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The Glen at Widefield Filing No. 11
Transportation Memorandum
PCD File No.: SF204
(LSC #194800)
August 6, 2020

Traffic Engineer's Statement

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



Per conversation with the traffic engineer this study has not been updated per previous conversations with staff. Please update the study accordingly. This TIS has not been reviewed.

Developer's Statement

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

A handwritten signature in blue ink, likely of the Developer, written over a horizontal line.

Aug 6th 2020
Date



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August 6, 2020

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

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

Dear Mr. Watson:

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

LSC recently prepared a TIS for Filings 10 & 11 combined (dated March 11, 2020) and a transportation memorandum for Filing No. 10 dated June 10, 2020.

A copy of the plat for Filing No. 11 is attached for reference. The lot and street layout for this filing matches the Preliminary Plan.

REPORT CONTENTS

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

- Updated traffic count data;
- Projections of short-term (2022) baseline/background traffic volumes at the key area intersections;
- The projected average weekday and peak-hour vehicle-trips to be generated by Filing No. 11;
- The assignment of the Filing No. 11 projected trips to the key area intersections;
- The short-term level of service at these intersections;

- The short-term level of service and queuing analysis at the intersection of Powers Boulevard/Mesa Ridge Parkway;
- Findings and recommendations; and
- Signal escrow analysis tables.

LAND USE AND ACCESS

Since completion of the 2016 Glen at Widefield East Preliminary Plan Traffic Report, 356 of the 578 proposed lots for single-family homes within the preliminary plan area have been platted as The Glen at Widefield Filing Nos. 7, 8, and 9. At the time traffic counts were conducted in September 2019, about 144 homes had been constructed in The Glen at Widefield Filing 7 and about 32 homes had been constructed in Filing 8. Note: There is currently significant home construction activity within Filing No. 8, so these figures will change rapidly. None of the homes in Filing 9 had been constructed at the time of the counts. Access for these filings is via the intersection of Spring Glen Drive/Mesa Ridge Parkway and via the recently completed west leg of the intersection of Marksheffel/Peaceful Valley Road.

The Glen at Widefield Filing No. 10, currently under review is planned to contain 40 lots for single-family homes. The currently proposed Glen at Widefield Filing No. 11 is planned to contain 103 lots for single family homes. Figure 2 shows the location of The Glen at Widefield Filing Nos. 7 through 11 and the anticipated future filings. An additional access to Marksheffel Road aligning with Poa Annua Street is planned as part of Filing No. 11.

ROADWAY AND TRAFFIC CONDITIONS

Area Roadways

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

Powers Boulevard is a four-lane Expressway extending north from Mesa Ridge Parkway. In the future, Powers Boulevard is planned to be extended south to connect to Interstate 25 (I-25), potentially at Exit 122. In the vicinity of the site, Powers Boulevard has two through lanes in each direction and a posted speed limit of 55 miles per hour (mph). The Colorado Department of Transportation has been collecting escrow funds from the previous Glen at Widefield filings as participation toward the recently installed traffic signal at the intersection of Mesa Ridge/Powers.

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

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

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

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

Notable Recent Area Roadway System Improvements

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

EXISTING TRAFFIC VOLUMES

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

LEVEL OF SERVICE

Level of service (LOS) is a quantitative measure of the level of delay at an intersection. Level of service is indicated on a scale from A to F. LOS A represents control delay of less than 10 seconds for unsignalized and signalized intersections. LOS F represents control delay of more than 50 seconds for unsignalized intersections and more than 80 seconds for signalized intersections. Table 1 shows the level of service delay ranges.

Table 1: Intersection Levels of Service Delay Ranges

Level of Service	Signalized Intersections	Unsignalized Intersections
	Average Control Delay (seconds per vehicle)	Average Control Delay (seconds per vehicle) ⁽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 Powers/Mesa Ridge, Marksheffel/Mesa Ridge, Marksheffel/Peaceful Valley and Marksheffel/Poa Annua were analyzed to determine the existing levels of service. The intersection of Powers/Mesa Ridge was analyzed using Synchro. The intersections of Marksheffel/Mesa Ridge, Marksheffel/Peaceful Valley, and Marksheffel/Poa Annua were analyzed using the unsignalized method of analysis procedures outlined in the *Highway Capacity Manual, 6th Edition* by the Transportation Research Board. The results of the analysis are shown in Figure 3b.

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

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

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

SHORT-TERM (YEAR 2022) BACKGROUND TRAFFIC

Figure 4a shows the short-term (Year 2022) background traffic volumes at the key area intersections. Background traffic is the traffic estimated to be on the roadways without the Glen at Widefield Filing No. 10 traffic.

Background traffic includes the existing traffic volume (from Figure 3) plus increases in through traffic, due to regional growth, plus traffic estimated to be generated by buildout of existing and currently proposed subdivisions in the vicinity of the site. These estimates include traffic projected to be generated by the development of the 220 single-family homes within The Glen at Widefield Filing Nos.

7, 8, 9, and 10 that were unoccupied when traffic counts were conducted in September 2019 and traffic projected to be generated by buildout of all of the existing and currently proposed developments within the Lorson Ranch development located east of the intersection of Marksheffel/Fontaine.

Increases in the through traffic volumes on Powers Boulevard were estimated, based on the growth rate calculated from the Colorado Department of Transportation 20-year growth factor for this section of Powers Boulevard.

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

Figures 5a and 5b shows the short-term (Year 2022) background traffic volumes, lane geometry, traffic control, and level of service, if the west leg of the intersection of Marksheffel/Peaceful Valley were to be restricted to right-in/right-out only.

TRIP GENERATION

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

Filing 11 is expected to generate 972 vehicle-trips on the average weekday, with about half entering and half exiting the site during a 24-hour period. During the morning peak hour, which generally occurs for one hour between 6:30 and 8:30 a.m., about 19 vehicles would enter and 57 vehicles would exit the site. During the afternoon peak hour, which generally occurs for one hour between 4:15 and 6:15 p.m., about 64 vehicles would enter, and 38 vehicles would exit the site.

TRIP DISTRIBUTION AND ASSIGNMENT

The directional distribution of the site-generated traffic volumes on the street and roadway system serving the site is an important factor in determining the site's traffic impacts. Figure 6 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 6 and assigned/routed on the internal and area street network (according to LSC estimates), the resulting projected site-generated traffic volumes can be determined.

Figures 7 and 8 show the projected short-term site-generated traffic volumes at the site access points and at key area intersections due to the currently-proposed Glen at Widefield Filing No. 11 only. The short-term site-generated traffic volumes assume the internal street network through the future development area just west of Filing 11 has not been constructed. The site-generated traffic volumes shown in Figure 7 assume the intersection of Marksheffel/Peaceful Valley remains a full-movement intersection and the site-generated traffic volumes in Figure 8 assume the west leg of this intersection has been restricted to right-in/right-out only.

SHORT-TERM TOTAL TRAFFIC

Figure 9a shows the projected short-term total traffic volumes at the key area intersections assuming the intersection of Marksheffel/Peaceful Valley remains a full-movement intersection. The short-term total traffic volumes are the sum of the short-term background traffic volumes (from Figure 4a) plus the Filing No. 11 short-term site-generated traffic volumes (from Figure 7).

Figure 9b shows the lane geometry, traffic control, and level of service at the key area intersections, based on the short-term total volumes.

Figure 10a shows the projected short-term total traffic volumes at the key area intersections assuming the west leg of the intersection of Marksheffel/Peaceful Valley is restricted to right-in/right-out only. The short-term total traffic volumes are the sum of the short-term background traffic volumes (from Figure 5a) plus the Filing No. 11 short-term site-generated traffic volumes (from Figure 8).

Figure 10b shows the lane geometry, traffic control, and level of service at the key area intersections, based on the short-term total volumes with Marksheffel/Peaceful Valley restricted to right-in/right-out only.

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.

LEVEL OF SERVICE

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

signalized intersection of Powers/Mesa Ridge was analyzed using Synchro. The results of the analysis are shown in Figures 4b, 5b, 9b, and 10b.

Powers Boulevard/Mesa Ridge Parkway

All movement at the intersection of Powers/Mesa Ridge is 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/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.

Spring Glen Drive/Mesa Ridge Parkway

All movements at the stop sign-controlled intersection of Springs Glen/Mesa Ridge are projected to operate at LOS C or better during the peak hours, based on the projected short-term total traffic volumes.

Marksheffel Road/Mesa Ridge Parkway

The eastbound left-turn movement at the stop sign-controlled intersection of Marksheffel/Mesa Ridge is projected to operate at LOS E during the morning peak hour, based on the projected short-term background and total traffic volumes. If this intersection were restriped to provide a northbound left-turn acceleration lane, the eastbound left-turn movement is projected to operate at LOS D or better during the peak hours.

Marksheffel Road/Peaceful Valley Road

The eastbound approach at the stop sign-controlled intersection of Marksheffel/Peaceful Valley is currently operating at LOS D during the morning peak hour and LOS E during the afternoon peak hour. This approach is projected to operate at LOS E during the morning peak hour and LOS F during the afternoon peak hour, based on the projected short-term background and total traffic volumes. Previous filings within the Glen at Widefield East Preliminary Plan area have contributed to an escrow account toward the Glen's portion of the cost for a potential future traffic signal at this location. However, a traffic signal may not be warranted in the short term. To achieve an

acceptable level of service (LOS D or better) the west leg of this intersection could be restricted to right-in/right-out only by installing a temporary raised right-turn island.

Marksheffel Road/Poa Annua

If the intersection of Marksheffel/Peaceful Valley remains a full-movement intersection, all movements at the intersection of Marksheffel/Poa Annua are projected to operate at LOS D or better during the peak hours, based on the projected short-term background and total traffic volumes. If the west leg of the intersection of Marksheffel/Peaceful Valley is restricted to right-in/right-out, the eastbound approach is projected to operate at LOS E during both the morning and afternoon peak hours, based on the projected short-term background and total traffic volumes.

QUEUING 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 206 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 412 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

The intersection of Marksheffel/Mesa Ridge and Marksheffel/Peaceful Valley 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 and/or short-term total traffic volume.

Table 3 shows the results of the analysis for Marksheffel/Mesa Ridge. As shown in the table, the existing traffic volumes during five of the eight hours studied currently meet the thresholds for both the Eight-Hour Vehicular-Volume Traffic-Signal Warrant and the Four-Hour Vehicular-Volume Traffic-Signal Warrant. An additional two of the hours analyzed are projected to meet the threshold for an Eight-Hour Vehicular-Volume Warrant, based on the short-term total traffic volumes. The satisfaction of warrants does not indicate that a signal must be installed. The decision to require a signal to be installed at this

location rests with the County. As discussed in the Level of Service section above, this intersection could potentially continue to operate at a satisfactory level of service as a stop sign-controlled intersection in the short term, with minor modifications to the existing traffic lane striping.

The intersection of Marksheffel/Peaceful Valley was analyzed to determine if either an Eight-Hour Vehicular-Volume Traffic Signal Warrant or a Four-Hour Vehicular-Volume Traffic-Signal Warrant would be met or be close to being met, based on the projected existing and/or short-term morning and afternoon peak-hour total traffic volumes only.

Table 4 shows the results of the analysis for Marksheffel/Peaceful Valley, based on the existing and short-term total traffic volumes. The minor approach volumes include the higher of either the westbound left-turn and through volumes or the eastbound left-turn, through, and right-turn volumes. As shown in Table 4, the existing morning peak hour traffic volumes currently meet the threshold for an Eight-Hour Vehicular-Volume Traffic-Signal Warrant, but not a Four-Hour Vehicular-Volume-Traffic Signal Warrant. Based on the projected short-term total traffic volumes, only the morning peak hour volumes are projected to meet the thresholds for Four-Hour and Eight-Hour Vehicular-Volume Traffic-Signal Warrants.

CONCLUSIONS AND RECOMMENDATIONS

Trip Generation

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

Level of Service

- 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.
- The eastbound left-turn movement at the stop sign-controlled intersection of Marksheffel/Mesa Ridge is projected to operate at LOS E during the afternoon peak hour, based on the projected short-term background and total traffic volumes. If this intersection were restriped to provide a northbound left-turn acceleration lane, the eastbound left-turn movement is projected to operate at LOS D or better during the peak hours.
- The intersection of Mesa Ridge Parkway/Spring Glen Drive would operate at satisfactory levels of service, as a stop sign-controlled intersection, based on the projected short-term background and total peak-hour traffic volumes.

- The eastbound approach at the stop sign-controlled intersection of Marksheffel/Peaceful Valley is currently operating at LOS D during the morning peak hour and LOS E during the afternoon peak. This approach is projected to operate at LOS E during the morning peak hour and LOS F during the afternoon peak hour, based on the projected short-term background and total traffic volumes. Previous filings within the Glen at Widefield East Preliminary Plan area have contributed to an escrow account for a potential traffic signal at this location. However, a traffic signal will not be warranted in the short term.

The adjacent intersections of Marksheffel/Mesa Ridge and Marksheffel Lorson are planned to be signal-controlled in the future. These future traffic signals will help to create gaps in through traffic on Marksheffel Road for the eastbound movements at Peaceful Valley to more easily occur. In the short-term, the west leg of this intersection could be restricted to right-in/right-out only by constructing a raised island. With this restriction, all movements at the intersection of Marksheffel/Peaceful Valley are projected to operate at LOS D or better during the peak hours, based on the projected short-term total traffic volumes.

If the intersection of Marksheffel/Peaceful Valley remains a full-movement intersection, the eastbound approach at the stop sign-controlled intersection of Poa Annua/Marksheffel is projected to operate at LOS D during the morning and afternoon peak hours based on the projected short-term total traffic volumes. If the west leg of the Marksheffel/Peaceful Valley is restricted to right-in/right-out only, the eastbound approach at the intersection of Poa Annua/Marksheffel is projected to operate at LOS E during the morning and afternoon peak hours (with a portion of the existing and projected Peaceful Valley eastbound left-turning movements shifted north to this intersection).

- The intersection of Lorson/Marksheffel located about 1,000 feet north of Poa Annua will most likely be signalized in the future (once warrants are met). Once Lorson/Marksheffel is signalized, it would help create gaps in through traffic that would allow for turning movements from Poa Annua to occur more easily. A potential solution, to achieve an acceptable level of service for all movements in the short-term, would be to restrict the east leg of this intersection to right-in/right-out only by constructing a raised right-turn island. This would remove some turning-movement conflicts from the east side and allow exclusive use of the painted, center TWLTL median for refuge by eastbound left-turning vehicles. However, this option changes an existing condition for Poa Annua and the residents of that neighborhood. Although the LOS is shown at LOS E for the west side of the intersection, it is preferable to not restrict the east leg of the intersection.

Despite the LOS E, LSC recommends allowing the west leg to operate as full movement as well, unless safety problems arise. LSC does not anticipate this because there is a relatively wide center painted median for "refuge" and the turning movements to/from the east leg (Poa Annua) are relatively light. This would maintain at least one location for left-turning movements to/from Marksheffel Road for the Glen at Widefield development. It is our understanding that staff agrees that it would be preferable to

maintain at least one location for left-turning movements, otherwise all left turns would be forced south to Mesa Ridge Parkway/Spring Glen.

Intersection Lane Configurations

- Table 8 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.
- The addition of Filing No. 11 site-generated traffic will **not** require the addition of a westbound right-turn deceleration lane on Mesa Ridge Parkway at Spring Glen Drive, if the intersection of Peaceful Valley/Marksheffel remains as a full-movement intersection. If the intersection of Peaceful Valley/Marksheffel is restricted to right-in/right-out only, the shift in the existing and future traffic patterns would result in the need for a right-turn deceleration lane on Mesa Ridge at Spring Glen Drive, with or without Filing No 11. Based on a design speed of 50 mph, the prescribed lane length for this lane is 235 feet plus a 200-foot taper.
- The painted center median on Marksheffel Road at the Peaceful Valley Road intersection is currently striped for a dedicated southbound left-turn lane and a dedicated southbound left-turn acceleration lane. The west leg of this intersection was recently completed to provide a second access to the Glen at Widefield East. If the west leg is restricted to right-in/right-out only, **as recommended with Filing No. 10**, the existing left-turn acceleration lane could remain. The right-turn restriction could be accomplished by installing a right-turn “island”, pavement markings and signs on the west leg. **Note:** If the west leg were to remain a full-movement intersection (or with future signalization and conversion back to a full-movement intersection), the painted center median should be restriped as an exclusive northbound left-turn lane. Based on a design speed of 50 mph, the prescribed lane length for this lane is 285 feet plus a 200-foot taper.
- The painted center median on Marksheffel Road at Mesa Ridge Parkway is currently striped as a two-way left-turn lane. LSC recommended (in the Filings 10 TIS) that this painted center median be restriped to create an interim “channelized-T”-type intersection. This would include a dedicated northbound left-turn lane and a dedicated northbound left-turn acceleration lane similar to the existing striping at the intersection of Marksheffel/Peaceful Valley.

- Based on a design speed of 60 mph, the prescribed lane length for this lane would be 1,170 feet plus a 300-foot taper.
- There is about 2,060 feet between Mesa Ridge Parkway and the Peaceful Valley intersections (not centerline spacing, rather space between the intersections). There is currently about 875 feet available for a northbound left-turn acceleration lane (assuming no change to the current Peaceful Valley southbound left-turn acceleration lane and taper) between the Mesa Ridge Parkway intersection and the current end of the lane transition taper for the southbound left-turn acceleration lane at Peaceful Valley Road (which is about 965 feet long plus a 220-foot taper).
- LSC recommends shortening the left-turn lane by about 100 feet (to 865 feet) and adding a new taper stripe for this southbound left-turn acceleration lane. The left-turn acceleration lane from Mesa Ridge Parkway would then be the 875 feet and the taper currently-striped for the Peaceful Valley acceleration lane would be used for this new northbound left-turn acceleration lane. Restriping in this manner would create 100 feet of separation between the tapers at the ends of the acceleration lanes, which would result in a “buffer” area between the ends of the opposing direction acceleration lanes. This following summarizes the resulting lane and taper lengths:
 - 865’ southbound left-turn acceleration lane from Peaceful Valley
 - 220’ lane transition taper
 - 100’ “buffer zone”
 - 220’ lane transition (with 120’ overlap with the southbound taper)
 - 875’ northbound left-turn acceleration lane from Marksheffel
- LSC recommends installation of yellow raised plastic delineator posts with yellow reflectors be placed within the 100-foot buffer area and in series parallel to the transition-taper stripes. These would emphasize the end of the lane for motorists that would be using the lanes from each direction. Motorists using the left-turn acceleration lanes in the opposing directions would essentially be using the common center painted median area (between the through lanes).
- Based on the projected short-term total traffic volumes, the classification of Marksheffel Road as an Expressway (as shown in the 2016 MTCP 2040 Roadway Plan), and the criteria contained in the El Paso County Engineering Criteria Manual (ECM), southbound right-turn deceleration lanes are projected to be warranted on Marksheffel Road approaching Peaceful Valley Road and Poa Annua Street. Based on a design speed of 60 mph, the prescribed lane length for these deceleration lanes is 290 feet plus a 240-foot taper.
- Based on the projected short-term total traffic volumes, the classification of Marksheffel Road as an Expressway, and the criteria contained in the El Paso County Engineering Criteria Manual (ECM), southbound right-turn acceleration lanes are projected to be

warranted on Marksheffel Road at Peaceful Valley Road and Poa Annu 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, a right-turn acceleration lane would not be required. LSC recommends right-of-way be reserved for this lane, should Marksheffel be upgraded to an Expressway cross section in the future.

- The southbound left-turn lane on Powers Boulevard approaching Mesa Ridge Parkway was lengthened as part of the Glen at Widefield Filing 7 access permit. The level of service analysis and queueing analysis for the short-term total traffic volumes indicates acceptable operations with the current single-lane configuration.
- Based on the projected short-term and total traffic volumes, 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.

Proposed Subdivision Street Classifications

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

Mesa Ridge Parkway/Powers Boulevard Intersection

- CDOT has agreed to a signal escrow amount of \$107,018 for all of Glen at Widefield East. The number of total lots in the Preliminary Plan has been reduced to 578 and, therefore, the corresponding escrow amount would be \$103,960 for all of Glen at Widefield East. For purposes of the Filing 11 access permit, the amount would be \$18,596. Table 5 presents the signal escrow analysis, including the previously identified amount for Filings 7, 8, 9, and 10 and the remaining amount for future filings.
- Access permit applications will be submitted to CDOT for these filings for purposes of processing the signal escrow and for work in the CDOT right-of-way to construct the westbound dual left-turn lanes and any associated traffic-signal modifications. A new access permit and associated Notice-to-Proceed will be required.

Mesa Ridge Parkway/Spring Glen Drive Signal Escrow

- The Glen East Preliminary Plan traffic report contains an estimated signal escrow amount for the entire Preliminary Plan and states that the developer's percentage contribution toward this signal will be calculated and a proportional contribution made toward the signal

construction with each filing. The estimated proportional contribution is \$5,859 for Filing No. 11. Table 6 presents the signal escrow analysis for this intersection including the previously identified amounts for Filings 7, 8, 9, and 10 and the remaining amount for future filings.

Marksheffel Road/Peaceful Valley Road

- The Glen at Widefield East Preliminary Plan traffic report contains an estimated escrow amount for the Preliminary Plan and states that the developer's percentage contribution toward this signal will be calculated and a proportional contribution made toward the signal construction with each filing. The estimated proportional contribution is \$6,489 for Filing No. 10. Table 7 presents the signal escrow analysis for this intersection, including the previously identified amounts for Filings 7, 8 9, and 10 and the remaining amounts for future filings.

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. 10 will join the ten-mil PID. The ten-mil PID building permit fee portion associated with this option is \$1,221 per single-family dwelling unit. The total building permit fee would be \$125,763 for the 103 lots within Filing No. 11.

* * * * *

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 2-8
Figures 1-11
Traffic Count Reports
Level of Service Reports
Queuing Reports
Additional Attachments: The Glen at Widefield Filing 11

Tables and Figures



Table 2
Trip Generation Estimate
The Glen at Widefield Filing 11

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

Notes:

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

(2) DU = dwelling unit

Source: LSC Transportation Consultants, Inc.

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Table 3
The Glen at Widefield Filing 11
Traffic Signal Warrant Analysis of Mesa Ridge Pkwy/Marksheffel Rd

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 Minimum	West Leg
	Major ⁽²⁾	Minor ⁽³⁾	Major	Minor	Major	Minor	A	B		
Existing										
6:30 AM	831	153	420	105	630	53	Yes	Yes	75	Yes
7:30 AM	627	153	420	105	630	53	Yes	No	122	Yes
11:30 AM	389	176	420	105	630	53	No	No	221	No
12:30 PM	367	129	420	105	630	53	No	No	232	No
1:30 PM	321	170	420	105	630	53	No	No	255	No
2:30 PM	446	221	420	105	630	53	Yes	No	192	Yes
4:00 PM	696	296	420	105	630	53	Yes	Yes	101	Yes
5:00 PM	674	248	420	105	630	53	Yes	Yes	108	Yes
							5	3		5
Short-Term Total										
6:30 AM	924	159	420	105	630	53	Yes	Yes	64	Yes
7:30 AM	697	159	420	105	630	53	Yes	Yes	101	Yes
11:30 AM	448	188	420	105	630	53	Yes	No	191	No
12:30 PM	423	138	420	105	630	53	Yes	No	204	No
1:30 PM	370	181	420	105	630	53	No	No	230	No
2:30 PM	514	236	420	105	630	53	Yes	No	160	Yes
4:00 PM	802	316	420	105	630	53	Yes	Yes	80	Yes
5:00 PM	777	265	420	105	630	53	Yes	Yes	85	Yes
							7	4		5

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

Table 4
The Glen at Widefield Filing 11
Traffic Signal Warrant Analysis of Peaceful Valley Road/Marksheffel Rd

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		East Leg		70% Warrant Threshold Minor	West Leg	East Leg
	Major ⁽²⁾	West ⁽³⁾	East ⁽⁴⁾	Major	Minor	Major	Minor	A	B	A	B	Minimum	Leg	Leg
Existing⁽⁴⁾														
6:30 AM	955	59	34	420	105	630	53	No	Yes	No	No	62	No	No
7:30 AM	827	53	11	420	105	630	53	No	No	No	No	76	No	No
11:30 AM	709	36	7	420	105	630	53	No	No	No	No	98	No	No
12:30 PM	643	40	8	420	105	630	53	No	No	No	No	117	No	No
1:30 PM	572	42	9	420	105	630	53	No	No	No	No	140	No	No
2:30 PM	580	42	9	420	105	630	53	No	No	No	No	137	No	No
4:00 PM	967	32	14	420	105	630	53	No	No	No	No	62	No	No
5:00 PM	890	33	10	420	105	630	53	No	No	No	No	67	No	No
								0	1	0	0		0	0
Short-Term Total														
6:30 AM	988	59	82	420	105	630	53	No	No	No	Yes	61	No	Yes
7:30 AM	859	53	51	420	105	630	53	No	No	No	No	71	No	No
11:30 AM	740	36	28	420	105	630	53	No	No	No	No	92	No	No
12:30 PM	674	40	31	420	105	630	53	No	No	No	No	108	No	No
1:30 PM	606	42	34	420	105	630	53	No	No	No	No	128	No	No
2:30 PM	625	42	34	420	105	630	53	No	No	No	No	123	No	No
4:00 PM	1022	32	45	420	105	630	53	No	No	No	No	60	No	No
5:00 PM	945	33	41	420	105	630	53	No	No	No	No	63	No	No
								0	0	0	1		0	1

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) The minor leg volumes for the 11:30 am, 12:30 pm, 1:30 pm and 2:30 pm are estimates by LSC based on hourly distribution of entering and exiting vehicle trips by land use for single family detached housing published by the Institute of Transportation Engineers August 2018. Through traffic volumes are based on counts conducted at Mesa Ridge/Marksheffel.

Source: LSC Transportation Consultants, Inc.

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Table 5
Glen East Preliminar Plan CDOT Access Permit and Escrow Analysis
Mesa Ridge & Powers (SH 21)
The Glen at Widefield Filing 11

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

Source: LSC Transportation Consultants, Inc.

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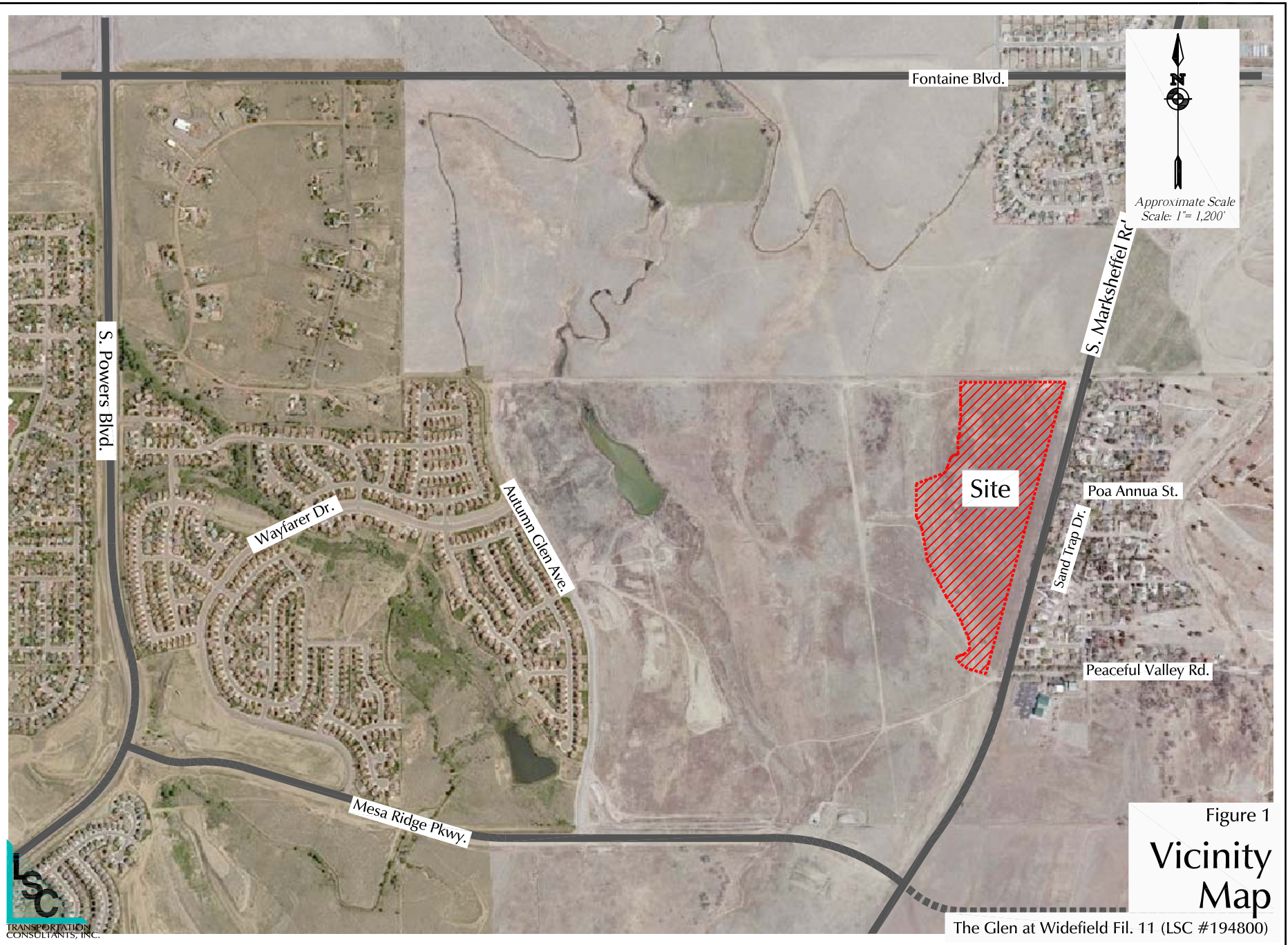
Table 6
Glen East Preliminary Plan County Intersection Escrow Analysis
Mesa Ridge Parkway & Spring Glen Drive Intersection
The Glen at Widefield Filing 10

Subdivisions Currently Proposed			Signal Escrow Amounts
Subdivision Name	Number of Lots	Status	Portion of Total Escrow of \$33,750
Filing 7	148	Platted	\$8,875
Filing 8	101	Platted	\$6,057
Filing 9	107	Plat Approved - not recorded	\$6,189
Filing 10	40	Pending	\$2,276
Filing 11	103	Pending	\$5,859
Remaining Filings	79	Future	\$4,494
			\$33,750
Source: LSC Transportation Consultants, Inc.			Jul-20

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

Subdivisions Currently Proposed			Signal Escrow Amounts
Subdivision Name	Number of Lots	Status	Portion of Total Escrow of \$36,250
Filing 7	148	Platted	Deferred to Fil 8
Filing 8	101	Platted	\$15,615
Filing 9	107	Plat Approved - not recorded	\$6,648
Filing 10	40	Pending	\$2,521
Filing 11	103	Future	\$6,489
Remaining Filings	79	Future	\$4,977
			\$36,250
Note: The escrow amount for Filing 8 includes the deferred amount for Filing 7			
Source: LSC Transportation Consultants, Inc.			Jul-20

<p align="center">Table 8 Recommended Short-Term Improvements The Glen at Widefield Filing No. 11</p>		
Description	Trigger	Timing
Westbound right-turn deceleration Lane on Mesa Ridge Parkway approaching Spring Glen Drive	Eastbound right-turn volume of 25 vehicles per hour	With Filing 10 if the west leg of Peaceful Valley/Marksheffel is restricted to right-in/right-out only
Westbound right-turn acceleration lane on Mesa Ridge Parkway at Spring Glen Drive	Southbound right-turn volume of 50 vehicles per hour (Existing southbound right-turn volume is 68 vehicles per hour)	Once the full four-lane Principal Arterial section is completed, it is anticipated that the acceleration lane will be implemented at that time. The width for a future westbound right-turn acceleration lane on Mesa Ridge Parkway will become available as the half-section to be built with the initial Mesa Ridge construction will be sufficiently wide. This has been shown on the Mesa Ridge Parkway design plans
Restrict the west leg of Marksheffel/Peaceful Valley to right-in/right-out only. The right-turn restriction could be accomplished by installing a right-turn "island", pavement markings and signs on the west leg.	When the level of service for the eastbound left-turn movement at the intersection of Marksheffel/Peaceful Valley drops below an acceptable level (LOS D)	With The Glen at Widefield Filing No. 10 (per the Filing 10 traffic report).
Restriping of the painted center median on Marksheffel Road at and in the vicinity of Peaceful Valley Road as an exclusive northbound left-turn deceleration lane with taper according to ECM standards. The white channelized T pavement markings in the center of the intersection will also need to be removed.	With future signalization of this intersection (assuming the interim restriction to RI/RO)	With future signalization of this intersection (assuming the interim restriction to RI/RO)
Restripe the painted center median on Marksheffel Road in the vicinity of Mesa Ridge Parkway to create an interim "Channelized Tee" type intersection. This would include a dedicated northbound left-turn lane and a dedicated northbound left-turn acceleration lane similar to the existing striping at the intersection of Marksheffel/Peaceful Valley. Please refer to the report text for lane dimensions and other details.	With Glen at Widefield Filing No. 10 or when the level of service for the eastbound left-turn movement at the intersection of Marksheffel/Mesa Ridge drops below an acceptable level (LOS D) or operations/safety indicate the need.	With The Glen at Widefield Filing 10. NOTE: the need for this improvement is primarily driven by background traffic.
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 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 (Existing southbound right-turn volume is 20 vehicles per hour) Based on Minor Arterial Classification: Southbound right-turn volume of 50 vehicles per hour	With The Glen at Widefield Filing No. 10
Southbound right-turn acceleration lane on Marksheffel Road at Poa Annua Street.	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 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 475foot left turn lanes (plus transition taper) would be adequate to accommodate the projected queues. Deceleration distance would not be necessary, as Powers/Mesa Ridge is a T-intersection. New redirect tapers would be required east of the dual left turn lanes to transition to the existing cross section. The taper ratio should be 45:1.	Once the westbound left-turn queue regularly exceeds the length of the existing single left-turn lane	With The Glen at Widefield Filing No. 10
Source: LSC Transportation Consultants, Inc.		8/6/2020



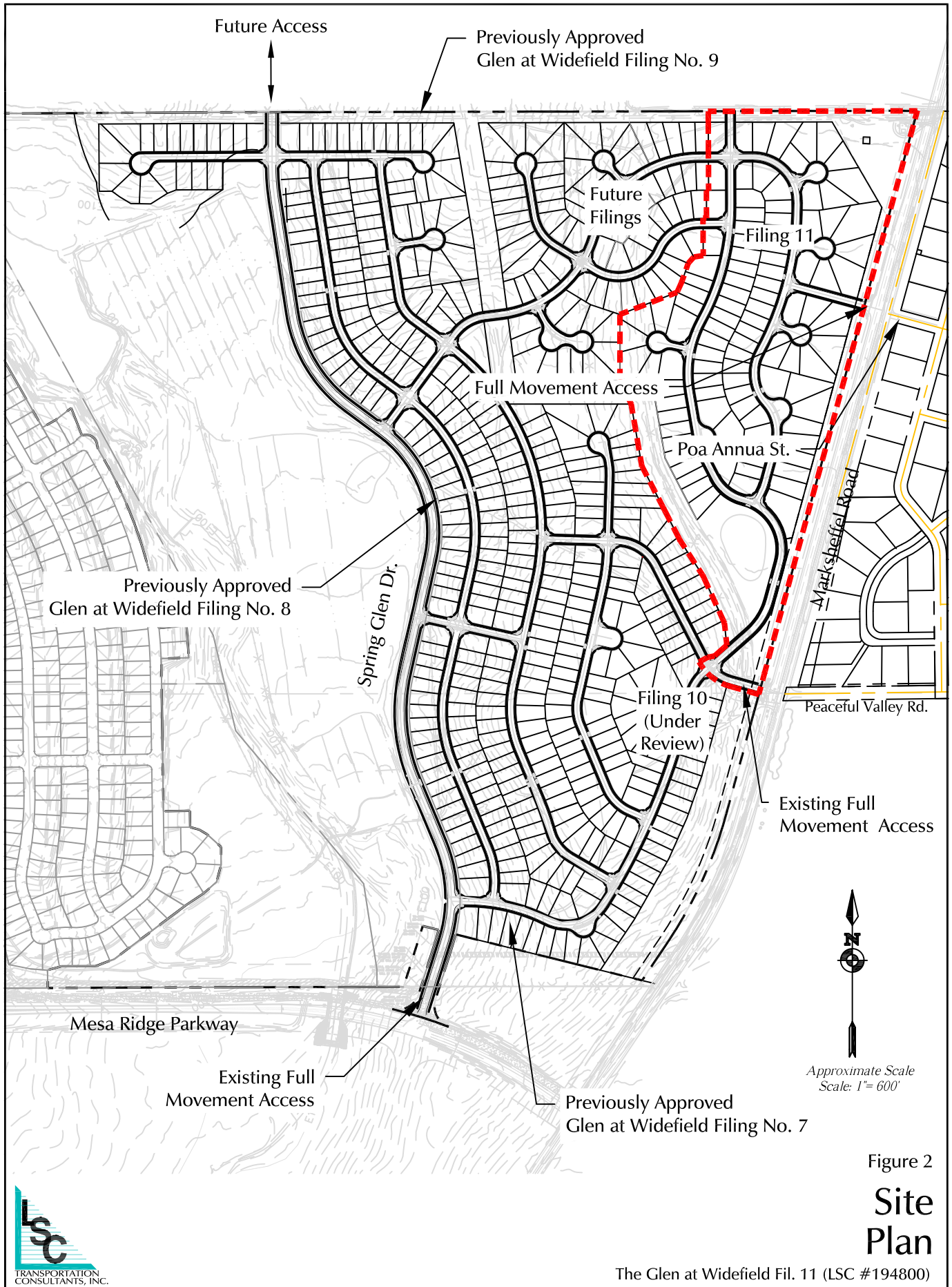
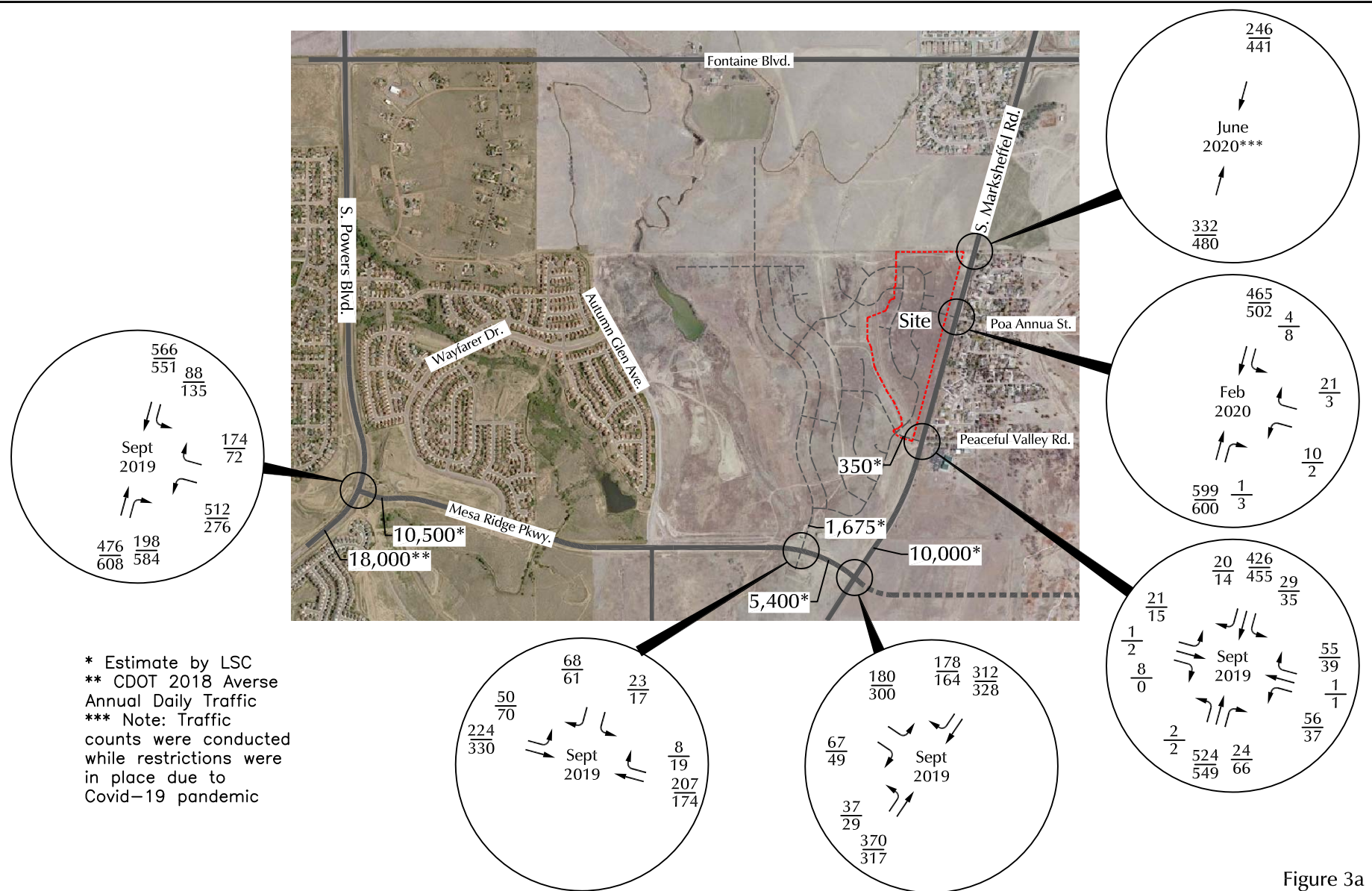


Figure 2
Site Plan

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



* Estimate by LSC
 ** CDOT 2018 Averse Annual Daily Traffic
 *** Note: Traffic counts were conducted while restrictions were in place due to Covid-19 pandemic

LEGEND:



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

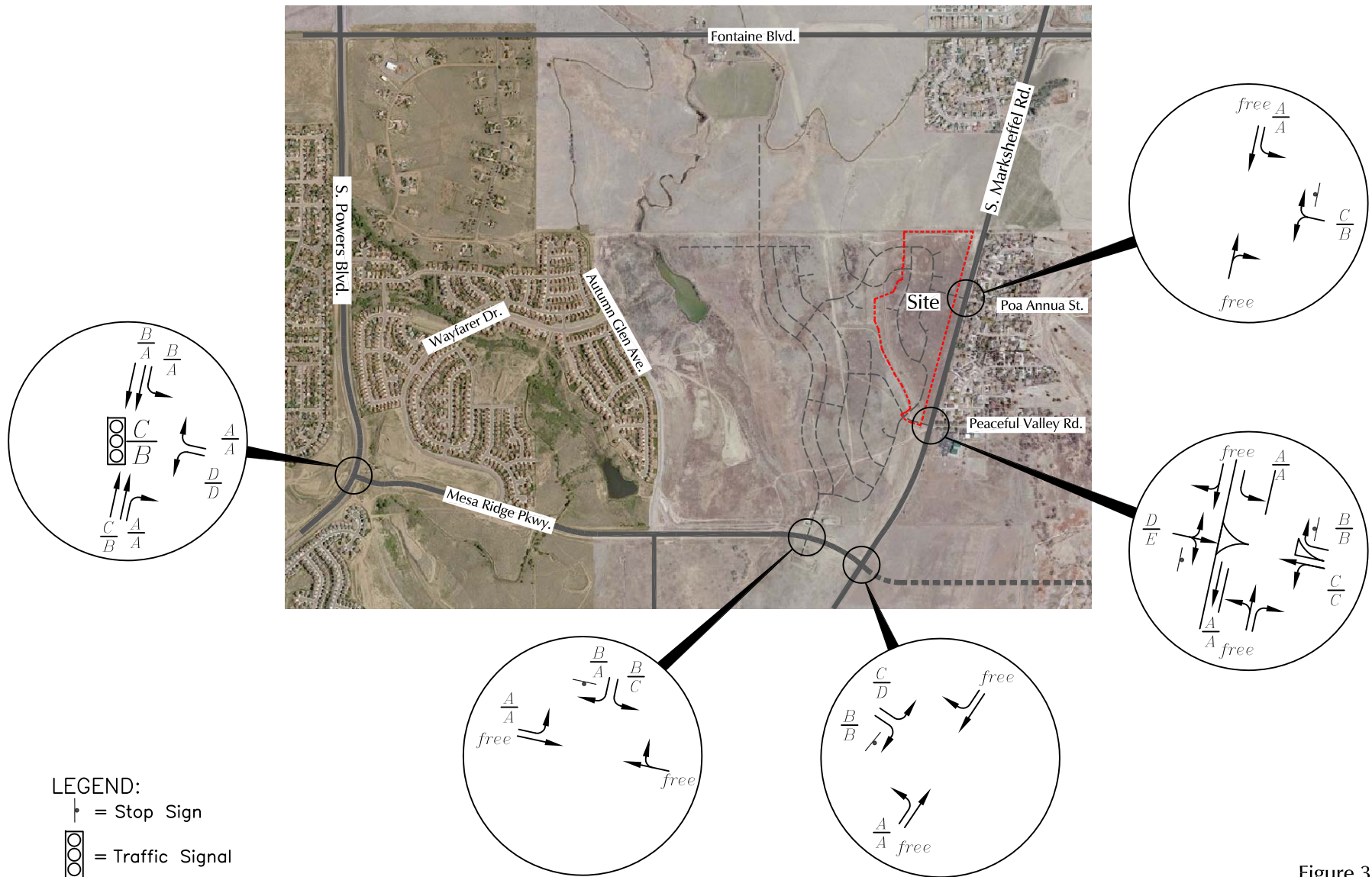
X,XXX = Average Weekday Traffic (vehicles per day) *Estimates by LSC

Based on counts by LSC September 2019

Figure 3a

Existing Traffic

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



LEGEND:

 = Stop Sign

 = Traffic Signal

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

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

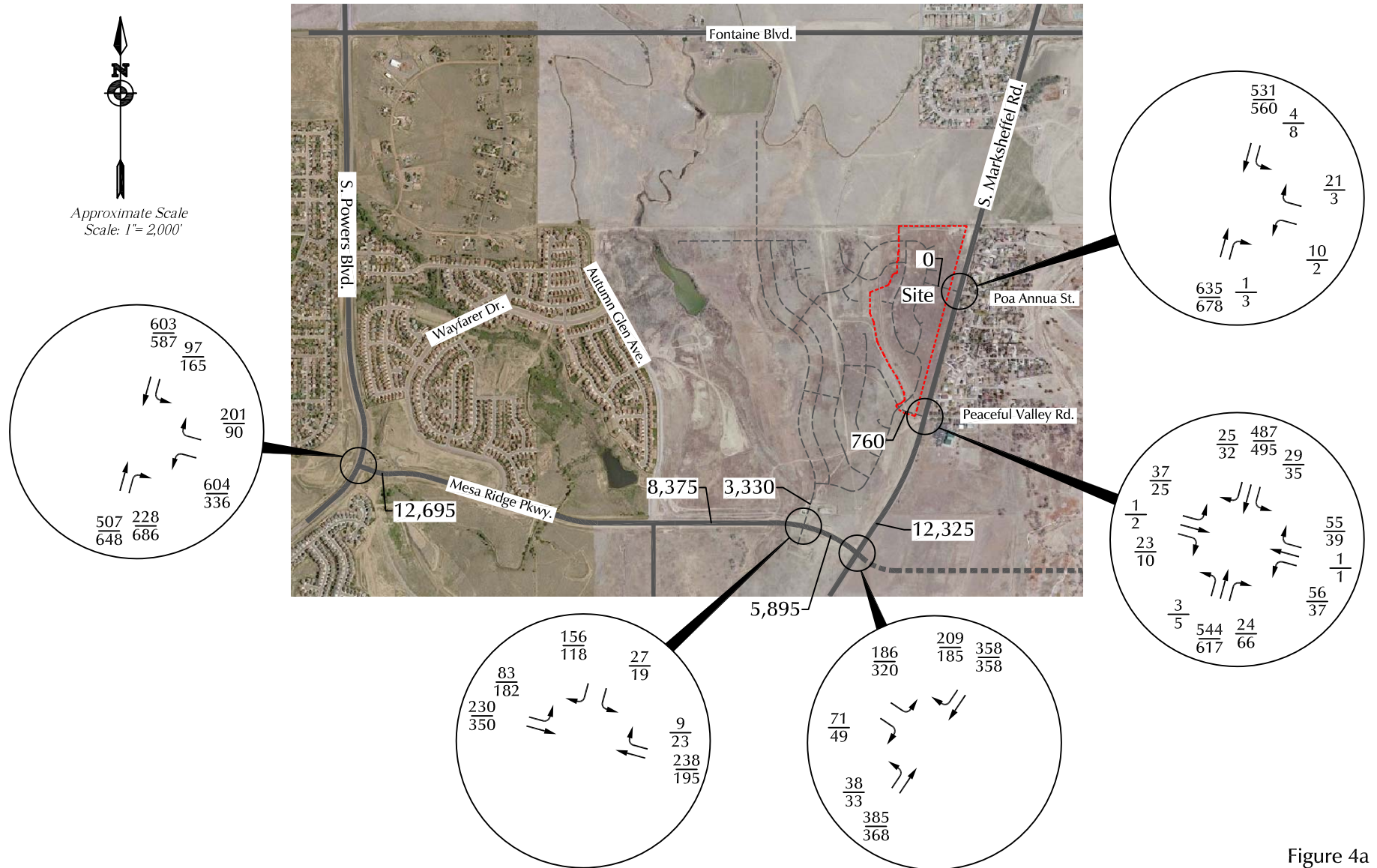
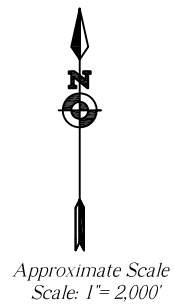
$\frac{C}{D}$ = AM Entire Intersection Peak-Hour Level of Service

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

Figure 3b

Existing Lane Geometry, Traffic Control and Level of Service

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



LEGEND:

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

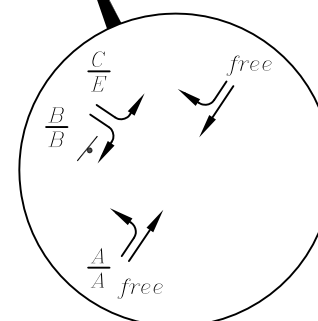
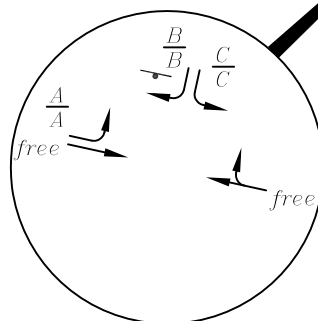
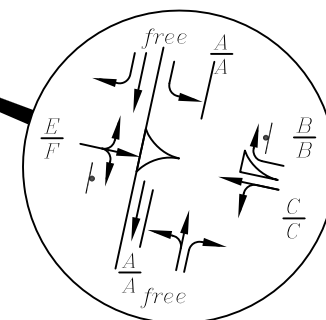
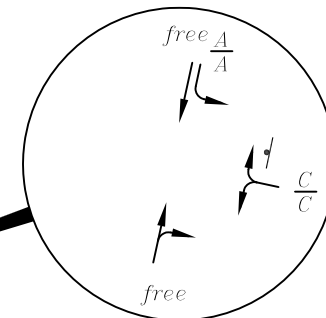
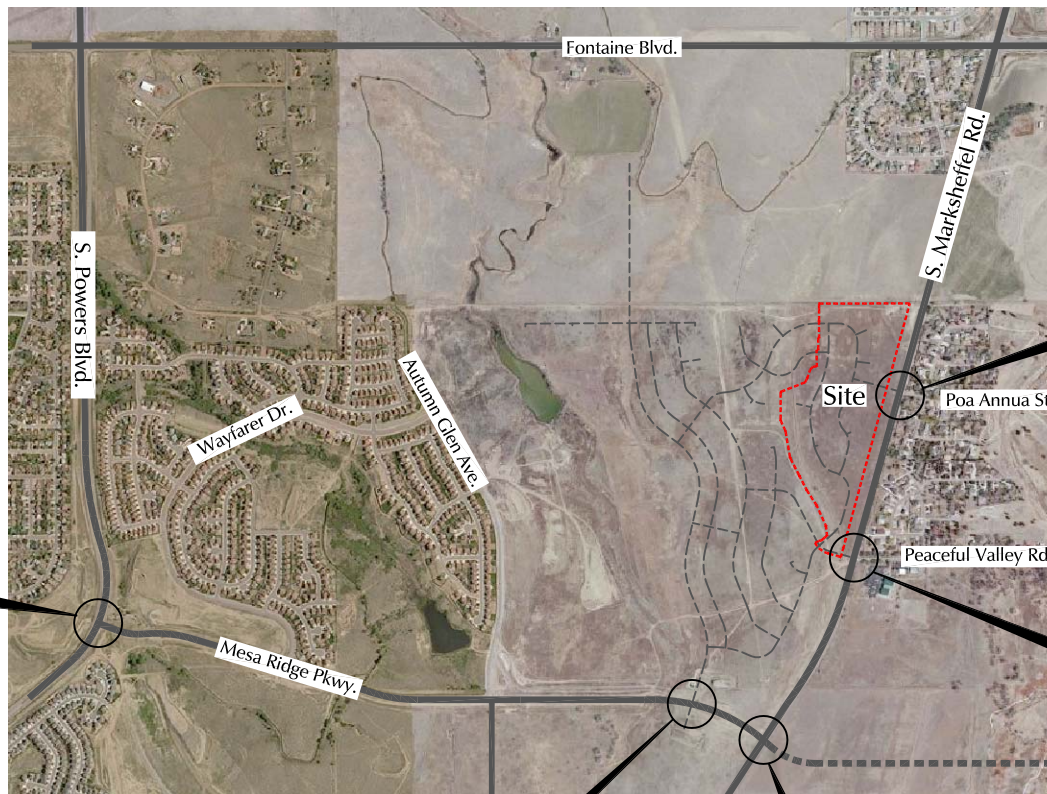
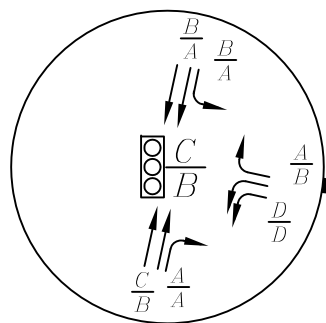
XXX = Average Weekday Traffic (vehicles per day)

Figure 4a

Short-Term Background Traffic

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

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



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

Figure 4b

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

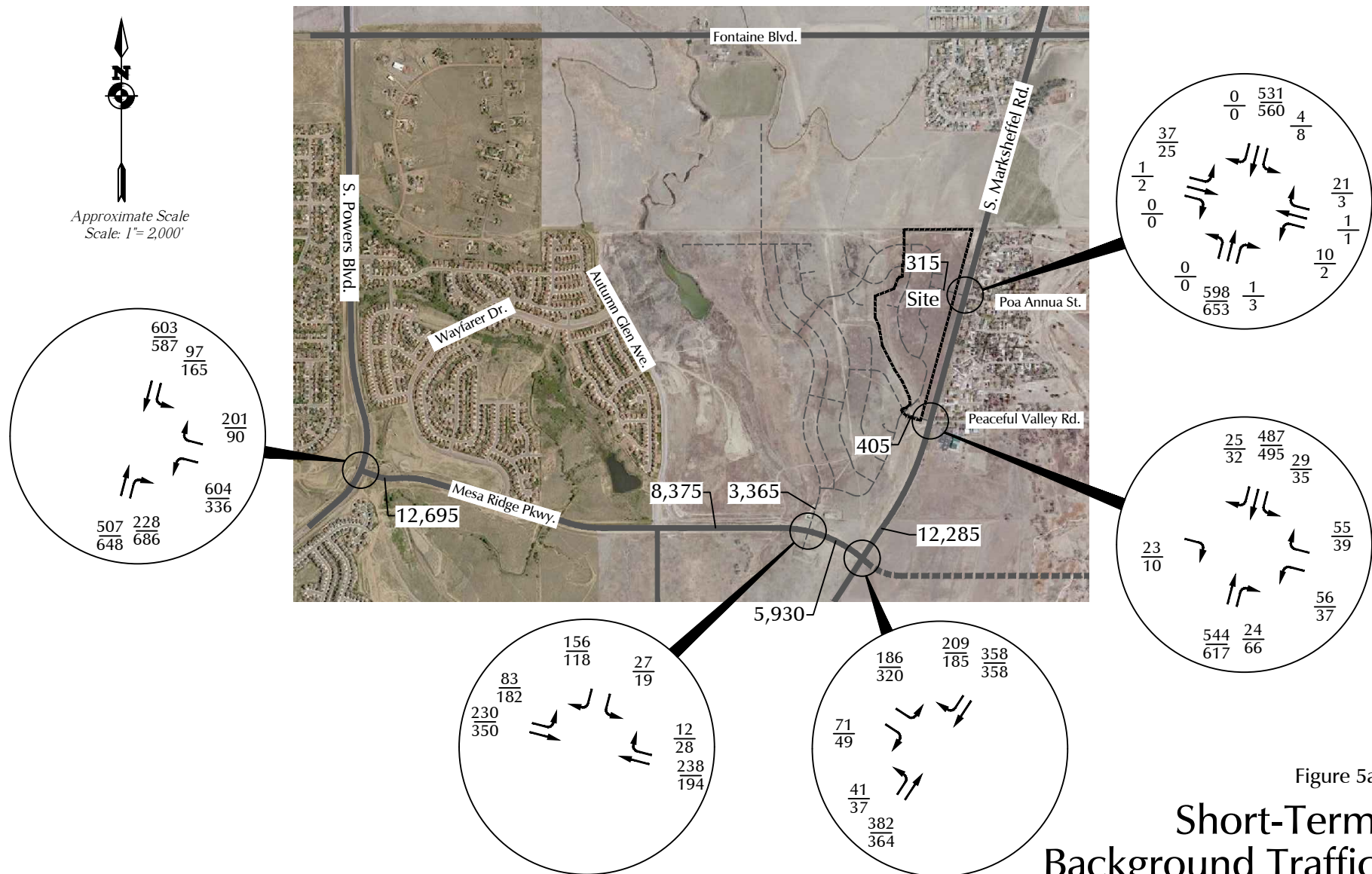
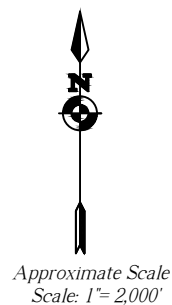


Figure 5a

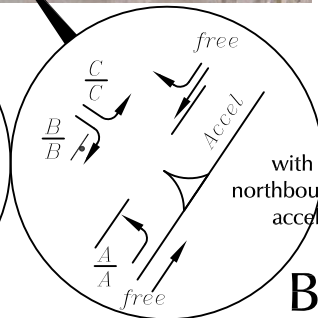
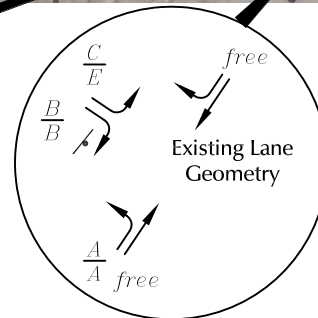
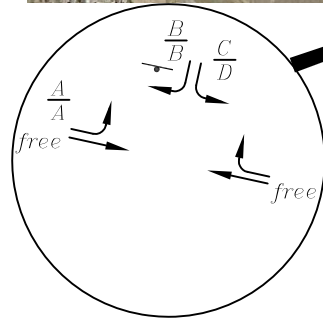
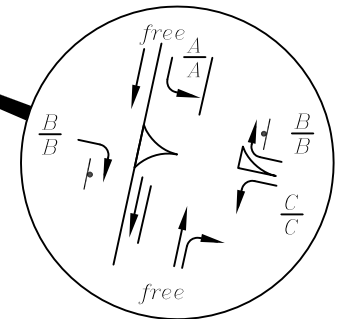
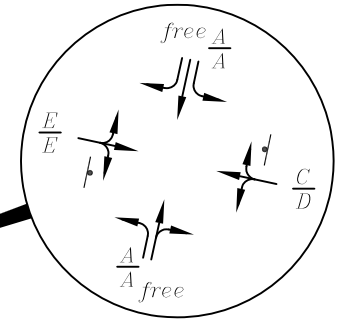
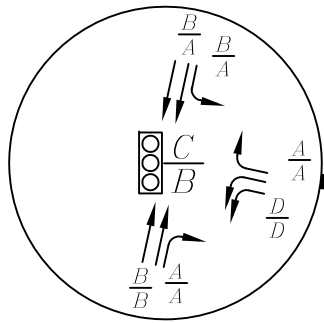
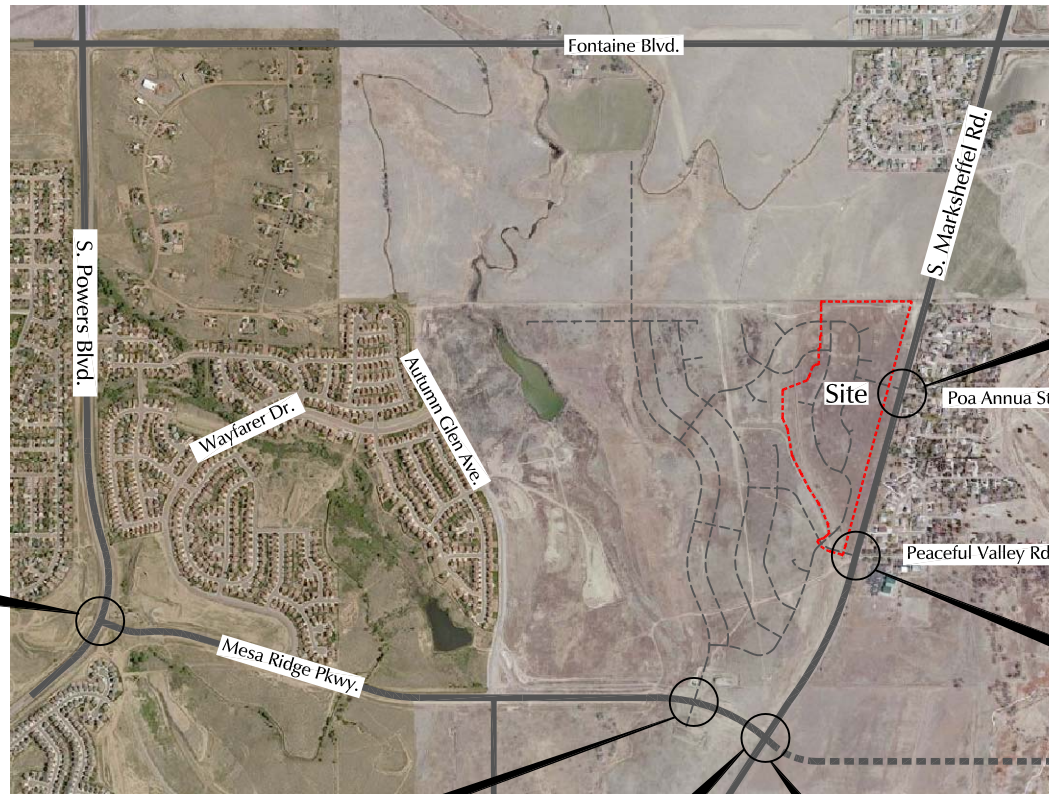
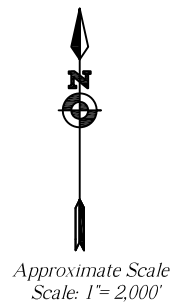
Short-Term Background Traffic with West Leg of Peaceful Valley Road Restricted to Right-In/Right-Out Only

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



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)



LEGEND:

= Stop Sign

= Traffic Signal

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

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

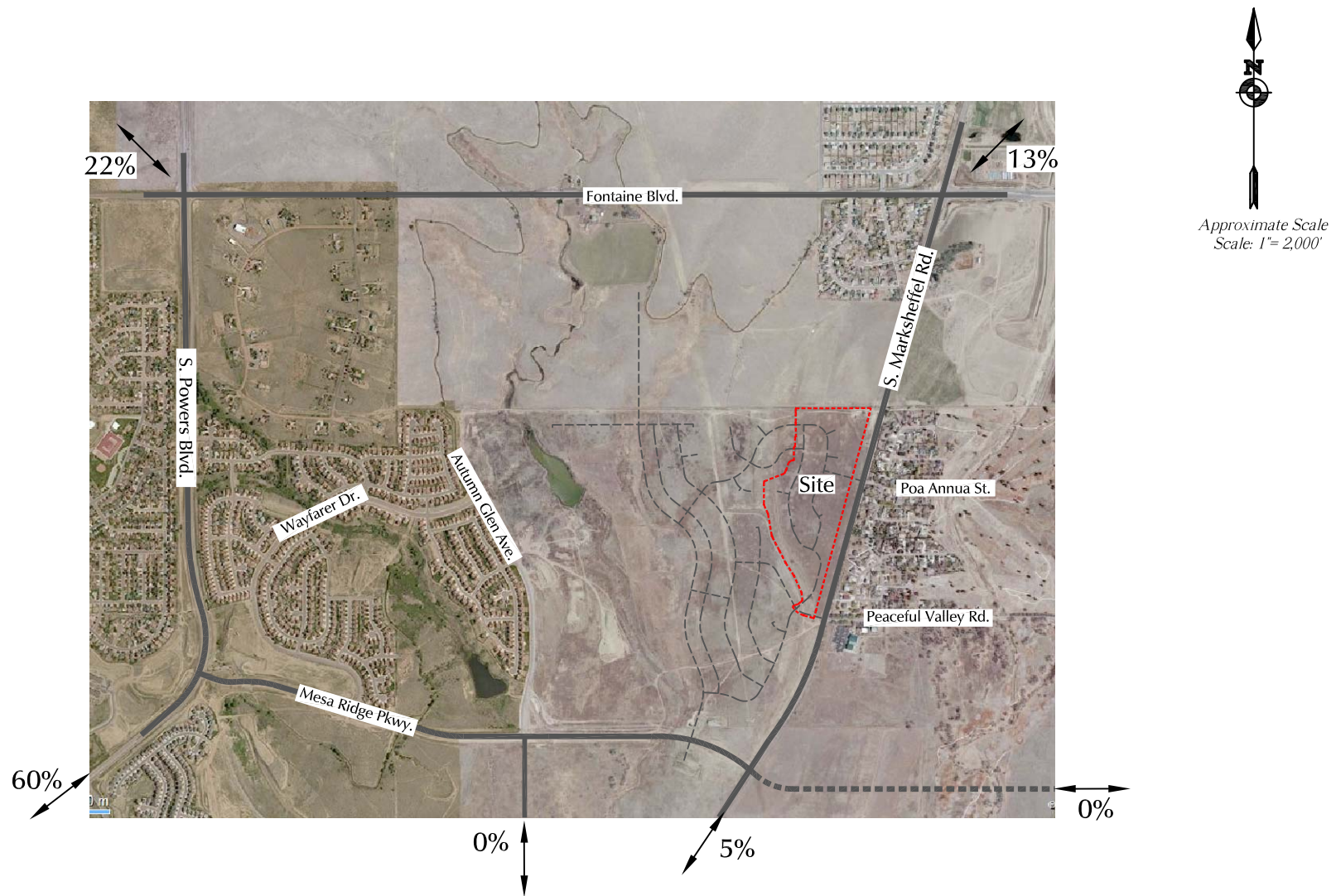


Geometry, Traffic Control and Level of Service with West Leg of Peaceful Valley Road Restricted to Right-In/Right-Out Only


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


Figure 5b

Short-Term Background Lane



LEGEND:

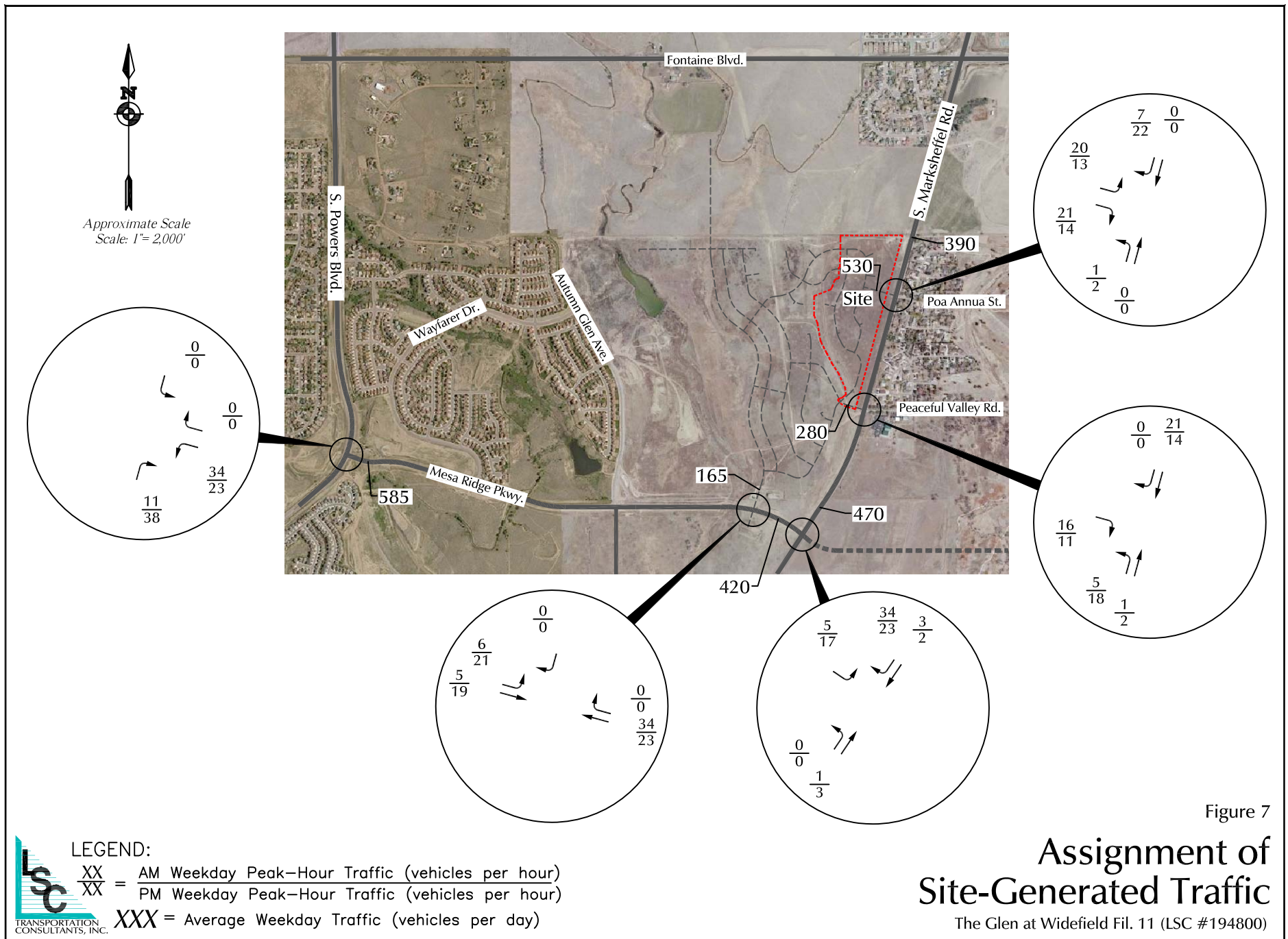

 XX% = Short-Term Percent Directional Distribution

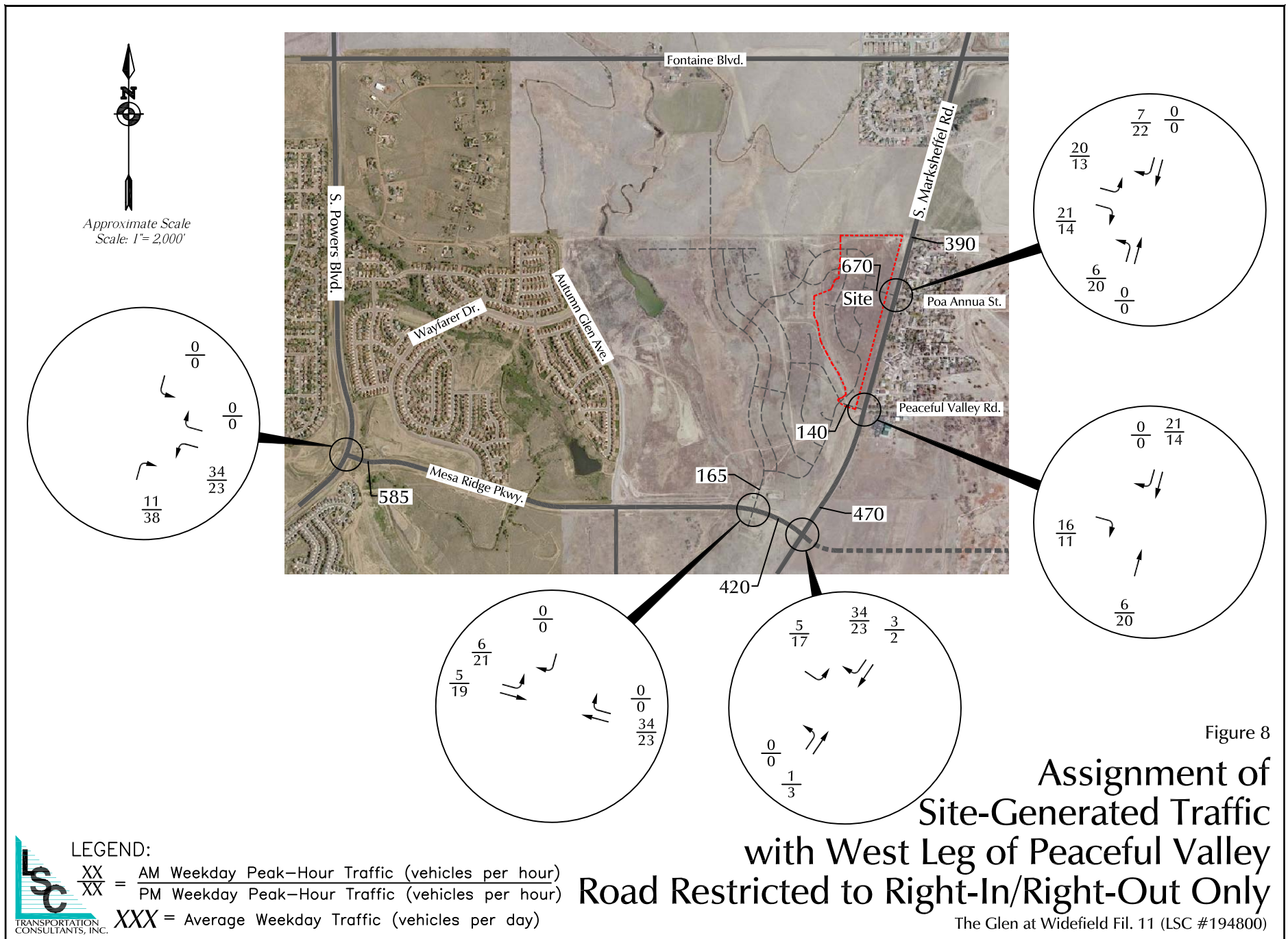

 TRANSPORTATION
CONSULTANTS, INC.

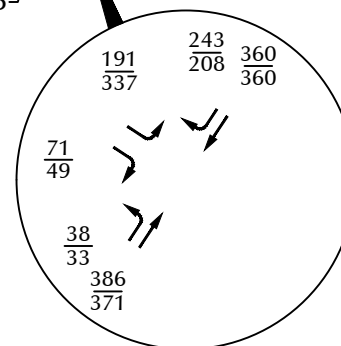
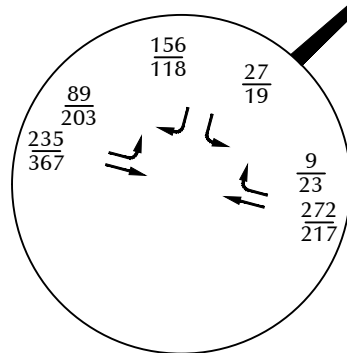
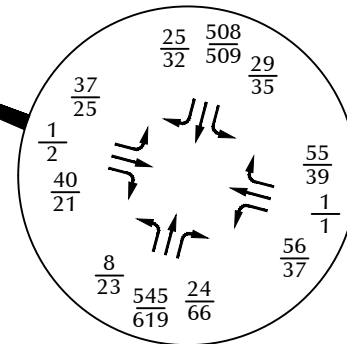
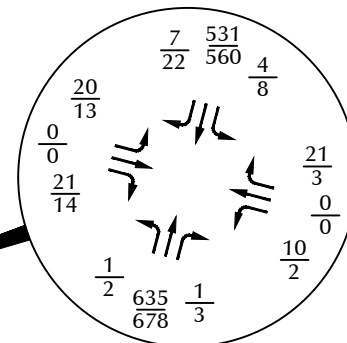
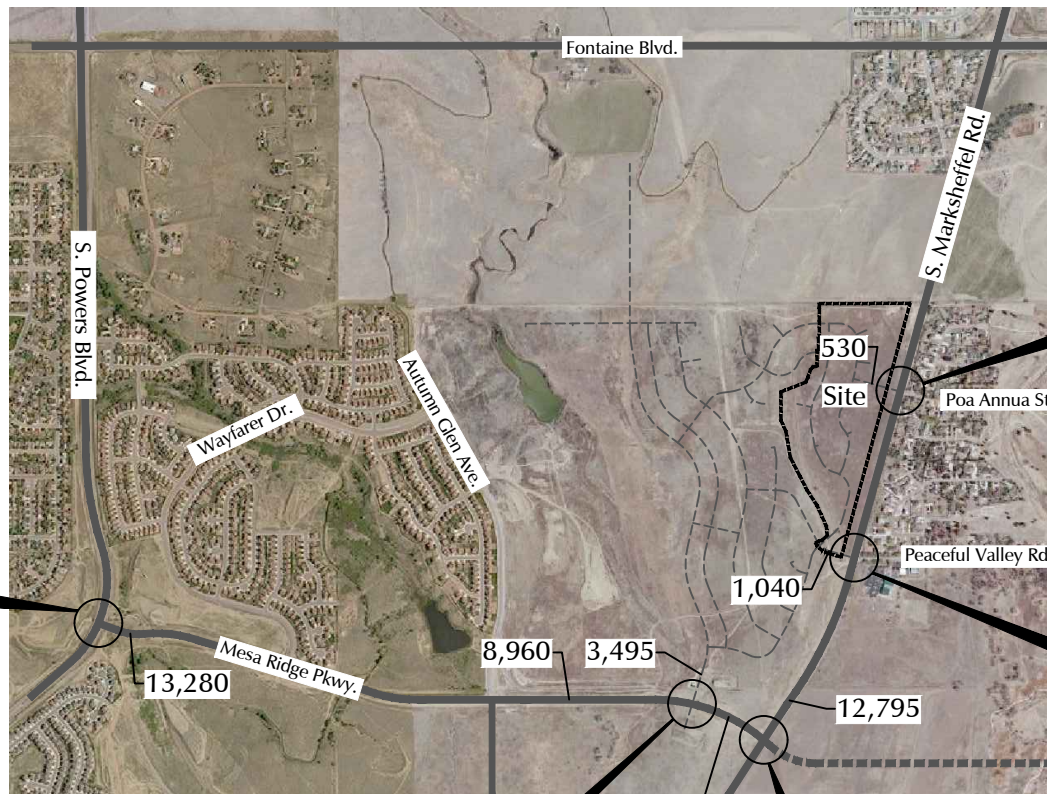
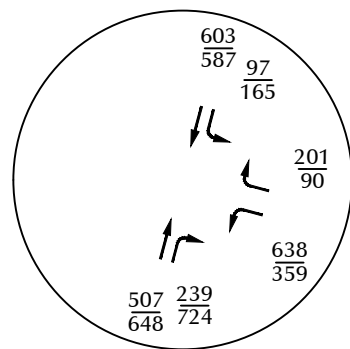
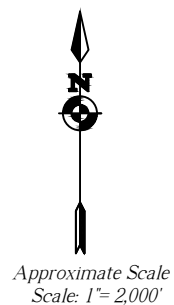
Estimated Directional Distribution of Site-Generated Traffic

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

Figure 6







LEGEND:

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

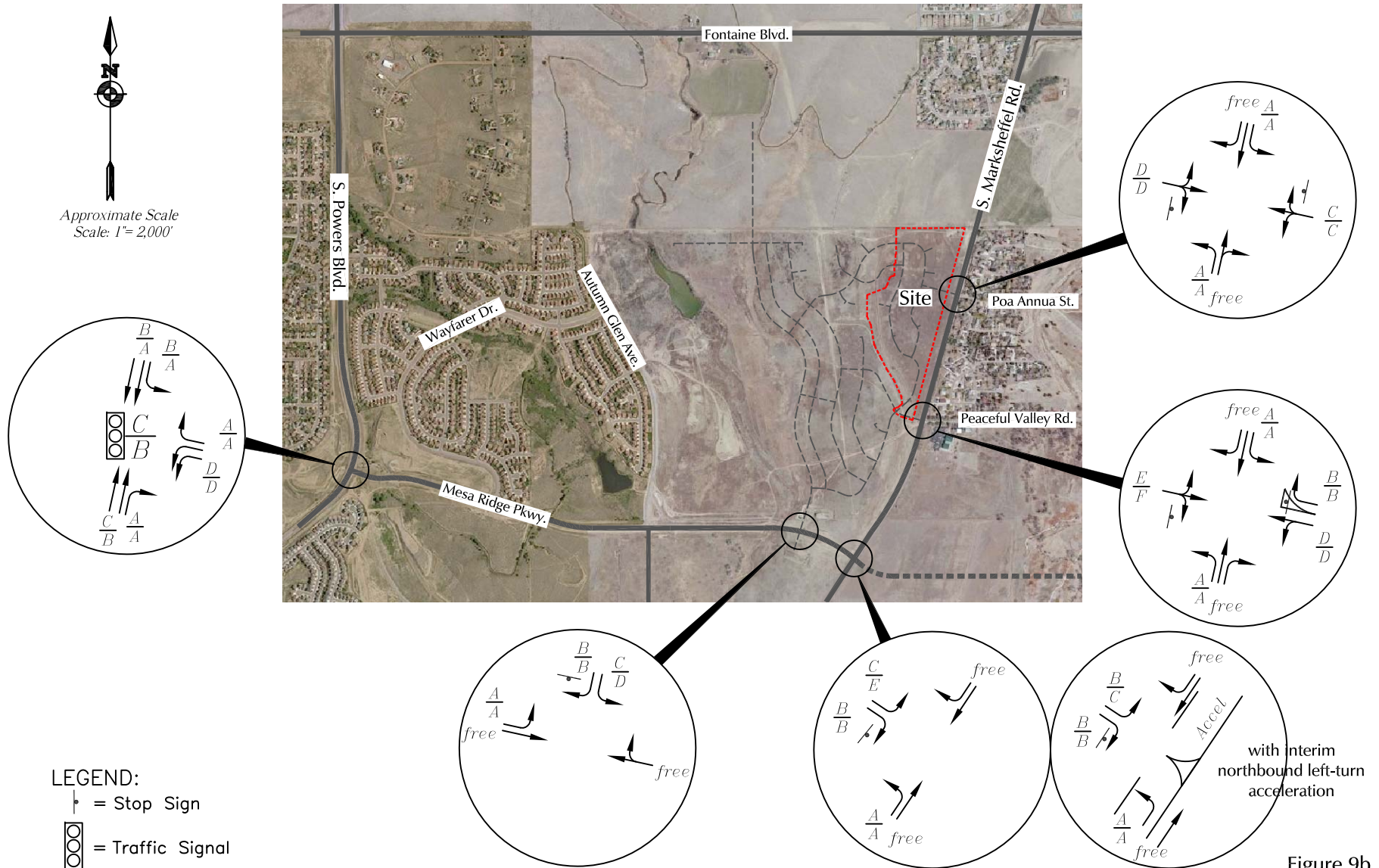
XXX = Average Weekday Traffic (vehicles per day)

Figure 9a

Short-Term Total Traffic

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

Approximate Scale
Scale: 1"= 2,000'



LEGEND:

⊥ = Stop Sign

⊞ = Traffic Signal

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

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

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

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



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

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

Figure 9b

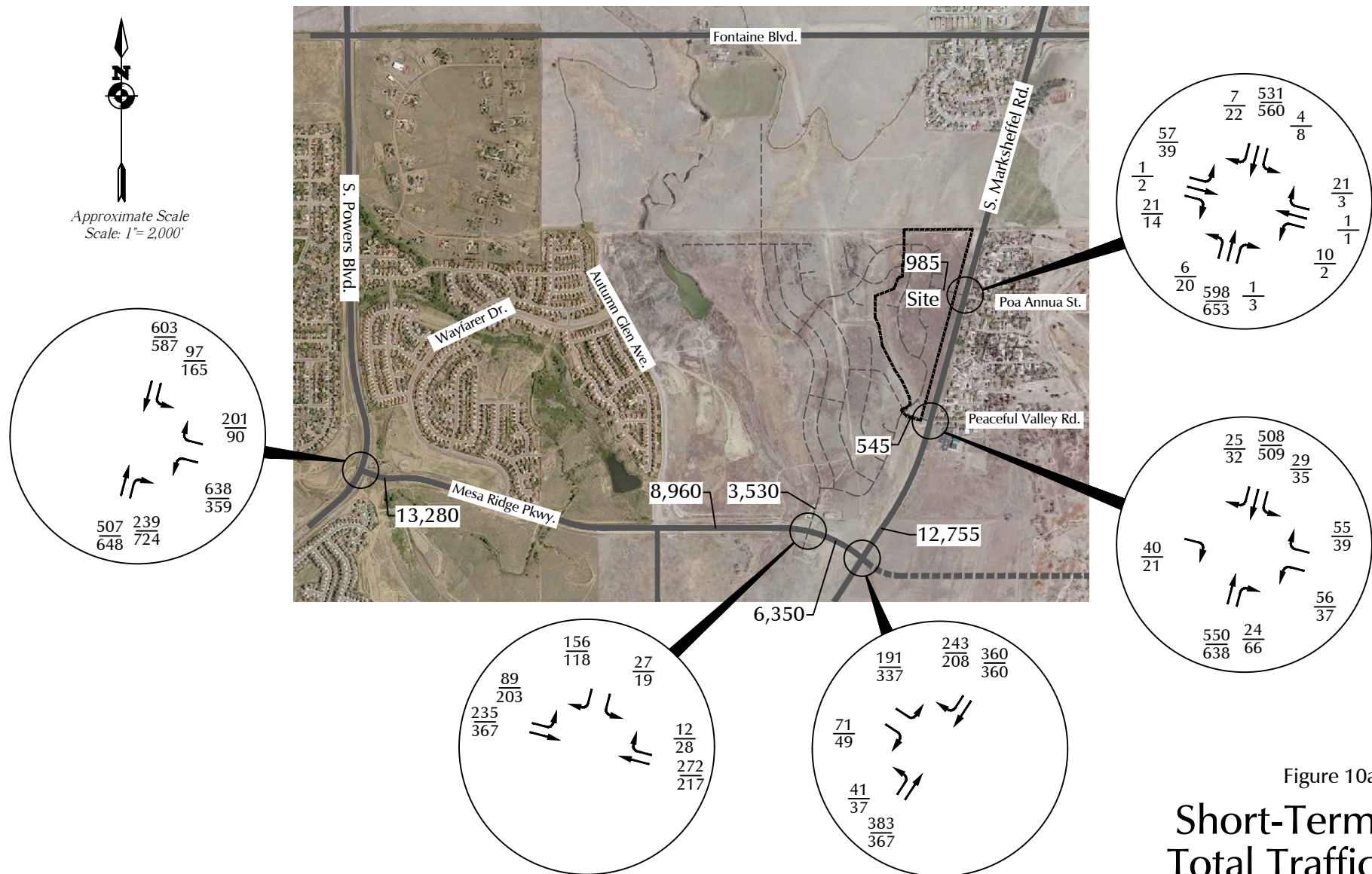
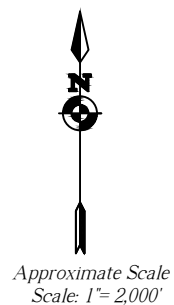


Figure 10a

**Short-Term
Total Traffic
with West Leg of Peaceful Valley
Road Restricted to Right-In/Right-Out Only**

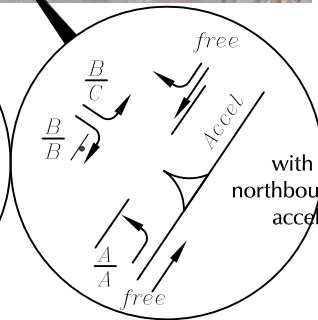
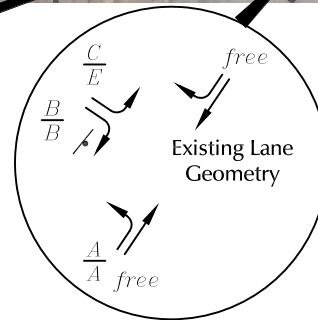
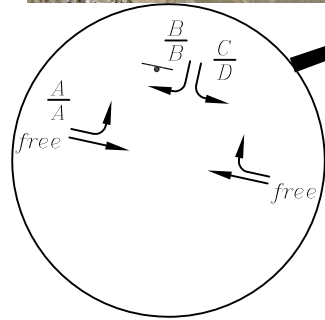
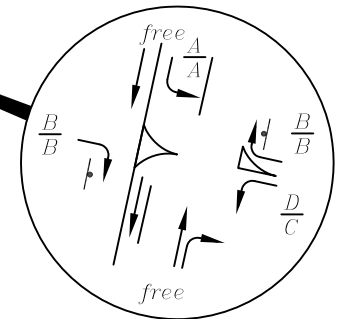
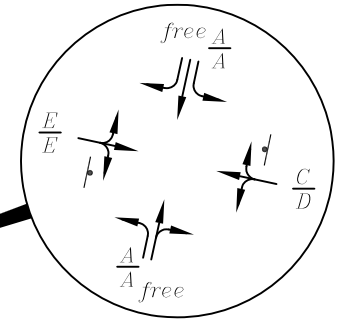
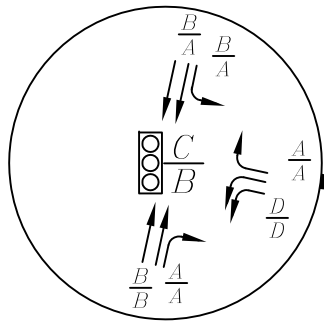
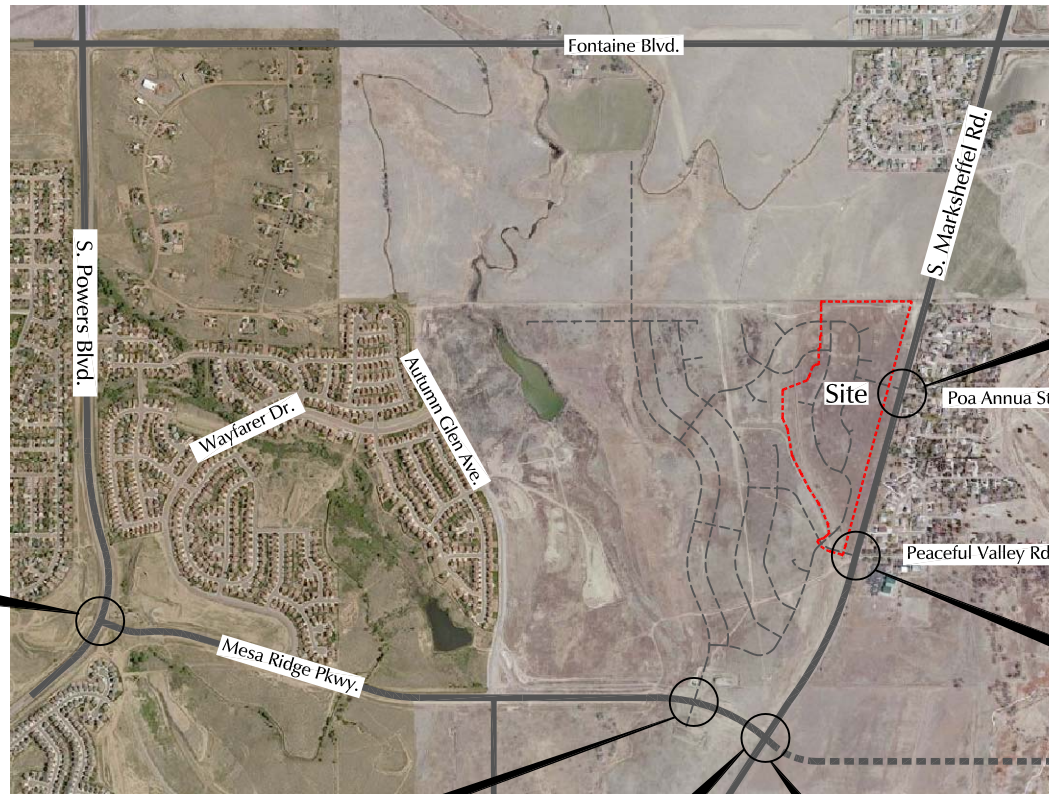
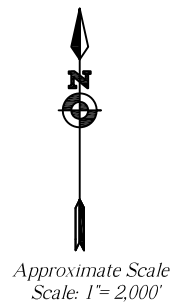


LEGEND:

$\frac{XX}{XX}$ = 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)

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



LEGEND:

⏏ = Stop Sign

⦿ = Traffic Signal

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

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

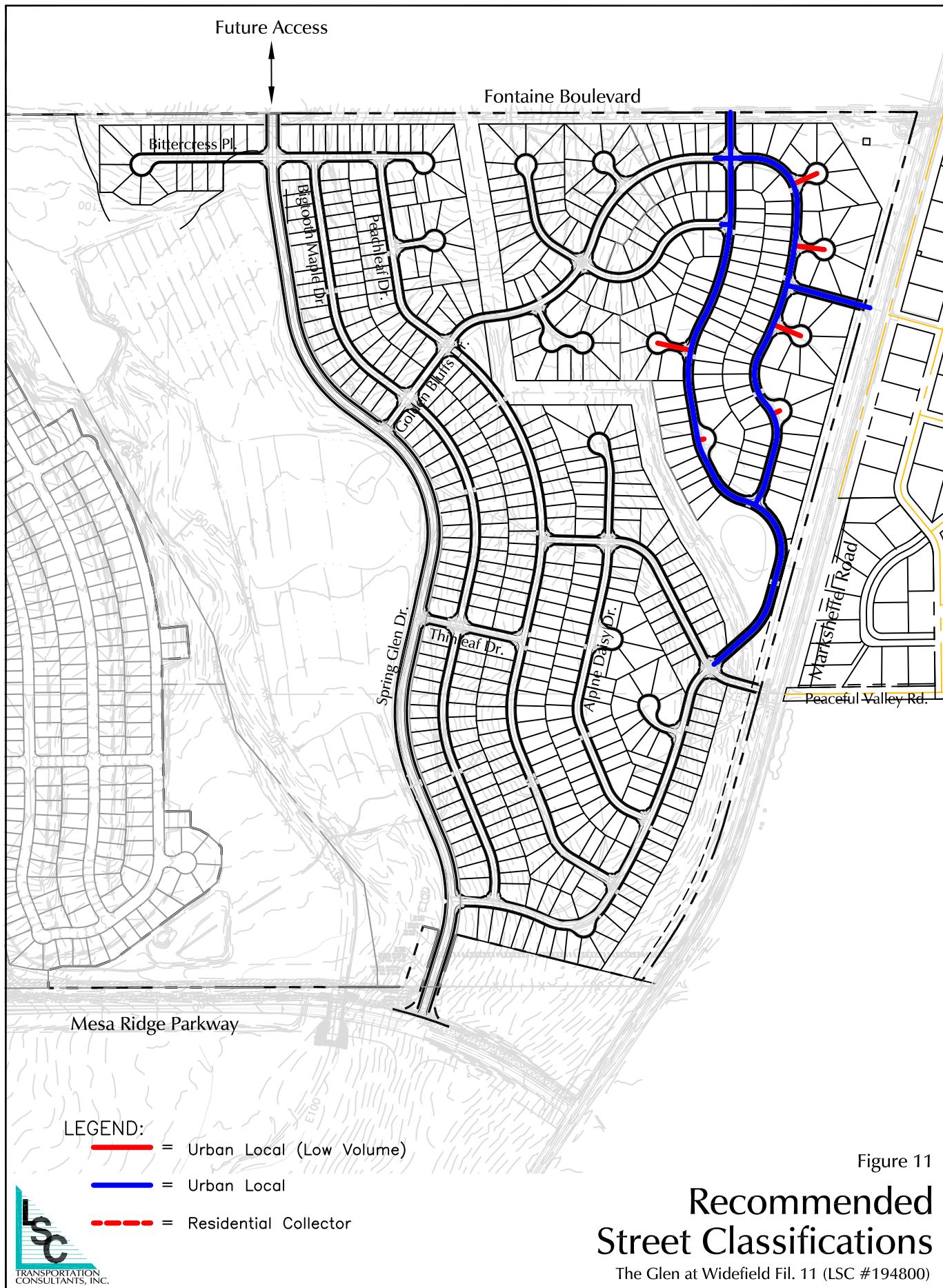


Geometry, Traffic Control and Level of Service with West Leg of Peaceful Valley Road Restricted to Right-In/Right-Out Only

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

Figure 10b

Short-Term
Total Lane



Traffic Counts



LSC Transportation Consultants, Inc.

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

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

Site Code : 00194800

Start Date : 9/25/2019

Page No : 1

Groups Printed- Unshifted

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



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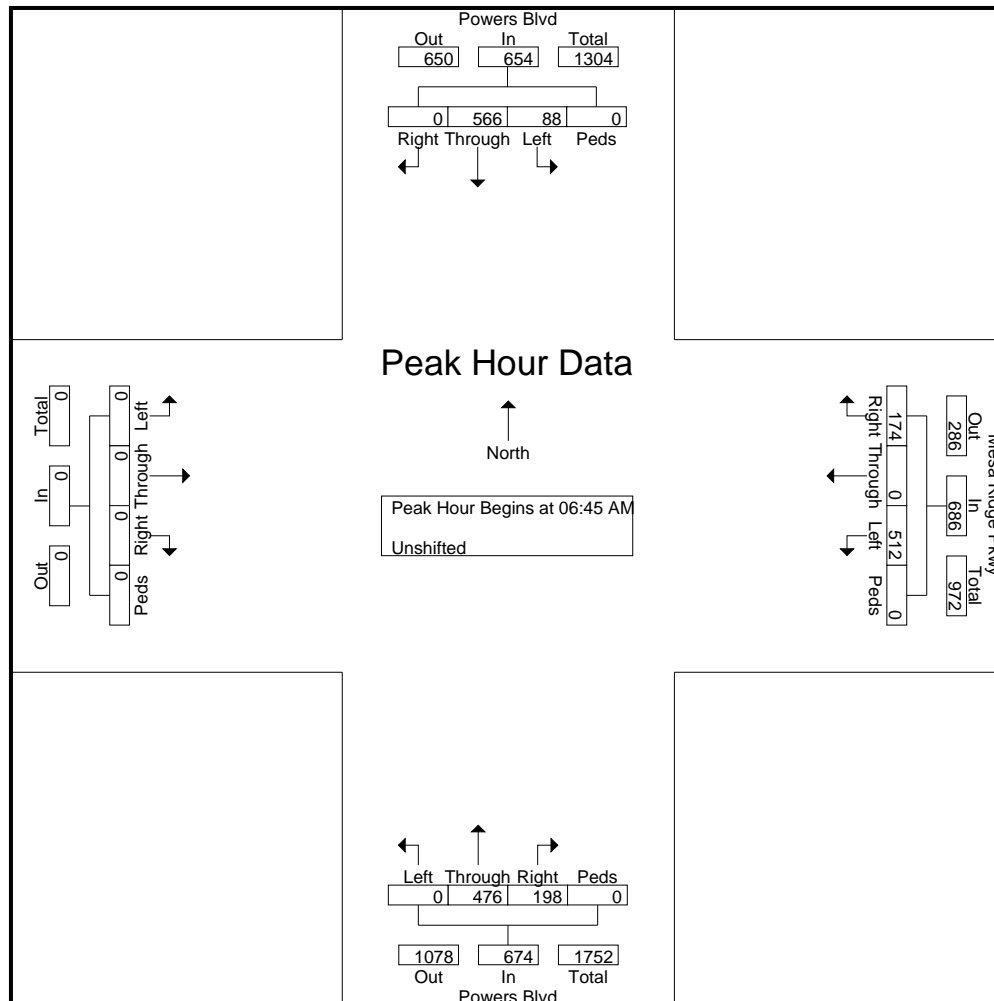
File Name : Powers Blvd - Mesa Ridge Parkway AM 9-19

Site Code : 00194800

Start Date : 9/25/2019

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





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Groups Printed- Unshifted

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



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Site Code : 00194800

Start Date : 9/18/2019

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Groups Printed- Unshifted

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



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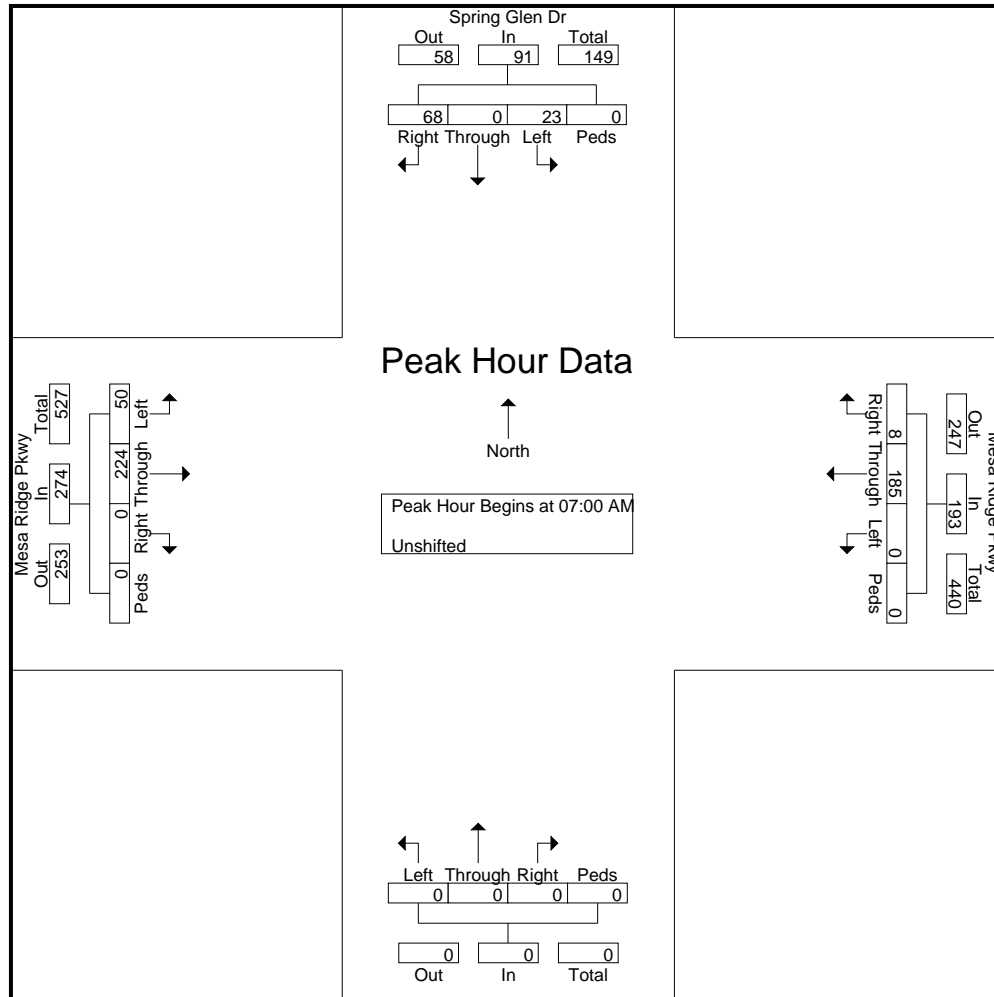
File Name : Spring Glen Dr - Mesa Ridge Pkwy AM

Site Code : 00194800

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	Spring Glen Dr Southbound					Mesa Ridge Pkwy Westbound					Northbound					Mesa Ridge Pkwy Eastbound					
Start Time	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Int. Total
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





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File Name : Spring Glen Dr - Mesa Ridge Pkwy PM

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Groups Printed- Unshifted

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



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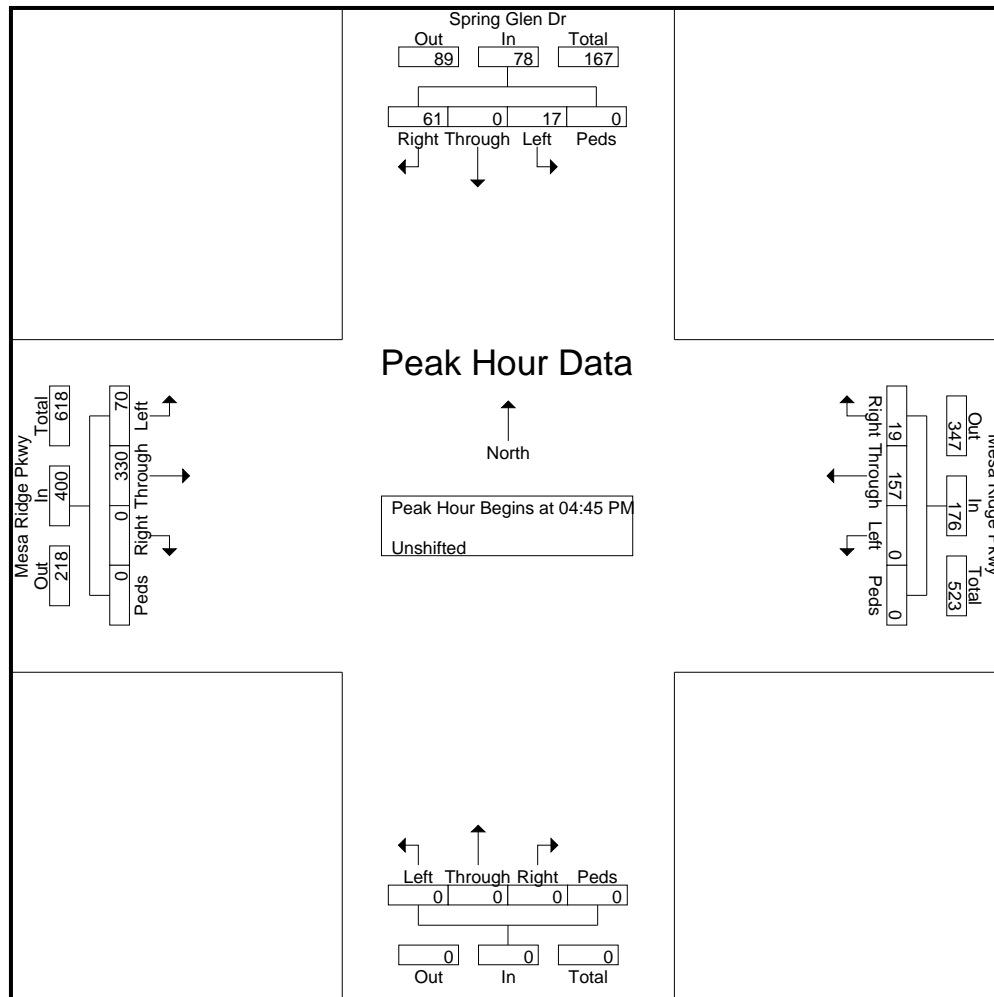
File Name : Spring Glen Dr - Mesa Ridge Pkwy PM

Site Code : 00194800

Start Date : 9/18/2019

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	Spring Glen Dr Southbound					Mesa Ridge Pkwy Westbound					Northbound					Mesa Ridge Pkwy Eastbound					
Start Time	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Int. Total
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





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

Site Code : 00194800

Start Date : 9/25/2019

Page No : 1

Groups Printed- Unshifted

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



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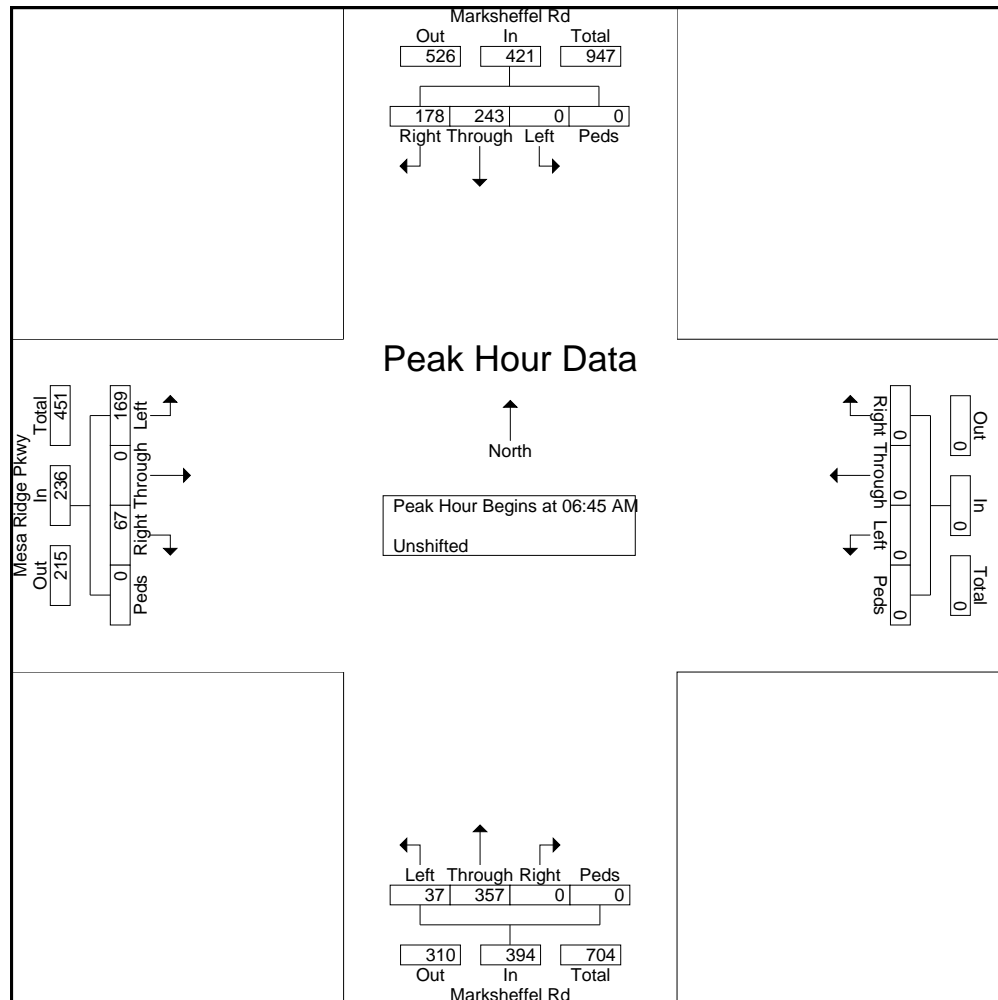
File Name : marksheffel rd - mesa ridge pkwy am 9-19

Site Code : 00194800

Start Date : 9/25/2019

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





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719-633-2868

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

Site Code : 00194800

Start Date : 9/25/2019

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Groups Printed- Unshifted

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



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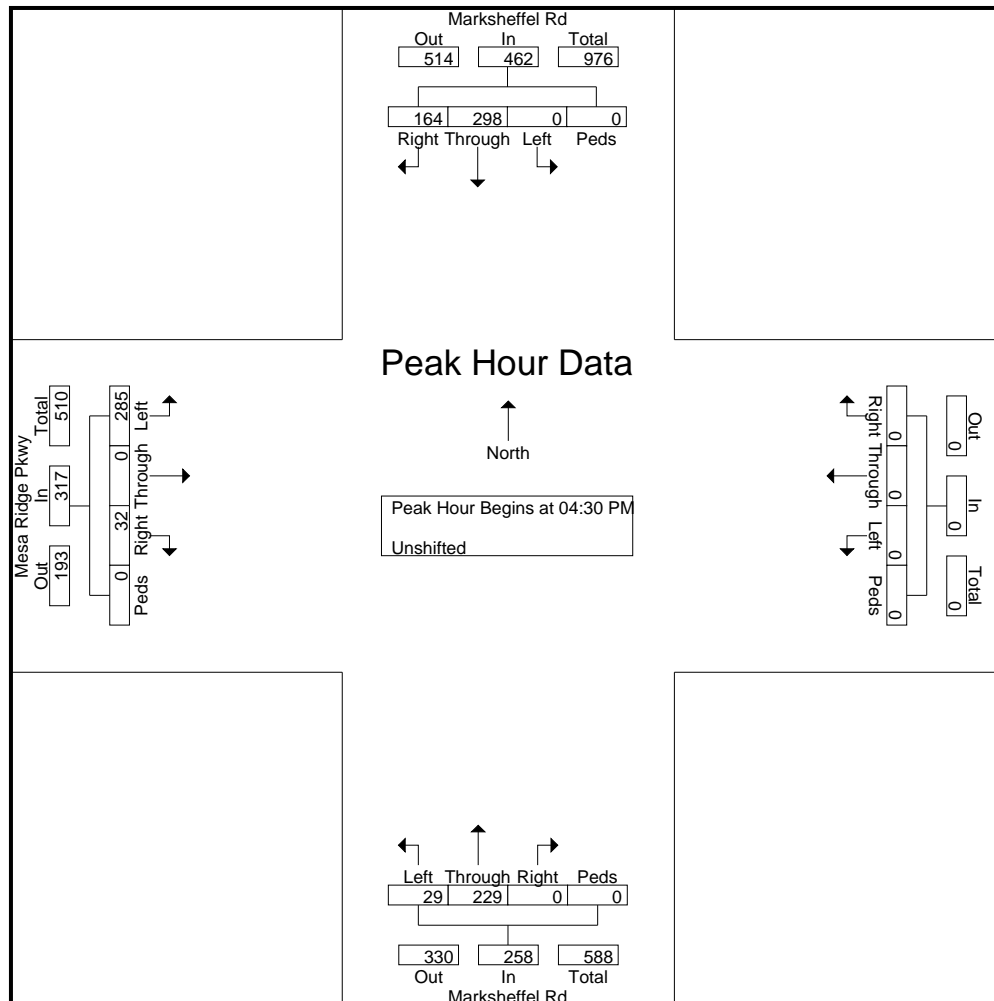
File Name : Marksheffel Rd - Mesa Ridge Pkwy PM 9-19

Site Code : 00194800

Start Date : 9/25/2019

Page No : 2

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





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

Site Code : 194800

Start Date : 9/12/2019

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Groups Printed- Unshifted

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



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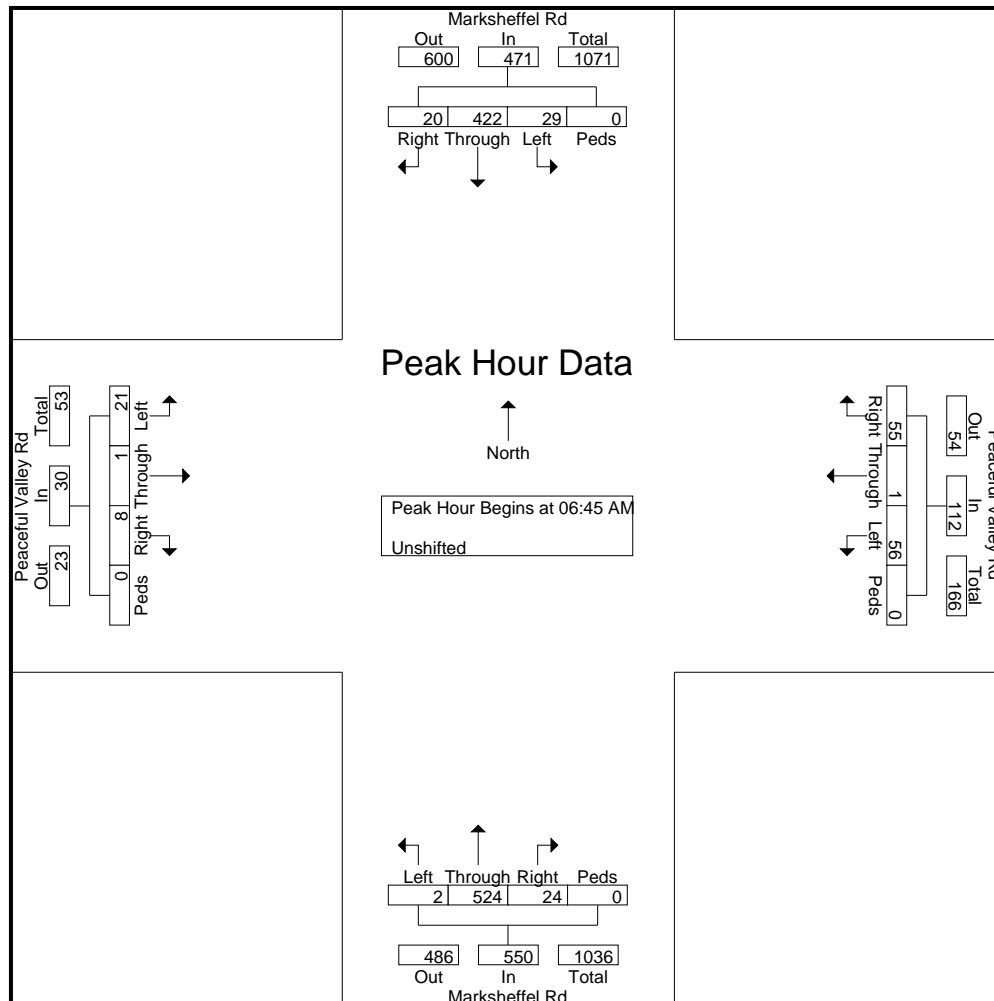
File Name : Marksheffel Rd - Peaceful Valley Rd AM 9-19

Site Code : 194800

Start Date : 9/12/2019

Page No : 2

	Marksheffel Rd Southbound					Peaceful Valley Rd Westbound					Marksheffel Rd Northbound					Peaceful Valley Rd Eastbound					
Start Time	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Int. Total
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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File Name : Marksheffel Rd - Peaceful Valley Rd PM 9-19

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



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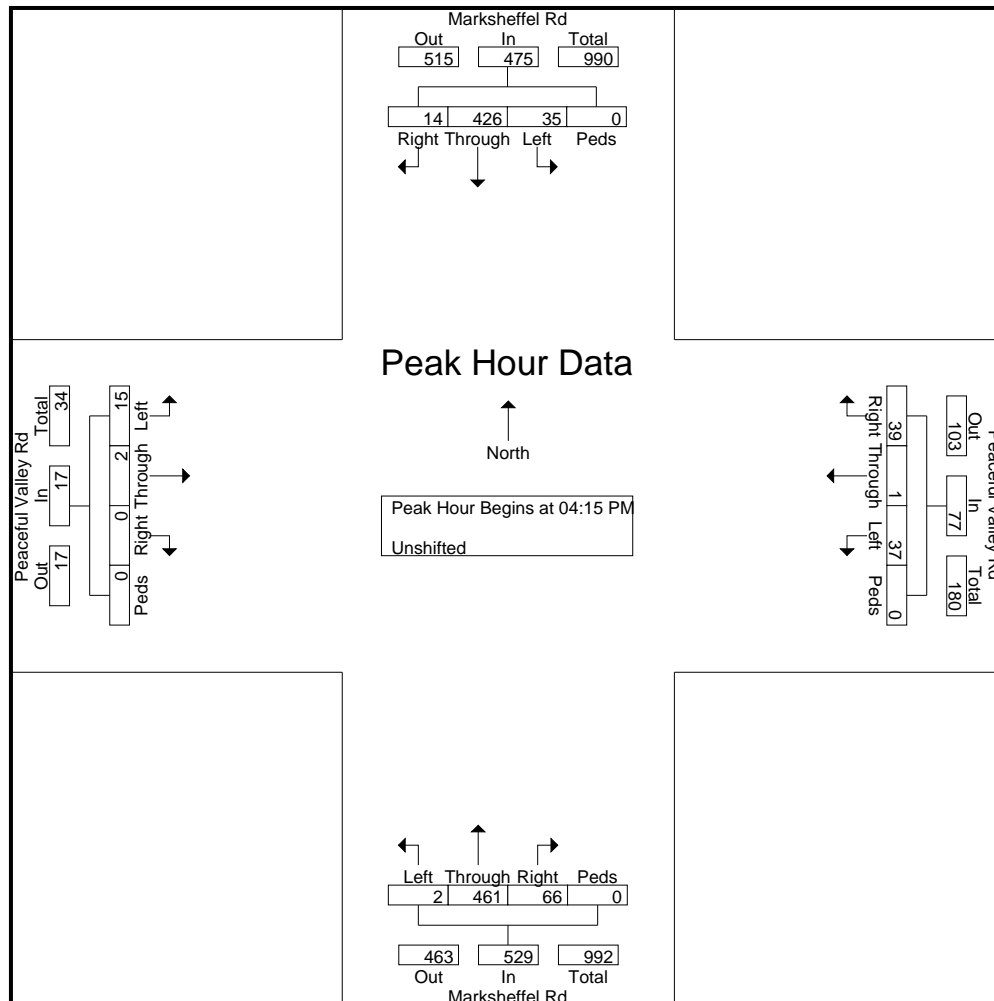
File Name : Marksheffel Rd - Peaceful Valley Rd PM 9-19

Site Code : 00194800

Start Date : 9/12/2019

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	Marksheffel Rd Southbound					Peaceful Valley Rd Westbound					Marksheffel Rd Northbound					Peaceful Valley Rd Eastbound					
Start Time	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Int. Total
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



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File Name : Marksheffel Rd - Poa Annua St AM
Site Code : 00194800
Start Date : 2/27/2020
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Groups Printed- Unshifted

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

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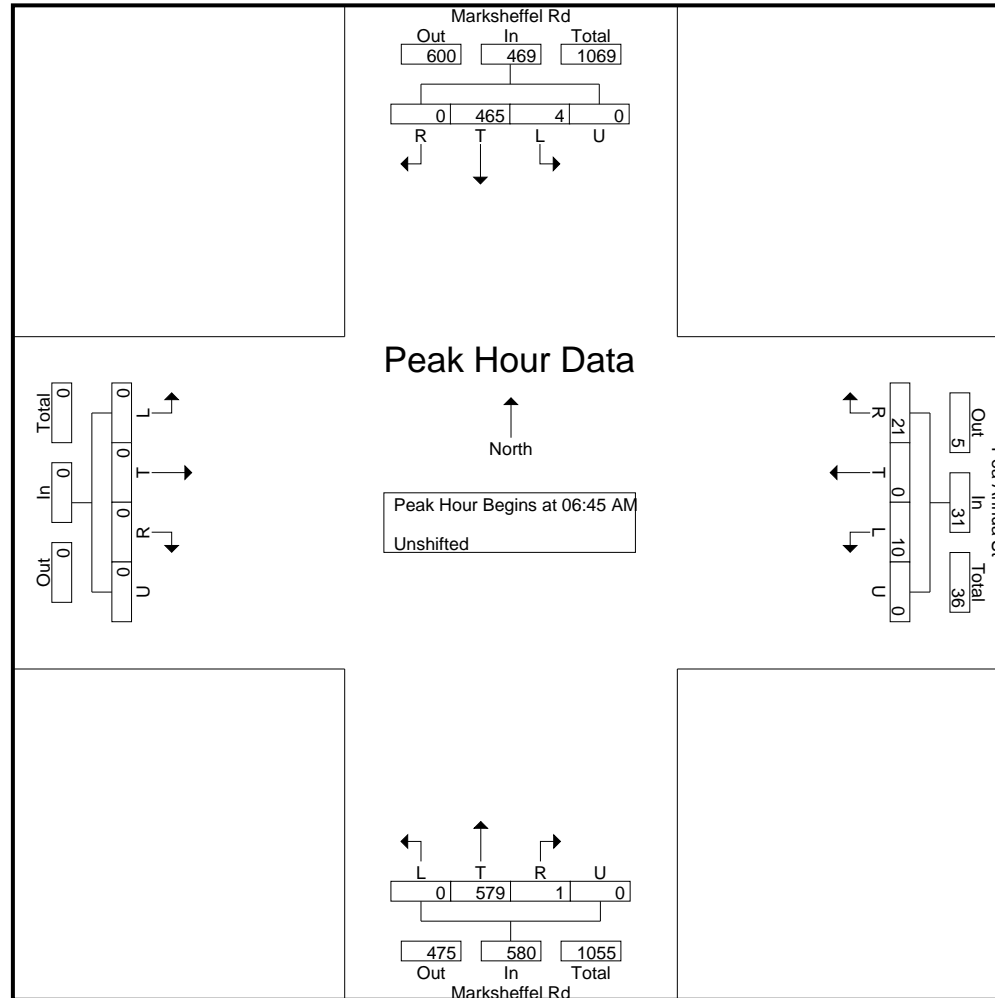
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File Name : Marksheffel Rd - Poa Annua St AM

Site Code : 00194800

Start Date : 2/27/2020

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

Groups Printed- Unshifted

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

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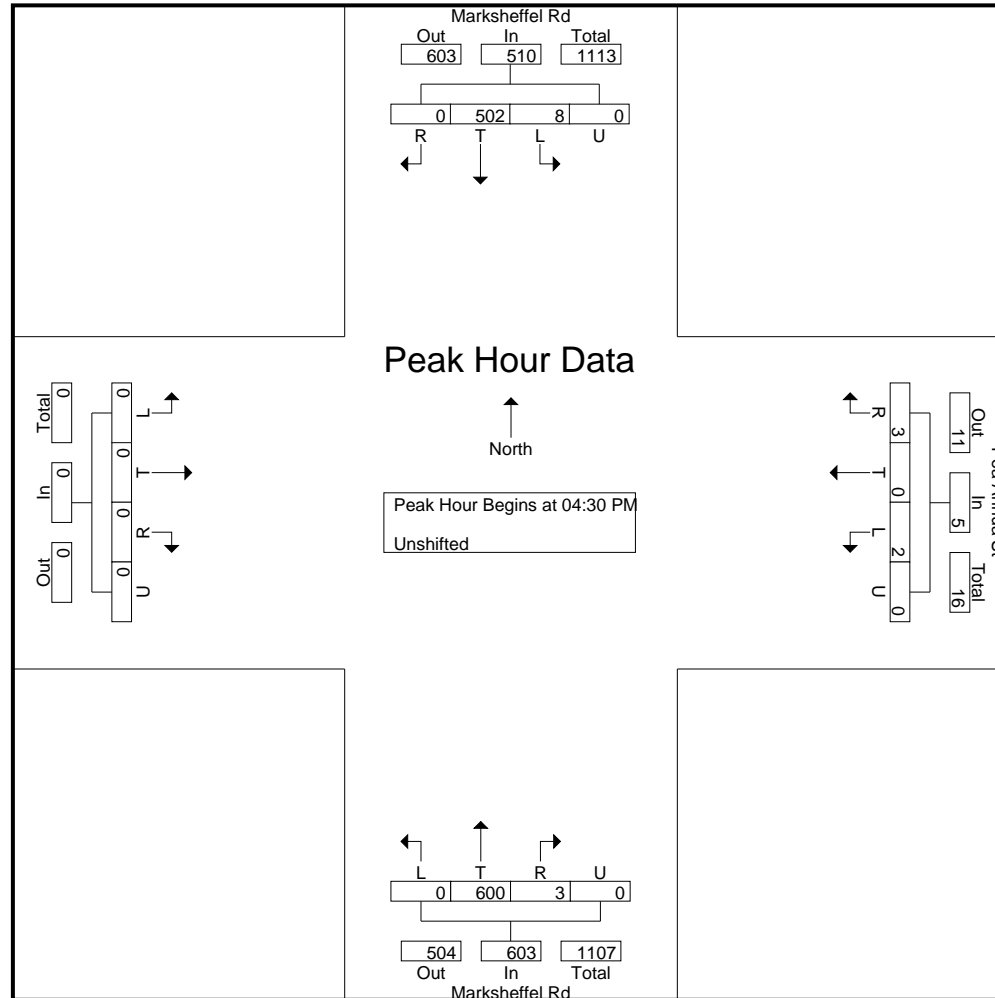
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File Name : Marksheffel Rd - Poa Annua St PM

Site Code : 00194800

Start Date : 2/27/2020

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545 E Pikes Peak Ave, Suite 210
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File Name : Marksheffel Rd - Lorson Blvd AM
Site Code : 00204050
Start Date : 5/28/2020
Page No : 1

Groups Printed- Unshifted

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

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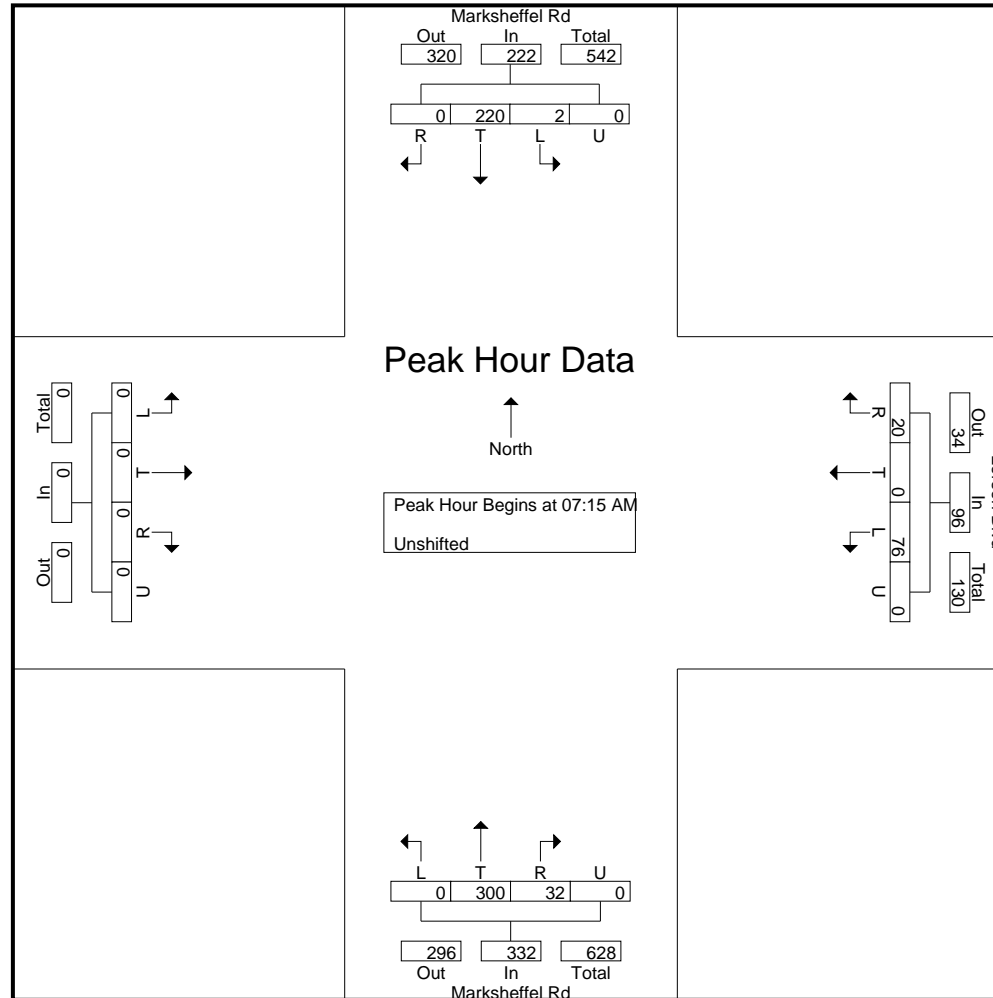
545 E Pikes Peak Ave, Suite 210
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File Name : Marksheffel Rd - Lorson Blvd AM

Site Code : 00204050

Start Date : 5/28/2020

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LSC Transportation Consultants, Inc.

545 E Pikes Peak Ave, Suite 210
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File Name : Marksheffel Rd - Lorson Blvd PM
Site Code : 00204050
Start Date : 5/28/2020
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Groups Printed- Unshifted

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

LSC Transportation Consultants, Inc.

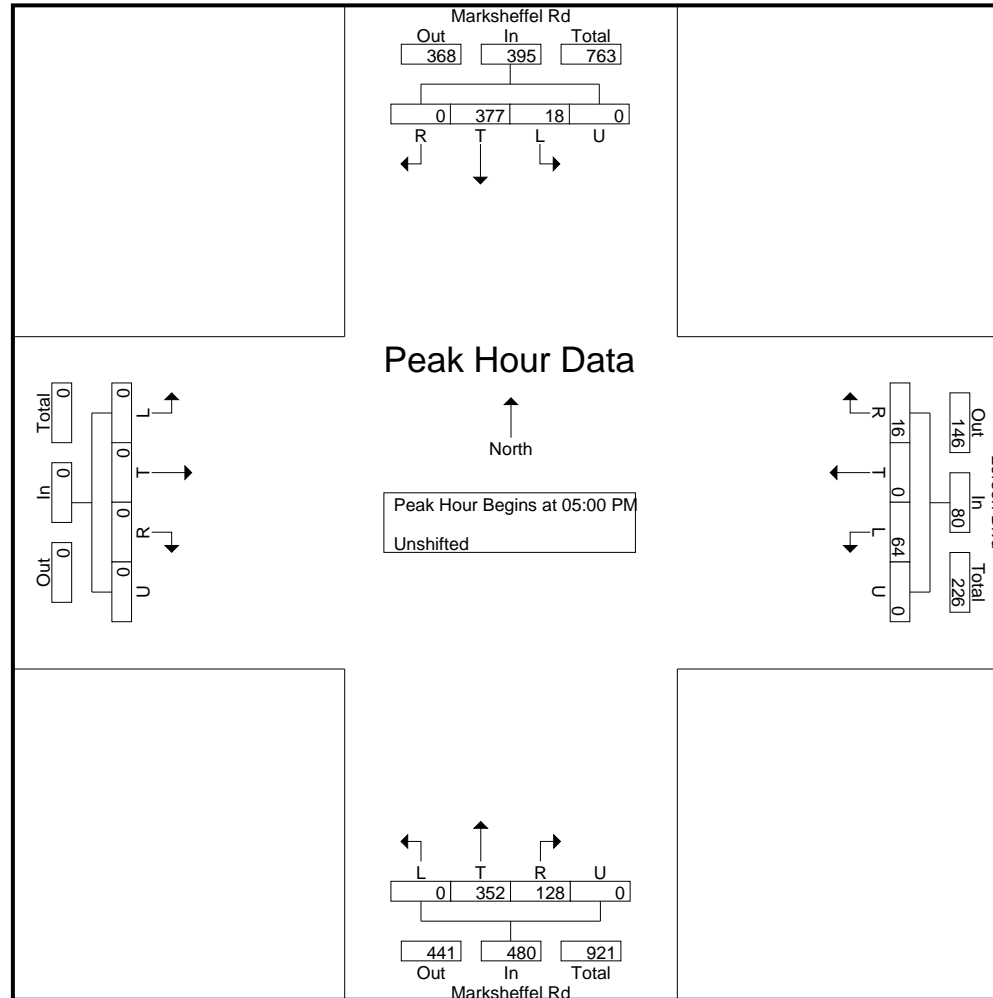
545 E Pikes Peak Ave, Suite 210
Colorado Springs, CO 80905
719-633-2868

File Name : Marksheffel Rd - Lorson Blvd PM

Site Code : 00204050

Start Date : 5/28/2020





Page No : 3



Levels of Service

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

Existing Traffic
AM Peak Hour

Intersection						
Int Delay, s/veh	0.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	21	579	1	4	465
Future Vol, veh/h	10	21	579	1	4	465
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	290	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	78	78	83	83	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	27	698	1	4	505
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1212	699	0	0	699	0
Stage 1	699	-	-	-	-	-
Stage 2	513	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	201	440	-	-	898	-
Stage 1	493	-	-	-	-	-
Stage 2	601	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	200	440	-	-	898	-
Mov Cap-2 Maneuver	336	-	-	-	-	-
Stage 1	491	-	-	-	-	-
Stage 2	601	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	15	0		0.1		
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	400	898	-	
HCM Lane V/C Ratio	-	-	0.099	0.005	-	
HCM Control Delay (s)	-	-	15	9	-	
HCM Lane LOS	-	-	C	A	-	
HCM 95th %tile Q(veh)	-	-	0.3	0	-	

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

Existing Traffic
AM Peak Hour

Intersection												
Int Delay, s/veh	2.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕		↕	↕	↕	↕	
Traffic Vol, veh/h	21	1	8	56	1	55	2	524	24	29	426	20
Future Vol, veh/h	21	1	8	56	1	55	2	524	24	29	426	20
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	-	-	290	340	-	-
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	27	1	10	67	1	66	2	602	28	33	490	23







Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1189	1202	502	1179	1185	602	513	0	0	630	0	0
Stage 1	568	568	-	606	606	-	-	-	-	-	-	-
Stage 2	621	634	-	573	579	-	-	-	-	-	-	-
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	165	185	569	167	189	500	1052	-	-	952	-	-
Stage 1	508	506	-	484	487	-	-	-	-	-	-	-
Stage 2	475	473	-	505	501	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	139	178	569	158	182	500	1052	-	-	952	-	-
Mov Cap-2 Maneuver	139	178	-	291	304	-	-	-	-	-	-	-
Stage 1	506	488	-	483	486	-	-	-	-	-	-	-
Stage 2	410	472	-	477	483	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	31.1		17.3		0		0.5	
HCM LOS	D		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1052	-	-	176 291 500	952	-	-
HCM Lane V/C Ratio	0.002	-	-	0.219 0.236 0.133	0.035	-	-
HCM Control Delay (s)	8.4	0	-	31.1 21.2 13.3	8.9	-	-
HCM Lane LOS	A	A	-	D C B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.8 0.9 0.5	0.1	-	-

HCM 6th TWSC
6: Marksheffel Rd & Mesa Ridge Pkwy

Existing Traffic
AM Peak Hour






Intersection						
Int Delay, s/veh	3.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	180	67	37	370	312	178
Future Vol, veh/h	180	67	37	370	312	178
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	500	-	-	290
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	95	95	89	89
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	180	67	39	389	351	200
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	818	351	551	0	-	0
Stage 1	351	-	-	-	-	-
Stage 2	467	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	346	692	1019	-	-	-
Stage 1	713	-	-	-	-	-
Stage 2	631	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	333	692	1019	-	-	-
Mov Cap-2 Maneuver	440	-	-	-	-	-
Stage 1	686	-	-	-	-	-
Stage 2	631	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	16.6	0.8		0		
HCM LOS	C					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1019	-	440	692	-	-
HCM Lane V/C Ratio	0.038	-	0.409	0.097	-	-
HCM Control Delay (s)	8.7	-	18.7	10.8	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.1	-	2	0.3	-	-

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

Existing Traffic
AM Peak Hour

Intersection

Int Delay, s/veh 2.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	50	224	207	8	23	68
Future Vol, veh/h	50	224	207	8	23	68
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	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	87	87	82	82	81	81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	57	257	252	10	28	84

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	262	0	0 628 257
Stage 1	-	-	- - 257 -
Stage 2	-	-	- - 371 -
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	1302	-	- - 447 782
Stage 1	-	-	- - 786 -
Stage 2	-	-	- - 698 -
Platoon blocked, %		-	- -
Mov Cap-1 Maneuver	1302	-	- - 427 782
Mov Cap-2 Maneuver	-	-	- - 427 -
Stage 1	-	-	- - 751 -
Stage 2	-	-	- - 698 -

Approach	EB	WB	SB
HCM Control Delay, s	1.4	0	11.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1302	-	-	-	427	782
HCM Lane V/C Ratio	0.044	-	-	-	0.066	0.107
HCM Control Delay (s)	7.9	-	-	-	14	10.2
HCM Lane LOS	A	-	-	-	B	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2	0.4

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

Existing Traffic
AM Peak Hour

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	512	174	476	198	88	566
Future Volume (vph)	512	174	476	198	88	566
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 Effect Green (s)	46.6	46.6	45.4	45.4	63.4	61.4
Actuated g/C Ratio	0.39	0.39	0.38	0.38	0.53	0.51
v/c Ratio	0.87	0.28	0.39	0.29	0.22	0.35
Control Delay	47.4	4.3	29.6	5.0	16.7	18.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.4	4.3	29.6	5.0	16.7	18.9
LOS	D	A	C	A	B	B
Approach Delay	36.5		22.4			18.6
Approach LOS	D		C			B

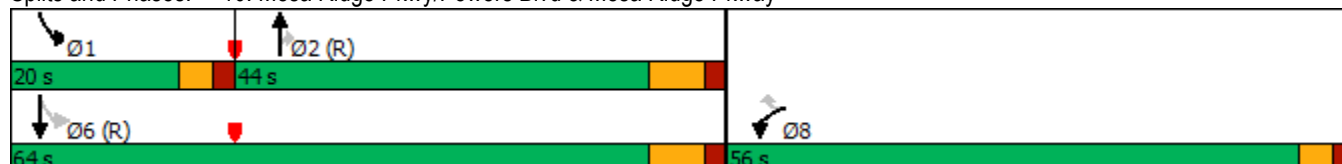
Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.87
Intersection Signal Delay: 26.1
Intersection Capacity Utilization 72.5%
Analysis Period (min) 15

Intersection LOS: C

ICU Level of Service C

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







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

Existing Traffic
PM Peak Hour

Intersection

Int Delay, s/veh 0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	3	600	3	8	502
Future Vol, veh/h	2	3	600	3	8	502
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	290	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	78	78	91	91	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	4	659	3	9	546

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1225	661	0
Stage 1	661	-	-
Stage 2	564	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	198	462	-
Stage 1	514	-	-
Stage 2	569	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	196	462	-
Mov Cap-2 Maneuver	333	-	-
Stage 1	509	-	-
Stage 2	569	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.1	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	400	927
HCM Lane V/C Ratio	-	-	0.016	0.009
HCM Control Delay (s)	-	-	14.1	8.9
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0	0

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

Existing Traffic
PM Peak Hour

Intersection												
Int Delay, s/veh	2.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔	↔		↔	↔	↔	↔	
Traffic Vol, veh/h	15	2	0	37	1	39	2	549	66	35	455	14
Future Vol, veh/h	15	2	0	37	1	39	2	549	66	35	455	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Stop	-	-	None	-	-	None
Storage Length	-	-	-	-	-	0	-	-	290	340	-	-
Veh in Median Storage, #	-	0	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	71	71	71	78	78	78	92	92	92	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	3	0	47	1	50	2	597	72	42	542	17







Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1273	1308	551	1237	1244	597	559	0	0	669	0	0
Stage 1	635	635	-	601	601	-	-	-	-	-	-	-
Stage 2	638	673	-	636	643	-	-	-	-	-	-	-
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	144	159	534	153	174	503	1012	-	-	921	-	-
Stage 1	467	472	-	487	489	-	-	-	-	-	-	-
Stage 2	465	454	-	466	468	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	124	151	534	145	165	503	1012	-	-	921	-	-
Mov Cap-2 Maneuver	124	151	-	277	287	-	-	-	-	-	-	-
Stage 1	466	450	-	486	488	-	-	-	-	-	-	-
Stage 2	416	453	-	442	446	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	39.8		16.8		0		0.6	
HCM LOS	E		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1012	-	-	127 277 503	921	-	-
HCM Lane V/C Ratio	0.002	-	-	0.189 0.176 0.099	0.045	-	-
HCM Control Delay (s)	8.6	0	-	39.8 20.8 12.9	9.1	-	-
HCM Lane LOS	A	A	-	E C B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.7 0.6 0.3	0.1	-	-

HCM 6th TWSC
6: Marksheffel Rd & Mesa Ridge Pkwy

Existing Traffic
PM Peak Hour






Intersection						
Int Delay, s/veh	7.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	300	47	29	317	328	164
Future Vol, veh/h	300	47	29	317	328	164
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	500	-	-	290
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	100	100	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	333	52	29	317	364	182
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	739	364	546	0	-	0
Stage 1	364	-	-	-	-	-
Stage 2	375	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	385	681	1023	-	-	-
Stage 1	703	-	-	-	-	-
Stage 2	695	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	374	681	1023	-	-	-
Mov Cap-2 Maneuver	479	-	-	-	-	-
Stage 1	683	-	-	-	-	-
Stage 2	695	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	25.7	0.7		0		
HCM LOS	D					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1023	-	479	681	-	-
HCM Lane V/C Ratio	0.028	-	0.696	0.077	-	-
HCM Control Delay (s)	8.6	-	28	10.7	-	-
HCM Lane LOS	A	-	D	B	-	-
HCM 95th %tile Q(veh)	0.1	-	5.3	0.2	-	-

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

Existing Traffic
PM Peak Hour

Intersection

Int Delay, s/veh 2.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	70	330	174	19	17	61
Future Vol, veh/h	70	330	174	19	17	61
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	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	87	87	86	86	78	78
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	80	379	202	22	22	78










Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	224	0	0 752 213
Stage 1	-	-	- 213 -
Stage 2	-	-	- 539 -
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	1345	-	- 378 827
Stage 1	-	-	- 823 -
Stage 2	-	-	- 585 -
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	1345	-	- 356 827
Mov Cap-2 Maneuver	-	-	- 356 -
Stage 1	-	-	- 774 -
Stage 2	-	-	- 585 -

Approach	EB	WB	SB
HCM Control Delay, s	1.4	0	11.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1345	-	-	-	356	827
HCM Lane V/C Ratio	0.06	-	-	-	0.061	0.095
HCM Control Delay (s)	7.8	-	-	-	15.8	9.8
HCM Lane LOS	A	-	-	-	C	A
HCM 95th %tile Q(veh)	0.2	-	-	-	0.2	0.3

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

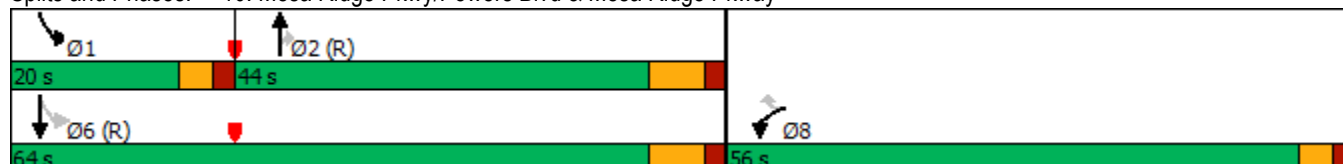
Existing Traffic
PM Peak Hour





						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			 			 
Traffic Volume (vph)	276	72	608	584	135	551
Future Volume (vph)	276	72	608	584	135	551
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 Effect Green (s)	29.4	29.4	62.5	62.5	80.6	78.6
Actuated g/C Ratio	0.24	0.24	0.52	0.52	0.67	0.66
v/c Ratio	0.73	0.18	0.34	0.56	0.26	0.25
Control Delay	51.1	7.3	19.0	5.0	9.5	9.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.1	7.3	19.0	5.0	9.5	9.7
LOS	D	A	B	A	A	A
Approach Delay	42.0		12.1			9.6
Approach LOS	D		B			A

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: 0.73
Intersection Signal Delay: 16.5
Intersection LOS: B
Intersection Capacity Utilization 61.9%
ICU Level of Service B
Analysis Period (min) 15







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



Intersection						
Int Delay, s/veh	0.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	21	635	1	4	531
Future Vol, veh/h	10	21	635	1	4	531
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	290	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	78	78	83	83	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	27	765	1	4	577
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1351	766	0	0	766	0
Stage 1	766	-	-	-	-	-
Stage 2	585	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	166	403	-	-	847	-
Stage 1	459	-	-	-	-	-
Stage 2	557	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	165	403	-	-	847	-
Mov Cap-2 Maneuver	303	-	-	-	-	-
Stage 1	459	-	-	-	-	-
Stage 2	554	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	16.1	0	0.1			
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	364	847	-	
HCM Lane V/C Ratio	-	-	0.109	0.005	-	
HCM Control Delay (s)	-	-	16.1	9.3	-	
HCM Lane LOS	-	-	C	A	-	
HCM 95th %tile Q(veh)	-	-	0.4	0	-	

HCM 6th TWSC Short-Term Background Traffic (With Peaceful Valley Full Movement)
 5: Marksheffel Rd & Peaceful Valley Rd AM Peak Hour

Intersection												
Int Delay, s/veh	4.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	37	1	23	56	1	55	3	544	24	29	487	25
Future Vol, veh/h	37	1	23	56	1	55	3	544	24	29	487	25
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Stop	-	-	None	-	-	None
Storage Length	-	-	-	-	-	0	-	-	290	340	-	-
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	47	1	29	67	1	66	3	625	28	33	560	29
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1287	1300	575	1287	1286	625	589	0	0	653	0	0
Stage 1	641	641	-	631	631	-	-	-	-	-	-	-
Stage 2	646	659	-	656	655	-	-	-	-	-	-	-
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	141	161	518	141	164	485	986	-	-	934	-	-
Stage 1	463	469	-	469	474	-	-	-	-	-	-	-
Stage 2	460	461	-	454	463	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	118	155	518	128	157	485	986	-	-	934	-	-
Mov Cap-2 Maneuver	118	155	-	257	280	-	-	-	-	-	-	-
Stage 1	461	453	-	467	472	-	-	-	-	-	-	-
Stage 2	394	459	-	412	447	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	44.2		18.9		0		0.5					
HCM LOS	E		C									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR					
Capacity (veh/h)	986	-	-	167 257 485	934	-	-					
HCM Lane V/C Ratio	0.003	-	-	0.468 0.267 0.137	0.036	-	-					
HCM Control Delay (s)	8.7	0	-	44.2 24 13.6	9	-	-					
HCM Lane LOS	A	A	-	E C B	A	-	-					
HCM 95th %tile Q(veh)	0	-	-	2.2 1 0.5	0.1	-	-					






Intersection						
Int Delay, s/veh	3.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	186	71	38	385	358	209
Future Vol, veh/h	186	71	38	385	358	209
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	500	-	-	290
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	95	95	89	89
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	186	71	40	405	402	235

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	887	402	637	0	-	0
Stage 1	402	-	-	-	-	-
Stage 2	485	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	315	648	947	-	-	-
Stage 1	676	-	-	-	-	-
Stage 2	619	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	302	648	947	-	-	-
Mov Cap-2 Maneuver	427	-	-	-	-	-
Stage 1	648	-	-	-	-	-
Stage 2	619	-	-	-	-	-













Approach	EB	NB	SB
HCM Control Delay, s	17.4	0.8	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	947	-	427	648	-	-
HCM Lane V/C Ratio	0.042	-	0.436	0.11	-	-
HCM Control Delay (s)	9	-	19.8	11.2	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.1	-	2.2	0.4	-	-

HCM 6th TWSC Short-Term Background Traffic (With Peaceful Valley Full Movement)
 7: Mesa Ridge Pkwy & Spring Glen Dr AM Peak Hour

Intersection						
Int Delay, s/veh	4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	83	230	238	9	27	156
Future Vol, veh/h	83	230	238	9	27	156
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	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	87	87	82	82	81	81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	95	264	290	11	33	193
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	301	0	-	0	750	296
Stage 1	-	-	-	-	296	-
Stage 2	-	-	-	-	454	-
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	1260	-	-	-	379	743
Stage 1	-	-	-	-	755	-
Stage 2	-	-	-	-	640	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1260	-	-	-	351	743
Mov Cap-2 Maneuver	-	-	-	-	351	-
Stage 1	-	-	-	-	698	-
Stage 2	-	-	-	-	640	-
Approach	EB	WB		SB		
HCM Control Delay, s	2.1	0		12.2		
HCM LOS	B					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1260	-	-	-	351	743
HCM Lane V/C Ratio	0.076	-	-	-	0.095	0.259
HCM Control Delay (s)	8.1	-	-	-	16.3	11.5
HCM Lane LOS	A	-	-	-	C	B
HCM 95th %tile Q(veh)	0.2	-	-	-	0.3	1

Timings Short-Term Background Traffic (With Peaceful Valley Full Movement)
 10: Mesa Ridge Pkwy/Powers Blvd & Mesa Ridge Pkway AM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	604	201	507	228	97	603
Future Volume (vph)	604	201	507	228	97	603
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 Effect Green (s)	35.3	35.3	57.1	57.1	74.7	72.7
Actuated g/C Ratio	0.29	0.29	0.48	0.48	0.62	0.61
v/c Ratio	0.70	0.37	0.33	0.28	0.21	0.32
Control Delay	41.0	5.2	21.6	3.7	11.3	12.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.0	5.2	21.6	3.7	11.3	12.8
LOS	D	A	C	A	B	B
Approach Delay	32.0		16.1			12.6
Approach LOS	C		B			B

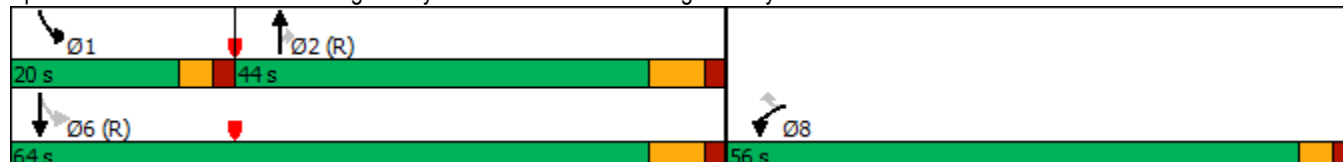
Intersection Summary





Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.70
 Intersection Signal Delay: 20.9
 Intersection Capacity Utilization 61.8%
 Analysis Period (min) 15

Intersection LOS: C

ICU Level of Service B

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



Intersection						
Int Delay, s/veh	0.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	3	678	3	8	560
Future Vol, veh/h	2	3	678	3	8	560
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	290	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	78	78	91	91	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	4	745	3	9	609

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1374	747	0
Stage 1	747	-	-
Stage 2	627	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	160	413	-
Stage 1	468	-	-
Stage 2	532	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	158	413	-
Mov Cap-2 Maneuver	298	-	-
Stage 1	468	-	-
Stage 2	527	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.2	0	0.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	358	861
HCM Lane V/C Ratio	-	-	0.018	0.01
HCM Control Delay (s)	-	-	15.2	9.2
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.1	0







HCM 6th TWSC Short-Term Background Traffic (With Peaceful Valley Full Movement)
 5: Marksheffel Rd & Peaceful Valley Rd PM Peak Hour






Intersection												
Int Delay, s/veh	3.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔	↔		↔	↔	↔	↔	
Traffic Vol, veh/h	25	2	10	37	1	39	5	617	66	35	495	32
Future Vol, veh/h	25	2	10	37	1	39	5	617	66	35	495	32
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Stop	-	-	None	-	-	None
Storage Length	-	-	-	-	-	0	-	-	290	340	-	-
Veh in Median Storage, #	-	0	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	71	71	71	78	78	78	92	92	92	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	35	3	14	47	1	50	5	671	72	42	589	38

Major/Minor	Minor2		Minor1		Major1		Major2		Major2		Major2	
Conflicting Flow All	1410	1445	608	1382	1392	671	627	0	0	743	0	0
Stage 1	692	692	-	681	681	-	-	-	-	-	-	-
Stage 2	718	753	-	701	711	-	-	-	-	-	-	-
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	116	132	496	121	142	456	955	-	-	864	-	-
Stage 1	434	445	-	440	450	-	-	-	-	-	-	-
Stage 2	420	417	-	429	436	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	98	124	496	110	134	456	955	-	-	864	-	-
Mov Cap-2 Maneuver	98	124	-	238	256	-	-	-	-	-	-	-
Stage 1	430	423	-	436	446	-	-	-	-	-	-	-
Stage 2	370	413	-	394	415	-	-	-	-	-	-	-













Approach	EB		WB		NB		SB	
HCM Control Delay, s	51.8		18.9		0.1		0.6	
HCM LOS	F		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR
Capacity (veh/h)	955	-	-	127 238 456	864	-	-
HCM Lane V/C Ratio	0.006	-	-	0.41 0.205 0.11	0.048	-	-
HCM Control Delay (s)	8.8	0	-	51.8 24 13.9	9.4	-	-
HCM Lane LOS	A	A	-	F C B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	1.8 0.7 0.4	0.2	-	-

Intersection						
Int Delay, s/veh	10.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	320	49	33	368	358	185
Future Vol, veh/h	320	49	33	368	358	185
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	500	-	-	290
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	100	100	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	356	54	33	368	398	206
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	832	398	604	0	-	0
Stage 1	398	-	-	-	-	-
Stage 2	434	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	~ 339	652	974	-	-	-
Stage 1	678	-	-	-	-	-
Stage 2	653	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 327	652	974	-	-	-
Mov Cap-2 Maneuver	448	-	-	-	-	-
Stage 1	655	-	-	-	-	-
Stage 2	653	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	34	0.7		0		
HCM LOS	D					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	974	-	448	652	-	-
HCM Lane V/C Ratio	0.034	-	0.794	0.084	-	-
HCM Control Delay (s)	8.8	-	37.5	11	-	-
HCM Lane LOS	A	-	E	B	-	-
HCM 95th %tile Q(veh)	0.1	-	7.1	0.3	-	-
Notes						
~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon						

Intersection						
Int Delay, s/veh	3.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	182	350	195	23	19	118
Future Vol, veh/h	182	350	195	23	19	118
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	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	87	87	86	86	78	78
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	209	402	227	27	24	151
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	254	0	-	0	1061	241
Stage 1	-	-	-	-	241	-
Stage 2	-	-	-	-	820	-
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	1311	-	-	-	248	798
Stage 1	-	-	-	-	799	-
Stage 2	-	-	-	-	433	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1311	-	-	-	209	798
Mov Cap-2 Maneuver	-	-	-	-	209	-
Stage 1	-	-	-	-	672	-
Stage 2	-	-	-	-	433	-
Approach	EB	WB		SB		
HCM Control Delay, s	2.8	0		12.5		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1311	-	-	-	209	798
HCM Lane V/C Ratio	0.16	-	-	-	0.117	0.19
HCM Control Delay (s)	8.3	-	-	-	24.5	10.6
HCM Lane LOS	A	-	-	-	C	B
HCM 95th %tile Q(veh)	0.6	-	-	-	0.4	0.7

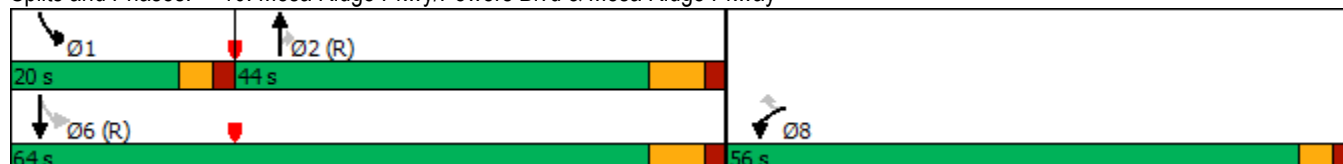
Timings Short-Term Background Traffic (With Peaceful Valley Full Movement)
 10: Mesa Ridge Pkwy/Powers Blvd & Mesa Ridge Pkway PM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	336	90	648	686	165	587
Future Volume (vph)	336	90	648	686	165	587
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 Effect Green (s)	21.6	21.6	70.4	70.4	88.4	86.4
Actuated g/C Ratio	0.18	0.18	0.59	0.59	0.74	0.72
v/c Ratio	0.63	0.28	0.33	0.61	0.30	0.24
Control Delay	49.7	9.3	14.1	5.1	6.5	6.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.7	9.3	14.1	5.1	6.5	6.3
LOS	D	A	B	A	A	A
Approach Delay	41.1		9.4			6.4
Approach LOS	D		A			A

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: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.63
 Intersection Signal Delay: 14.4
 Intersection Capacity Utilization 61.6%
 Analysis Period (min) 15

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



Intersection

Int Delay, s/veh 2.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	↕
Traffic Vol, veh/h	37	1	0	10	1	21	0	598	1	4	531	0
Future Vol, veh/h	37	1	0	10	1	21	0	598	1	4	531	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	290	-	-	290	-	290
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	78	78	78	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	44	1	0	13	1	27	0	650	1	4	577	0









Major/Minor	Minor2		Minor1		Major1		Major2		Major2		Major2	
Conflicting Flow All	1250	1236	577	1237	1236	651	577	0	0	651	0	0
Stage 1	585	585	-	651	651	-	-	-	-	-	-	-
Stage 2	665	651	-	586	585	-	-	-	-	-	-	-
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	150	176	516	153	176	469	996	-	-	935	-	-
Stage 1	497	498	-	457	465	-	-	-	-	-	-	-
Stage 2	449	465	-	496	498	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	140	175	516	152	175	469	996	-	-	935	-	-
Mov Cap-2 Maneuver	140	175	-	152	175	-	-	-	-	-	-	-
Stage 1	497	496	-	457	465	-	-	-	-	-	-	-
Stage 2	422	465	-	493	496	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	42	20.4	0	0.1
HCM LOS	E	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	996	-	-	141 275	935	-	-
HCM Lane V/C Ratio	-	-	-	0.317 0.149	0.005	-	-
HCM Control Delay (s)	0	-	-	42 20.4	8.9	-	-
HCM Lane LOS	A	-	-	E C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	1.3 0.5	0	-	-

Intersection

Int Delay, s/veh 2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	24	56	0	55	0	544	24	29	487	25
Future Vol, veh/h	0	0	24	56	0	55	0	544	24	29	487	25
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Stop	-	-	None	-	-	None
Storage Length	-	-	0	0	-	0	-	-	290	340	-	290
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	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	31	67	0	66	0	625	28	33	560	29

Major/Minor	Minor2		Minor1		Major1		Major2		Major2		Major2	
Conflicting Flow All	-	-	560	1281	-	625	-	0	0	653	0	0
Stage 1	-	-	-	625	-	-	-	-	-	-	-	-
Stage 2	-	-	-	656	-	-	-	-	-	-	-	-
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	528	142	0	485	0	-	-	934	-	-
Stage 1	0	0	-	473	0	-	0	-	-	-	-	-
Stage 2	0	0	-	454	0	-	0	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	528	130	-	485	-	-	-	934	-	-
Mov Cap-2 Maneuver	-	-	-	260	-	-	-	-	-	-	-	-
Stage 1	-	-	-	473	-	-	-	-	-	-	-	-
Stage 2	-	-	-	412	-	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	12.2		18.6		0		0.5	
HCM LOS	B		C					

Minor Lane/Major Mvmt	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR
Capacity (veh/h)	-	-	528 260 485 934	-	-	-
HCM Lane V/C Ratio	-	-	0.058 0.259 0.137 0.036	-	-	-
HCM Control Delay (s)	-	-	12.2 23.6 13.6 9	-	-	-
HCM Lane LOS	-	-	B C B A	-	-	-
HCM 95th %tile Q(veh)	-	-	0.2 1 0.5 0.1	-	-	-

Intersection

Int Delay, s/veh 4.3

Movement EBL EBR NBL NBT SBT SBRLane Configurations 

Traffic Vol, veh/h 186 71 41 382 358 209

Future Vol, veh/h 186 71 41 382 358 209

Conflicting Peds, #/hr 0 0 0 0 0 0

Sign Control Stop Stop Free Free Free Free

RT Channelized - None - None - None

Storage Length 0 0 500 - - 290

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

Grade, % 0 - - 0 0 -

Peak Hour Factor 87 87 95 95 89 89

Heavy Vehicles, % 2 2 2 2 2 2

Mvmt Flow 214 82 43 402 402 235

Major/Minor Minor2 Major1 Major2

Conflicting Flow All 890 402 637 0 - 0

Stage 1 402 - - - - -

Stage 2 488 - - - - -

Critical Hdwy 6.42 6.22 4.12 - - -

Critical Hdwy Stg 1 5.42 - - - - -

Critical Hdwy Stg 2 5.42 - - - - -

Follow-up Hdwy 3.518 3.318 2.218 - - -

Pot Cap-1 Maneuver 313 648 947 - - -

Stage 1 676 - - - - -

Stage 2 617 - - - - -

Platoon blocked, % - - -

Mov Cap-1 Maneuver 299 648 947 - - -

Mov Cap-2 Maneuver 424 - - - - -

Stage 1 646 - - - - -

Stage 2 617 - - - - -

Approach EB NB SB

HCM Control Delay, s 18.9 0.9 0

HCM LOS C

Minor Lane/Major Mvmt NBL NBT EBLn1 EBLn2 SBT SBR

Capacity (veh/h) 947 - 424 648 - -

HCM Lane V/C Ratio 0.046 - 0.504 0.126 - -

HCM Control Delay (s) 9 - 21.8 11.4 - -

HCM Lane LOS A - C B - -

HCM 95th %tile Q(veh) 0.1 - 2.8 0.4 - -

Intersection

Int Delay, s/veh 4

Movement EBL EBT WBT WBR SBL SBRLane Configurations 

Traffic Vol, veh/h 83 230 238 12 27 156

Future Vol, veh/h 83 230 238 12 27 156

Conflicting Peds, #/hr 0 0 0 0 0 0

Sign Control Free Free Free Free Stop Stop

RT Channelized - None - None - None

Storage Length 475 - - - 0 0

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

Grade, % - 0 0 - 0 -

Peak Hour Factor 87 87 82 82 81 81

Heavy Vehicles, % 2 2 2 2 2 2

Mvmt Flow 95 264 290 15 33 193

Major/Minor Major1 Major2 Minor2

Conflicting Flow All 305 0 - 0 752 298

Stage 1 - - - - 298 -

Stage 2 - - - - 454 -

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 1256 - - - 378 741

Stage 1 - - - - 753 -

Stage 2 - - - - 640 -

Platoon blocked, % - - - -

Mov Cap-1 Maneuver 1256 - - - 349 741

Mov Cap-2 Maneuver - - - - 349 -

Stage 1 - - - - 696 -

Stage 2 - - - - 640 -

Approach EB WB SB

HCM Control Delay, s 2.1 0 12.3

HCM LOS B

Minor Lane/Major Mvmt EBL EBT WBT WBR SBLn1 SBLn2

Capacity (veh/h) 1256 - - - 349 741

HCM Lane V/C Ratio 0.076 - - - 0.096 0.26

HCM Control Delay (s) 8.1 - - - 16.4 11.6

HCM Lane LOS A - - - C B

HCM 95th %tile Q(veh) 0.2 - - - 0.3 1

Timings

Short-Term Background Traffic (With Peaceful Valley RIRO)

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

AM Peak Hour

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	604	201	507	228	97	603
Future Volume (vph)	604	201	507	228	97	603
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)	40.0	40.0	60.0	60.0	20.0	80.0
Total Split (%)	33.3%	33.3%	50.0%	50.0%	16.7%	66.7%
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 Effect Green (s)	32.4	32.4	60.2	60.2	77.6	75.6
Actuated g/C Ratio	0.27	0.27	0.50	0.50	0.65	0.63
v/c Ratio	0.76	0.39	0.31	0.27	0.20	0.30
Control Delay	45.8	6.1	19.0	3.0	9.5	11.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.8	6.1	19.0	3.0	9.5	11.0
LOS	D	A	B	A	A	B
Approach Delay	35.9		14.0			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: 0.76

Intersection Signal Delay: 21.1

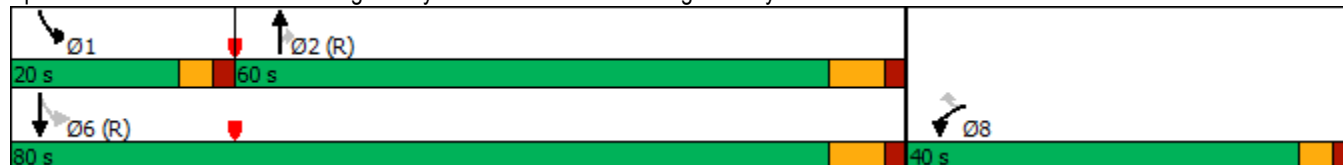
Intersection LOS: C

Intersection Capacity Utilization 61.8%

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 2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	↕
Traffic Vol, veh/h	39	2	14	2	1	3	20	653	3	8	560	22
Future Vol, veh/h	39	2	14	2	1	3	20	653	3	8	560	22
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	290	-	-	290	-	290
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	78	78	78	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	46	2	16	3	1	4	22	710	3	9	609	24

Major/Minor	Minor2		Minor1		Major1		Major2		Major2		Major2	
Conflicting Flow All	1385	1384	609	1404	1407	712	633	0	0	713	0	0
Stage 1	627	627	-	756	756	-	-	-	-	-	-	-
Stage 2	758	757	-	648	651	-	-	-	-	-	-	-
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	121	143	495	117	139	432	950	-	-	887	-	-
Stage 1	471	476	-	400	416	-	-	-	-	-	-	-
Stage 2	399	416	-	459	465	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	116	138	495	109	134	432	950	-	-	887	-	-
Mov Cap-2 Maneuver	116	138	-	109	134	-	-	-	-	-	-	-
Stage 1	460	471	-	391	406	-	-	-	-	-	-	-
Stage 2	385	406	-	437	460	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	48.4	25.5	0.3	0.1
HCM LOS	E	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	950	-	-	145 183	887	-	-
HCM Lane V/C Ratio	0.023	-	-	0.446 0.042	0.01	-	-
HCM Control Delay (s)	8.9	-	-	48.4 25.5	9.1	-	-
HCM Lane LOS	A	-	-	E D	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	2 0.1	0	-	-

Intersection												
Int Delay, s/veh	1.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↗	↗		↗		↗	↗	↗	↗	↗
Traffic Vol, veh/h	0	0	21	37	0	39	0	638	66	35	509	32
Future Vol, veh/h	0	0	21	37	0	39	0	638	66	35	509	32
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Stop	-	-	None	-	-	None
Storage Length	-	-	0	0	-	0	-	-	290	340	-	290
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	71	71	71	78	78	78	92	92	92	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	30	47	0	50	0	693	72	42	606	38
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	-	-	606	1417	-	693	-	0	0	765	0	0
Stage 1	-	-	-	693	-	-	-	-	-	-	-	-
Stage 2	-	-	-	724	-	-	-	-	-	-	-	-
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	497	115	0	443	0	-	-	848	-	-
Stage 1	0	0	-	434	0	-	0	-	-	-	-	-
Stage 2	0	0	-	417	0	-	0	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	497	104	-	443	-	-	-	848	-	-
Mov Cap-2 Maneuver	-	-	-	230	-	-	-	-	-	-	-	-
Stage 1	-	-	-	434	-	-	-	-	-	-	-	-
Stage 2	-	-	-	373	-	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	12.7		19.3		0		0.6					
HCM LOS	B		C									
Minor Lane/Major Mvmt	NBT		NBR		EBLn1WBLn1WBLn2		SBL	SBT	SBR			
Capacity (veh/h)	-		-		497 230 443		848	-	-			
HCM Lane V/C Ratio	-		-		0.06 0.206 0.113		0.049	-	-			
HCM Control Delay (s)	-		-		12.7 24.7 14.2		9.5	-	-			
HCM Lane LOS	-		-		B C B		A	-	-			
HCM 95th %tile Q(veh)	-		-		0.2 0.8 0.4		0.2	-	-			

Intersection

Int Delay, s/veh 11.9

Movement EBL EBR NBL NBT SBT SBRLane Configurations 

Traffic Vol, veh/h 337 49 37 367 360 208

Future Vol, veh/h 337 49 37 367 360 208

Conflicting Peds, #/hr 0 0 0 0 0 0

Sign Control Stop Stop Free Free Free Free

RT Channelized - None - None - None

Storage Length 0 0 500 - - 290

Veh in Median Storage, # 1 - - 0 0 -

Grade, % 0 - - 0 0 -

Peak Hour Factor 90 90 100 100 90 90

Heavy Vehicles, % 2 2 2 2 2 2

Mvmt Flow 374 54 37 367 400 231

Major/Minor Minor2 Major1 Major2

Conflicting Flow All 841 400 631 0 - 0

Stage 1 400 - - - - -

Stage 2 441 - - - - -

Critical Hdwy 6.42 6.22 4.12 - - -

Critical Hdwy Stg 1 5.42 - - - - -

Critical Hdwy Stg 2 5.42 - - - - -

Follow-up Hdwy 3.518 3.318 2.218 - - -

Pot Cap-1 Maneuver ~ 335 650 951 - - -

Stage 1 677 - - - - -

Stage 2 648 - - - - -

Platoon blocked, % - - -

Mov Cap-1 Maneuver ~ 322 650 951 - - -

Mov Cap-2 Maneuver 443 - - - - -

Stage 1 651 - - - - -

Stage 2 648 - - - - -

Approach EB NB SB

HCM Control Delay, s 39.7 0.8 0

HCM LOS E

Minor Lane/Major Mvmt NBL NBT EBLn1 EBLn2 SBT SBR

Capacity (veh/h) 951 - 443 650 - -

HCM Lane V/C Ratio 0.039 - 0.845 0.084 - -

HCM Control Delay (s) 8.9 - 43.9 11 - -

HCM Lane LOS A - E B - -

HCM 95th %tile Q(veh) 0.1 - 8.3 0.3 - -

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection

Int Delay, s/veh 3.8

Movement EBL EBT WBT WBR SBL SBRLane Configurations 

Traffic Vol, veh/h 203 367 217 28 19 118

Future Vol, veh/h 203 367 217 28 19 118

Conflicting Peds, #/hr 0 0 0 0 0 0

Sign Control Free Free Free Free Stop Stop

RT Channelized - None - None - None

Storage Length 475 - - - 0 0

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

Grade, % - 0 0 - 0 -

Peak Hour Factor 87 87 86 86 78 78

Heavy Vehicles, % 2 2 2 2 2 2

Mvmt Flow 233 422 252 33 24 151

Major/Minor Major1 Major2 Minor2

Conflicting Flow All 285 0 - 0 1157 269

Stage 1 - - - - 269 -

Stage 2 - - - - 888 -

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 1277 - - - 217 770

Stage 1 - - - - 776 -

Stage 2 - - - - 402 -

Platoon blocked, % - - - -

Mov Cap-1 Maneuver 1277 - - - 178 770

Mov Cap-2 Maneuver - - - - 178 -

Stage 1 - - - - 635 -

Stage 2 - - - - 402 -

Approach EB WB SB

HCM Control Delay, s 3 0 13.2

HCM LOS B

Minor Lane/Major Mvmt EBL EBT WBT WBR SBLn1 SBLn2

Capacity (veh/h) 1277 - - - 178 770

HCM Lane V/C Ratio 0.183 - - - 0.137 0.196

HCM Control Delay (s) 8.4 - - - 28.4 10.8

HCM Lane LOS A - - - D B

HCM 95th %tile Q(veh) 0.7 - - - 0.5 0.7

Timings

Short-Term Background Traffic (With Peaceful Valley RIRO)

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

PM Peak Hour

	↖	↗	↑	↘	↙	↓
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↖↖	↗	↑↑	↘	↙	↑↑
Traffic Volume (vph)	359	90	648	724	165	587
Future Volume (vph)	359	90	648	724	165	587
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 Effect Green (s)	22.5	22.5	69.3	69.3	87.5	85.5
Actuated g/C Ratio	0.19	0.19	0.58	0.58	0.73	0.71
v/c Ratio	0.64	0.27	0.33	0.64	0.30	0.24
Control Delay	49.3	9.0	14.7	5.5	6.9	6.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.3	9.0	14.7	5.5	6.9	6.7
LOS	D	A	B	A	A	A
Approach Delay	41.3		9.9			6.7
Approach LOS	D		A			A

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: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.64

Intersection Signal Delay: 14.9

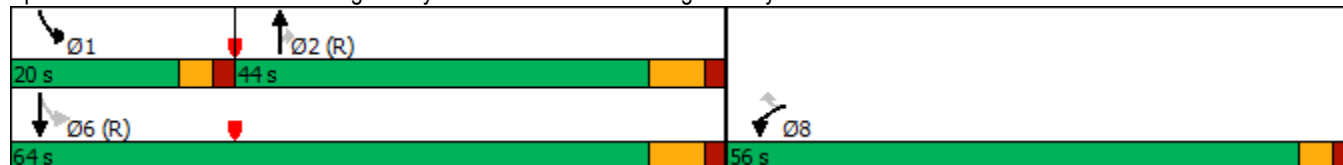
Intersection LOS: B

Intersection Capacity Utilization 64.0%

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 1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	↕
Traffic Vol, veh/h	20	0	21	10	0	21	1	635	1	4	531	7
Future Vol, veh/h	20	0	21	10	0	21	1	635	1	4	531	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	290	-	-	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	22	0	23	13	0	27	1	765	1	4	577	8

Major/Minor	Minor2		Minor1		Major1		Major2		Major2		Major2	
Conflicting Flow All	1366	1353	577	1369	1361	766	585	0	0	766	0	0
Stage 1	585	585	-	768	768	-	-	-	-	-	-	-
Stage 2	781	768	-	601	593	-	-	-	-	-	-	-
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	124	150	516	124	148	403	990	-	-	847	-	-
Stage 1	497	498	-	394	411	-	-	-	-	-	-	-
Stage 2	388	411	-	487	493	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	115	149	516	118	147	403	990	-	-	847	-	-
Mov Cap-2 Maneuver	115	149	-	118	147	-	-	-	-	-	-	-
Stage 1	497	496	-	394	411	-	-	-	-	-	-	-
Stage 2	362	411	-	463	491	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	29.5	24.2	0	0.1
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	990	-	-	191 227	847	-	-
HCM Lane V/C Ratio	0.001	-	-	0.233 0.175	0.005	-	-
HCM Control Delay (s)	8.6	-	-	29.5 24.2	9.3	-	-
HCM Lane LOS	A	-	-	D C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.9 0.6	0	-	-

Intersection

Int Delay, s/veh 4.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕	↕	↕	↕	↕	↕	↕
Traffic Vol, veh/h	37	1	40	56	1	55	8	545	24	29	508	25
Future Vol, veh/h	37	1	40	56	1	55	8	545	24	29	508	25
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Stop	-	-	None	-	-	None
Storage Length	-	-	-	-	-	0	340	-	290	340	-	0
Veh in Median Storage, #	-	0	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	83	83	83	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	47	1	51	67	1	66	9	626	28	33	584	29

Major/Minor	Minor2		Minor1		Major1		Major2		Major2		Major2	
Conflicting Flow All	1309	1322	584	1335	1323	626	613	0	0	654	0	0
Stage 1	650	650	-	644	644	-	-	-	-	-	-	-
Stage 2	659	672	-	691	679	-	-	-	-	-	-	-
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	136	156	512	131	156	484	966	-	-	933	-	-
Stage 1	458	465	-	461	468	-	-	-	-	-	-	-
Stage 2	453	454	-	435	451	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	113	149	512	113	149	484	966	-	-	933	-	-
Mov Cap-2 Maneuver	113	149	-	237	271	-	-	-	-	-	-	-
Stage 1	454	449	-	457	464	-	-	-	-	-	-	-
Stage 2	386	450	-	377	435	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	43.6		20		0.1		0.5	
HCM LOS	E		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR
Capacity (veh/h)	966	-	-	189 238 484	933	-	-
HCM Lane V/C Ratio	0.01	-	-	0.529 0.289 0.137	0.036	-	-
HCM Control Delay (s)	8.8	-	-	43.6 26.1 13.6	9	-	-
HCM Lane LOS	A	-	-	E D B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	2.7 1.2 0.5	0.1	-	-

Intersection

Int Delay, s/veh 3.6

Movement EBL EBR NBL NBT SBT SBRLane Configurations 

Traffic Vol, veh/h 191 71 38 386 360 243

Future Vol, veh/h 191 71 38 386 360 243

Conflicting Peds, #/hr 0 0 0 0 0 0

Sign Control Stop Stop Free Free Free Free

RT Channelized - None - None - None

Storage Length 0 0 500 - - 290

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

Grade, % 0 - - 0 0 -

Peak Hour Factor 100 100 95 95 89 89

Heavy Vehicles, % 2 2 2 2 2 2

Mvmt Flow 191 71 40 406 404 273

Major/Minor Minor2 Major1 Major2

Conflicting Flow All 890 404 677 0 - 0

Stage 1 404 - - - - -

Stage 2 486 - - - - -

Critical Hdwy 6.42 6.22 4.12 - - -

Critical Hdwy Stg 1 5.42 - - - - -

Critical Hdwy Stg 2 5.42 - - - - -

Follow-up Hdwy 3.518 3.318 2.218 - - -

Pot Cap-1 Maneuver 313 647 915 - - -

Stage 1 674 - - - - -

Stage 2 618 - - - - -

Platoon blocked, % - - -

Mov Cap-1 Maneuver 299 647 915 - - -

Mov Cap-2 Maneuver 424 - - - - -

Stage 1 644 - - - - -

Stage 2 618 - - - - -

Approach EB NB SB

HCM Control Delay, s 17.8 0.8 0

HCM LOS C

Minor Lane/Major Mvmt NBL NBT EBLn1 EBLn2 SBT SBR

Capacity (veh/h) 915 - 424 647 - -






HCM Lane V/C Ratio 0.044 - 0.45 0.11 - -

HCM Control Delay (s) 9.1 - 20.3 11.2 - -

HCM Lane LOS A - C B - -

HCM 95th %tile Q(veh) 0.1 - 2.3 0.4 - -

HCM 6th TWSC Short-Term Total Traffic (With LT Accel Lane)(With Peaceful Valley Full Movement
6: Marksheffel Rd & Mesa Ridge Pkwy AM Peak Hour

Intersection						
Int Delay, s/veh	4.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	191	71	38	0	360	243
Future Vol, veh/h	191	71	38	0	360	243
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	290
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	95	95	89	89
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	220	82	40	0	404	273
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	484	404	677	0	-	0
Stage 1	404	-	-	-	-	-
Stage 2	80	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	542	647	915	-	-	-
Stage 1	674	-	-	-	-	-
Stage 2	943	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	518	647	915	-	-	-
Mov Cap-2 Maneuver	604	-	-	-	-	-
Stage 1	644	-	-	-	-	-
Stage 2	943	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	13.5	9.1		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	915	-	604	647	-	-
HCM Lane V/C Ratio	0.044	-	0.363	0.126	-	-
HCM Control Delay (s)	9.1	0	14.3	11.4	-	-
HCM Lane LOS	A	A	B	B	-	-
HCM 95th %tile Q(veh)	0.1	-	1.7	0.4	-	-

Intersection

Int Delay, s/veh 4

Movement EBL EBT WBT WBR SBL SBRLane Configurations      

Traffic Vol, veh/h 89 235 272 9 27 156

Future Vol, veh/h 89 235 272 9 27 156

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 - - - 0 0

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

Grade, % - 0 0 - 0 -

Peak Hour Factor 87 87 82 82 81 81

Heavy Vehicles, % 2 2 2 2 2 2

Mvmt Flow 102 270 332 11 33 193

Major/Minor Major1 Major2 Minor2

Conflicting Flow All 343 0 - 0 812 338

Stage 1 - - - - 338 -

Stage 2 - - - - 474 -

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 1216 - - - 348 704

Stage 1 - - - - 722 -

Stage 2 - - - - 626 -

Platoon blocked, % - - - -

Mov Cap-1 Maneuver 1216 - - - 319 704

Mov Cap-2 Maneuver - - - - 319 -

Stage 1 - - - - 661 -

Stage 2 - - - - 626 -

Approach EB WB SB

HCM Control Delay, s 2.3 0 12.8

HCM LOS B

Minor Lane/Major Mvmt EBL EBT WBT WBR SBLn1 SBLn2

Capacity (veh/h) 1216 - - - 319 704

HCM Lane V/C Ratio 0.084 - - - 0.104 0.274

HCM Control Delay (s) 8.2 - - - 17.6 12

HCM Lane LOS A - - - C B

HCM 95th %tile Q(veh) 0.3 - - - 0.3 1.1

Timings

Short-Term Total Traffic (With Peaceful Valley Full Movement)

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

AM Peak Hour

	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↖↗	↖	↖↖	↖	↖	↖↖
Traffic Volume (vph)	638	201	507	239	97	603
Future Volume (vph)	638	201	507	239	97	603
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 Effect Green (s)	36.9	36.9	55.4	55.4	73.1	71.1
Actuated g/C Ratio	0.31	0.31	0.46	0.46	0.61	0.59
v/c Ratio	0.70	0.36	0.34	0.30	0.21	0.32
Control Delay	40.1	4.9	22.9	3.9	12.2	13.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.1	4.9	22.9	3.9	12.2	13.7
LOS	D	A	C	A	B	B
Approach Delay	31.6		16.8			13.5
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: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.70

Intersection Signal Delay: 21.4

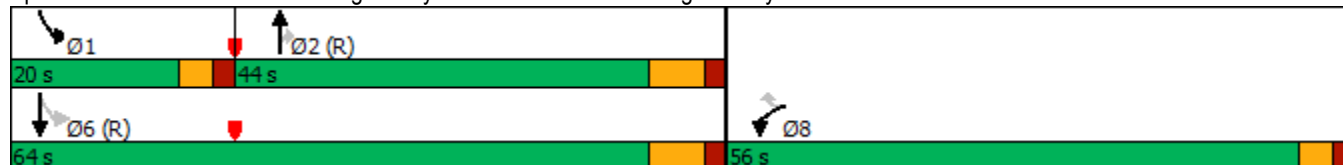
Intersection LOS: C

Intersection Capacity Utilization 62.7%

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 0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	↕
Traffic Vol, veh/h	13	0	14	2	0	3	2	678	3	8	560	22
Future Vol, veh/h	13	0	14	2	0	3	2	678	3	8	560	22
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	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	14	0	15	3	0	4	2	745	3	9	609	24

Major/Minor	Minor2		Minor1		Major1		Major2		Major2		Major2	
Conflicting Flow All	1380	1379	609	1398	1402	747	633	0	0	748	0	0
Stage 1	627	627	-	751	751	-	-	-	-	-	-	-
Stage 2	753	752	-	647	651	-	-	-	-	-	-	-
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	122	144	495	118	140	413	950	-	-	861	-	-
Stage 1	471	476	-	403	418	-	-	-	-	-	-	-
Stage 2	402	418	-	460	465	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	120	142	495	113	138	413	950	-	-	861	-	-
Mov Cap-2 Maneuver	120	142	-	113	138	-	-	-	-	-	-	-
Stage 1	470	471	-	402	417	-	-	-	-	-	-	-
Stage 2	397	417	-	441	460	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	26.3	23.6	0	0.1
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	950	-	-	198 200	861	-	-
HCM Lane V/C Ratio	0.002	-	-	0.148 0.032	0.01	-	-
HCM Control Delay (s)	8.8	-	-	26.3 23.6	9.2	-	-
HCM Lane LOS	A	-	-	D C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.5 0.1	0	-	-

Intersection

Int Delay, s/veh 3.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕	↕	↕	↕	↕	↕	↕
Traffic Vol, veh/h	25	2	21	37	1	39	23	619	66	35	509	32
Future Vol, veh/h	25	2	21	37	1	39	23	619	66	35	509	32
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Stop	-	-	None	-	-	None
Storage Length	-	-	-	-	-	0	340	-	290	340	-	0
Veh in Median Storage, #	-	0	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	71	71	71	78	78	78	92	92	92	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	35	3	30	47	1	50	25	673	72	42	606	38

Major/Minor	Minor2		Minor1		Major1		Major2		Major2		Major2	
Conflicting Flow All	1450	1485	606	1449	1451	673	644	0	0	745	0	0
Stage 1	690	690	-	723	723	-	-	-	-	-	-	-
Stage 2	760	795	-	726	728	-	-	-	-	-	-	-
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	109	125	497	109	131	455	941	-	-	863	-	-
Stage 1	435	446	-	417	431	-	-	-	-	-	-	-
Stage 2	398	399	-	416	429	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	91	116	497	95	121	455	941	-	-	863	-	-
Mov Cap-2 Maneuver	91	116	-	213	238	-	-	-	-	-	-	-
Stage 1	423	424	-	406	419	-	-	-	-	-	-	-
Stage 2	344	388	-	370	408	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	50.4	20.2	0.3	0.6
HCM LOS	F	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR
Capacity (veh/h)	941	-	-	144 214 455	863	-	-
HCM Lane V/C Ratio	0.027	-	-	0.469 0.228 0.11	0.048	-	-
HCM Control Delay (s)	8.9	-	-	50.4 26.7 13.9	9.4	-	-
HCM Lane LOS	A	-	-	F D B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	2.2 0.8 0.4	0.2	-	-

Intersection

Int Delay, s/veh 11.6

Movement EBL EBR NBL NBT SBT SBRLane Configurations 

Traffic Vol, veh/h 337 49 33 371 360 208

Future Vol, veh/h 337 49 33 371 360 208

Conflicting Peds, #/hr 0 0 0 0 0 0

Sign Control Stop Stop Free Free Free Free

RT Channelized - None - None - None

Storage Length 0 0 500 - - 290

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

Grade, % 0 - - 0 0 -

Peak Hour Factor 90 90 100 100 90 90

Heavy Vehicles, % 2 2 2 2 2 2

Mvmt Flow 374 54 33 371 400 231

Major/Minor Minor2 Major1 Major2

Conflicting Flow All 837 400 631 0 - 0

Stage 1 400 - - - - -

Stage 2 437 - - - - -

Critical Hdwy 6.42 6.22 4.12 - - -

Critical Hdwy Stg 1 5.42 - - - - -

Critical Hdwy Stg 2 5.42 - - - - -

Follow-up Hdwy 3.518 3.318 2.218 - - -

Pot Cap-1 Maneuver ~ 337 650 951 - - -

Stage 1 677 - - - - -

Stage 2 651 - - - - -

Platoon blocked, % - - -

Mov Cap-1 Maneuver ~ 325 650 951 - - -

Mov Cap-2 Maneuver 446 - - - - -

Stage 1 653 - - - - -

Stage 2 651 - - - - -

Approach EB NB SB

HCM Control Delay, s 38.9 0.7 0

HCM LOS E

Minor Lane/Major Mvmt NBL NBT EBLn1 EBLn2 SBT SBR

Capacity (veh/h) 951 - 446 650 - -

HCM Lane V/C Ratio 0.035 - 0.84 0.084 - -

HCM Control Delay (s) 8.9 - 42.9 11 - -






HCM Lane LOS A - E B - -

HCM 95th %tile Q(veh) 0.1 - 8.2 0.3 - -

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 6th TWSC Short-Term Total Traffic (With LT Accel Lane)(With Peaceful Valley RIRO)
 6: Marksheffel Rd & Mesa Ridge Pkwy PM Peak Hour

Intersection						
Int Delay, s/veh	7.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	337	49	33	0	360	208
Future Vol, veh/h	337	49	33	0	360	208
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	290
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	85	85	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	374	54	39	0	400	231
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	478	400	631	0	-	0
Stage 1	400	-	-	-	-	-
Stage 2	78	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	546	650	951	-	-	-
Stage 1	677	-	-	-	-	-
Stage 2	945	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	524	650	951	-	-	-
Mov Cap-2 Maneuver	608	-	-	-	-	-
Stage 1	649	-	-	-	-	-
Stage 2	945	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	18.8	8.9		0		
HCM LOS	C					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	951	-	608	650	-	-
HCM Lane V/C Ratio	0.041	-	0.616	0.084	-	-
HCM Control Delay (s)	8.9	0	19.9	11	-	-
HCM Lane LOS	A	A	C	B	-	-
HCM 95th %tile Q(veh)	0.1	-	4.2	0.3	-	-

Intersection

Int Delay, s/veh 3.9

Movement EBL EBT WBT WBR SBL SBRLane Configurations 

Traffic Vol, veh/h 203 367 217 23 19 118

Future Vol, veh/h 203 367 217 23 19 118

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 - - - 0 0

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

Grade, % - 0 0 - 0 -

Peak Hour Factor 87 87 86 86 78 78

Heavy Vehicles, % 2 2 2 2 2 2

Mvmt Flow 233 422 252 27 24 151

Major/Minor Major1 Major2 Minor2

Conflicting Flow All 279 0 - 0 1154 266

Stage 1 - - - - 266 -

Stage 2 - - - - 888 -

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 1284 - - - 218 773

Stage 1 - - - - 779 -

Stage 2 - - - - 402 -

Platoon blocked, % - - - -

Mov Cap-1 Maneuver 1284 - - - 179 773

Mov Cap-2 Maneuver - - - - 179 -

Stage 1 - - - - 638 -

Stage 2 - - - - 402 -

Approach EB WB SB

HCM Control Delay, s 3 0 13.2

HCM LOS B

Minor Lane/Major Mvmt EBL EBT WBT WBR SBLn1 SBLn2

Capacity (veh/h) 1284 - - - 179 773

HCM Lane V/C Ratio 0.182 - - - 0.136 0.196

HCM Control Delay (s) 8.4 - - - 28.3 10.8

HCM Lane LOS A - - - D B

HCM 95th %tile Q(veh) 0.7 - - - 0.5 0.7

Timings

Short-Term Total Traffic (With Peaceful Valley Full Movement)

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

PM Peak Hour

	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔↔	↔	↕↕	↔	↔	↕↕
Traffic Volume (vph)	359	90	648	724	165	587
Future Volume (vph)	359	90	648	724	165	587
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 Effect Green (s)	22.5	22.5	69.3	69.3	87.5	85.5
Actuated g/C Ratio	0.19	0.19	0.58	0.58	0.73	0.71
v/c Ratio	0.64	0.27	0.33	0.64	0.30	0.24
Control Delay	49.3	9.0	14.7	5.5	6.9	6.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.3	9.0	14.7	5.5	6.9	6.7
LOS	D	A	B	A	A	A
Approach Delay	41.3		9.9			6.7
Approach LOS	D		A			A

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: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.64

Intersection Signal Delay: 14.9

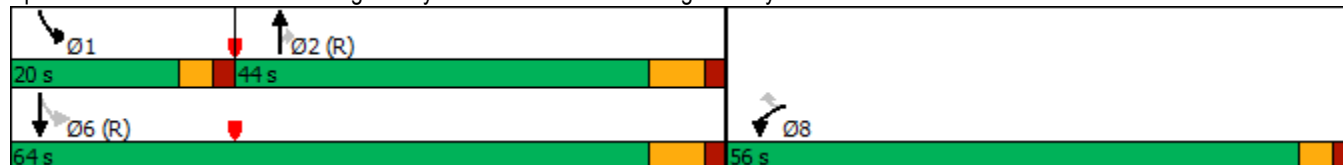
Intersection LOS: B

Intersection Capacity Utilization 64.0%

ICU Level of Service B

Analysis Period (min) 15

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



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

Short-Term Total Traffic (With Peaceful Valley RIRO)

AM Peak Hour

Intersection												
Int Delay, s/veh	4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	↕
Traffic Vol, veh/h	57	1	21	10	1	21	6	598	1	4	531	7
Future Vol, veh/h	57	1	21	10	1	21	6	598	1	4	531	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	290	-	-	290	-	290
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	78	78	78	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	67	1	25	13	1	27	7	650	1	4	577	8

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1264	1250	577	1267	1258	651	585	0	0	651	0	0
Stage 1	585	585	-	665	665	-	-	-	-	-	-	-
Stage 2	679	665	-	602	593	-	-	-	-	-	-	-
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	146	173	516	146	171	469	990	-	-	935	-	-
Stage 1	497	498	-	449	458	-	-	-	-	-	-	-
Stage 2	441	458	-	486	493	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	136	171	516	137	169	469	990	-	-	935	-	-
Mov Cap-2 Maneuver	136	171	-	137	169	-	-	-	-	-	-	-
Stage 1	494	496	-	446	455	-	-	-	-	-	-	-
Stage 2	412	455	-	460	491	-	-	-	-	-	-	-









Approach	EB		WB		NB		SB	
HCM Control Delay, s	49.1		21.5		0.1		0.1	
HCM LOS	E		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	990	-	-	170 259	935	-	-
HCM Lane V/C Ratio	0.007	-	-	0.547 0.158	0.005	-	-
HCM Control Delay (s)	8.7	-	-	49.1 21.5	8.9	-	-
HCM Lane LOS	A	-	-	E C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	2.8 0.6	0	-	-

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

Short-Term Total Traffic (With Peaceful Valley RIRO)

AM Peak Hour

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	40	56	0	55	0	550	24	29	508	25
Future Vol, veh/h	0	0	40	56	0	55	0	550	24	29	508	25
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Stop	-	-	None	-	-	None
Storage Length	-	-	0	0	-	0	-	-	290	340	-	290
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	78	83	83	83	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	51	67	0	66	0	632	28	33	584	29







Major/Minor	Minor2		Minor1		Major1		Major2	
Conflicting Flow All	-	-	584	1322	-	632	-	0
Stage 1	-	-	-	632	-	-	-	-
Stage 2	-	-	-	690	-	-	-	-
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	512	133	0	480	0	928
Stage 1	0	0	-	468	0	-	-	-
Stage 2	0	0	-	435	0	-	-	-
Platoon blocked, %							-	-
Mov Cap-1 Maneuver	-	-	512	116	-	480	-	928
Mov Cap-2 Maneuver	-	-	-	243	-	-	-	-
Stage 1	-	-	-	468	-	-	-	-
Stage 2	-	-	-	378	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.8	19.6	0	0.5
HCM LOS	B	C		






Minor Lane/Major Mvmt	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR
Capacity (veh/h)	-	-	512 243 480	928	-	-
HCM Lane V/C Ratio	-	-	0.1 0.278 0.138	0.036	-	-
HCM Control Delay (s)	-	-	12.8 25.4 13.7	9	-	-
HCM Lane LOS	-	-	B D B	A	-	-
HCM 95th %tile Q(veh)	-	-	0.3 1.1 0.5	0.1	-	-

HCM 6th TWSC
6: Marksheffel Rd & Mesa Ridge Pkwy

Short-Term Total Traffic (With Peaceful Valley RIRO)
AM Peak Hour






Intersection						
Int Delay, s/veh	4.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	191	71	41	383	351	243
Future Vol, veh/h	191	71	41	383	351	243
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	500	-	-	290
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	95	95	89	89
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	220	82	43	403	394	273
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	883	394	667	0	-	0
Stage 1	394	-	-	-	-	-
Stage 2	489	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	316	655	923	-	-	-
Stage 1	681	-	-	-	-	-
Stage 2	616	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	301	655	923	-	-	-
Mov Cap-2 Maneuver	426	-	-	-	-	-
Stage 1	649	-	-	-	-	-
Stage 2	616	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	19.2	0.9		0		
HCM LOS	C					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	923	-	426	655	-	-
HCM Lane V/C Ratio	0.047	-	0.515	0.125	-	-
HCM Control Delay (s)	9.1	-	22.1	11.3	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.1	-	2.9	0.4	-	-

HCM 6th TWSC Short-Term Total Traffic (With LT Accel Lane)(With Peaceful Valley RIRO)
 6: Marksheffel Rd & Mesa Ridge Pkwy AM Peak Hour

Intersection						
Int Delay, s/veh	4.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	191	71	41	0	351	243
Future Vol, veh/h	191	71	41	0	351	243
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	290
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	95	95	89	89
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	220	82	43	0	394	273
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	480	394	667	0	-	0
Stage 1	394	-	-	-	-	-
Stage 2	86	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	545	655	923	-	-	-
Stage 1	681	-	-	-	-	-
Stage 2	937	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	519	655	923	-	-	-
Mov Cap-2 Maneuver	607	-	-	-	-	-
Stage 1	649	-	-	-	-	-
Stage 2	937	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	13.5	9.1		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	923	-	607	655	-	-
HCM Lane V/C Ratio	0.047	-	0.362	0.125	-	-
HCM Control Delay (s)	9.1	0	14.3	11.3	-	-
HCM Lane LOS	A	A	B	B	-	-
HCM 95th %tile Q(veh)	0.1	-	1.6	0.4	-	-

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

Short-Term Total Traffic (With Peaceful Valley RIRO)
AM Peak Hour

Intersection						
Int Delay, s/veh	4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	88	235	272	12	27	156
Future Vol, veh/h	88	235	272	12	27	156
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	475	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	87	87	82	82	81	81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	101	270	332	15	33	193
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	347	0	-	0	812	340
Stage 1	-	-	-	-	340	-
Stage 2	-	-	-	-	472	-
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	1212	-	-	-	348	702
Stage 1	-	-	-	-	721	-
Stage 2	-	-	-	-	628	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1212	-	-	-	319	702
Mov Cap-2 Maneuver	-	-	-	-	319	-
Stage 1	-	-	-	-	661	-
Stage 2	-	-	-	-	628	-
Approach	EB	WB		SB		
HCM Control Delay, s	2.2	0		12.9		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1212	-	-	-	319	702
HCM Lane V/C Ratio	0.083	-	-	-	0.104	0.274
HCM Control Delay (s)	8.2	-	-	-	17.6	12.1
HCM Lane LOS	A	-	-	-	C	B
HCM 95th %tile Q(veh)	0.3	-	-	-	0.3	1.1

Timings

Short-Term Total Traffic (With Peaceful Valley RIRO)

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

AM Peak Hour

	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔↔	↔	↕↕	↔	↔	↕↕
Traffic Volume (vph)	638	201	507	239	97	603
Future Volume (vph)	638	201	507	239	97	603
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)	40.0	40.0	60.0	60.0	20.0	80.0
Total Split (%)	33.3%	33.3%	50.0%	50.0%	16.7%	66.7%
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 Effect Green (s)	33.0	33.0	59.6	59.6	77.0	75.0
Actuated g/C Ratio	0.28	0.28	0.50	0.50	0.64	0.62
v/c Ratio	0.79	0.39	0.31	0.28	0.20	0.31
Control Delay	46.7	6.0	19.3	3.0	9.6	11.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.7	6.0	19.3	3.0	9.6	11.2
LOS	D	A	B	A	A	B
Approach Delay	36.9		14.1			11.0
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: 21.8

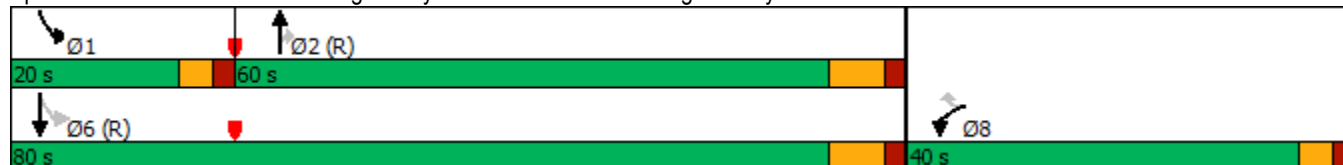
Intersection LOS: C

Intersection Capacity Utilization 62.7%

ICU Level of Service B

Analysis Period (min) 15

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



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

Short-Term Total Traffic (With Peaceful Valley RIRO)

PM Peak Hour

Intersection												
Int Delay, s/veh	2.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	↕
Traffic Vol, veh/h	39	2	14	2	1	3	20	653	3	8	560	22
Future Vol, veh/h	39	2	14	2	1	3	20	653	3	8	560	22
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	290	-	-	290	-	290
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	78	78	78	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	46	2	16	3	1	4	22	710	3	9	609	24









Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1385	1384	609	1404	1407	712	633	0	0	713	0	0
Stage 1	627	627	-	756	756	-	-	-	-	-	-	-
Stage 2	758	757	-	648	651	-	-	-	-	-	-	-
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	121	143	495	117	139	432	950	-	-	887	-	-
Stage 1	471	476	-	400	416	-	-	-	-	-	-	-
Stage 2	399	416	-	459	465	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	116	138	495	109	134	432	950	-	-	887	-	-
Mov Cap-2 Maneuver	116	138	-	109	134	-	-	-	-	-	-	-
Stage 1	460	471	-	391	406	-	-	-	-	-	-	-
Stage 2	385	406	-	437	460	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	48.4		25.5		0.3		0.1	
HCM LOS	E		D					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	950	-	-	145	183	887	-	-
HCM Lane V/C Ratio	0.023	-	-	0.446	0.042	0.01	-	-
HCM Control Delay (s)	8.9	-	-	48.4	25.5	9.1	-	-
HCM Lane LOS	A	-	-	E	D	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	2	0.1	0	-	-

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

Short-Term Total Traffic (With Peaceful Valley RIRO)
PM Peak Hour

Intersection												
Int Delay, s/veh	1.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	21	37	0	39	0	638	66	35	509	32
Future Vol, veh/h	0	0	21	37	0	39	0	638	66	35	509	32
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Stop	-	-	None	-	-	None
Storage Length	-	-	0	0	-	0	-	-	290	340	-	290
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	71	71	71	78	78	78	92	92	92	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	30	47	0	50	0	693	72	42	606	38







Major/Minor	Minor2		Minor1		Major1		Major2	
Conflicting Flow All	-	-	606	1417	-	693	-	0
Stage 1	-	-	-	693	-	-	-	-
Stage 2	-	-	-	724	-	-	-	-
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	497	115	0	443	0	848
Stage 1	0	0	-	434	0	-	-	-
Stage 2	0	0	-	417	0	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	497	104	-	443	-	848
Mov Cap-2 Maneuver	-	-	-	230	-	-	-	-
Stage 1	-	-	-	434	-	-	-	-
Stage 2	-	-	-	373	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.7	19.3	0	0.6
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR
Capacity (veh/h)	-	-	497 230 443	848	-	-
HCM Lane V/C Ratio	-	-	0.06 0.206 0.113	0.049	-	-
HCM Control Delay (s)	-	-	12.7 24.7 14.2	9.5	-	-
HCM Lane LOS	-	-	B C B	A	-	-
HCM 95th %tile Q(veh)	-	-	0.2 0.8 0.4	0.2	-	-

HCM 6th TWSC
6: Marksheffel Rd & Mesa Ridge Pkwy

Short-Term Total Traffic (With Peaceful Valley RIRO)
PM Peak Hour

Intersection						
Int Delay, s/veh	11.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	337	49	37	367	360	208
Future Vol, veh/h	337	49	37	367	360	208
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	500	-	-	290
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	100	100	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	374	54	37	367	400	231






Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	841	400	631
Stage 1	400	-	-
Stage 2	441	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	~ 335	650	951
Stage 1	677	-	-
Stage 2	648	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	~ 322	650	951
Mov Cap-2 Maneuver	443	-	-
Stage 1	651	-	-
Stage 2	648	-	-

Approach	EB	NB	SB
HCM Control Delay, s	39.7	0.8	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	951	-	443	650	-	-
HCM Lane V/C Ratio	0.039	-	0.845	0.084	-	-
HCM Control Delay (s)	8.9	-	43.9	11	-	-
HCM Lane LOS	A	-	E	B	-	-
HCM 95th %tile Q(veh)	0.1	-	8.3	0.3	-	-

Notes			
~: Volume exceeds capacity	\$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

HCM 6th TWSC Short-Term Total Traffic (With LT Accel Lane)(With Peaceful Valley RIRO)
6: Marksheffel Rd & Mesa Ridge Pkwy PM Peak Hour

Intersection						
Int Delay, s/veh	7.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	337	49	37	0	360	208
Future Vol, veh/h	337	49	37	0	360	208
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	290
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	85	85	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	374	54	44	0	400	231






Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	488	400	631	0	-	0
Stage 1	400	-	-	-	-	-
Stage 2	88	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	539	650	951	-	-	-
Stage 1	677	-	-	-	-	-
Stage 2	935	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	514	650	951	-	-	-
Mov Cap-2 Maneuver	604	-	-	-	-	-
Stage 1	646	-	-	-	-	-
Stage 2	935	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	19	9	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	951	-	604	650	-	-
HCM Lane V/C Ratio	0.046	-	0.62	0.084	-	-
HCM Control Delay (s)	9	0	20.2	11	-	-
HCM Lane LOS	A	A	C	B	-	-
HCM 95th %tile Q(veh)	0.1	-	4.3	0.3	-	-

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

Short-Term Total Traffic (With Peaceful Valley RIRO)
PM Peak Hour













Intersection						
Int Delay, s/veh	3.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	203	367	217	28	19	118
Future Vol, veh/h	203	367	217	28	19	118
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	475	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	87	87	86	86	78	78
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	233	422	252	33	24	151
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	285	0	-	0	1157	269
Stage 1	-	-	-	-	269	-
Stage 2	-	-	-	-	888	-
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	1277	-	-	-	217	770
Stage 1	-	-	-	-	776	-
Stage 2	-	-	-	-	402	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1277	-	-	-	178	770
Mov Cap-2 Maneuver	-	-	-	-	178	-
Stage 1	-	-	-	-	635	-
Stage 2	-	-	-	-	402	-
Approach	EB	WB		SB		
HCM Control Delay, s	3	0		13.2		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1277	-	-	-	178	770
HCM Lane V/C Ratio	0.183	-	-	-	0.137	0.196
HCM Control Delay (s)	8.4	-	-	-	28.4	10.8
HCM Lane LOS	A	-	-	-	D	B
HCM 95th %tile Q(veh)	0.7	-	-	-	0.5	0.7

Timings

Short-Term Total Traffic (With Peaceful Valley RIRO)

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

PM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	359	90	648	724	165	587
Future Volume (vph)	359	90	648	724	165	587
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 Effect Green (s)	22.5	22.5	69.3	69.3	87.5	85.5
Actuated g/C Ratio	0.19	0.19	0.58	0.58	0.73	0.71
v/c Ratio	0.64	0.27	0.33	0.64	0.30	0.24
Control Delay	49.3	9.0	14.7	5.5	6.9	6.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.3	9.0	14.7	5.5	6.9	6.7
LOS	D	A	B	A	A	A
Approach Delay	41.3		9.9			6.7
Approach LOS	D		A			A

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: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.64

Intersection Signal Delay: 14.9

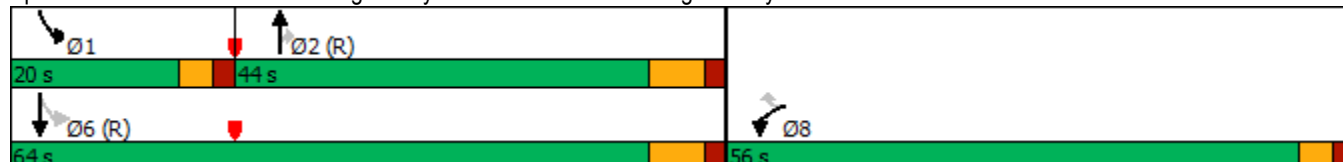
Intersection LOS: B

Intersection Capacity Utilization 64.0%

ICU Level of Service B

Analysis Period (min) 15

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



Queuing Reports

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)	361	412	83	232	203	78	93	187	160
Average Queue (ft)	213	262	39	131	67	39	43	107	67
95th Queue (ft)	317	368	71	204	166	67	79	172	135
Link Distance (ft)			824	517	517			1437	1437
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	500	500				150	1000		
Storage Blk Time (%)		0			0				
Queuing Penalty (veh)		0			0				

Queuing and Blocking Report

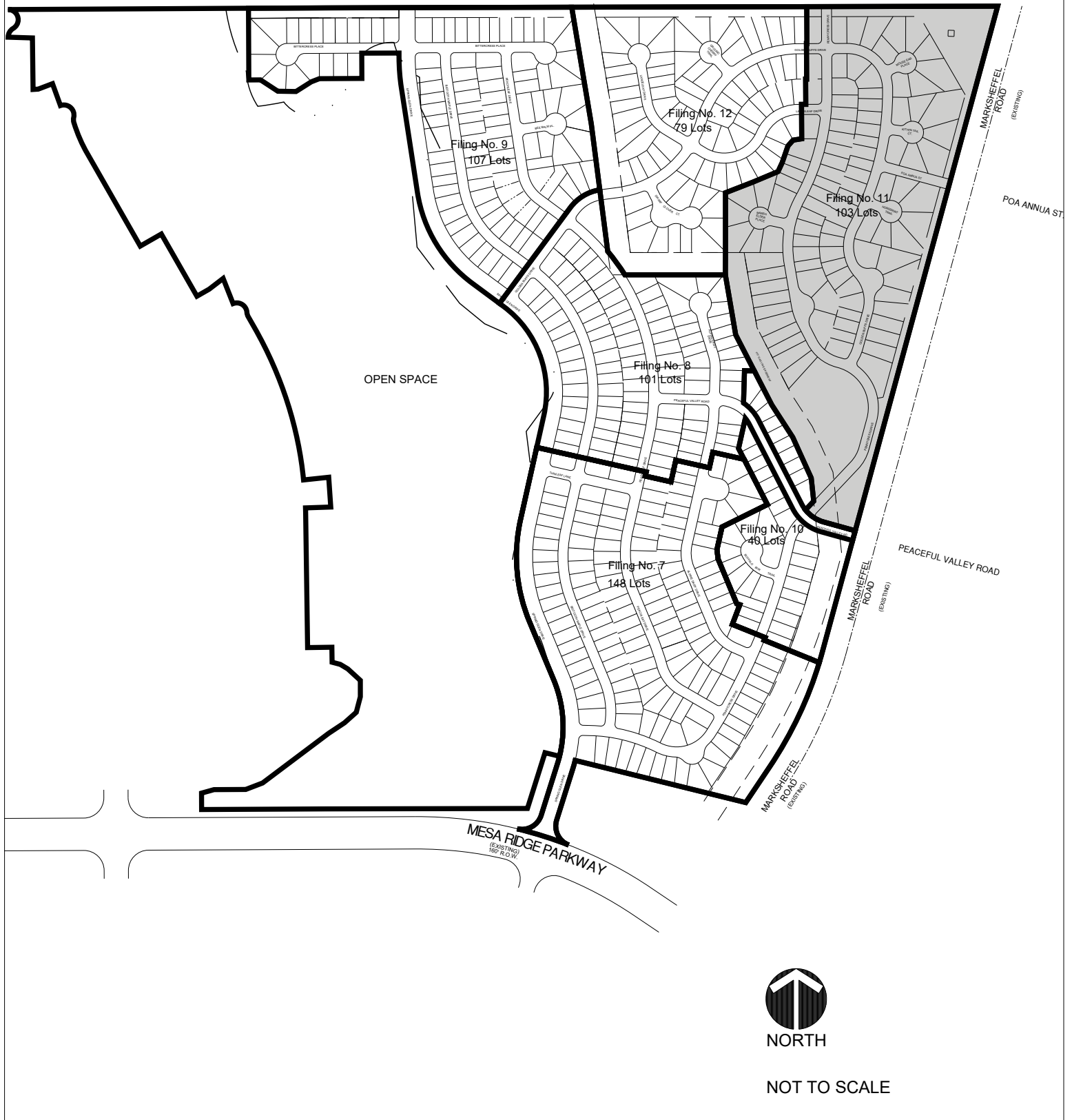
Intersection: 10: Mesa Ridge Pkwy/Powers Blvd & Mesa Ridge Pkwy

Movement	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	R	T	T	R	L	T	T
Maximum Queue (ft)	230	266	61	309	436	250	206	185	168
Average Queue (ft)	106	161	22	173	142	150	84	86	56
95th Queue (ft)	219	234	46	283	321	255	150	152	124
Link Distance (ft)			824	517	517			1437	1437
Upstream Blk Time (%)					0				
Queuing Penalty (veh)					0				
Storage Bay Dist (ft)	350	350				150	1000		
Storage Blk Time (%)					1	9			
Queuing Penalty (veh)					11	29			

Additional Attachments

Glen at Widefield Filing 11





VICINITY MAP

EXHIBIT A

LAND DESCRIPTION:

A tract of land located in a Portion of the South One-half (S1/2) of Section 22, Township 15 South (T15S), Range 65 West (R65W) of the 6th P.M., County of El Paso, State of Colorado, being more particularly described as follows:

Beginning at the Northeast corner of Lot 89, Glen at Widefield Subdivision Filing No. 8 as recorded under Reception No. 218714205 in the records of the Clerk and Recorder's Office, County of El Paso, State of Colorado; Thence N00°04'54"E, a distance of 405.64 feet; Thence N68°48'00"E, a distance of 146.71 feet; Thence N67°16'30"E, a distance of 133.27 feet; Thence N24°56'29"E, a distance of 48.70 feet; Thence N18°59'59"E, a distance of 87.12 feet; Thence N41°26'03"E, a distance of 38.75 feet; Thence N81°14'24"E, a distance of 43.05 feet; Thence N00°5d18'38"W, a distance of 170.00 feet; Thence N89°41'22"E, a distance of 28.36 feet; Thence N01°18'38"W, a distance of 483.09 feet to a point on the North line of the South One-half (S1/2) of said Section 22; Thence N89°51'21"E along the North line of the South One-half (S1/2) of said Section 22, a distance of 944.14 feet to a point on the Westerly Right-of-Way line of Marksheffel Road; Thence S15°11'44"W along the Westerly Right-of-Way line of Marksheffel Road, a distance of 2686.82 feet to a point on the Northerly Right-of-Way line of Peaceful Valley Road as described in said Glen at Widefield Subdivision Filing No. 8; Thence N74°27'43"W along said Northerly Right-of-Way line, a distance of 161.72 feet; Thence continuing along said Northerly Right-of-Way line on the arc of a curve to the right, having a central angle of 44°41'37", a radius of 175.00 feet, an arc length of 136.51 feet; Thence along the arc of a non-tangential curve to the left having a central angle of 106°52'38", a radius of 20.00 feet, an arc length of 37.31 feet, whose chord bears S83°12'25"E; Thence N43°21'16"E, a distance of 34.29 feet to a point on the Westerly line of a 110.00 foot Gas Line Easement as described under Reception No. 202092771 in the records of the Clerk and Recorder's Office of said County; Thence along the Westerly line of said 110.00 foot Gas Line Easement, the following five (5) courses:

- 1.) N06°05'38"W, a distance of 115.36 feet;
- 2.) Thence N24°24'25"W, a distance of 220.92 feet;
- 3.) Thence N32°55'46"W, a distance of 190.67 feet;
- 4.) Thence N27°15'04"W, a distance of 389.87 feet;
- 5.) Thence N09°45'52"W, a distance of 300.61 feet to the Point of Beginning.

Said Parcel contains 44.996 acres (1,960,019 S.F.) more or less.

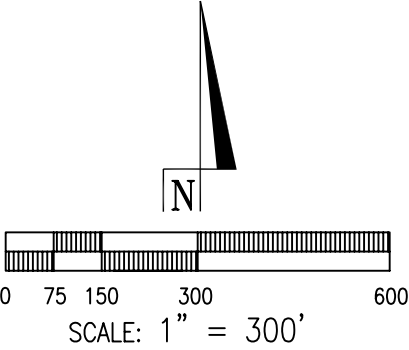
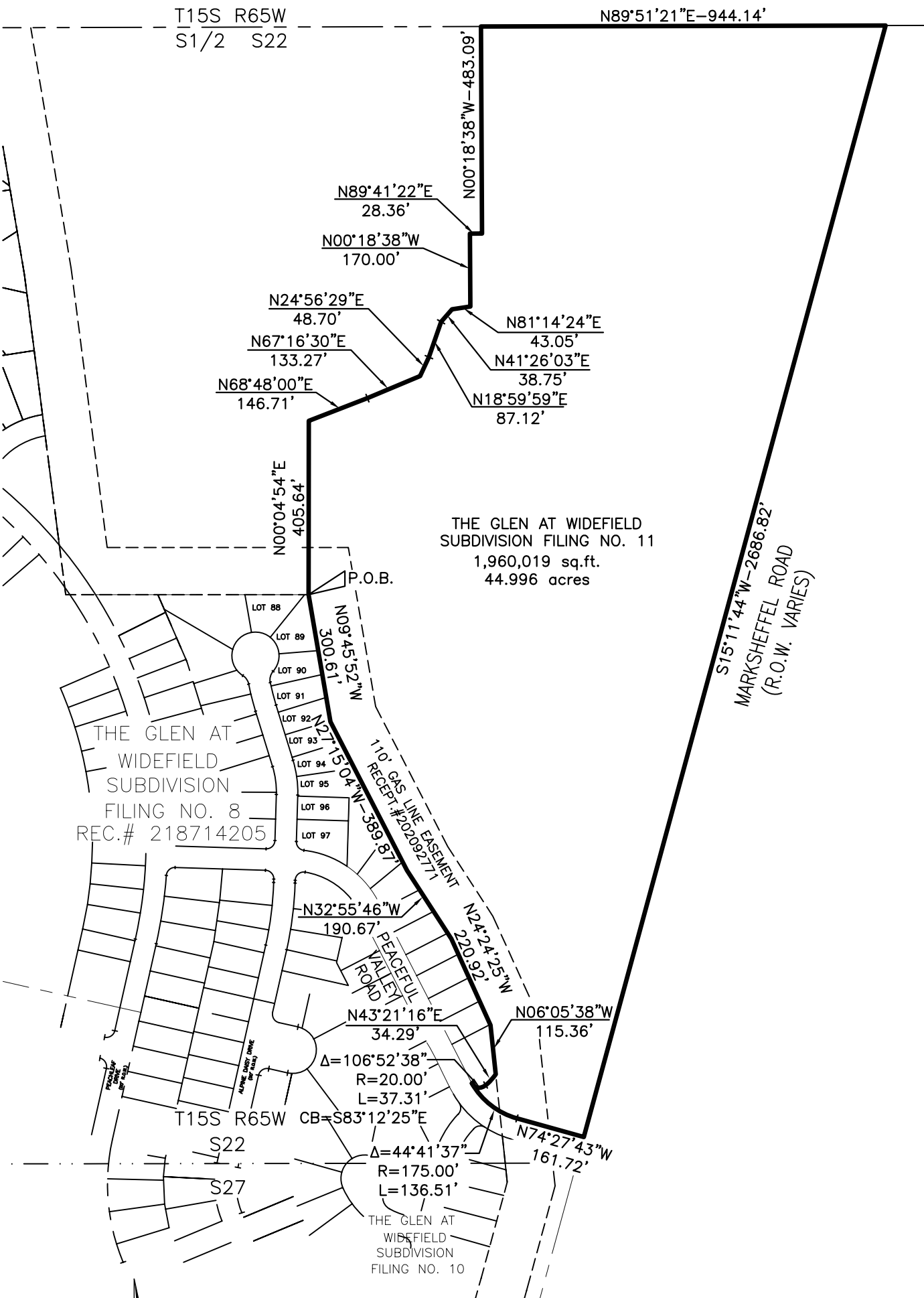
For and on Behalf of
Pinnacle Land Surveying Co., Inc.
John W. Towner
P.L.S. #25968

The Glen at Widefield Filing No. 11

EXHIBIT A

TITLE:	DRAWN BY: MWW	FILE: 19001700-exh.dwg
SCALE:	CHECKED BY: JWT	JOB NO. 19001700
DATE:		

EXHIBIT B



For and on Behalf of
Pinnacle Land Surveying Co., Inc.
John W. Towner
P.L.S. #25968

PINNACLE LAND SURVEYING, INC.
121 County Road 5, Divide, CO 80814

EXHIBIT B		
TITLE: THE GLEN AT WIDEFIELD FILING NO. 11		
SCALE: 1"= 300'	DRAWN BY: MWW	FILE: 19001700-exh.dwg
DATE: 05/28/19	CHECKED BY: JWT	JOB NO. 19001700

THE GLEN AT WIDEFIELD SUBDIVISION FILING NO. 11

A portion of the South One-half (S1/2) of Section 22
Township 15 South (T15S), Range 65 West (R65W) of the 6TH P.M.
County of El Paso, State of Colorado

KNOW ALL MEN BY THESE PRESENTS:

That Glen Investment Group No. VIII, LLC, being the owner of the described tract of land, to wit:

LAND DESCRIPTION, THE GLEN AT WIDEFIELD SUBDIVISION FILING NO. 9:

A tract of land located in a Portion of Sections 21 and 22, Township 15 South (T15S), Range 65 West (R65W) of the 6th P.M., County of El Paso, State of Colorado, being more particularly described as follows:

Beginning at the Northwest corner of the Glen at Widefield Subdivision No. 8 as recorded under Reception No. _____, in the records of the Clerk and Recorder's Office, County of El Paso, State of Colorado; Thence N53°29'23"W, a distance of 166.96 feet; Thence along the arc of a curve to the right, having a central angle of 44°45'21", a radius of 690.00 feet, an arc length of 538.99 feet; Thence N08°44'02"W, a distance of 522.83 feet; Thence along the arc of a curve to the right having a central angle of 08°48'48", a radius of 990.00 feet, an arc length of 152.28 feet; Thence along the arc of a reverse curve to the left, having a central angle of 90°23'24", a radius of 20.00 feet, an arc length of 31.55 feet; Thence S89°41'22"W, a distance of 164.24 feet; Thence S00°18'38"E, a distance of 125.00 feet; Thence S89°41'22"W, a distance of 210.00 feet; Thence S65°54'53"W, a distance of 42.79 feet; Thence S57°40'22"W, a distance of 89.89 feet; Thence N89°03'10"W, a distance of 89.89 feet; Thence N58°49'31"W, a distance of 59.34 feet; Thence N53°53'00"W, a distance of 42.88 feet; Thence S89°41'22"W, a distance of 57.81 feet; Thence N00°18'38"W, a distance of 354.40 feet to a point on the North line of the Southeast One-quarter (SE1/4) of said Section 21; Thence N89°41'22"E along the North line the Southeast One-quarter (SE1/4) of said Section 21, a distance of 381.45 feet; Thence N89°51'21"E, a distance of 1216.92 feet to a point on the Westerly line of a 110' GIS Gas Line Easement as recorded under Reception No. 202092771 in the records of the Clerk and Recorder's Office of said County; Thence S09°31'38"E along the Westerly line of said Gas Line Easement, a distance of 584.99 feet; Thence S07°21'14"E along the Westerly line of said Gas Line Easement, a distance of 328.34 feet to a point on the Northerly line of said Glen at Widefield Subdivision Filing No. 8; Thence along the arc of a non-tangential curve to the left and the Northerly line of said Glen at Widefield Subdivision Filing No. 8, having a central angle of 44°38'25", a radius of 225.00 feet, an arc length of 175.17 feet, whose chord bears S58°48'50"W; Thence continuing along the Northerly line of said Glen at Widefield Subdivision Filing No. 8, S36°30'37"W, a distance of 588.31 feet to the Point of Beginning.

Said tract contains 30.505 acres (1,328,801 S.F.) more or less.

TOGETHER WITH TRACT C LAND DESCRIPTION:

A Portion of Sections 21, 22, 27 and 28, Township 15 South, Range 65 West of the 6th P.M., County of El Paso, State of Colorado, being more particularly described as follows:

Beginning at the Southeast corner of the Glen at Widefield Subdivision Filing No. 6A as recorded under Reception No. _____ in the records of the Clerk and Recorder's Office of said County; Thence along the Easterly boundaries of the Glen at Widefield Subdivision Filing No. 6A (Receipt No. 213713312), 6B (Receipt No. 214713541) and 6C (Receipt No. 215713589); the following thirty-nine (39) courses:
1.) N00°12'26"W, a distance of 81.12 feet; 2.) Thence N74°18'43"E, a distance of 64.03 feet; 3.) Thence N89°42'34"E, a distance of 156.77 feet; 4.) Thence N69°00'39"E, a distance of 89.31 feet; 5.) Thence N53°05'24"E, a distance of 408.47 feet; 6.) Thence N56°23'06"E, a distance of 84.06 feet; 7.) Thence N48°08'15"E, a distance of 78.00 feet; 8.) Thence N14°40'13"E, a distance of 79.69 feet; 9.) Thence N00°00'00"E, a distance of 80.83 feet; 10.) Thence N47°32'46"W, a distance of 83.98 feet; 11.) Thence N59°07'16"W, a distance of 43.67 feet; 12.) Thence N75°10'14"W, a distance of 41.66 feet; 13.) Thence N00°50'00"W, a distance of 74.00 feet; 14.) Thence S89°10'00"W, a distance of 120.00 feet; 15.) Thence N00°50'00"W, a distance of 863.36 feet; 16.) Thence along the arc of a curve to the left, having a central angle of 01°05'47", a radius of 1930.00 feet, an arc length of 36.93 feet; 17.) Thence N88°04'13"E, a distance of 125.00 feet; 18.) Thence N03°59'13"W, a distance of 147.54 feet; 19.) Thence S83°57'21"W, a distance of 125.00 feet; 20.) Thence along the arc of a non-tangential curve to the left, having a central angle of 23°40'5", a radius of 1930.00 feet, an arc length of 799.50 feet, whose chord bears N17°54'42"W; 21.) Thence N29°46'44"W, a distance of 59.51 feet; 22.) Thence along the arc of a curve to the right, having a central angle of 25°50'31", a radius of 50.00 feet, an arc length of 22.55 feet; 23.) Thence along the arc of a reverse curve to the left, having a central angle of 107°37'45", a radius of 50.00 feet, an arc length of 93.92 feet; 24.) Thence N21°33'57"W, a distance of 133.92 feet; 25.) Thence S52°29'14"W, a distance of 87.00 feet; 26.) Thence S80°13'10"W, a distance of 70.00 feet; 27.) Thence N29°46'50"W, a distance of 354.00 feet; 28.) Thence S60°13'10"W, a distance of 120.00 feet; 29.) Thence N29°46'50"W, a distance of 527.00 feet; 30.) Thence along the arc of a curve to the right, having a central angle of 12°35'05", a radius of 760.00 feet, an arc length of 166.93 feet; 31.) Thence along the arc of a compound curve to the right, having a central angle of 30°13'06", a radius of 50.00 feet, an arc length of 28.37 feet; 32.) Thence along the arc of a reverse curve to the left, having a central angle of 122°55'41", a radius of 50.00 feet, an arc length of 107.27 feet; 33.) Thence N86°54'53"E, a distance of 115.00 feet; 34.) Thence S69°15'09"W, a distance of 75.76 feet; 35.) Thence S86°19'29"W, a distance of 25.36 feet; 36.) Thence N00°40'30"W, a distance of 254.64 feet; 37.) Thence N88°13'59"W, a distance of 120.08 feet; 38.) Thence along a non-tangential curve to the right, having a central angle of 60°00'00", a radius of 50.00 feet, an arc length of 52.36 feet, whose chord bears N29°42'12"E; 39.) Thence along the arc of a reverse curve to the left, having a central angle of 150°00'00", a radius of 50.00 feet, an arc length of 130.91 feet to a point on the North line of the Southeast One-quarter (SE1/4) of said Section 21;

Thence N89°41'22"E along the North line of the Southeast One-quarter (SE1/4) of said Section 21, a distance of 1188.63 feet; Thence S00°18'38"E, a distance of 354.40 feet; Thence S89°41'22"E, a distance of 57.81 feet; Thence S53°53'00"E, a distance of 42.88 feet; Thence S58°49'31"E, a distance of 59.34 feet; Thence S89°03'10"E, a distance of 89.89 feet; Thence N57°40'22"E, a distance of 89.89 feet; Thence N68°54'53"E, a distance of 42.79 feet; Thence N89°41'22"E, a distance of 210.00 feet; Thence N00°18'38"W, a distance of 125.00 feet; Thence N89°41'22"E, a distance of 164.24 feet; Thence along the arc of a curve to the right, having a central angle of 90°23'24", a radius of 20.00 feet, an arc length of 31.55 feet; Thence along the arc of a reverse curve to the left, having a central angle of 08°48'48", a radius of 990.00 feet, an arc length of 152.28 feet; Thence S08°44'02"E, a distance of 522.83 feet; Thence along the arc of a curve to the left, having a central angle of 44°45'21", a radius of 690.00 feet, an arc length of 538.99 feet; Thence S53°29'23"E, a distance of 191.96 feet; Thence along the arc of a curve to the right, having a central angle of 66°07'14", a radius of 525.00 feet, an arc length of 606.86 feet; Thence S12°37'51"W, a distance of 528.19 feet; Thence along the arc of a curve to the left, having a central angle of 35°16'00", a radius of 840.00 feet, an arc length of 517.04 feet; Thence S22°38'09"E, a distance of 308.02 feet; Thence along the arc of a curve to the left, having a central angle of 36°23'00", a radius of 610.00 feet, an arc length of 387.35 feet to the Northeast corner of the Jimmy Camp Lift Station as recorded under Reception No. 205032403 in the records of the Clerk and Recorder's Office of said County; Thence N78°12'09"W along the North line of said Jimmy Camp Lift Station, a distance of 73.86 feet; Thence S17°29'04"W along the West line of said Jimmy Camp Lift Station, a distance of 288.96 feet to the Southwest corner of said Jimmy Camp Lift Station; Thence S89°52'30"W, a distance of 992.47 feet; Thence S89°42'34"W, a distance of 618.49 feet to the Point of Beginning.

Said tract contains 114.702 acres (4,996,437 S.F.) more or less.
Combined tracts contain 145.207 acres (6,325,238 S.F.) more or less.

OWNERS CERTIFICATE:

The undersigned, being all the owners, mortgagees, beneficiaries of deeds of trust and holders of other interests in the land described herein, have laid out, subdivided, and platted said lands into lots, streets, and easements as shown herein under the name and subdivision of THE GLEN AT WIDEFIELD SUBDIVISION FILING NO. 9. All public improvements so platted are hereby dedicated to public use and said owner does hereby covenant and agree that the public improvements will be constructed to El Paso County standards and that proper drainage and erosion control for same will be provided at said owner's expense, all to the satisfaction of the Board of County Commissioners of El Paso County, Colorado. Upon acceptance by resolution, all public improvements so dedicated will become matters of maintenance by El Paso County, Colorado. The utility easements shown hereon are hereby dedicated for public utilities and communication systems and other purposes as shown hereon. The entities responsible for providing the services for which the easements are established are hereby granted the perpetual right of ingress and egress from and to adjacent properties for installation, maintenance, and replacement of utility lines and related facilities.

Glen Investment Group No. VIII, LLC

J. Mark Watson President Glen Investment Group No. VIII, LLC

NOTARIAL:

STATE OF COLORADO)
COUNTY OF EL PASO) SS

The foregoing instrument was acknowledged before me this ____ day of _____, 20__ A.D., by J. Mark Watson, President of Glen Investment Group No. VIII, LLC

Witness my Hand and Seal: _____ Notary Public

My Commission Expires: _____

Address: _____

DEDICATION:

The above party in interest has caused said tract to be platted into Lots, Blocks, Streets, Easements and Tracts as shown on the plat, which is drawn to a fixed scale as indicated thereon, and accurately sets forth the boundaries and dimensions of said Lots, Blocks, Streets, Easements, and Tracts which shall be known as "THE GLEN AT WIDEFIELD SUBDIVISION FILING NO. 9" El Paso County, Colorado. All streets as platted are hereby dedicated to public use and said owner does hereby personally covenant and agree that all platted streets will be graded, paved and that proper drainage for same will be provided at his own expense, all to the satisfaction of the Board of County Commissioners of El Paso County, Colorado, and upon acceptance by resolution, all streets so dedicated will become matters of maintenance by EL Paso County, Colorado.

BASIS OF BEARINGS STATEMENT:

The bearings of this plat are based upon a portion of the Easterly boundary of the Glen at Widefield Subdivision Filing No. 5B as recorded under Reception No. 206712328 in the records of the Clerk and Recorder's Office, County of El Paso, State of Colorado; Said line being also a portion of the Easterly Right-of-Way line of Autumn Glen Avenue as described in said subdivision, being monumented at the Point of Tangency of said boundary by a found cap and rebar marked "PLSC 25968" and at the Point of Curvature of said boundary by a found rebar and cap marked "PLSC 25968". Said line bears N29°46'44"W, a distance of 1154.12 feet.

EASEMENTS:

Unless shown greater in width, both sides of all side lot lines will be platted with five (5') foot easements for drainage purposes and public utilities only, and both sides of all rear lot lines will be platted with a ten (10') foot easement for drainage purposes and public utilities only, and all lot lines adjoining a street which has a fifty (50') foot right-of-way width will be platted with a fifteen (15') foot easement, being a five (5') foot easement adjacent to that fifty (50') foot right-of-way for public improvements and a ten (10') foot easement adjacent to the five (5') foot easement for utility purposes, with sole responsibility for maintenance being vested with the adjoining property owners.

NOTES:

1. These tracts of land are subject to the following per the Commitment for Title Insurance, prepared by Unified Title Company, Order No. 54829UTC, effective date December 9, 2017 at 7:30 A.M.

9. Any interest which may have been acquired by the public reason of the Resolution of the Board of County Commissioners dated and recorded October 3, 1987 in Road Book A at Page 78, which provided that all section lines, township lines, and range lines on the public domain east of the range line dividing range lines 65 west and 66 west declared to be public highways of the width of 60 feet, being 30 feet on each side of said section lines, township lines, or range lines.

10. Any rights of the Spring Lake Reservoir as shown on Map recorded under Reception No. 499772, File No. 836.

11. Any rights, interest or easements in favor of the riparian owners, the State of Colorado, the United States of America, or the general public, which exist, have existed, or are claimed to exist in and over the waters and present and past bed and banks of the streams, ditches and/or ponds within the herein described property.

12. Any question, dispute or adverse claims as to any loss or gain of land as a result of any change in the river bed location by other than natural causes, or alteration through accretion, reliction, erosion or avulsion of the center thread, bank, channel or flow of waters in Jimmy Camp Creek lying within subject land, and any question as to the location of such center thread, bed bank or channel as a legal description monument or marker for purposes of describing or locating subued lands.

NOTE: There are no documents in the land records of the office of the Clerk and Recorder of El Paso, accurately locating past or present location(s) of the center thread, bank, bed or channel of the above Jimmy Camp Creek or indicating any alterations of the same as from time to time may have occurred.

13. Terms, agreements, provisions, conditions and obligations as contained in Agreement between W. T. Gore and The League Land Company recorded December 9, 1922 in Book 606 at Page 542 at Reception No. 331050.

14. Right of Way recorded December 1, 1927 in Book 798 at Page 202, subject to the Special Warranty Deed recorded July 19, 1928 in Book 814 at Page 324, subject to the Agreement and Partial Release recorded November 15, 1982 in Book 3534 at Page 80, as modified by and subject to the Colorado Interstate Gas Company Right of Way and Easement Agreement to Pipeline Corridor recorded June 7, 2002 as Reception No. 202092771, and as modified by the Partial Release of Right of Way Agreement recorded February 21, 2008 as Reception No. 206020315.

15. Terms, agreements, provisions, conditions, obligations and easements as contained in Grant of Right of Way to the Mountain View Electric Association, Inc., recorded September 30, 1968 in Book 2256 at Page 64.

16. Inclusion within the Security Fire Protection District as evidenced by instruments recorded October 23, 1986 in Book 5258 at Page 1049; recorded March 27, 2001 at Reception No. 201036563, and recorded December 9, 2005 as Reception No. 205196147.

17. Terms, agreements, provisions, conditions and obligations as contained in Annexation Agreement recorded September 23, 1988 in Book 5557 at Page 405.

18. Agreement between Widefield Water and Sanitation District and JHW Investment Company recorded May 6, 1997 at Reception No. 97051183.

19. Right of Way and easement to Colorado Interstate Gas Company as contained in instrument recorded June 7, 2002 at Reception No. 202092771, and subject to the terms and conditions contained therein.

20. The effects of Order and Decree Organizing the Glen Metropolitan District No. 2 and Issuance of Certificates of Election recorded June 24, 2004 at Reception No. 204105070.

21. The effects of Order and Decree Organizing the Glen Metropolitan District No. 3 and issuance of Certificates of Election recorded June 24, 2004 at Reception No. 204105072.

22. Resolution No. 04-482 recorded February 4, 2005 as Reception No. 205017888.

23. Terms, agreements, provisions, conditions and obligations as contained in Development Agreement recorded November 23, 2005 at Reception No. 205187505 and recorded May 26, 2006 at Reception No. 206077406.

24. Terms, agreements, provisions, conditions, obligations and easements as contained in Grant of Right of Way to Mountain View Electric Association, Inc., recorded March 2, 2006 at Reception No. 206031532.

25. Terms, agreements, provisions, conditions, obligations and easements as contained in Resolution, recorded July 18, 2007 at Reception No. 207095753.

26. Inclusion within the Fountain Sanitation District as disclosed by instrument recorded August 23, 2007 at Reception No. 207110450.

27. Terms, agreements, provisions, conditions, obligations and easements as contained in Water Easement Agreement, recorded June 12, 2008 at Reception No. 208067692.

28. Terms, agreements, provisions, conditions, obligations and easements as contained in Water Easement Agreement, recorded June 12, 2008 at Reception No. 208067699.

29. Terms, agreements, provisions, conditions, obligations and easements as contained in Private Detention Basin/Stormwater Quality Best Management Practice Maintenance Agreement and Easement, recorded March 28, 2013 at Reception No. 213040286, recorded November 20, 2014 at Reception No. 21470771, recorded March 4, 2015 at Reception No. 215020223 and subject to Declaration of Covenants, Conditions, Restrictions and Easements recorded March 28, 2013 at Reception No. 213040288.

30. Terms, agreements, provisions, conditions, obligations and easements as contained in Slope Access Easement, recorded March 28, 2013 at Reception No. 213040287.

31. Terms, agreements, provisions, conditions, obligations and easements as contained in Grant of Right of Way to Mountain View Electric Association, Inc., recorded August 27, 2014 at Reception No. 214077896.

32. Terms, agreements, provisions, conditions, obligations and easements as contained in Grant of Right of Way to Mountain View Electric Association, Inc., recorded August 27, 2014 at Reception No. 214077896.

33. Terms, agreements, provisions, conditions, obligations and easements as contained in Grant of Right of Way to Mountain View Electric Association, Inc., recorded August 27, 2014 at Reception No. 214077997.

34. Terms, agreements, provisions, conditions, obligations and easements as contained in Grant of Right of Way to Mountain View Electric Association, Inc., recorded August 27, 2014 at Reception No. 214077998.

35. Terms, agreements, provisions, conditions, obligations and easements as contained in Park Easement Agreement, recorded December 30, 2014 at Reception No. 214119757.

36. Terms, agreements, provisions, conditions, obligations and easements as contained in Grant of Right of Way to Mountain View Electric Association, Inc., recorded August 27, 2015 at Reception No. 215093708.

37. Terms, agreements, provisions, conditions, obligations and easements as contained in Grant of Right of Way to Mountain View Electric Association, Inc., recorded August 27, 2015 at Reception No. 215093709.

38. Terms, agreements, provisions, conditions, obligations and easements as contained in Park & Trail Easement Agreement, recorded October 1, 2015 at Reception No. 215107195.

39. Terms, agreements, provisions, conditions and obligations as contained in ReSolution No. 16-141 recorded May 3, 2016 at Reception No. 216047340.

40. Terms, agreements, provisions, conditions and obligations as contained in Resolution No. 16-227 recorded June 29, 2016 at Reception No. 216070954.

41. Covenants, conditions, restrictions and easements, if any, which do not contain a forfeiture or reverter clause, (deleting any restrictions indicating any preference, limitation or discrimination based on race, color, religion, sex, handicap, familial status or national origin) as contained in instrument recorded August 1, 2016 at Reception No. 216085646 and any and all amendments and/or supplements thereto.

42. Terms, agreements, provisions, conditions, obligations and easements as contained in Grant of Right of Way to Mountain View Electric Association, Inc., recorded January 19, 2017 at Reception No. 217007137.

NOTES CONTINUED:

43. Terms, agreements, provisions, conditions, obligations and easements as contained in Private Detention Basin/Stormwater Quality Best Management Practice Maintenance Agreement and Easement, recorded January 30, 2017 at Reception No. 217011405.

44. Terms, agreements, provisions, conditions, obligations and easements as contained in Exclusive Access and Utility Easement Agreement, recorded January 6, 2017 at Reception No. 217001810 and re-recorded January 19, 2017 at Reception No. 217007192.

45. Terms, agreements, provisions, conditions, obligations and easements as contained in Filing No. 6 Detention Basin Easement Agreement, recorded September 20, 2017 at Reception No. 217113818.

46. Any and all unrecorded leases or tenancies and any and all parties claiming by, through, or under such leases or tenancies.

2. Water and sewer service is provided by Widefield Water and Sanitation District subject to the District's rules, regulations, and specifications.

3. The El Paso County Planning and Community Development must be contacted prior to the establishment of any driveway.

4. All structural foundations shall be located and designed by a Professional Engineer, currently registered in the State of Colorado.

5. The following reports have been submitted and are on file at the County Planning and Community Development: Soils and Geological, Water and Wastewater Resources, Drainage Report, Natural Features Inventory Report, Erosion Control Report, Wetland Impact Report.

6. No man-made or non-man-made obstructions shall be allowed to penetrate the 40:1 approach surface of the Colorado Springs Municipal Airport.

7. All exterior lighting plans shall be approved by the Director of Aviation to prevent a hazard to aircraft.

8. No electromagnetic, light, or any other physical emissions which might interfere with aircraft, aviation, communications or navigational aids shall be allowed.

9. The Airport Advisory Commission suggests that residences constructed in this area should include F.A.A. approved sound mitigation construction techniques to obtain at least a 25db reduction in interior noise.

NOTICE: This property may be adversely impacted by noise caused by aircraft operating into and out of the Colorado Springs Municipal Airport. The buyer should familiarize himself/herself with this potentiality and the ramifications thereof.

10. All property owners are responsible for maintaining proper storm water drainage in and through their property. Public drainage easements as specifically noted on the plat shall be maintained by the individual lot owners unless otherwise indicated. Structures, fences, materials or landscaping that could impede the flow of runoff shall not be placed in drainage easements.

11. No lot or interest therein, shall be sold, conveyed, or transferred whether by deed or by contract, nor shall building permits be issued, until and unless the requirements of the subdivision map and title of record, Pinnacle Land Surveying Company have been constructed and completed and preliminary accepted in accordance with the Subdivision Improvements Agreement between the applicant/owner and El Paso County as recorded under Reception Number _____ in the Office of the Clerk and Recorder of El Paso County, Colorado or, in the alternative, other collateral is provided to the subdivision for the completion of said improvements in accordance with the El Paso County Planning and Community Development Code and Engineering Criteria Manual. Any such alternative collateral must be approved by the Board of County Commissioners or, if permitted by the Subdivision Improvements Agreement, by the Planning and Community Development Director and meet the policy and procedure requirements of El Paso County prior to the release by the County of any lots for sale, conveyance or transfer. This plat restriction may be removed or rescinded by the Board of County Commissioners or, if permitted by the Subdivision Improvements Agreement, by the Planning and Community Development Director upon either approval of an alternative form of collateral or completion and preliminary acceptance by the El Paso Board of County Commissioners of all improvements required to be constructed and completed in accordance with said Subdivision Improvements Agreement. The partial release of lots for sale, conveyance or transfer may only be granted in accordance with any planned partial release of lots authorized by the Subdivision Improvements Agreement.

12. All corner lots will be platted with a Slight Visibility and Public Improvements Easement as shown in the "Typical Public Improvement Easement" detail. No obstructions greater than thirty (30') inches in height above flow line elevation of the adjacent roadway are allowed within this area. The sole responsibility for maintenance and ownership being vested with individual property owners.

13. The addresses (0000) exhibited on this plat are for informational purposes only. They are not the legal descriptions and are subject to change.

14. Direct lot access to Spring Glen Drive is prohibited.

15. The Glen at Widefield Filing No. 9 is subject to the provisions of the Park Lands Agreement as recorded at Reception No. _____ in the records of El Paso County, Colorado, recorded on the ____ day of _____, 20__.

16. This property may be adversely impacted by possible radio towers installation on an adjacent parcel. The buyer should familiarize himself/herself with this potentiality and ramification thereof.

17. This property is subject to the Protective Covenants, recorded at Reception No. _____, in the records of the El Paso County Clerk and Recorder.

18. This survey does not constitute a title search by Pinnacle Land Surveying Company to determine ownership of easements of record. For all information regarding easements, rights-of-way and title of record, Pinnacle Land Surveying Company relied upon a Commitment for Title Insurance, prepared by Unified Title Company, Order No. 54829UTC, effective date December 9, 2017 at 7:30 A.M.

19. Developer shall comply with federal and state laws, regulations, ordinances, review and permit requirements, and other agency requirements, if any, of applicable agencies including, but not limited to, the Colorado Department of Wildlife, Colorado Department of Transportation, U.S. Army the Corps of Engineers, the U.S. Fish & Wildlife Service and/or Colorado Department of Wildlife regarding the Endangered Species Act, particularly as it relates to the Proboscis Meadow Jumping Mouse as a listed threatened species.

20. Mailboxes shall be installed in accordance with all El Paso County Department of Transportation and United States Postal Service regulations.

21. The Subdivider(s) agrees on behalf of himself/ herself and any developer or builder successors and assigns that Subdivider and/or said successors and assigns shall be required to pay traffic impact fees in accordance with the El Paso County Road Impact Fee Program Resolution (Resolution N16-454), or any amendments thereto, at or prior to the time of building permit submittals. The fee obligation, if not paid at final plat recording, shall be documented on all sales documents and on plat notes to ensure that a title search would find the fee obligation before sale of the property.

22. The property in The Glen at Widefield Subdivision Filing No. 9 is located in Flood Zone X, determined to be outside the 500-year floodplain and a portion of Tract C is located in Flood Zone AE with base flood elevations determined. Zone X areas within the 500-year flood, areas of 100-year flood with average depth of less than 1 foot or drainage areas less than 1 square mile and areas protected by levees from the 100-year flood and in Flood Zone X determined to be outside the 500-year flood per FEMA Flood Insurance Rate Maps 08041C956 F and 08041C957 F. Effective date March 17, 1997.

23. Pursuant to Resolution No. _____, approved by the Board of Directors, El Paso County Public Improvement District ____, and recorded in the records of the El Paso County Clerk and Recorder at Reception Number _____, the parcels within the platted boundaries of Glen at Widefield Subdivision Filing No. 9 are included within the boundaries of the El Paso County Public Improvement District #2 and as such is subject to applicable road impact fees and mill levy.

24. Detention Basin Easement as shown, is for location purposes only and is not part of this subdivision. The Detention Basin Easement is owned and maintained by the Glen at Widefield Subdivision Filing No. 9 Homeowners Association as recorded under Reception No. _____ in the records of the El Paso County Clerk and Recorder.

25. This plat has opted to be included in the 10-mil PID #2 for the road impact fee program. The fee is based on the established rate at the time of building permit application.

26. Tracts "A", "B", and "D" are to be used for open space, public and private utilities, drainage, trails, and signage. The tracts will be owned and maintained by The Glen Metropolitan District.

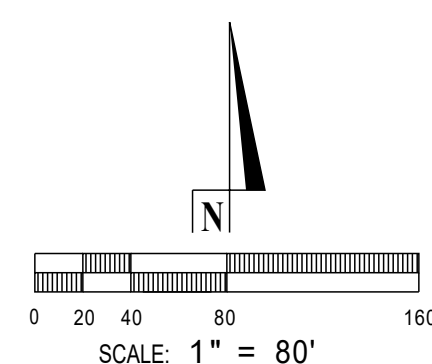
27. Tract C is to be used for Open Space, Trails, Signage, picnic area furnishings and structures, drainage facilities, utilities, and general urban recreation uses and will be owned and maintained by The Glen Metropolitan District.

28. All distances shown hereon are in US Feet.

29. There are 106 lots and 4 tracts within this subdivision.

GLEN 9 ACREAGE TABLE		
TRACTS		OWNERSHIP & MAINTENANCE
TRACT A	0.894 AC	THE GLEN METROPOLITAN DISTRICT
TRACT B	0.853 AC	THE GLEN METROPOLITAN DISTRICT
TRACT C	114.702 AC	THE GLEN METROPOLITAN DISTRICT
TRACT D	0.344 AC	THE GLEN METROPOLITAN DISTRICT
TOTAL ACREAGE		116.793 AC
RIGHT-OF-WAY (R.O.W.)		
TOTAL ACREAGE		7.425 AC
LOTS (106 TOTAL)		
TOTAL ACREAGE		20.989 AC
TOTAL GLEN 9		
TOTAL ACREAGE		145.207 AC

A portion of the South One-half (S1/2) of Section 22
Township 15 South (T15S), Range 65 West (R65W) of the 6TH P.M.
County of El Paso, State of Colorado



THE GLEN AT WIDEFIELD SUBDIVISION FILING NO. 11

A portion of the South One-half (S1/2) of Section 22
Township 15 South (T15S), Range 65 West (R65W) of the 6TH P.M.
County of El Paso, State of Colorado



KEY MAP THIS SHEET