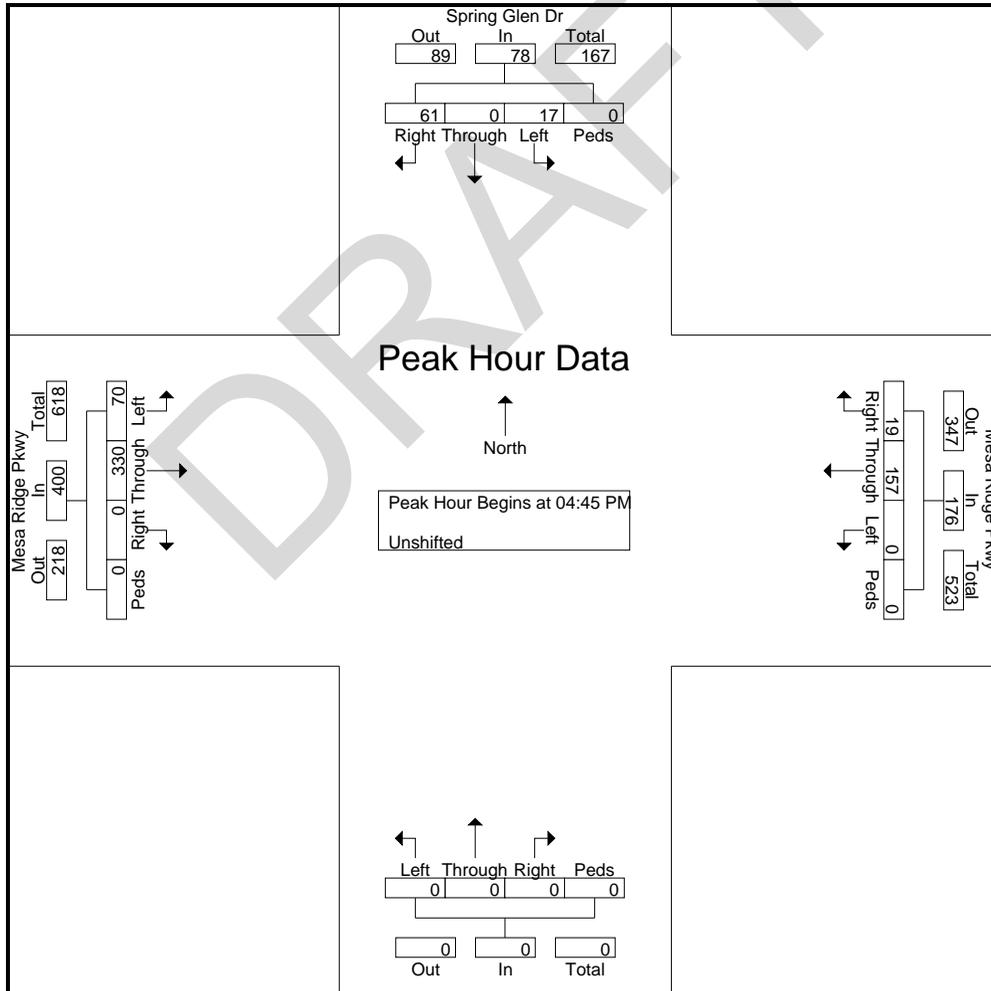


LSC Transportation Consultants, Inc.

2504 E Pikes Peak Ave, Suite 304
 Colorado Springs, CO 80909
 719-633-2868

File Name : Spring Glen Dr - Mesa Ridge Pkwy PM
 Site Code : 00194800
 Start Date : 9/18/2019
 Page No : 2

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	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	4	0	13	0	17	0	48	3	0	51	0	0	0	0	0	14	83	0	0	97	165
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
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



Levels of Service

DRAFT

Intersection												
Int Delay, s/veh	7.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	↕
Traffic Vol, veh/h	64	1	19	5	1	19	1	698	4	7	604	13
Future Vol, veh/h	64	1	19	5	1	19	1	698	4	7	604	13
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									
Storage Length	-	-	-	-	-	-	290	-	-	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	70	1	21	6	1	24	1	841	5	8	657	14

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1531	1521	657	1537	1533	844	671	0	0	846	0	0
Stage 1	673	673	-	846	846	-	-	-	-	-	-	-
Stage 2	858	848	-	691	687	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	96	118	465	95	116	363	919	-	-	791	-	-
Stage 1	445	454	-	357	378	-	-	-	-	-	-	-
Stage 2	352	378	-	435	447	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	88	117	465	89	115	363	919	-	-	791	-	-
Mov Cap-2 Maneuver	88	117	-	89	115	-	-	-	-	-	-	-
Stage 1	445	449	-	357	378	-	-	-	-	-	-	-
Stage 2	327	378	-	410	443	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	121.4		24.7		0		0.1	
HCM LOS	F		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	919	-	-	108	214	791	-	-
HCM Lane V/C Ratio	0.001	-	-	0.845	0.149	0.01	-	-
HCM Control Delay (s)	8.9	-	-	121.4	24.7	9.6	-	-
HCM Lane LOS	A	-	-	F	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	4.9	0.5	0	-	-

SimTraffic Performance Report

4: Marksheffel Rd & Poa Annua St Performance by lane Interval #1 7:00

Lane	EB	WB	NB	NB	SB	SB	SB	All
Movements Served	LTR	LTR	L	TR	L	T	R	
Stop Del/Veh (s)	12.2	6.8		0.8	1.5	0.1	0.0	1.2

4: Marksheffel Rd & Poa Annua St Performance by lane Interval #2 7:15

Lane	EB	WB	NB	NB	SB	SB	SB	All
Movements Served	LTR	LTR	L	TR	L	T	R	
Stop Del/Veh (s)	17.0	13.5		0.9	6.1	0.1	0.0	1.6

4: Marksheffel Rd & Poa Annua St Performance by lane Interval #3 7:30

Lane	EB	WB	NB	NB	SB	SB	SB	All
Movements Served	LTR	LTR	L	TR	L	T	R	
Stop Del/Veh (s)	11.9	7.0	4.9	0.8	1.1	0.1	0.0	1.2

4: Marksheffel Rd & Poa Annua St Performance by lane Interval #4 7:45

Lane	EB	WB	NB	SB	SB	SB	All
Movements Served	LTR	LTR	TR	L	T	R	
Stop Del/Veh (s)	18.0	6.0	0.6	2.5	0.1	0.0	1.5

4: Marksheffel Rd & Poa Annua St Performance by lane Entire Run

Lane	EB	WB	NB	NB	SB	SB	SB	All
Movements Served	LTR	LTR	L	TR	L	T	R	
Stop Del/Veh (s)	15.4	9.3	5.4	0.8	4.1	0.1	0.0	1.5

Intersection												
Int Delay, s/veh	2.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↗	↘		↗		↖	↗	↘	↖	↗
Traffic Vol, veh/h	0	0	38	56	0	55	0	648	24	29	576	23
Future Vol, veh/h	0	0	38	56	0	55	0	648	24	29	576	23
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	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	49	67	0	66	0	745	28	33	662	26
Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	-	-	662	1511	-	745	-	0	0	773	0	0
Stage 1	-	-	-	745	-	-	-	-	-	-	-	-
Stage 2	-	-	-	766	-	-	-	-	-	-	-	-
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	462	99	0	414	0	-	-	842	-	-
Stage 1	0	0	-	406	0	-	0	-	-	-	-	-
Stage 2	0	0	-	395	0	-	0	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	462	86	-	414	-	-	-	842	-	-
Mov Cap-2 Maneuver	-	-	-	207	-	-	-	-	-	-	-	-
Stage 1	-	-	-	406	-	-	-	-	-	-	-	-
Stage 2	-	-	-	339	-	-	-	-	-	-	-	-
Approach	EB		WB		NB			SB				
HCM Control Delay, s	13.7		23		0			0.4				
HCM LOS	B		C									
Minor Lane/Major Mvmt	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR				
Capacity (veh/h)	-	-	462	207	414	842	-	-				
HCM Lane V/C Ratio	-	-	0.105	0.326	0.16	0.04	-	-				
HCM Control Delay (s)	-	-	13.7	30.6	15.3	9.5	-	-				
HCM Lane LOS	-	-	B	D	C	A	-	-				
HCM 95th %tile Q(veh)	-	-	0.4	1.3	0.6	0.1	-	-				

Timings
6: Marksheffel Rd & Mesa Ridge Pkwy

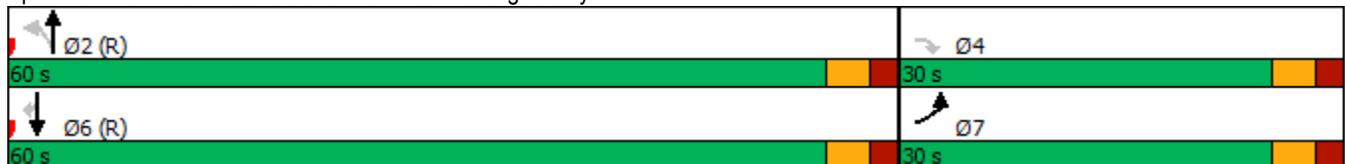
Short-Term Background Traffic
AM Peak Hour

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	355	51	31	317	267	403
Future Volume (vph)	355	51	31	317	267	403
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 Effct Green (s)	23.4	23.4	56.6	56.6	56.6	56.6
Actuated g/C Ratio	0.26	0.26	0.63	0.63	0.63	0.63
v/c Ratio	0.89	0.13	0.05	0.29	0.26	0.39
Control Delay	54.3	7.8	7.3	8.7	8.1	3.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.3	7.8	7.3	8.7	8.1	3.5
LOS	D	A	A	A	A	A
Approach Delay	48.5			8.6	5.3	
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: 0.89
 Intersection Signal Delay: 18.8
 Intersection Capacity Utilization 49.6%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service A

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



Intersection						
Int Delay, s/veh	3.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↗	↗	↘	↘	↘
Traffic Vol, veh/h	91	380	422	12	26	139
Future Vol, veh/h	91	380	422	12	26	139
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	107	447	496	14	31	164

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	510	0	-	0	1157 496
Stage 1	-	-	-	-	496 -
Stage 2	-	-	-	-	661 -
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	1055	-	-	-	217 574
Stage 1	-	-	-	-	612 -
Stage 2	-	-	-	-	514 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	1055	-	-	-	195 574
Mov Cap-2 Maneuver	-	-	-	-	195 -
Stage 1	-	-	-	-	550 -
Stage 2	-	-	-	-	514 -

Approach	EB	WB	SB
HCM Control Delay, s	1.7	0	15.9
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1055	-	-	-	195	574
HCM Lane V/C Ratio	0.101	-	-	-	0.157	0.285
HCM Control Delay (s)	8.8	-	-	-	26.9	13.8
HCM Lane LOS	A	-	-	-	D	B
HCM 95th %tile Q(veh)	0.3	-	-	-	0.5	1.2

Timings
 10: Mesa Ridge Pkwy/Powers Blvd & Mesa Ridge Pkwy

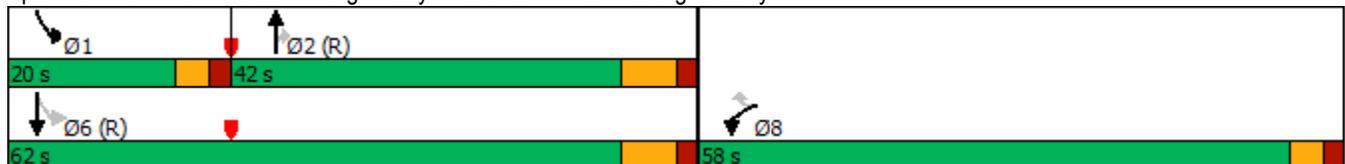
Short-Term Background Traffic
 AM Peak Hour

	↙	↖	↑	↗	↘	↓
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↖↗	↖	↖↗	↖	↖	↖↗
Traffic Volume (vph)	683	109	361	483	44	477
Future Volume (vph)	683	109	361	483	44	477
Turn Type	Prot	Perm	NA	Perm	pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8		2	6	
Detector Phase	8	8	2	2	1	6
Switch Phase						
Minimum Initial (s)	6.0	6.0	30.0	30.0	6.0	30.0
Minimum Split (s)	11.0	11.0	37.0	37.0	11.0	37.0
Total Split (s)	58.0	58.0	42.0	42.0	20.0	62.0
Total Split (%)	48.3%	48.3%	35.0%	35.0%	16.7%	51.7%
Yellow Time (s)	3.0	3.0	5.0	5.0	3.0	5.0
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	7.0	7.0	5.0	7.0
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	None	None	C-Max	C-Max	None	C-Max
Act Effct Green (s)	38.5	38.5	58.0	58.0	71.5	69.5
Actuated g/C Ratio	0.32	0.32	0.48	0.48	0.60	0.58
v/c Ratio	0.72	0.21	0.23	0.51	0.08	0.25
Control Delay	39.5	5.1	20.6	4.0	12.3	13.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.5	5.1	20.6	4.0	12.3	13.7
LOS	D	A	C	A	B	B
Approach Delay	34.8		11.1			13.6
Approach LOS	C		B			B

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.72
 Intersection Signal Delay: 20.7
 Intersection LOS: C
 Intersection Capacity Utilization 63.7%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 10: Mesa Ridge Pkwy/Powers Blvd & Mesa Ridge Pkwy



Intersection												
Int Delay, s/veh	3.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	↕
Traffic Vol, veh/h	45	2	13	2	1	3	3	742	3	8	660	41
Future Vol, veh/h	45	2	13	2	1	3	3	742	3	8	660	41
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									
Storage Length	-	-	-	-	-	-	290	-	-	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	49	2	14	3	1	4	3	815	3	9	717	45

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1560	1559	717	1589	1603	817	762	0	0	818	0	0
Stage 1	735	735	-	823	823	-	-	-	-	-	-	-
Stage 2	825	824	-	766	780	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	91	112	430	87	106	376	850	-	-	810	-	-
Stage 1	411	425	-	368	388	-	-	-	-	-	-	-
Stage 2	367	387	-	395	406	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	88	110	430	82	104	376	850	-	-	810	-	-
Mov Cap-2 Maneuver	88	110	-	82	104	-	-	-	-	-	-	-
Stage 1	409	420	-	367	386	-	-	-	-	-	-	-
Stage 2	361	385	-	376	402	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	81	31.4	0	0.1
HCM LOS	F	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	850	-	-	107	144	810	-
HCM Lane V/C Ratio	0.004	-	-	0.61	0.052	0.011	-
HCM Control Delay (s)	9.3	-	-	81	31.4	9.5	-
HCM Lane LOS	A	-	-	F	D	A	-
HCM 95th %tile Q(veh)	0	-	-	3	0.2	0	-

SimTraffic Performance Report

4: Marksheffel Rd & Poa Annua St Performance by lane Interval #1 5:00

Lane	EB	WB	NB	NB	SB	SB	SB	All
Movements Served	LTR	LTR	L	TR	L	T	R	
Stop Del/Veh (s)	18.4	8.9		0.6	4.5	0.1	0.0	1.1

4: Marksheffel Rd & Poa Annua St Performance by lane Interval #2 5:15

Lane	EB	WB	NB	NB	SB	SB	SB	All
Movements Served	LTR	LTR	L	TR	L	T	R	
Stop Del/Veh (s)	23.1	20.4	1.0	0.8	1.5	0.1	0.0	1.3

4: Marksheffel Rd & Poa Annua St Performance by lane Interval #3 5:30

Lane	EB	WB	NB	NB	SB	SB	SB	All
Movements Served	LTR	LTR	L	TR	L	T	R	
Stop Del/Veh (s)	18.8	8.5	2.4	0.7	0.6	0.1	0.0	0.9

4: Marksheffel Rd & Poa Annua St Performance by lane Interval #4 5:45

Lane	EB	WB	NB	NB	SB	SB	SB	All
Movements Served	LTR	LTR	L	TR	L	T	R	
Stop Del/Veh (s)	25.3	16.5	1.4	0.6	3.7	0.1	0.0	1.2

4: Marksheffel Rd & Poa Annua St Performance by lane Entire Run

Lane	EB	WB	NB	NB	SB	SB	SB	All
Movements Served	LTR	LTR	L	TR	L	T	R	
Stop Del/Veh (s)	21.8	14.7	2.4	0.7	2.9	0.1	0.0	1.1

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	20	37	0	39	0	709	66	35	617	23
Future Vol, veh/h	0	0	20	37	0	39	0	709	66	35	617	23
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Stop	-	-	None	-	-	None
Storage Length	-	-	0	0	-	0	-	-	290	340	-	290
Veh in Median Storage, #	-	0	-	-	2	-	-	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	28	47	0	50	0	771	72	42	735	27
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	-	-	735	1618	-	771	-	0	0	843	0	0
Stage 1	-	-	-	771	-	-	-	-	-	-	-	-
Stage 2	-	-	-	847	-	-	-	-	-	-	-	-
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	420	83	0	400	0	-	-	793	-	-
Stage 1	0	0	-	393	0	-	0	-	-	-	-	-
Stage 2	0	0	-	357	0	-	0	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	420	74	-	400	-	-	-	793	-	-
Mov Cap-2 Maneuver	-	-	-	243	-	-	-	-	-	-	-	-
Stage 1	-	-	-	393	-	-	-	-	-	-	-	-
Stage 2	-	-	-	315	-	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	14.2		19.2		0		0.5					
HCM LOS	B		C									
Minor Lane/Major Mvmt	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR				
Capacity (veh/h)	-	-	420	243	400	793	-	-				
HCM Lane V/C Ratio	-	-	0.067	0.195	0.125	0.053	-	-				
HCM Control Delay (s)	-	-	14.2	23.4	15.3	9.8	-	-				
HCM Lane LOS	-	-	B	C	C	A	-	-				
HCM 95th %tile Q(veh)	-	-	0.2	0.7	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)	423	34	70	352	360	314
Future Volume (vph)	423	34	70	352	360	314
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)	40.0	40.0	50.0	50.0	50.0	50.0
Total Split (%)	44.4%	44.4%	55.6%	55.6%	55.6%	55.6%
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 Effct Green (s)	28.7	28.7	51.3	51.3	51.3	51.3
Actuated g/C Ratio	0.32	0.32	0.57	0.57	0.57	0.57
v/c Ratio	0.83	0.07	0.16	0.38	0.38	0.33
Control Delay	41.4	6.4	12.1	13.1	10.1	1.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.4	6.4	12.1	13.1	10.1	1.3
LOS	D	A	B	B	B	A
Approach Delay	38.8			12.9	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: 45
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.83
 Intersection Signal Delay: 17.5
 Intersection LOS: B
 Intersection Capacity Utilization 58.8%
 ICU Level of Service B
 Analysis Period (min) 15

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



Intersection						
Int Delay, s/veh	3.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↗	↗	↘	↘	↘
Traffic Vol, veh/h	202	438	357	28	19	109
Future Vol, veh/h	202	438	357	28	19	109
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	232	503	415	33	22	128
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	448	0	-	0	1382	415
Stage 1	-	-	-	-	415	-
Stage 2	-	-	-	-	967	-
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	1112	-	-	-	159	637
Stage 1	-	-	-	-	666	-
Stage 2	-	-	-	-	369	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	1112	-	-	-	126	637
Mov Cap-2 Maneuver	-	-	-	-	126	-
Stage 1	-	-	-	-	527	-
Stage 2	-	-	-	-	369	-
Approach	EB	WB	SB			
HCM Control Delay, s	2.9	0	16.2			
HCM LOS			C			
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1112	-	-	-	126	637
HCM Lane V/C Ratio	0.209	-	-	-	0.177	0.201
HCM Control Delay (s)	9.1	-	-	-	39.6	12.1
HCM Lane LOS	A	-	-	-	E	B
HCM 95th %tile Q(veh)	0.8	-	-	-	0.6	0.7

SimTraffic Performance Report

7: Mesa Ridge Pkwy & Spring Glen Dr Performance by lane Interval #1 5:00

Lane	EB	EB	WB	WB	SB	SB	All
Movements Served	L	T	T	R	L	R	
Stop Del/Veh (s)	1.4	0.0	0.3	0.0	11.5	3.5	0.8

7: Mesa Ridge Pkwy & Spring Glen Dr Performance by lane Interval #2 5:15

Lane	EB	EB	WB	WB	SB	SB	All
Movements Served	L	T	T	R	L	R	
Stop Del/Veh (s)	2.8	0.0	0.3	0.0	32.4	4.0	1.4

7: Mesa Ridge Pkwy & Spring Glen Dr Performance by lane Interval #3 5:30

Lane	EB	EB	WB	WB	SB	SB	All
Movements Served	L	T	T	R	L	R	
Stop Del/Veh (s)	2.6	0.0	0.3	0.0	19.7	4.0	1.1

7: Mesa Ridge Pkwy & Spring Glen Dr Performance by lane Interval #4 5:45

Lane	EB	EB	WB	WB	SB	SB	All
Movements Served	L	T	T	R	L	R	
Stop Del/Veh (s)	1.4	0.0	0.3	0.0	15.1	3.5	0.9

7: Mesa Ridge Pkwy & Spring Glen Dr Performance by lane Entire Run

Lane	EB	EB	WB	WB	SB	SB	All
Movements Served	L	T	T	R	L	R	
Stop Del/Veh (s)	2.1	0.0	0.3	0.0	21.0	3.9	1.1

Timings
10: Mesa Ridge Pkwy/Powers Blvd & Mesa Ridge Pkway

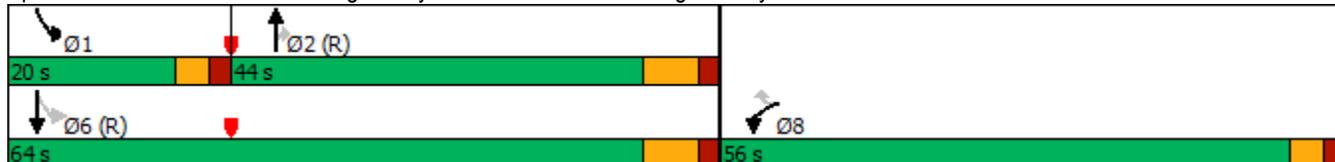
Short-Term Background Traffic
PM Peak Hour

	↙	↖	↑	↗	↘	↓
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↖↗	↖	↖↗	↖	↖	↖↗
Traffic Volume (vph)	523	104	757	834	162	507
Future Volume (vph)	523	104	757	834	162	507
Turn Type	Prot	Perm	NA	Perm	pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8		2	6	
Detector Phase	8	8	2	2	1	6
Switch Phase						
Minimum Initial (s)	6.0	6.0	30.0	30.0	6.0	30.0
Minimum Split (s)	11.0	11.0	37.0	37.0	11.0	37.0
Total Split (s)	56.0	56.0	44.0	44.0	20.0	64.0
Total Split (%)	46.7%	46.7%	36.7%	36.7%	16.7%	53.3%
Yellow Time (s)	3.0	3.0	5.0	5.0	3.0	5.0
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	7.0	7.0	5.0	7.0
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	None	None	C-Max	C-Max	None	C-Max
Act Effct Green (s)	30.6	30.6	60.0	60.0	79.4	77.4
Actuated g/C Ratio	0.26	0.26	0.50	0.50	0.66	0.64
v/c Ratio	0.70	0.25	0.44	0.77	0.39	0.25
Control Delay	44.5	6.6	21.5	12.1	11.1	10.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.5	6.6	21.5	12.1	11.1	10.0
LOS	D	A	C	B	B	A
Approach Delay	38.2		16.6			10.3
Approach LOS	D		B			B

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.77
 Intersection Signal Delay: 20.1
 Intersection LOS: C
 Intersection Capacity Utilization 70.6%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 10: Mesa Ridge Pkwy/Powers Blvd & Mesa Ridge Pkway



Intersection												
Int Delay, s/veh	12.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↖		↗	↖	↗
Traffic Vol, veh/h	79	1	21	5	1	19	2	698	4	7	604	18
Future Vol, veh/h	79	1	21	5	1	19	2	698	4	7	604	18
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	290	-	-	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	86	1	23	6	1	24	2	841	5	8	657	20
Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	1533	1523	657	1543	1541	844	677	0	0	846	0	0
Stage 1	673	673	-	848	848	-	-	-	-	-	-	-
Stage 2	860	850	-	695	693	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	95	118	465	94	115	363	915	-	-	791	-	-
Stage 1	445	454	-	356	378	-	-	-	-	-	-	-
Stage 2	351	377	-	433	445	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	87	117	465	88	114	363	915	-	-	791	-	-
Mov Cap-2 Maneuver	87	117	-	88	114	-	-	-	-	-	-	-
Stage 1	444	449	-	355	377	-	-	-	-	-	-	-
Stage 2	326	376	-	407	441	-	-	-	-	-	-	-
Approach	EB		WB		NB			SB				
HCM Control Delay, s	177		24.9		0			0.1				
HCM LOS	F		C									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	915	-	-	105	213	791	-	-				
HCM Lane V/C Ratio	0.002	-	-	1.046	0.15	0.01	-	-				
HCM Control Delay (s)	8.9	-	-	177	24.9	9.6	-	-				
HCM Lane LOS	A	-	-	F	C	A	-	-				
HCM 95th %tile Q(veh)	0	-	-	6.7	0.5	0	-	-				

SimTraffic Performance Report

4: Marksheffel Rd & Poa Annua St Performance by lane Interval #1 7:00

Lane	EB	WB	NB	NB	SB	SB	SB	All
Movements Served	LTR	LTR	L	TR	L	T	R	
Stop Del/Veh (s)	18.3	8.8	4.2	0.9	1.9	0.1	0.0	2.0

4: Marksheffel Rd & Poa Annua St Performance by lane Interval #2 7:15

Lane	EB	WB	NB	NB	SB	SB	SB	All
Movements Served	LTR	LTR	L	TR	L	T	R	
Stop Del/Veh (s)	28.2	13.5		1.0	12.9	0.1	0.0	2.7

4: Marksheffel Rd & Poa Annua St Performance by lane Interval #3 7:30

Lane	EB	WB	NB	NB	SB	SB	SB	All
Movements Served	LTR	LTR	L	TR	L	T	R	
Stop Del/Veh (s)	16.6	6.0		0.8	1.6	0.1	0.0	1.7

4: Marksheffel Rd & Poa Annua St Performance by lane Interval #4 7:45

Lane	EB	WB	NB	NB	SB	SB	SB	All
Movements Served	LTR	LTR	L	TR	L	T	R	
Stop Del/Veh (s)	21.6	12.9		0.6	3.6	0.1	0.0	1.9

4: Marksheffel Rd & Poa Annua St Performance by lane Entire Run

Lane	EB	WB	NB	NB	SB	SB	SB	All
Movements Served	LTR	LTR	L	TR	L	T	R	
Stop Del/Veh (s)	22.1	11.5	4.3	0.9	4.7	0.1	0.0	2.2

Intersection												
Int Delay, s/veh	2.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↗	↘		↗		↖	↗	↘	↖	↗
Traffic Vol, veh/h	0	0	38	56	0	55	0	649	24	29	578	23
Future Vol, veh/h	0	0	38	56	0	55	0	649	24	29	578	23
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	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	49	67	0	66	0	746	28	33	664	26
Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	-	-	664	1514	-	746	-	0	0	774	0	0
Stage 1	-	-	-	746	-	-	-	-	-	-	-	-
Stage 2	-	-	-	768	-	-	-	-	-	-	-	-
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	461	98	0	413	0	-	-	842	-	-
Stage 1	0	0	-	405	0	-	0	-	-	-	-	-
Stage 2	0	0	-	394	0	-	0	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	461	85	-	413	-	-	-	842	-	-
Mov Cap-2 Maneuver	-	-	-	207	-	-	-	-	-	-	-	-
Stage 1	-	-	-	405	-	-	-	-	-	-	-	-
Stage 2	-	-	-	339	-	-	-	-	-	-	-	-
Approach	EB		WB		NB			SB				
HCM Control Delay, s	13.7		23.1		0			0.4				
HCM LOS	B		C									
Minor Lane/Major Mvmt	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR				
Capacity (veh/h)	-	-	461	207	413	842	-	-				
HCM Lane V/C Ratio	-	-	0.106	0.326	0.16	0.04	-	-				
HCM Control Delay (s)	-	-	13.7	30.6	15.4	9.5	-	-				
HCM Lane LOS	-	-	B	D	C	A	-	-				
HCM 95th %tile Q(veh)	-	-	0.4	1.3	0.6	0.1	-	-				

Timings
6: Marksheffel Rd & Mesa Ridge Pkwy

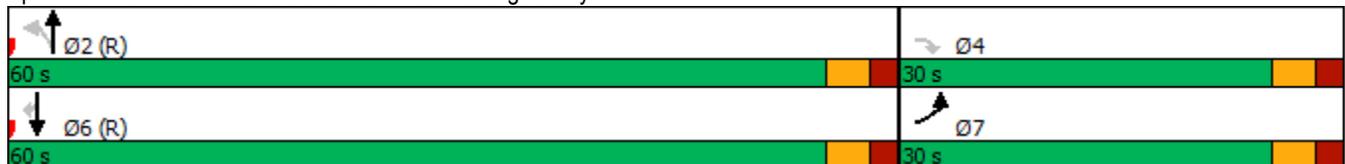
Short-Term Total Traffic
AM Peak Hour

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	355	51	31	318	269	403
Future Volume (vph)	355	51	31	318	269	403
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 Effct Green (s)	23.4	23.4	56.6	56.6	56.6	56.6
Actuated g/C Ratio	0.26	0.26	0.63	0.63	0.63	0.63
v/c Ratio	0.89	0.13	0.05	0.29	0.26	0.39
Control Delay	54.3	7.8	7.3	8.7	8.2	3.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.3	7.8	7.3	8.7	8.2	3.4
LOS	D	A	A	A	A	A
Approach Delay	48.5			8.6	5.3	
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: 0.89
 Intersection Signal Delay: 18.7
 Intersection Capacity Utilization 49.7%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service A

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



Intersection						
Int Delay, s/veh	3.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↗	↗	↘	↘	↘
Traffic Vol, veh/h	99	380	422	12	26	164
Future Vol, veh/h	99	380	422	12	26	164
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	116	447	496	14	31	193
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	510	0	-	0	1175	496
Stage 1	-	-	-	-	496	-
Stage 2	-	-	-	-	679	-
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	1055	-	-	-	212	574
Stage 1	-	-	-	-	612	-
Stage 2	-	-	-	-	504	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	1055	-	-	-	189	574
Mov Cap-2 Maneuver	-	-	-	-	189	-
Stage 1	-	-	-	-	545	-
Stage 2	-	-	-	-	504	-
Approach	EB	WB	SB			
HCM Control Delay, s	1.8	0	16.2			
HCM LOS			C			
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1055	-	-	-	189	574
HCM Lane V/C Ratio	0.11	-	-	-	0.162	0.336
HCM Control Delay (s)	8.8	-	-	-	27.7	14.4
HCM Lane LOS	A	-	-	-	D	B
HCM 95th %tile Q(veh)	0.4	-	-	-	0.6	1.5

Timings
10: Mesa Ridge Pkwy/Powers Blvd & Mesa Ridge Pkway

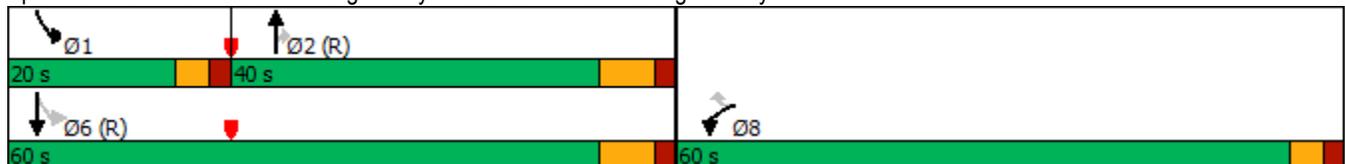
Short-Term Total Traffic
AM Peak Hour

	↙	↖	↑	↗	↘	↓
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↖↗	↖	↖↗	↖	↖	↖↗
Traffic Volume (vph)	708	109	361	492	44	477
Future Volume (vph)	708	109	361	492	44	477
Turn Type	Prot	Perm	NA	Perm	pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8		2	6	
Detector Phase	8	8	2	2	1	6
Switch Phase						
Minimum Initial (s)	6.0	6.0	30.0	30.0	6.0	30.0
Minimum Split (s)	11.0	11.0	37.0	37.0	11.0	37.0
Total Split (s)	60.0	60.0	40.0	40.0	20.0	60.0
Total Split (%)	50.0%	50.0%	33.3%	33.3%	16.7%	50.0%
Yellow Time (s)	3.0	3.0	5.0	5.0	3.0	5.0
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	7.0	7.0	5.0	7.0
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	None	None	C-Max	C-Max	None	C-Max
Act Effct Green (s)	39.7	39.7	56.8	56.8	70.3	68.3
Actuated g/C Ratio	0.33	0.33	0.47	0.47	0.59	0.57
v/c Ratio	0.72	0.21	0.23	0.52	0.08	0.26
Control Delay	38.8	4.9	21.4	4.1	12.9	14.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.8	4.9	21.4	4.1	12.9	14.4
LOS	D	A	C	A	B	B
Approach Delay	34.3		11.4			14.2
Approach LOS	C		B			B

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.72
 Intersection Signal Delay: 21.0
 Intersection LOS: C
 Intersection Capacity Utilization 64.4%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 10: Mesa Ridge Pkwy/Powers Blvd & Mesa Ridge Pkway



Intersection												
Int Delay, s/veh	4.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↘		↗	↘	↗
Traffic Vol, veh/h	54	2	14	2	1	3	5	742	3	8	660	57
Future Vol, veh/h	54	2	14	2	1	3	5	742	3	8	660	57
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	290	-	-	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	59	2	15	3	1	4	5	815	3	9	717	62

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1564	1563	717	1602	1624	817	779	0	0	818	0	0
Stage 1	735	735	-	827	827	-	-	-	-	-	-	-
Stage 2	829	828	-	775	797	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	91	112	430	85	102	376	838	-	-	810	-	-
Stage 1	411	425	-	366	386	-	-	-	-	-	-	-
Stage 2	365	386	-	391	399	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	88	110	430	80	100	376	838	-	-	810	-	-
Mov Cap-2 Maneuver	88	110	-	80	100	-	-	-	-	-	-	-
Stage 1	409	420	-	364	384	-	-	-	-	-	-	-
Stage 2	358	384	-	371	395	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	99.9	32	0.1	0.1
HCM LOS	F	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	838	-	-	105	141	810	-	-
HCM Lane V/C Ratio	0.006	-	-	0.725	0.053	0.011	-	-
HCM Control Delay (s)	9.3	-	-	99.9	32	9.5	-	-
HCM Lane LOS	A	-	-	F	D	A	-	-
HCM 95th %tile Q(veh)	0	-	-	3.8	0.2	0	-	-

SimTraffic Performance Report

4: Marksheffel Rd & Poa Annua St Performance by lane Interval #1 5:00

Lane	EB	WB	NB	NB	SB	SB	SB	All
Movements Served	LTR	LTR	L	TR	L	T	R	
Stop Del/Veh (s)	21.0	23.0	1.7	0.6	4.2	0.1	0.0	1.2

4: Marksheffel Rd & Poa Annua St Performance by lane Interval #2 5:15

Lane	EB	WB	NB	NB	SB	SB	SB	All
Movements Served	LTR	LTR	L	TR	L	T	R	
Stop Del/Veh (s)	18.6	8.7	2.6	0.8	5.8	0.1	0.0	1.1

4: Marksheffel Rd & Poa Annua St Performance by lane Interval #3 5:30

Lane	EB	WB	NB	NB	SB	SB	SB	All
Movements Served	LTR	LTR	L	TR	L	T	R	
Stop Del/Veh (s)	20.5	3.3	1.7	0.6	9.0	0.1	0.0	1.3

4: Marksheffel Rd & Poa Annua St Performance by lane Interval #4 5:45

Lane	EB	WB	NB	NB	SB	SB	SB	All
Movements Served	LTR	LTR	L	TR	L	T	R	
Stop Del/Veh (s)	14.3	6.0	3.5	0.8	2.5	0.1	0.0	1.0

4: Marksheffel Rd & Poa Annua St Performance by lane Entire Run

Lane	EB	WB	NB	NB	SB	SB	SB	All
Movements Served	LTR	LTR	L	TR	L	T	R	
Stop Del/Veh (s)	19.0	9.3	2.8	0.7	5.0	0.1	0.0	1.1

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	20	37	0	39	0	711	66	35	619	23
Future Vol, veh/h	0	0	20	37	0	39	0	711	66	35	619	23
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Stop	-	-	None	-	-	None
Storage Length	-	-	0	0	-	0	-	-	290	340	-	290
Veh in Median Storage, #	-	0	-	-	2	-	-	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	28	47	0	50	0	773	72	42	737	27
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	-	-	737	1622	-	773	-	0	0	845	0	0
Stage 1	-	-	-	773	-	-	-	-	-	-	-	-
Stage 2	-	-	-	849	-	-	-	-	-	-	-	-
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	418	82	0	399	0	-	-	792	-	-
Stage 1	0	0	-	392	0	-	0	-	-	-	-	-
Stage 2	0	0	-	356	0	-	0	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	418	73	-	399	-	-	-	792	-	-
Mov Cap-2 Maneuver	-	-	-	242	-	-	-	-	-	-	-	-
Stage 1	-	-	-	392	-	-	-	-	-	-	-	-
Stage 2	-	-	-	314	-	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	14.2		19.3		0		0.5					
HCM LOS	B		C									
Minor Lane/Major Mvmt	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR				
Capacity (veh/h)	-	-	418	242	399	792	-	-				
HCM Lane V/C Ratio	-	-	0.067	0.196	0.125	0.053	-	-				
HCM Control Delay (s)	-	-	14.2	23.5	15.3	9.8	-	-				
HCM Lane LOS	-	-	B	C	C	A	-	-				
HCM 95th %tile Q(veh)	-	-	0.2	0.7	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)	423	34	70	354	362	314
Future Volume (vph)	423	34	70	354	362	314
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)	40.0	40.0	50.0	50.0	50.0	50.0
Total Split (%)	44.4%	44.4%	55.6%	55.6%	55.6%	55.6%
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 Effct Green (s)	28.7	28.7	51.3	51.3	51.3	51.3
Actuated g/C Ratio	0.32	0.32	0.57	0.57	0.57	0.57
v/c Ratio	0.83	0.07	0.16	0.38	0.38	0.33
Control Delay	41.4	6.4	12.1	13.1	10.1	1.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.4	6.4	12.1	13.1	10.1	1.3
LOS	D	A	B	B	B	A
Approach Delay	38.8			13.0	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: 45
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.83
 Intersection Signal Delay: 17.5
 Intersection LOS: B
 Intersection Capacity Utilization 58.9%
 ICU Level of Service B
 Analysis Period (min) 15

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



Intersection

Int Delay, s/veh 3.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↗	↗	↘	↘	↘
Traffic Vol, veh/h	230	438	357	28	19	125
Future Vol, veh/h	230	438	357	28	19	125
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	264	503	415	33	22	147

Major/Minor

	Major1	Major2	Minor2		
Conflicting Flow All	448	0	0	1446	415
Stage 1	-	-	-	415	-
Stage 2	-	-	-	1031	-
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	1112	-	-	145	637
Stage 1	-	-	-	666	-
Stage 2	-	-	-	344	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	1112	-	-	111	637
Mov Cap-2 Maneuver	-	-	-	111	-
Stage 1	-	-	-	508	-
Stage 2	-	-	-	344	-

Approach

	EB	WB	SB
HCM Control Delay, s	3.2	0	16.7
HCM LOS			C

Minor Lane/Major Mvmt

	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1112	-	-	-	111	637
HCM Lane V/C Ratio	0.238	-	-	-	0.201	0.231
HCM Control Delay (s)	9.2	-	-	-	45.4	12.3
HCM Lane LOS	A	-	-	-	E	B
HCM 95th %tile Q(veh)	0.9	-	-	-	0.7	0.9

SimTraffic Performance Report

7: Mesa Ridge Pkwy & Spring Glen Dr Performance by lane Interval #1 5:00

Lane	EB	EB	WB	WB	SB	SB	All
Movements Served	L	T	T	R	L	R	
Stop Del/Veh (s)	1.6	0.0	0.3	0.0	19.3	3.6	0.9

7: Mesa Ridge Pkwy & Spring Glen Dr Performance by lane Interval #2 5:15

Lane	EB	EB	WB	WB	SB	SB	All
Movements Served	L	T	T	R	L	R	
Stop Del/Veh (s)	2.2	0.0	0.3	0.0	32.8	4.2	1.3

7: Mesa Ridge Pkwy & Spring Glen Dr Performance by lane Interval #3 5:30

Lane	EB	EB	WB	WB	SB	SB	All
Movements Served	L	T	T	R	L	R	
Stop Del/Veh (s)	1.7	0.0	0.3	0.0	21.9	4.1	1.2

7: Mesa Ridge Pkwy & Spring Glen Dr Performance by lane Interval #4 5:45

Lane	EB	EB	WB	WB	SB	SB	All
Movements Served	L	T	T	R	L	R	
Stop Del/Veh (s)	1.9	0.0	0.3	0.0	14.0	4.0	1.1

7: Mesa Ridge Pkwy & Spring Glen Dr Performance by lane Entire Run

Lane	EB	EB	WB	WB	SB	SB	All
Movements Served	L	T	T	R	L	R	
Stop Del/Veh (s)	1.9	0.0	0.3	0.0	20.5	4.1	1.1

Timings
 10: Mesa Ridge Pkwy/Powers Blvd & Mesa Ridge Pkway

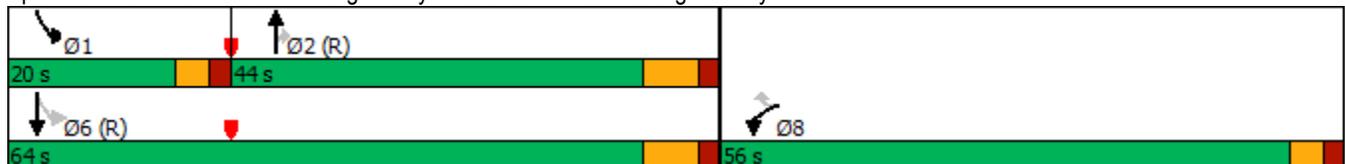
Short-Term Total Traffic
 PM Peak Hour

	↙	↖	↑	↗	↘	↓
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↖↖	↖	↖↖	↖	↖	↖↖
Traffic Volume (vph)	539	104	757	862	162	507
Future Volume (vph)	539	104	757	862	162	507
Turn Type	Prot	Perm	NA	Perm	pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8		2	6	
Detector Phase	8	8	2	2	1	6
Switch Phase						
Minimum Initial (s)	6.0	6.0	30.0	30.0	6.0	30.0
Minimum Split (s)	11.0	11.0	37.0	37.0	11.0	37.0
Total Split (s)	56.0	56.0	44.0	44.0	20.0	64.0
Total Split (%)	46.7%	46.7%	36.7%	36.7%	16.7%	53.3%
Yellow Time (s)	3.0	3.0	5.0	5.0	3.0	5.0
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	7.0	7.0	5.0	7.0
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	None	None	C-Max	C-Max	None	C-Max
Act Effct Green (s)	31.5	31.5	58.9	58.9	78.5	76.5
Actuated g/C Ratio	0.26	0.26	0.49	0.49	0.65	0.64
v/c Ratio	0.70	0.24	0.44	0.79	0.40	0.26
Control Delay	43.8	6.4	22.4	13.1	11.6	10.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.8	6.4	22.4	13.1	11.6	10.5
LOS	D	A	C	B	B	B
Approach Delay	37.7		17.4			10.7
Approach LOS	D		B			B

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.79
 Intersection Signal Delay: 20.6
 Intersection LOS: C
 Intersection Capacity Utilization 72.3%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 10: Mesa Ridge Pkwy/Powers Blvd & Mesa Ridge Pkway



Queuing Reports

DRAFT

Queuing and Blocking Report

Intersection: 10: Mesa Ridge Pkwy/Powers Blvd & Mesa Ridge Pkwy

Movement	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	R	T	T	R	L	T	T
Maximum Queue (ft)	346	351	51	237	176	182	72	223	195
Average Queue (ft)	187	238	20	121	55	67	24	119	72
95th Queue (ft)	284	329	41	202	151	122	55	196	159
Link Distance (ft)			824	517	517			1087	1087
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	350	350				150	750		
Storage Blk Time (%)	0	0			0	0			
Queuing Penalty (veh)	0	0			1	1			

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Queuing and Blocking Report

Intersection: 10: Mesa Ridge Pkwy/Powers Blvd & Mesa Ridge Pkwy

Movement	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	R	T	T	R	L	T	T
Maximum Queue (ft)	294	336	67	497	572	250	188	198	172
Average Queue (ft)	154	205	23	295	529	249	88	89	57
95th Queue (ft)	258	296	50	468	626	269	156	164	128
Link Distance (ft)			824	517	517			1087	1087
Upstream Blk Time (%)				0	65				
Queuing Penalty (veh)				0	0				
Storage Bay Dist (ft)	350	350				150	750		
Storage Blk Time (%)	0	0			4	64			
Queuing Penalty (veh)	0	0			39	244			

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