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Ridges at Lorson Ranch
Traffic Impact Analysis
PUDSP216
(LSC #S214080)
November 5, 2021

Traffic Engineer's Statement

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

Developer's Statement

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

11/5/21
Date

Ridges at Lorson Ranch

Traffic Impact Analysis

Prepared for:
The Landhuis Company
212 North Wahsatch Avenue, Suite 301
Colorado Springs, CO 80903

Contact: Mr. Jeff Mark, President

NOVEMBER 5, 2021

LSC Transportation Consultants
Prepared by: Kirstin D. Ferrin, P.E.
Reviewed by: Jeffrey C. Hodsdon, P.E.

LSC #S214080
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November 5, 2021

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

RE: Ridges at Lorson Ranch
El Paso County, CO
Updated Traffic Impact Analysis
LSC #S214080
PUDSP216

Dear Mr. Mark,

In response to your request, LSC Transportation Consultants, Inc. has prepared this updated traffic impact analysis for the proposed Ridges at Lorson Ranch residential development. As shown in Figure 1, the site is located within the Lorson Ranch development in El Paso County, Colorado.

REPORT CONTENTS

This report has been prepared to address the project's traffic impact at the proposed access points and adjacent intersections.

This report contains the following:

- The existing street and traffic conditions in the site's vicinity, including the street widths, lane geometries, and traffic controls;
- The projected future background traffic volumes, which include estimates of traffic from other area development projects;
- The estimated average weekday and peak-hour trip generation;
- The estimated directional distribution of site-generated trips and the projected site-generated traffic volumes;
- Estimates of the resulting total traffic volumes on the adjacent streets and intersections; and
- The projected levels of service at the site access points and key area intersections;

RECENT AREA TRAFFIC STUDIES

Appendix Table 1 includes a list of other recent traffic studies conducted by LSC within the Lorson Ranch development and in the vicinity.

This site was previously included in *The Hills at Lorson Ranch Full Traffic Impact and Access Analysis* (TIA) by LSC Transportation Consultants, Inc. dated October 27, 2020 as traffic analysis zone 45. That TIA assumed this zone would be developed with 993 single-family homes.

LAND USE AND ACCESS

Land Use

The Ridges at Lorson Ranch is planned to include 994 lots for single-family homes. This is one more single-family home than was assumed in the Hills at Lorson Ranch TIA. Figure 2 shows the proposed site plan.

Street Connections

Fontaine Boulevard and Lorson Boulevard are planned to be extended east to a new north-south collector (Walleye Drive) as part of The Hills at Lorson Ranch. These streets are planned to be further extended to the east boundary of Lorson Ranch as part of the currently-proposed Ridges at Lorson Ranch development. A new east-west collector (Grayling Drive) is planned to be constructed between Lamprey Drive and the future Walleye Drive as part of The Hills at Lorson Ranch. Access for the Ridges at Lorson Ranch is proposed to Walleye Drive, Grayling Drive, Fontaine Boulevard, and Lorson Boulevard, as shown in Figure 2. The proposed access points to Walleye Drive, Grayling Drive and Lorson Boulevard all meet the spacing criteria set by the *El Paso County Engineering Criteria Manual* (ECM). The proposed access to Fontaine Boulevard (Buckner Way) is located about 1,127 feet east of Walleye Drive and 790 feet west of the future Meridian Road alignment. This spacing is adequate, based on the interim/Lorson Buildout 2-Lane Urban Non-Residential Collector classification, but does not meet the ½-mile spacing requirement, based on the ultimate 4-Lane Principal Arterial classification. If and when this section of Fontaine Boulevard is upgraded to a Principal Arterial cross section, this access may need to be restricted to three-quarter movement (left-in/right-in/right-out) or right-in/right-out only.

Pedestrian and Bicycle Route Analysis

Grand Mountain K-8 School is located west of the site. The subdivision streets will include sidewalks and connecting streets within Lorson Ranch also have sidewalks. Trail corridors are planned along the powerline easement, the East Fork of Jimmy Camp Creek, and along Jimmy Camp Creek. Also, Marksheffel Road and Fontaine Boulevard have paved shoulders to accommodate cyclists. Lorson Boulevard has been constructed with wider travel lanes (and a striped left-turn median) to allow

for shared lane use with experienced cyclists (the adjacent sidewalk will accommodate children and families, as well as cyclists less experienced at cycling in traffic).

Sight Distance Analysis

Figures 3a through 3f show sight-distance analysis at the proposed Collector and Arterial intersection.

Figure 3a shows the sight distance analysis for the proposed intersection of Regan Ridge/Grayling Drive. Based on a design speed of 40 miles per hour (mph) and the criteria contained in Table-2-21 of the *ECM*, the required intersection sight distance at the access points is 445 feet. This intersection is located about 391 feet west of Walleye Drive and the available stopping sight distance from the start of the pavement on the west leg of Walleye/ Grayling to the centerline of Regan Ridge/Grayling is about 356 feet. This is about 89 feet less than the *ECM* requirement. However, as Grayling/Walleye is a "T" intersection, all westbound traffic on Grayling Drive approaching Scrub Jay Trail will have either just turned right or left from Walleye Drive. The required stopping sight distance from *ECM* Table 2-17 is 305 feet. As shown in Figure 3a, this requirement can be met by the proposed spacing. As the stopping sight distance can be met and the intersection/entering sight distance will be adequate based on this site-specific analysis, no additional signage will be needed to warn westbound traffic of an upcoming intersection.

Figure 3b shows the sight distance analysis for the proposed intersection of Sanderling Street/Walleye Drive. Based on a design speed of 40 miles per hour (mph) and the criteria contained in Table 2-21 of the *ECM*, the required intersection sight distance at this intersection is 445 feet. As shown in Figure 3b, the intersection sight distance and stopping sight distance requirements can be met by the proposed spacing.

Figure 3c shows the sight distance analysis for the proposed access to Fontaine Boulevard (Buckner Way). Based on a design speed of 50 miles per hour (mph) for the ultimate Principal Arterial classification and the criteria contained in Table 2-21 of the *ECM*, the required intersection sight distance at this intersection is 555 feet. As shown in Figure 3c, the intersection sight distance and stopping sight distance requirements can be met at the proposed intersection.

Figure 3d shows the sight distance analysis for the proposed intersections of Lake Trout Drive/Walleye Drive and Splake Street/Walleye Drive. Based on a design speed of 40 miles per hour (mph) and the criteria contained in Table 2-21 of the *ECM*, the required intersection sight distance at this intersection is 445 feet. As shown in Figure 3b, the intersection sight requirements can be met at both intersections.

Figure 3e shows the sight distance analysis for the proposed access points to Lorson Boulevard (Split Mountain Drive and Kingston Peak). Based on a design speed of 25 miles per hour (mph) and the criteria contained in Table 2-21 of the *ECM*, the required intersection sight distance for Local/Local intersections is 280 feet. As Lorson Boulevard does not have lots fronting it like a

typical Local street, Figure 3e also shows the analysis based on a design speed of 35 mph (although the future plan for development on the south side of the street may show lots fronting this section of Lorson Boulevard). A required distance of 390 feet was extrapolated from the values given in Table 2-21 of the ECM, based on design speeds of 30 and 40 mph. As shown in this figure, the required intersection sight distance can be met at both site access points.

STREET AND TRAFFIC CONDITIONS

Area Streets

The key area streets are shown in Figure 1 and are described below. Copies of the *2016 El Paso County Major Transportation Corridors Plan (MTCP) 2040 Roadway Plan* and *2016 MTCP 2060 Corridor Preservation Plan,* with the site location identified on them, have been attached to this report.

- **Fontaine Boulevard** is designated as a four-lane Urban Principal Arterial east of Marksheffel Road and has been constructed as such from Marksheffel Road east to Old Glory Drive/Stingray Lane. Fontaine Boulevard has recently been constructed east of Old Glory Drive/Stingray Lane adjacent to the Lorson Ranch East development as an interim Urban Non-Residential Collector Street within 100 feet of right-of-way. As part of this development, Fontaine Boulevard will be extended east from its current terminus adjacent to the site with the same interim cross section and right-of-way. The posted speed limit on Fontaine Boulevard is 35 mph just east of (and a short distance west of) Marksheffel Road. The speed limit increases to 45 mph just east of the bridge over Jimmy Camp Creek and then decreases back to 35 mph just east of Old Glory (east)/Stingray.
- **Lorson Boulevard** currently extends east from Marksheffel Road to Lamprey Drive. Lorson Boulevard is classified as an Urban Non-Residential Collector Street (modified for a 44-foot street width, rather than the standard 52-foot street width) with an 80-foot-wide right-of-way between Marksheffel Road and Stingray Lane and as an Urban Residential Collector Street (modified for a 44-foot street width, rather than the standard 52-foot street width) with a 64- to 72-foot-wide right-of-way between Stingray Lane and Lamprey Drive. As part of this development, Lorson Boulevard will be constructed east of Lamprey Drive adjacent to the site as a standard Urban Residential Collector with a 60-foot-wide right-of-way.
- **Meridian Road** currently extends south from County Line Road to just south of Blaney Road. The *MTCP 2040 Roadway Plan* identifies a new segment of Meridian Road between Bradley Road and Mesa Ridge Parkway (Project N9). This new segment would form the eastern boundary of the site. As shown in Table 4 of the *MTCP*, Meridian Road is planned to be constructed as a two-lane Rural Minor Arterial adjacent to the site. This report assumes the new segment of Meridian Road will **not** be constructed within the long-term (20-year) time frame analyzed.

Recent Traffic Volumes

Figure 4 shows the results of recent traffic counts conducted at the intersections of Marksheffel/Fontaine, Old Glory (west)/Fontaine, Old Glory (east)/Stingray/Fontaine, and

Marksheffel/Lorson in July 2020, June 2021, and April 2021. It should be noted that the counts occurred when the COVID-19 pandemic may have been impacting traffic volumes. Figure 4a also shows estimates of the existing traffic volumes at the intersection of Lamine/Fontaine, based on the traffic counts at the adjacent intersections and traffic projections for Lamine Drive from the *Lorson Ranch East Updated Traffic Impact and Access Analysis* dated November 9, 2017. The traffic count reports are attached.

Existing Levels of Service

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

Table 1: Intersection Levels of Service Delay Ranges

	Signalized Intersections	Unsignalized Intersections
Level of Service	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 key area intersections have been analyzed to determine the existing levels of service. The intersection of Marksheffel/Fontaine has been analyzed based on the signalized method of analysis from Synchro. The intersections of Old Glory (west)/Fontaine, Old Glory (east)/Stingray/Fontaine, Lamine/Fontaine, and Lorson/Marksheffel have been analyzed based on the unsignalized intersection analysis procedures from the *Highway Capacity Manual (HCM), 6th Edition* by the Transportation Research Board. The results of the analysis are shown in Figure 4.

All movements at the existing signalized intersection of Marksheffel/Fontaine are currently operating at LOS D or better during the peak hours.

The northbound left-turn at the intersection of Fontaine/OId Glory (west) is currently operating at LOS E during the morning and LOS F during the afternoon peak hours. The southbound left-turn movement at this intersection is currently operating at LOS E during the morning peak hour and LOS D during the afternoon peak hour. The southbound through movement at this intersection is currently operating at LOS D during the morning peak hour and LOS E during the afternoon peak hour.

The southbound left-turn movement at the intersection of Fontaine/Old Glory (east)/Stingray is currently operating at LOS F during the morning peak hour and LOS C during the afternoon peak hour.

All movements at the intersection of Fontaine/Lamine are currently operating at LOS C or better during the peak hours.

All movements at the intersection of Marksheffel/Lorson are currently operating at LOS C or better during the peak hours.

TRIP GENERATION

The site-generated vehicle trips were estimated using the nationally published trip-generation rates from *Trip Generation, 10th Edition, 2017* by the Institute of Transportation Engineers (ITE). Table 2 shows the average weekday and peak-hour trip-generation estimates. Table 2 also shows a comparison of the trip-generation estimate for this same area, assumed in *The Hills at Lorson Ranch Full Traffic Impact Analysis* by LSC dated October 27, 2020.

The site is projected to generate about 9,383 new vehicle trips on the average weekday, with about half entering and half exiting the site. During the morning peak hour, which generally occurs for one hour between 6:30 and 8:30 a.m., about 184 vehicles would enter and 552 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 620 vehicles would enter and 364 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 one of the most important factors in determining the site's traffic impacts. Figures 5a and 5b show the short-term and long-term trip-distribution estimates, respectively. The directional distribution estimates have been based on the location of the site with respect to the regional residential employment, commercial, and activity centers; the land use proposed; the access/roadway connections assumed; the roadway network; and the most recent traffic counts conducted at the intersections of Marksheffel/Fontaine and Marksheffel/Lorson. The short-term distribution estimate assumes a portion of the trips to and from The Ridges at Lorson Ranch will travel to and from the existing Grand Mountain School. The long-term distribution estimates assume a portion of the trips to and from the Ridges at Lorson Ranch will travel to and from the future retail sites located near the intersection of Fontaine Boulevard and Carriage Meadows Drive.

The percentages to and from the Grand Mountain School and the future retail sites were based on the internal trip estimates shown in Appendix Table 2.

When the distribution percentages (from Figures 5a and 5b) are applied to the trip-generation estimates (from Table 2), the resulting site-generated traffic volumes can be determined. Figures 6a and 6b show the short-term site-generated traffic-volume estimates. Figure 6a shows the projected site-generated traffic-volume estimates for key area intersections external to the currently-proposed Ridges at Lorson Ranch and Figure 6b shows the projected site-generated traffic-volume estimates for the key intersections within the currently-proposed site. Figures 7a and 7b show the long-term site-generated traffic-volume estimates. Figure 7a shows the projected site-generated traffic-volume estimates for key area intersections external to the currently-proposed Ridges at Lorson Ranch and Figure 7b shows the projected site-generated traffic-volume estimates for the key intersections within the currently-proposed site.

BACKGROUND TRAFFIC

Background traffic is the traffic estimated to be on the roadways without the Ridge at Lorson Ranch traffic.

Short Term

The short-term (Year 2025) background traffic volumes are shown in Figures 8a and 8b. Figure 8a shows the projected background traffic volumes for key area intersections external to the currently-proposed Ridges at Lorson Ranch and Figure 8b shows the projected background traffic volume estimates for the key intersections within the currently-proposed site. The short-term background traffic includes traffic projected to be generated by buildout of the approved Lorson Ranch subdivisions including Lorson Ranch East, Ponderosa at Lorson Ranch Filing 3, Creekside at Lorson Ranch, The Hills at Lorson Ranch, and Skyline at Lorson Ranch. Figures 8a and 8c show the lane geometry assumed for the study-area intersections in the short-term analysis.

2040

Figures 9a and 9b show the projected 2040 background traffic volumes. Figure 9a shows the projected background traffic volumes for key area intersections external to the currently-proposed Ridges at Lorson Ranch and Figure 9b shows the projected background traffic volume estimates for the key intersections within the currently-proposed site. The 2040 background traffic volumes are based on estimates of traffic projected to be generated at buildout of the Lorson Ranch Sketch Plan (excluding the traffic projected to be generated by the Ridges at Lorson Ranch. Appendix Tables 2 and 3 show the trip-generation estimates for all existing and future land uses assumed to be built out by 2040 in the Lorson Ranch development. The 2040 background volumes also assume full buildout of the street network within Lorson Ranch, but assume Meridian Road has not been extended south to Fontaine Boulevard. Figures 9a and 9c show the lane geometry assumed for the study-area intersections in the 2040 analysis.

BUILDOUT TOTAL TRAFFIC

Figures 10a and 10b show the short-term total traffic volumes. Figure 10a shows the projected short-term total traffic volumes for key area intersections external to the currently-proposed Ridges at Lorson Ranch and Figure 10b shows the projected short-term total traffic-volume estimates for the key intersections within the currently-proposed site. These volumes are the sum of the short-term background traffic volumes (from Figure 8a and 8b) plus the short-term site-generated traffic volumes (from Figures 6a and 6b). Figures 10a,10c, and 10d show the lane geometry assumed for the study-area intersections in the short-term analysis.

Figures 11a and 11b show the 2040 total traffic volumes. Figure 11a shows the projected 2040 total traffic volumes for key area intersections external to the currently-proposed Ridges at Lorson Ranch and Figure 11b shows the projected 2040 total traffic volume estimates for the key intersections within the currently-proposed site. These volumes are the sum of the 2040 background traffic volumes (from Figures 9a and 9b) plus the long-term site-generated traffic volumes (from Figures 7a and 7b). Figures 11a, 11c, and 11d show the lane geometry assumed for the study-area intersections in the 2040 analysis.

Figure 11e shows supplemental analysis of hypothetical, long-range (beyond 2040) traffic volumes at the intersection of Fontaine Boulevard/Walleye Drive (intersection #10) assuming some portion of Meridian Road constructed adjacent to the site and connected to Fontaine. This analysis includes minor hypothetical increases in east/west through traffic volumes. About 5,000 additional vehicles per day were assumed to be added to the eastbound and westbound traffic volumes on Fontaine Boulevard across Walleye Drive. These analysis volumes also assume the intersection of Bucker/Fontaine (intersection #19) restricted to three-quarter movement (left-in/right-in/right-out only) with side street left turns shifted to the Walleye/Fontaine intersection. This is a cursory analysis to evaluate the capacity of AWSC with some additional through traffic. This analysis does not assume redistribution of overall Lorson Ranch trips to a connection to Meridian. This analysis is beneficial, however, as it evaluates critical volumes of the northbound left-turn and major street through traffic at a Walleye/Fontaine AWSC controlled intersection. Eventually (likely beyond the 2040 long-term future), if/when through volumes on Fontaine increase with significant growth in areas served by future Meridian Road in this area and/or a Fontaine extension east of Meridian, the Walleye/Fontaine intersection may need to be signalized.

PROJECTED LEVELS OF SERVICE

The key area intersections have been analyzed to determine the projected levels of service for the short-term, 2040 background, and total traffic volumes, based on the signalized method of analysis from Synchro and the unsignalized method of analysis procedures outlined in the *Highway Capacity Manual, 6th Edition* by the Transportation Research Board. The level of service reports are attached. The results of the analysis are shown in Figures 8a, 8c, 9a, 9c, 10a, 10c, 10d, 11a, 11c, 11d and 11e. Figure 11a also provides references to the recent analysis of all other intersections to Fontaine Boulevard and Lorson Boulevard within the Lorson Ranch development.

Fontaine/Marksheffel

The intersection of Fontaine/Marksheffel is currently traffic-signal controlled. The existing signal-timing plan has two phases, namely a northbound/southbound phase and an eastbound/westbound phase with no protected phasing for any of the left-turn movements. The southbound and westbound left-turn movements are projected to operate at LOS F during the afternoon peak hour, based on the short-term total traffic volumes and the existing signal-timing plan. If protected/permissive phasing is added for all left-turn movements, the westbound left-turn and southbound left-turn movements are projected to operate at LOS E during the afternoon peak hour. The V/C ratio for the southbound left-turn movement is projected to be 1.04 which indicates that this movement may be approaching capacity or over capacity with a single left-turn lane. This left-turn movement should be reevaluated as part of Final Plat submittals with current volumes (at the time of each plat submittal). By 2040, it was assumed that Marksheffel Road would be widened to provide two northbound and southbound through lanes and dual southbound left-turn lanes. Based on the 2040 total traffic volumes and the lane geometry shown in Figure 11a, all movements are projected to operate at LOS D or better during the peak hours.

Fontaine/Carriage Meadows

Please refer to the *Carriage Meadows Townhomes Traffic Impact Analysis* PUDSP-19-005 dated May 28, 2020 for analysis of the intersection of Fontaine/Carriage Meadows. Key pages from that report are attached. As discussed in that report, the northbound and southbound left-turn and through movements at this intersection are projected to operate at LOS E or LOS F during the peak hours based on the short-term total traffic volumes from that report which do not include any traffic from The Ridges at Lorson Ranch. Fontaine/Carriage Meadows is planned as a future traffic-signal-controlled intersection. However, a traffic-signal warrant is not anticipated to be met until one or more of the future retail parcels are developed. Once signalized, all movements are projected to operate at LOS D or better through 2040.

Fontaine/Kearsarge

The intersection of Fontaine/Kearsarge is restricted to right-in/right-out only. There is an existing right-turn deceleration lane on Fontaine Boulevard approaching Kearsarge Drive.

Fontaine/Old Glory (west)

The northbound left-turn at the intersection of Fontaine/Old Glory (west) is currently operating at LOS E during the morning and LOS F during the afternoon peak hours. The southbound left-turn movement at this intersection is currently operating at LOS E during the morning peak hour and LOS D during the afternoon peak hour. This intersection is planned to be converted to all-way stop-sign control as part of the Hills at Lorson Ranch development. Fontaine/Old Glory is projected to operate at LOS B or better for all movements as an all-way stop-sign-controlled intersection, based on the projected short-term background traffic volumes. However, with the addition of

site-generated traffic, the level of service for some of the movements is projected to degrade below a LOS D during the peak hours. Please note, the *HCM* procedure for all-way stop-sign-controlled intersections is limited to three approach lanes. As Fontaine Boulevard has four eastbound and westbound approach lanes at Old Glory Drive, this intersection was analyzed using Synchro/SimTraffic. The simulation was run five times and the average stop delay per vehicle for each lane was averaged over the five runs and compared to the control delay listed in Table 1.

If this intersection is converted to traffic-signal control, all movements are projected to operate at LOS D or better during the peak hours through 2040. Traffic-signal warrant(s) should be analyzed with each final plat.

Fontaine/Nassau Trail

The intersection of Fontaine/Nassau Trail is restricted to right-in/right-out only. There is an existing right-turn deceleration lane on Fontaine approaching Nassau.

Fontaine/Old Glory (east)/Stingray

The southbound left-turn movement at the intersection of Fontaine/Old Glory (east)/Stingray is currently operating at LOS F during the morning peak hour and LOS C during the afternoon peak hour. Access for this intersection will likely need to be restricted in the short-term future as the traffic volumes are not predicted to meet any vehicular-volume traffic-signal warrants and right-of-way constraints prohibit reconstructing it as a modern roundabout. Two restricted access scenarios were analyzed in this report. The first scenario assumed the intersection restricted to three-quarter movement (left-in/right-in/right-out only). The second scenario assumed the north leg of the intersection converted to a channelized "T" intersection by modifying the median to provide an eastbound left-turn acceleration lane. This would require the south leg to be restricted to right-in/right-out only. All movements at this intersection are projected to operate at LOS D or better during the peak hours through 2040, assuming either traffic control scenario.

Fontaine/Lamine

The intersection of Fontaine/Lamine was previously analyzed as part of the *Lorson Ranch East Updated Traffic Impact and Access Analysis* dated November 9, 2017. Key pages from this report have been attached. The northbound left-turn movement at this intersection was projected to operate at LOS F, based on the 2040 total traffic volumes during the morning and afternoon peak hours using the *Highway Capacity Manual, 2010 Edition*. Based on the currently-projected 2040 total traffic volumes shown in Figure 11a, the more current method of analysis procedures outlined in the *Highway Capacity Manual, 6th Edition,* and the existing lane geometry (which includes a center-two-way left-turn lane on Fontaine Boulevard), this movement is now projected to operate at LOS E during the morning peak hour and LOS D during the afternoon peak hour. As discussed in the Lorson Rach East TIA, northbound left-turning traffic at this intersection would have the option to turn right and execute a U-turn at the Lamprey/Fontaine roundabout.

Fontaine/Edisto

The intersection of Fontaine/Edisto was previously analyzed as part of the *Lorson Ranch East Updated Traffic Impact and Access Analysis* dated November 9, 2017. As shown in that report, this intersection is projected to operate at LOS C or better for all movements during the peak hours through 2040 as a two-way, stop-sign-controlled intersection.

Fontaine/Lamprey

The intersection of Fontaine/Lamprey was previously analyzed as part of *The Hills at Lorson Ranch Full Traffic Impact Analysis* PUDSP 203 October, 26, 2020. As shown in that report, this intersection is projected to operate at LOS C or better for all movements during the peak hours through 2040 as a one-lane modern roundabout.

Lorson/Marksheffel

The intersection of Lorson/Marksheffel is currently two-way, stop-sign-controlled. The westbound left-turn movement at this intersection is projected to operate at LOS E during the peak hours, based on the projected short-term background traffic volumes, and LOS F during the peak hours, based on the projected short-term total traffic volumes. If this intersection is converted to traffic-signal control, all movements are projected to operate at LOS D or better during the peak hours. By 2040, it was assumed that a west leg would be constructed at this intersection and that Marksheffel Road would be widened to provide two northbound and southbound through lanes. Based on the 2040 total traffic volumes and the lane geometry and traffic control shown in Figure 11a, all movements at this intersection are projected to operate at LOS D or better during the peak hours.

Fontaine/Wando

The intersections of Fontaine/Wando (east and west) were previously analyzed as part of the *Carriage Meadows South at Lorson Ranch Filing No. 1 Updated Traffic Impact and Access Analysis* August 14, 2017. Key pages from that report have been attached. As shown in that report, the northbound approaches at both Wando Drive intersections are projected to operate at LOS E during the afternoon peak hour, based on the projected 2040 total traffic volumes. As the northbound approach volumes at both intersections are well below the 80-vehicle-per-hour minimum threshold for a Four-Hour Vehicular-Volume Traffic-Signal warrants, it is unlikely that traffic-signal warrants would be met at either intersection. Further, as noted in the Carriage Meadows South TIS, the traffic signal at the intersection of Lorson/Marksheffel will likely help to create gaps to help these movements occur more easily.

Lorson/Tensas, Lorson/Kearsarge, & Lorson/Stingray

The intersections of Lorson/Tensas, Lorson/Kearsarge, and Lorson/Stingray were previously analyzed as part of the *Creekside at Lorson Ranch Filing No. 1 Traffic Impact and Access Analysis* PUDSP-18-005 October 25, 2018. Key pages from this report have been attached. As shown in that report, these intersections are projected to operate at LOS D or better for all movements during the peak hours through 2040 as two-way, stop-sign-controlled intersections.

Lorson/Old Glory

The intersection of Lorson/Old Glory was previously analyzed as part of *The Hills at Lorson Ranch Full Traffic Impact Analysis* PUDSP 203 October, 26, 2020. As shown in that report, this intersection is projected to operate at LOS D or better for all movements during the peak hours through 2040 as a two-way, stop-sign-controlled intersection.

Lorson/Trappe, Lorson/Willapa, & Lorson/Skuna

The intersections of Lorson/Trappe, Lorson/Willapa, and Lorson/Skuna were previously analyzed as part of the *Lorson Ranch East Updated Traffic Impact and Access Analysis* November 9, 2017. As shown in that report, these intersections are projected to operate at LOS D or better for all movements during the peak hours through 2040 as two-way, stop-sign-controlled intersections.

Lorson/Lamprey

The intersection of Lorson/Lamprey was previously analyzed as part of *The Hills at Lorson Ranch Full Traffic Impact Analysis* PUDSP 203 October, 26, 2020. As shown in that report, this intersection is projected to operate at LOS D or better for all movements during the peak hours through 2040 as a two-way, stop-sign-controlled intersection.

Grayling/Regan Ridge/Scrub Jay

The intersection of Grayling/Regan Ridge/Scrub Jay is projected to operate at LOS A for all movements, based on the projected 2040 total traffic volumes as a two-way stop-sign-controlled intersection.

Walleye/Grayling, Walleye/Sanderling, Walleye/Lake Trout, Walleye/Splake, & Walleye/Lorson

The intersections of Walleye/Grayling, Walleye/Sanderling, Walleye/Lake Trout, Walleye/Splake and Walleye/Lorson are projected to operate at LOS B or better for all movements, based on the projected 2040 total traffic volumes as two-way stop-sign-controlled intersections.

Walleye/Fontaine

The future intersection of Fontaine/Walleye is projected to operate at LOS F for the northbound left-turn movement during the afternoon peak hour if it is signed as a two-way, stop-sign-controlled intersection with stop control on the north and south legs. If the stop control is instead placed on the east and west legs or if this intersection were to be signed for all-way, stop-sign control, all movements are projected to operate at LOS D or better, based on the projected 2040 total traffic volumes. Note: A roundabout analysis has not been included for the intersection of Fontaine/Walleye because of difficult topography- grading/slopes. The slopes are five percent just east of the intersection.

Figure 11e shows the level of service for the supplemental analysis for the intersection of Fontaine Boulevard/Walleye Drive assuming in initial connection to Meridian Road. Please refer to the "Total Traffic" paragraph above for assumptions and details of this analysis. As shown in Figure 11e, this intersection could potentially continue to operate at LOS D or better for all movements as an all-way stop-sign-controlled intersection, based on the projected long-range traffic volumes.

Eventually (likely beyond the 2040 long-term future), if/when through volumes on Fontaine increase with significant growth in areas served by future Meridian Road in this area and/or a Fontaine extension east of Meridian, the Walleye/Fontaine intersection may need to be signalized.

Split Mountain /Lorson

The intersection of Split Mountain/Lorson is projected to operate at LOS A for all movements, based on the projected 2040 total traffic volumes as a two-way stop-sign-controlled intersection.

Buckner/Fontaine

The intersection of Bucker/Fontaine is projected to operate at LOS A for all movements, based on the projected 2040 total traffic volumes as a two-way stop-sign-controlled intersection.

TRAFFIC SIGNAL WARRANTS

The intersections of Fontaine/Old Glory (west) and Lorson/Marksheffel were previously analyzed to determine if any traffic-signal warrants are anticipated to be met in the short term as part of *The Hills at Lorson Ranch Full Traffic Impact Analysis* PUDSP 203 October, 26, 2020. The key pages from that report are attached. As shown in that report, Four-Hour and Eight-Hour Vehicular-Volume Traffic-Signal Warrants are anticipated to be met at both of these intersections prior to the development of the currently-proposed Ridges at Lorson Ranch.

LEFT-TURN PHASE ANALYSIS: MARKSHEFFEL/FONTAINE

The intersection of Marksheffel/Fontaine is currently traffic-signal-controlled. The existing signal-timing plan has two phases, namely a northbound/southbound phase and an eastbound/westbound phase with no protected phasing for any of the left-turn movements. LSC has analyzed the need to add additional protected phases based on the criteria found in Exhibit 11-6 from the *Federal Highway Administration Report Signalized Intersections: Informational Guide Publication Number: FHWA-SA-13-027*, dated July 2013, copied below with our analysis.

Exhibit 11-6 Guidelines for use of left-turn phasing

Left-turn phasing (protected-permissive, permissive-protected, or protected-only) should be considered if any one of the following criteria is satisfied:

1. *A minimum of 2 left-turning vehicles per cycle and the product of opposing and left-turn hourly volumes exceeds the appropriate following value:*
    a. *Random arrivals (no other traffic signals within 0.8 km (0.5 mi))*
    One opposing lane: 45,000 Two opposing lanes: 90,000
    b. *Platoon arrivals (other traffic signals within 0.8 km (0.5 mi))*
    One opposing lane: 50,000 Two opposing lanes: 100,000

Table 3 shows the results of the analysis. As shown in Table 3, the existing southbound left-turn traffic volumes currently meet this criterion. The westbound left-turn traffic volumes are projected to meet this criterion based on the short-term total traffic volumes shown in Figure 10a.

2. *The left-turning movement crosses 3 or more lanes of opposing through traffic.*

This criterion is not currently applicable to the intersection of Fontaine/Marksheffel.

3. The posted speed of opposing traffic exceeds 45 mph.

This criterion is not currently applicable to the intersection of Fontaine/Marksheffel.

4. *Recent crash history for a 12-month period indicates 5 or more left-turn collisions that could be prevented by the installation of left-turn signals.*

The Colorado State Patrol (CSP) provided LSC with crash history data for the intersection of Marksheffel Road/Fontaine Boulevard from 2018 through July 2021. During the reported time period, there were less than five left-turn collisions during any 12-month period that could potentially have been prevented by installation of left-turn signals. Based on this data, criterion 4 is not currently met. The crash history data has been attached.

5. *Sight distances to oncoming traffic are less than the minimum distances in Exhibit 11-7.*

This criterion is not applicable to the intersection of Fontaine/Marksheffel.

6. *The intersection has unusual geometric configurations, such as five legs, when an analysis indicates that left-turn or other special traffic-signal phases would be appropriate to provide positive direction to the motorist.*

This criterion is not applicable to the intersection of Fontaine/Marksheffel.

7. *An opposing left-turn approach has a left-turn signal or meets one or more of the criteria in this table.*

This criterion is met for the southbound left-turn movement, based on the existing traffic volumes, and is projected to be met for the eastbound left-turn movement, based on the short-term total traffic volumes.

8. *An engineering study indicates a need for left-turn signals. Items that may be considered include, but are not necessarily limited to, pedestrian volumes, traffic-signal progression, freeway interchange design, maneuverability of particular classes of vehicles, and operational requirements unique to preemption systems.*

No special conditions exist at the intersection of Fontaine/Marksheffel that would warrant additional study

ROADWAY CLASSIFICATIONS

Figure 12 shows the recommended street classifications for the key Lorson Ranch streets.

ROADWAY IMPROVEMENT FEE

This project will be required to participate in the El Paso County Road Improvement Fee Program. The Ridges at Lorson Ranch will join the ten-mil PID. The current ten-mil PID building permit fee portion associated with this option is $1,221 per single-family dwelling unit. Based on 994 lots, the total building permit fee would be $1,213,674. Note: This is based on the current rate, which is subject to change. El Paso County updates this rate periodically.

CONCLUSIONS AND RECOMMENDATIONS

Trip Generation

- The site is projected to generate about 9,383 new vehicle trips on the average weekday, with about half entering and half exiting the site. During the morning peak hour about 184 vehicles would enter and 552 vehicles would exit the site. During the afternoon peak hour about 620 vehicles would enter and 364 vehicles would exit the site.

Intersection Sight Distance

- All of the proposed site access points can meet the site-distance requirements except for the intersection of Regan Ridge/Grayling. Please refer to the Sight Distance section of this report for details. A deviation for the criteria contained in the *ECM* will be submitted for the intersection of Regan Ridge/Grayling.

Projected Levels of Service & Intersection Traffic Control Recommendations

- Please see the Level of Service Analysis section above for detailed analysis of all of the intersections to Fontaine Boulevard and Lorson Boulevard between Marksheffel Road and the Ridges at Lorson Ranch west boundary. All of the key area intersections within the Ridges at Lorson Ranch analyzed are projected to projected to operate at LOS D or better during the peak hours for all movements as two-way, stop-sign-controlled intersections, based on the projected short-term and 2040 total traffic volumes. The intersection of Fontaine/Walleye has the potential to need traffic-signal control in the very long-range future (beyond 2040). Although analysis of that scenario is outside of the scope of this report, a brief supplemental/hypothetical analysis has been provided (Figure 11e) to evaluate the proposed AWSC with some increase in through traffic with a potential initial Meridian Road connection.

Street Classifications

- All of the streets within the Ridges at Lorson Ranch should be classified as Urban Local. See Figure 12 for the recommended classifications of the adjacent roadways.

Roadway Improvement Fee

- Based on the current ten-mil PID building permit fee, the total building permit fee would be $1,213,674. Note: This is based on the current rate, which is subject to change. El Paso County updates this rate periodically.

Recommended Improvements

- A list of all improvements in the vicinity of the site is presented in Table 4. Table 4 also identifies the timing of installation (or escrow, as applicable) and responsibility for the improvements listed in the table

* * * * *

We trust this traffic impact analysis will assist you in gaining approval of the proposed Ridges at Lorson Ranch residential development. Please contact me if you have any questions or need further assistance.

Sincerely,

LSC TRANSPORTATION CONSULTANTS, INC.

By Kirstin D. Ferrin, P.E.
Senior Transportation Engineer

JCH/KDF:jas

Enclosures: Tables 2-4
Figures 1-12
Traffic Count Reports
Level of Service Reports
Appendix Tables 1-3
Crash History
MTCP Maps
Key Pages from recent traffic impact studies

Tables 2-4

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Table 2
Trip Generation Estimate
Ridges at Lorson Ranch

Traffic Analysis Zone	Land Use Code	Land Use Description	Trip Generation Units	Trip Generation Rates [1] Average Weekday Traffic	Trip Generation Rates [1] Morning Peak Hour In	Trip Generation Rates [1] Morning Peak Hour Out	Trip Generation Rates [1] Afternoon Peak Hour In	Trip Generation Rates [1] Afternoon Peak Hour Out	Total Trips Generated Average Weekday Traffic	Total Trips Generated Morning Peak Hour In	Total Trips Generated Morning Peak Hour Out	Total Trips Generated Afternoon Peak Hour In	Total Trips Generated Afternoon Peak Hour Out
Trip Generation Estimate Based on the Currently Proposed Plan													
46	210	Single-Family Detached Housing	459 DU[2]	9.44	0.19	0.56	0.62	0.37	4,333	85	255	286	168
35	210	Single-Family Detached Housing	535 DU	9.44	0.19	0.56	0.62	0.37	5,050	99	297	334	196
			994 DU						**9,383**	**184**	**552**	**620**	**364**
Trip Generation Estimate for the Same Area From the *The Hills at Lorson Ranch Full Traffic Impact Analysis* by LSC October 26, 2020													
46	210	Single-Family Detached Housing	461 DU	9.44	0.19	0.56	0.62	0.37	4,352	85	256	288	169
35	210	Single-Family Detached Housing	532 DU	9.44	0.19	0.56	0.62	0.37	5,022	98	295	332	195
			993 DU						**9,374**	**184**	**551**	**619**	**364**
					Change in Trip Generation Estimate				**9**	**0**	**1**	**1**	**0**

Notes:

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

(2) DU = dwelling unit

Source: LSC Transportation Consultants, Inc.

Aug-21

Table 3
Left-Turn Signal Phase Warrant Analysis
Marksheffel Road/Fontaine Blvd
Ridge at Lorson Ranch

		Existing Traffic Volumes[1]					Short-Term Background Traffic					Short-Term Total Traffic				
Movement	Time	Left-Turn Volume (vph)	Through and Right-Turn (vph)	Product	Threshold[2]	Met?	Left-Turn Volume (vph)	Through and Right-Turn (vph)	Product	Threshold	Met?	Left-Turn Volume (vph)	Through and Right-Turn (vph)	Product	Threshold	Met?
WB LT	AM	118	150	17,700	90,000	NO	184	224	41,216	100,000	NO	246	289	71,094	90,000	NO
	PM	69	345	23,805	90,000	NO	115	641	73,715	100,000	NO	159	885	140,715	90,000	YES
EB LT	AM	25	452	11,300	90,000	NO	25	782	19,550	90,000	NO	25	1,112	27,800	90,000	NO
	PM	51	282	14,382	90,000	NO	51	515	26,265	90,000	NO	51	747	38,097	90,000	NO
NB LT	AM	38	177	6,726	45,000	NO	51	187	9,537	45,000	NO	51	187	9,537	45,000	NO
	PM	61	399	24,339	45,000	NO	70	436	30,520	45,000	NO	70	436	30,520	45,000	NO
SB LT[3]	AM	74	408	30,192	50,000	NO	111	375	41,625	50,000	NO	151	375	56,625	50,000	YES
	PM	259	230	59,570	50,000	YES	398	258	102,684	50,000	YES	551	258	142,158	50,000	YES

Notes:

(1) Based on manual turning movement counts by LSC in July 2021.

(2) Based on the criteria contained in Exhibit 11-6 from the Federal Highway Administration Report *Signalized Intersections: Informational Guide* Publication Number: FHWA-SA-13-027 dated July 2013

(3) The opposing volume for the southbound left-turn movement only includes the northbound through movement as there is an existing acceleration lane for the northbound right-turn movement

Source:LSC Transportation Consultants, Inc. Aug-21

Table 4
Page 1 of 2
The Ridges at Lorson Ranch
Roadway Improvements

Item #	Improvement	Improvement Description With Details	Trigger	Timing	Responsibility
Roadway Segment Improvements					
1	Roadway Segment	Construct Fontaine Boulevard from its existing terminus to Walleye Drive as an interim 2-Lane Urban Non-Residential Collector in 100' right-of-way	With The Hills at Lorson Ranch	With The Hills at Lorson Ranch	Lorson Ranch
2	Roadway Segment	Construct Fontaine Boulevard from Walleye Drive to the east boundary of Lorson Ranch as an interim 2-Lane Urban Non-Residential Collector in 100' right-of-way	With The Ridges at Lorson Ranch	With The Ridges at Lorson Ranch	Lorson Ranch
3	Roadway Segment	Construct Lorson Boulevard from Lamprey Drive to-Walleye Drive as an Urban Residential Collector with 64' - 72' of right-of-way	With The Hills at Lorson Ranch	With The Hills at Lorson Ranch	Lorson Ranch
4	Roadway Segment	Construct Lorson Boulevard from Walleye Drive to its planned ultimate terminus as an Urban Residential Collector with 60' of right-of-way	With The Ridges at Lorson Ranch	With The Ridges at Lorson Ranch	Lorson Ranch
5	Roadway Segment	Construct-Walleye Drive from Lorson Boulevard to-Grayling Drive as an Urban Residential Collector with 64' to 72' of right-of-way	With The Hills at Lorson Ranch	With The Hills at Lorson Ranch	Lorson Ranch
6	Roadway Segment	Construct-Grayling Drive from Lamprey Drive to Walleye Drive as an Urban Residential Collector with 60' of right-of-way	With The Hills at Lorson Ranch	With The Hills at Lorson Ranch	Lorson Ranch
7	Roadway Segment	Construct-Grayling Drive from Walleye Drive to the north boundary of Lorson Ranch as an Urban Residential Collector with 64' to 72' of right-of-way	With The Skyline at Lorson Ranch	With The Skyline at Lorson Ranch	Lorson Ranch
Intersection #1 Marksheffel/Fontaine					
8	Traffic Signal Improvements	Add protected phasing for left-turn movements	When warrant(s) are met	With The Ridges at Lorson Ranch	Lorson Ranch or El Paso County with escrow depending on warrants
9	Second southbound left-turn lane	Add a second southbound left-turn lane on Marksheffel Road approaching Fontaine Boulevard	left turn volume > 505 vehicles per hour	With Future Lorson Ranch Filings	Lorson Ranch or El Paso County with escrow depending on warrants
Intersection #2 Old Glory/Fontaine					
10	All-Way Stop Control	Convert from two-way stop-sign control to all-way stop-sign control	When warrant(s) are met	With The Hills at Lorson Ranch	Lorson Ranch
11	Traffic Signal Control	Convert from all-way stop-sign control to traffic signal control	When warrant(s) are met and The Level of Service degrades below an acceptable level (LOS D)	With The Ridges at Lorson Ranch	Lorson Ranch
Intersection #3 Old Glory/Stingray/Fontaine					
12	Access Restriction	Construct a median on Fontaine Boulevard to restrict the intersection of Old Glory/Stingray/Fontaine to three-quarter movement (left-in/right-in/right-out only) or Construct a median on Fontaine Boulevard to create a channelized "T" intersection for the north leg with a protected eastbound left-turn acceleration lane. The southbound leg would be restricted to right-in/right-out only	When the LOS degrades below LOS D	With The Hills at Lorson Ranch	Lorson Ranch
Intersection #5 Marksheffel/Lorson					
13	Traffic Signal Control	Convert to traffic signal control	When warrant(s) are met and The Level of Service degrades below an acceptable level (LOS D)	With The Hills at Lorson Ranch	Lorson Ranch
Intersection #7 Grayling/Regan Ridge					
14	Southeastbound left-turn lane	Southeastbound left-turn lane on Grayling approaching Regan Ridge	left turn volume > 25 vehicles per hour	NOT REQUIRED	
15	Southeastbound right-turn deceleration lane	Southeastbound right-turn deceleration lane on Grayling approaching Regan Ridge	right turn volume > 50 vehicles per hour	NOT REQUIRED	
16	Northwestbound left-turn lane	Northwestbound left-turn lane on Grayling approaching Regan Ridge	left turn volume > 25 vehicles per hour	NOT REQUIRED	
17	Northwestbound right-turn deceleration lane	Northwestbound right-turn deceleration lane on Grayling approaching Regan Ridge	right turn volume > 50 vehicles per hour	NOT REQUIRED	
Intersection #8 Grayling/Walleye					
18	Southeastbound left-turn lane	Southeastbound left-turn lane on Grayling approaching Walleye	left turn volume > 25 vehicles per hour	NOT REQUIRED	
19	Northweastbound left-turn lane	Northeastbound left-turn lane on Walleye approaching Grayling	left turn volume > 25 vehicles per hour	NOT REQUIRED	
Intersection #9 Walleye/Sanderling					
20	Southbound left-turn lane	Southbound left-turn lane on Walleye approaching Sanderling (recommended length: 205' turn lane plus 160' taper)	left turn volume > 25 vehicles per hour	NOT REQUIRED short left-turn bay recommended to match the northbound left-turn lane (will be included with street construction/in the cross section)	Lorson Ranch
21	Southbound right-turn deceleration lane	Southbound right-turn deceleration lane on Walleye approaching Sanderling	right turn volume > 50 vehicles per hour	NOT REQUIRED	
22	Northbound left-turn lane	Northbound left-turn lane on Walleye approaching Sanderling (recommended length: 205' turn lane plus 160' taper)	left turn volume > 25 vehicles per hour	With The Hills at Lorson Ranch	Lorson Ranch
23	Northbound right-turn deceleration lane	Northbound right-turn deceleration lane on Walleye approaching Sanderling (recommended length: 155' turn lane plus 160' taper)	right turn volume > 50 vehicles per hour	With The Ridges at Lorson Ranch	Lorson Ranch

Source: LSC Transportation Consultants, Inc. (March 2021)

The Ridges at Lorson Ranch
Roadway Improvements

Item #	Improvement	Improvement Description With Details	Trigger	Timing	Responsibility
Intersection #10 Fontaine/Walleye					
24	Eastbound left-turn lane	Eastbound left-turn lane on Fontaine approaching Walleye (recommended length: 355' turn lane plus 160' taper)	left turn volume > 25 vehicles per hour	With The Hills at Lorson Ranch	Lorson Ranch
25	Eastbound right-turn deceleration lane	Eastbound right-turn deceleration lane on Fontaine approaching Walleye (recommended length: 155' turn lane plus 160' taper)	right turn volume > 50 vehicles per hour	With The Hills at Lorson Ranch	Lorson Ranch
26	Westbound left-turn lane	Westbound left-turn lane on Fontaine approaching Walleye (recommended length: 205' turn lane plus 160' taper)	left turn volume > 25 vehicles per hour	NOT REQUIRED A left-turn lane is included in the standard Urban Non-Residential Collector Cross Section	Lorson Ranch
27	Westbound right-turn deceleration lane	Westbound right-turn deceleration lane on Fontaine approaching Walleye (recommended length: 155' turn lane plus 160' taper)	right turn volume > 50 vehicles per hour	NOT REQUIRED - but will be included with The Ridges at Lorson Ranch	Lorson Ranch
28	Northbound left-turn lane	Northbound left-turn lane on Walleye approaching Fontaine (recommended length: 355' turn lane plus 160' taper)	left turn volume > 25 vehicles per hour	With The Hills at Lorson Ranch	Lorson Ranch
29	Northbound right-turn deceleration lane	Northbound right-turn deceleration lane on Walleye approaching Fontaine (recommended length: 155' turn lane plus 160' taper)	right turn volume > 50 vehicles per hour	NOT REQUIRED - but will be included with The Ridges at Lorson Ranch	Lorson Ranch
30	Southbound left-turn lane	Southbound left-turn lane on Walleye approaching Fontaine (recommended length: 205' turn lane plus 160' taper)	left turn volume > 25 vehicles per hour	NOT REQUIRED recommended to match the northbound left-turn lane (will be included with street construction/in the cross section)	Lorson Ranch
31	Southbound right-turn deceleration lane	Southbound right-turn deceleration lane on Walleye approaching Fontaine (recommended length: 155' turn lane plus 160' taper)	right turn volume > 50 vehicles per hour	With The Hills at Lorson Ranch	Lorson Ranch
Intersection #11 Walleye/Lake Trout					
32	Southbound left-turn lane	Southbound left-turn lane on Walleye approaching Lake Trout (recommended length: 255' turn lane plus 160' taper)	left turn volume > 25 vehicles per hour	With The Ridges at Lorson Ranch	Lorson Ranch
33	Southbound right-turn deceleration lane	Southbound right-turn deceleration lane on Walleye approaching Lake Trout	right turn volume > 50 vehicles per hour	NOT REQUIRED	
34	Northbound left-turn lane	Northbound left-turn lane on Walleye approaching Lake Trout (recommended length: 205' turn lane plus 160' taper)	left turn volume > 25 vehicles per hour	With The Hills at Lorson Ranch	Lorson Ranch
35	Northbound right-turn deceleration lane	Northbound right-turn deceleration lane on Walleye approaching Lake Trout	right turn volume > 50 vehicles per hour	NOT REQUIRED	
Intersection #12 Walleye/Splake					
36	Southbound left-turn lane	Southbound left-turn lane on Walleye approaching Splake (recommended length: 205' turn lane plus 160' taper)	left turn volume > 25 vehicles per hour	With The Ridges at Lorson Ranch	Lorson Ranch
37	Southbound right-turn deceleration lane	Southbound right-turn deceleration lane on Walleye approaching Splake	right turn volume > 50 vehicles per hour	NOT REQUIRED	
38	Northbound left-turn lane	Northbound left-turn lane on Walleye approaching Splake (recommended length: 205' turn lane plus 160' taper)	left turn volume > 25 vehicles per hour	NOT REQUIRED but needed to match southbound left-turn lane	Lorson Ranch
39	Northbound right-turn deceleration lane	Northbound right-turn deceleration lane on Walleye approaching Splake	right turn volume > 50 vehicles per hour	NOT REQUIRED	
Intersection #17 Lorson/Walleye					
40	Westbound right-turn deceleration lane	Westbound right-turn deceleration lane on Lorson approaching Walleye	right turn volume > 50 vehicles per hour	NOT REQUIRED	
41	Southbound left-turn lane	Southbound left-turn lane on Walleye approaching Lorson (recommended length: 205 plus 160' taper)	left turn volume > 25 vehicles per hour	NOT REQUIRED - but will be included	Lorson Ranch
42	Eastbound left-turn lane	Eastbound left-turn lane on Lorson approaching Walleye (recommended length: 355' turn lane plus 160' taper)	left turn volume > 25 vehicles per hour	With The Hills at Lorson Ranch	Lorson Ranch
Intersection #18 Lorson/Split Mountain					
43	Westbound right-turn deceleration lane	Westbound right-turn deceleration lane on Lorson approaching Split Mountain	right turn volume > 50 vehicles per hour	NOT REQUIRED	
44	Eastbound left-turn lane	Eastbound left-turn lane on Lorson approaching Split Mountain (recommended length: 205' turn lane plus 160' taper)	left turn volume > 25 vehicles per hour	With The Ridges at Lorson Ranch	Lorson Ranch
Intersection #19 Fontaine/Buckner Way					
45	Eastbound right-turn deceleration lane	Eastbound right-turn deceleration lane on Fontaine approaching Buckner	right turn volume > 50 vehicles per hour	NOT REQUIRED	
46	Eastbound left-turn lane	Eastbound left-turn lane on Fontaine approaching Buckner (recommended length: 205' turn lane plus 160' taper)	left turn volume > 25 vehicles per hour	With The Ridges at Lorson Ranch	Lorson Ranch
47	Westbound right-turn deceleration lane	Westbound right-turn deceleration lane on Fontaine approaching Buckner	right turn volume > 50 vehicles per hour	NOT REQUIRED	
48	Westbound left-turn lane	Eastbound left-turn lane on Fontaine approaching Buckner (recommended length: 205' turn lane plus 160' taper)	left turn volume > 25 vehicles per hour	NOT REQUIRED - but will be included	Lorson Ranch

Source: LSC Transportation Consultants, Inc. (November 2021)

Figures 1-12

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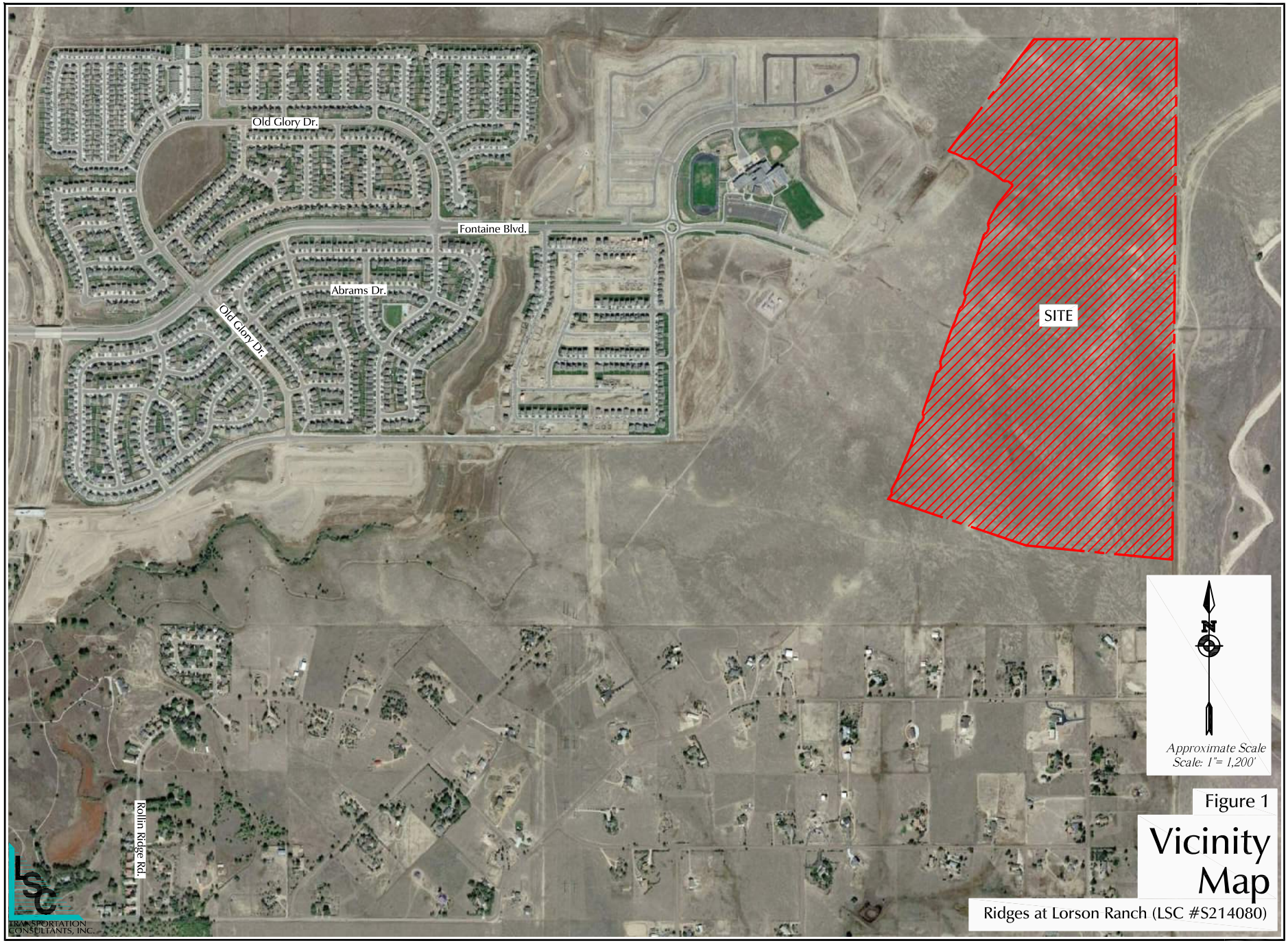


Figure 1

Vicinity Map

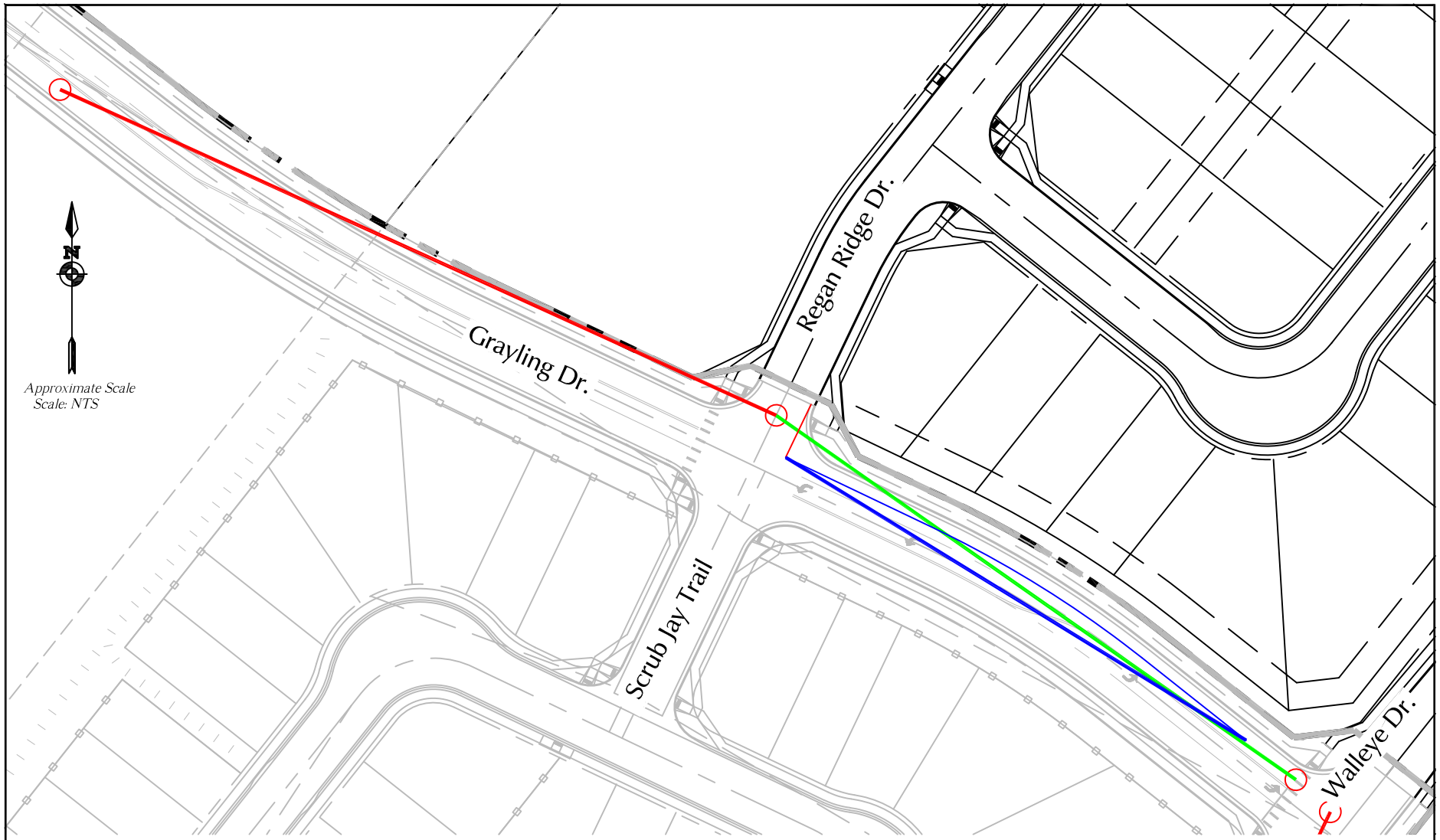
Ridges at Lorson Ranch (LSC #S214080)

Figure 2

Site Plan

Ridges at Lorson Ranch (LSC #S214080)

LSC TRANSPORTATION CONSULTANTS, INC.



LEGEND:

= ECM Required Intersection Sight Distance (445' based on a design speed of 40 mph from Table 2-21)

= 356' available intersection sight distance

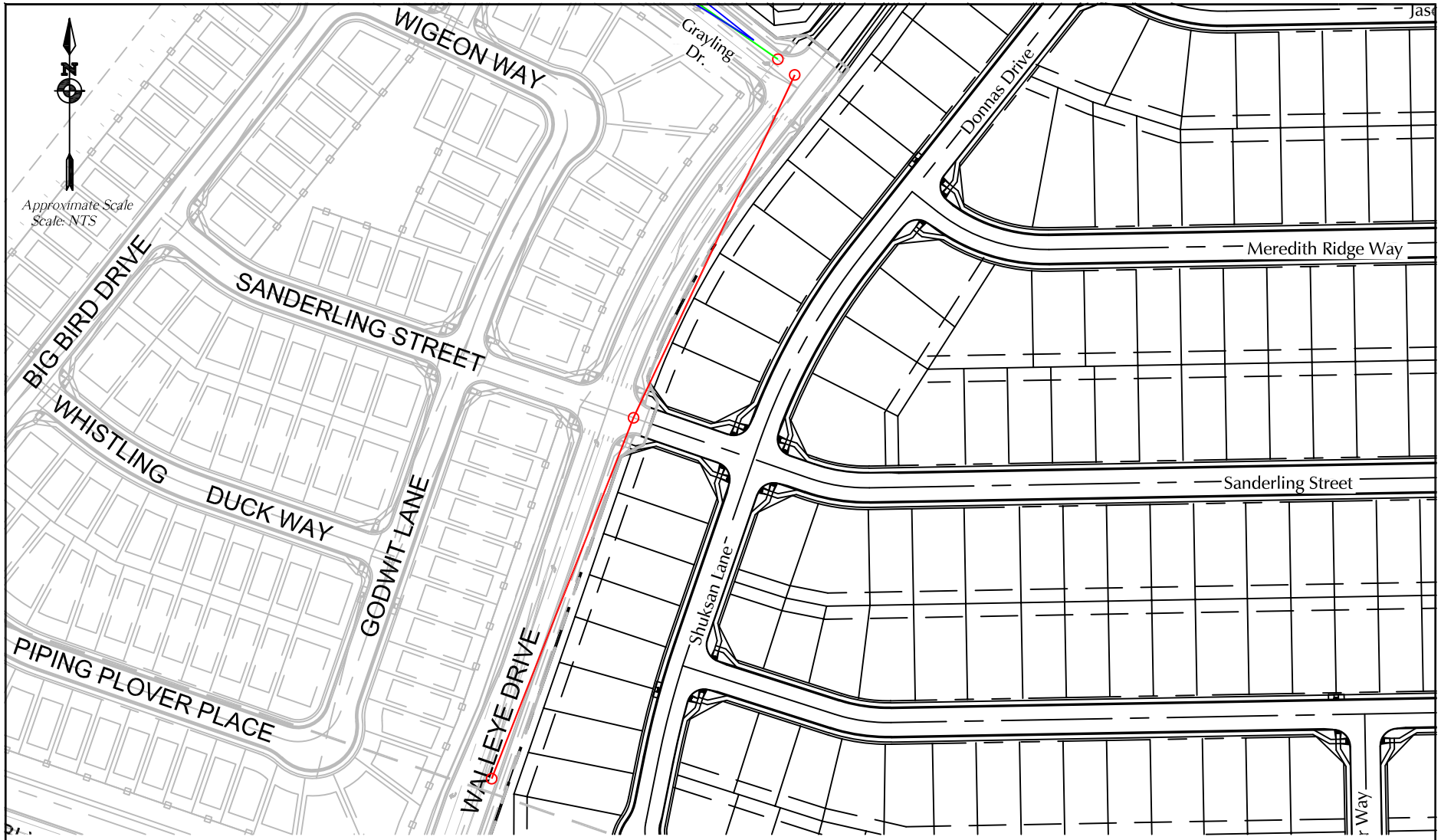
= ECM Required Stopping Sight Distance (305' based on a design speed of 40 mph from Table 2-17)

TRANSPORTATION CONSULTANTS, INC.

Figure 3a

Sight Distance Analysis Grayling/Regan Ridge Dr.

Ridges at Lorson Ranch (LSC #S214080)



LEGEND:

= ECM Required Intersection Sight Distance (445' based on a design speed of 40 mph from Table 2-21)

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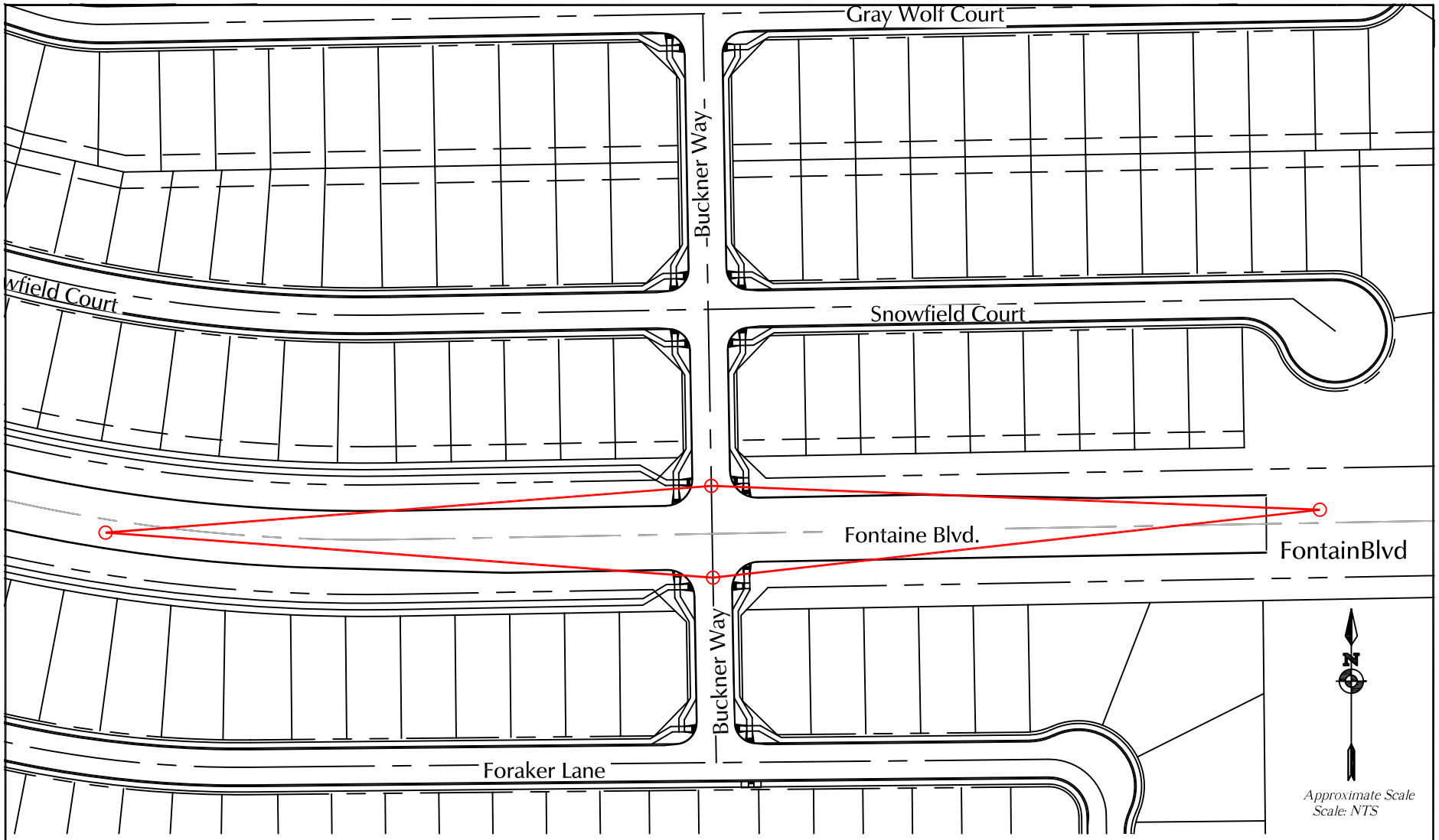
Figure 3b

Sight Distance Analysis Sanderling/Walleye

Ridges at Lorson Ranch (LSC #S214080)



LEGEND:

= ECM Required Intersection Sight Distance (555' based the **ultimate** design speed of 50 mph from Table 2-21)

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Figure 3c

Sight Distance Analysis Fontaine/Buckner

Ridges at Lorson Ranch (LSC #S214080)

Approximate Scale
Scale: NTS

LEGEND:

= ECM Required Intersection Sight Distance (445' based on a design speed of 40 mph from Table 2-21)

Figure 3d

Sight Distance Analysis
Walleye/Lake Trout & Walleye/Splake

Ridges at Lorson Ranch (LSC #S214080)

LSC TRANSPORTATION CONSULTANTS, INC.

Approximate Scale
Scale: NTS

LEGEND:

= ECM Required Intersection Sight Distance (445' based on a design speed of 40 mph from Table 2-21)

= ECM Required Intersection Sight Distance at a Local/Local intersection (390' based on a design speed of 35 mph extrapolated from Table 2-21)

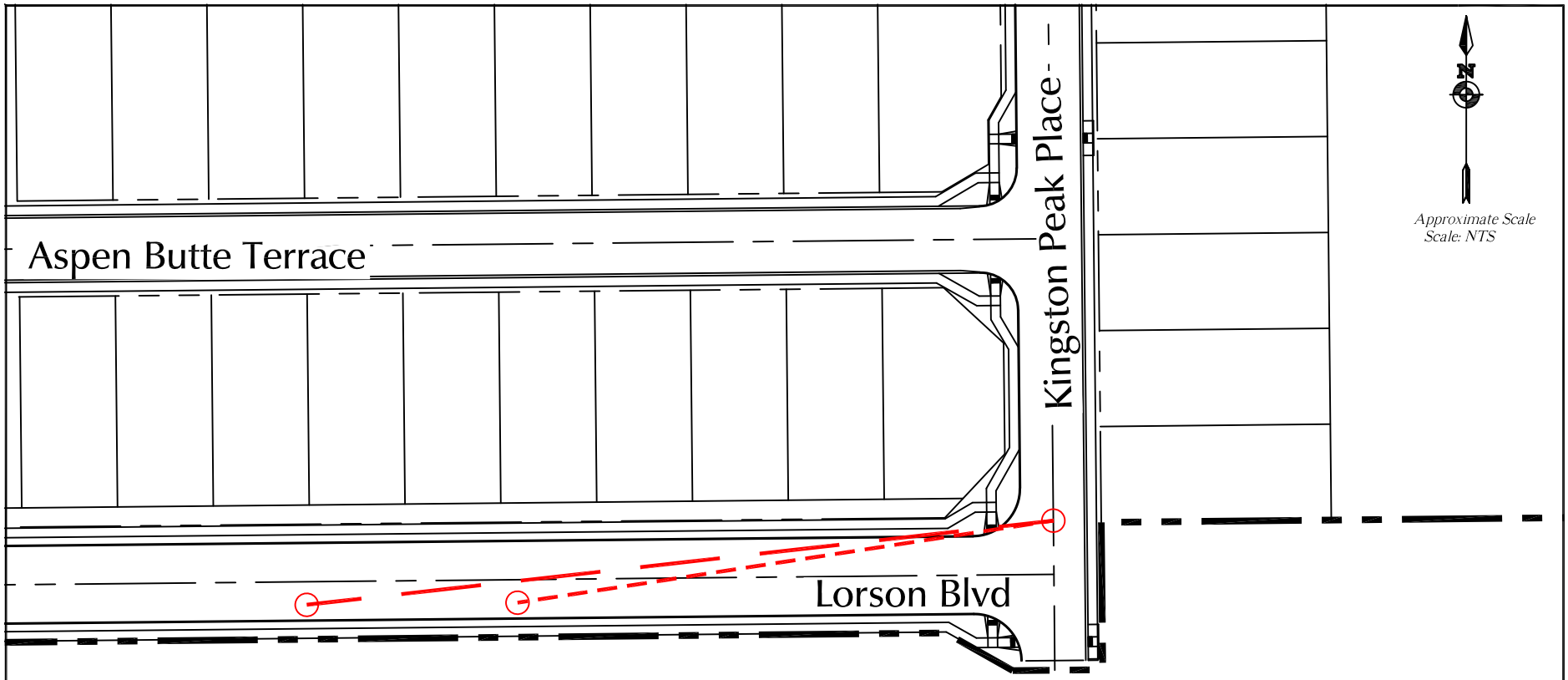
= ECM Required Intersection Sight Distance at a Local/Local intersection (280' based on a design speed of 25 mph from Table 2-21)

Figure 3e

Sight Distance Analysis
Walleye/Lorson & Split Mountain/Lorson

Ridges at Lorson Ranch (LSC #S214080)

LSC TRANSPORTATION CONSULTANTS, INC.



LEGEND:

= ECM Required Intersection Sight Distance at a Local/Local intersection (390' based on a design speed of 35 mph extrapolated from Table 2-21)

= ECM Required Intersection Sight Distance at a Local/Local intersection (280' based on a design speed of 25 mph from Table 2-21)

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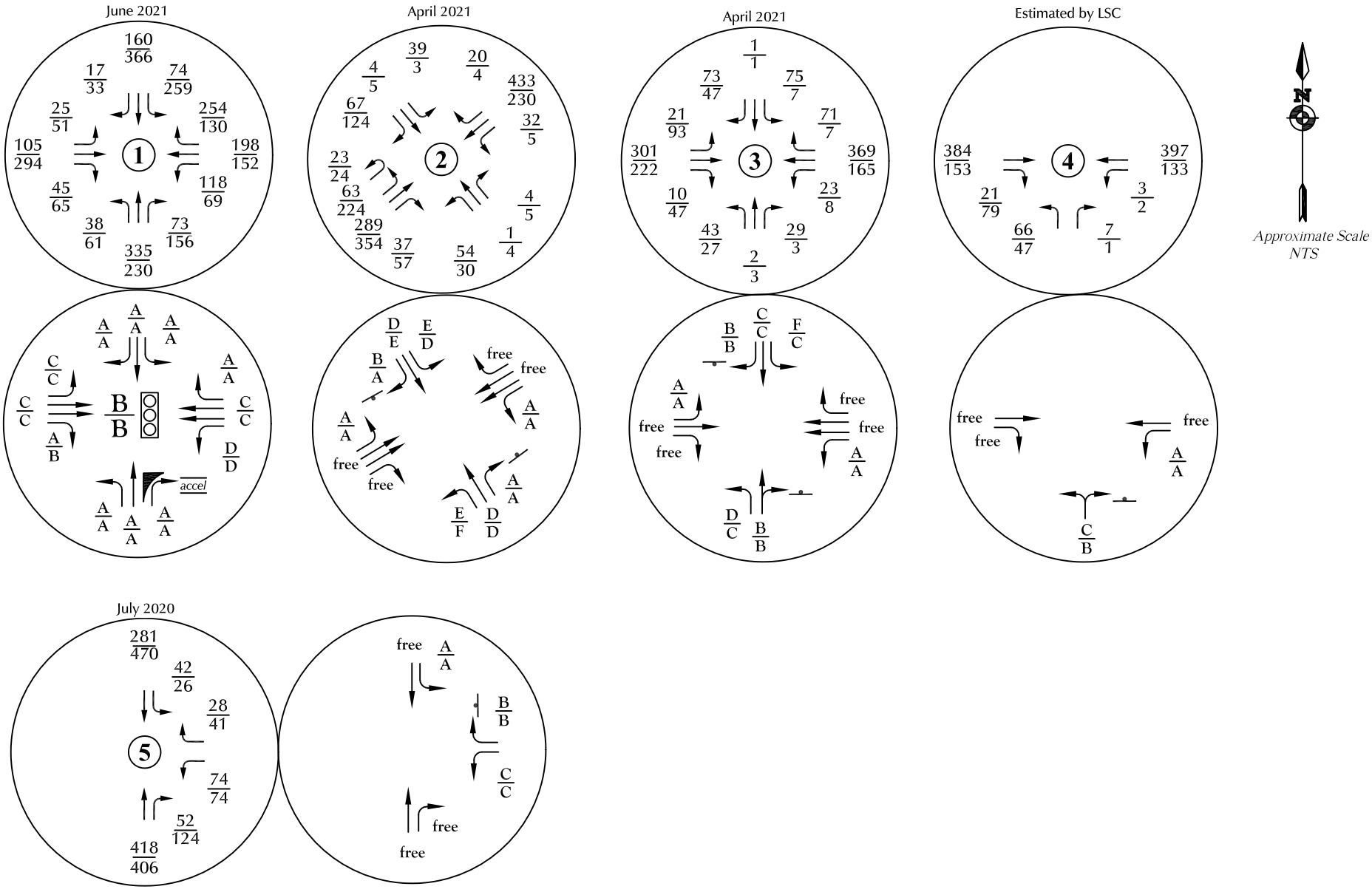
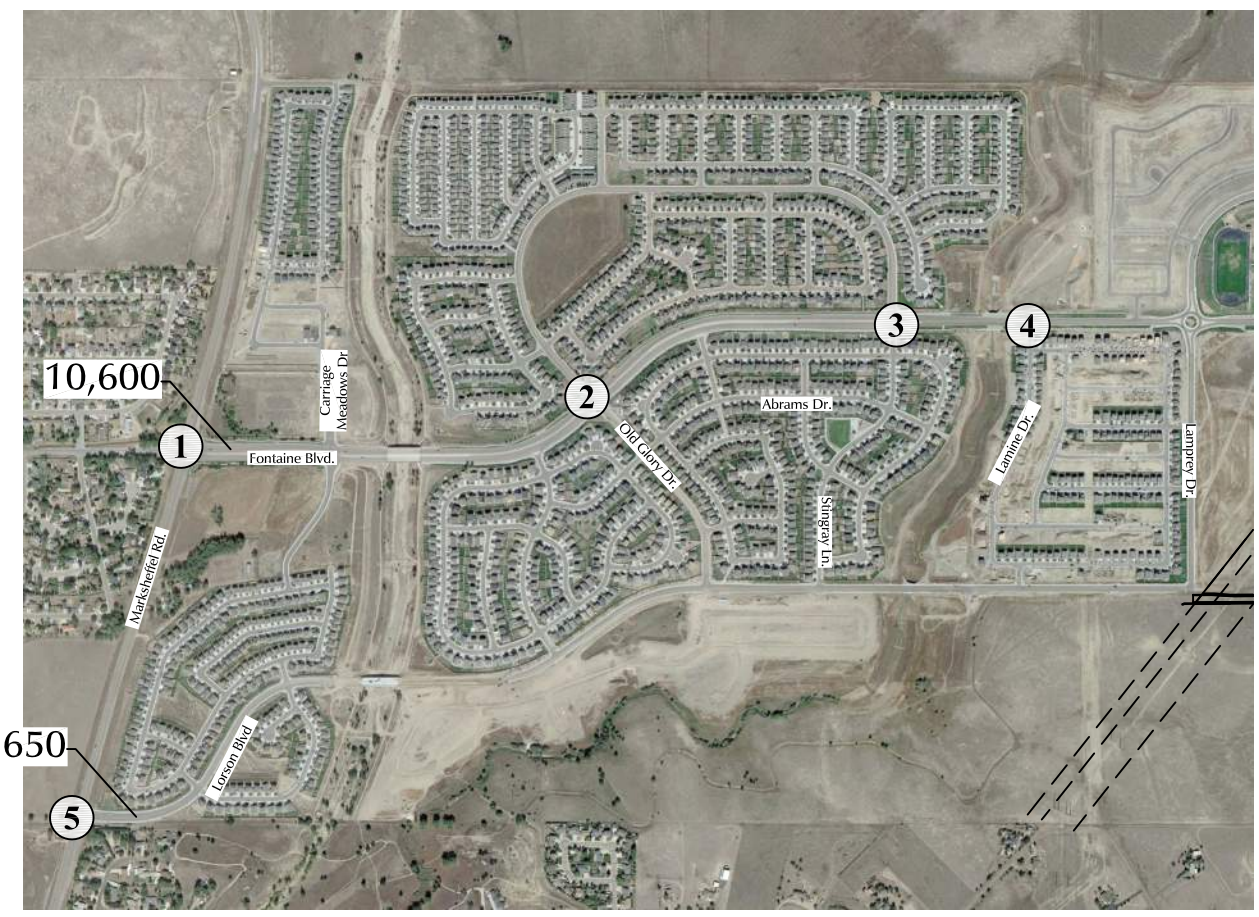
Figure 3f

Sight Distance Analysis Lorson/Kingston Peak

Ridges at Lorson Ranch (LSC #S214080)





LEGEND:

(#) = Intersection Number

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

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

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

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

= Stop Sign

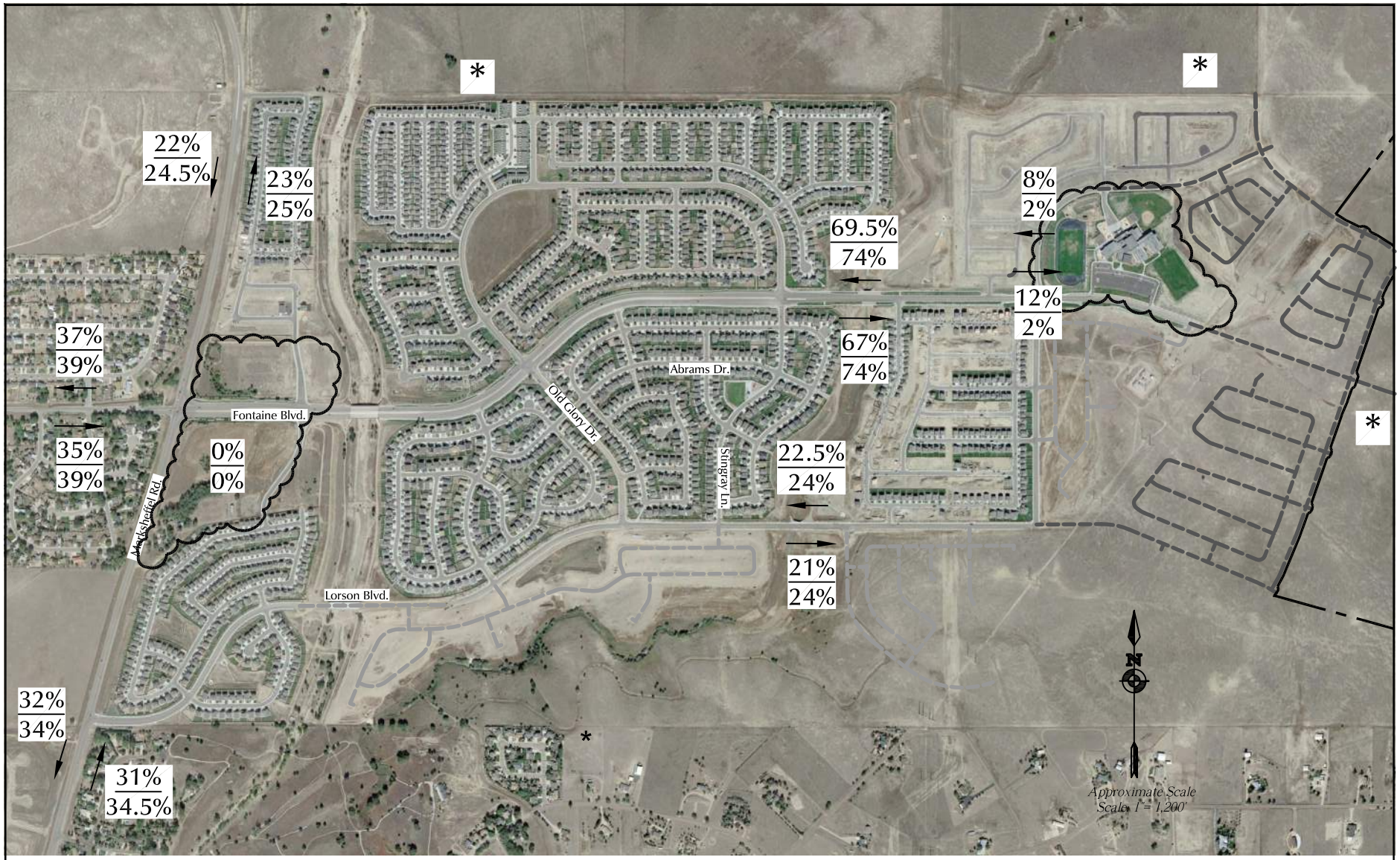
= Traffic Signal

Figure 4

Existing Traffic, Lane Geometry, and Levels of Service

Ridges at Lorson Ranch (LSC #S214080)

LSC TRANSPORTATION CONSULTANTS, INC.



LEGEND:

XX% / XX% = AM Percent Directional Distribution / PM Percent Directional Distribution

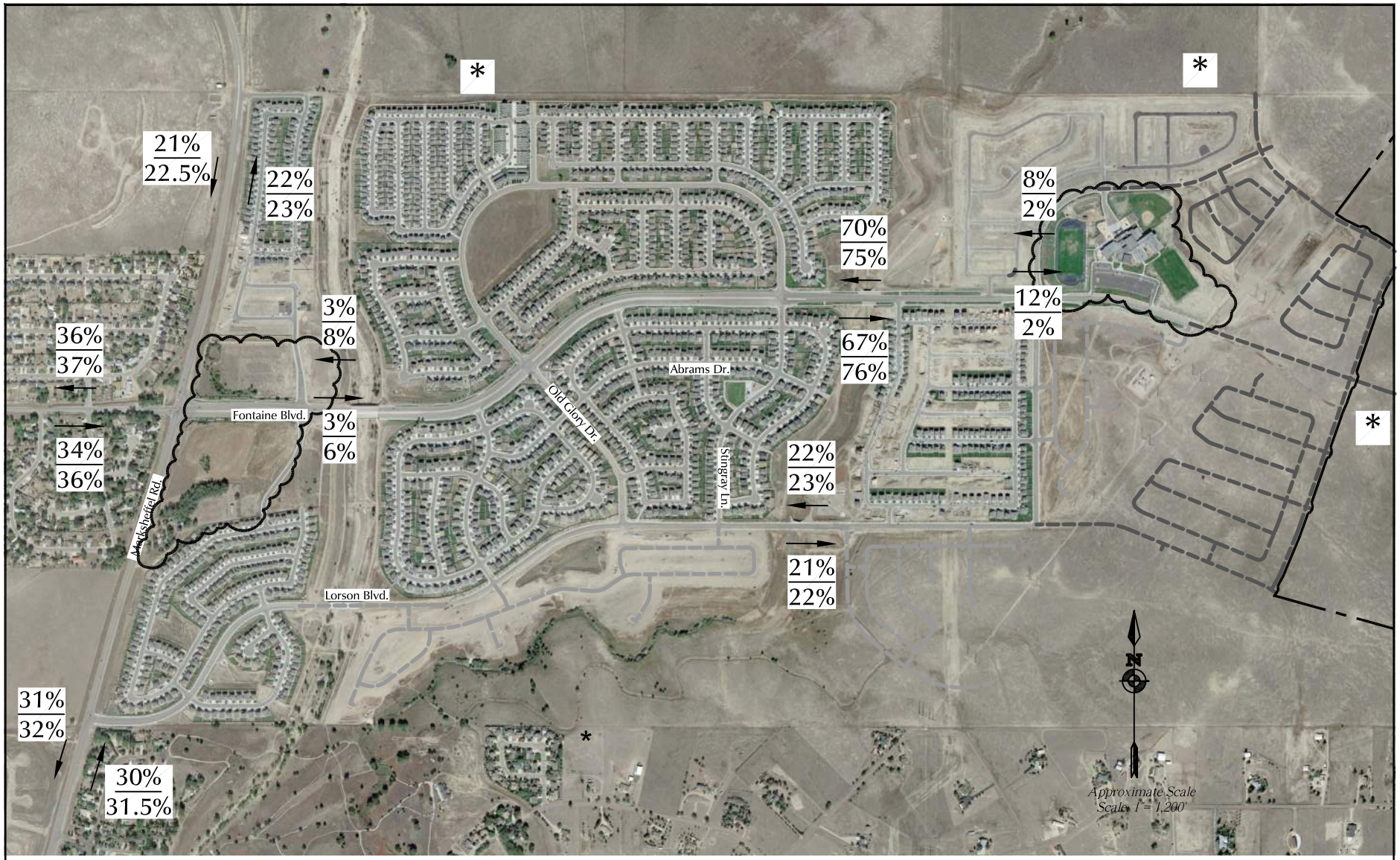
TRANSPORTATION CONSULTANTS, INC.

* Assumes no trip distribution east or north of the greater Lorson Ranch boundary within the 20-year horizon.

Figure 5a

Directional Distribution of Short-Term Site-Generated Traffic

Ridges at Lorson Ranch (LSC #S214080)



LEGEND:

XX% / XX% = AM Percent Directional Distribution / PM Percent Directional Distribution

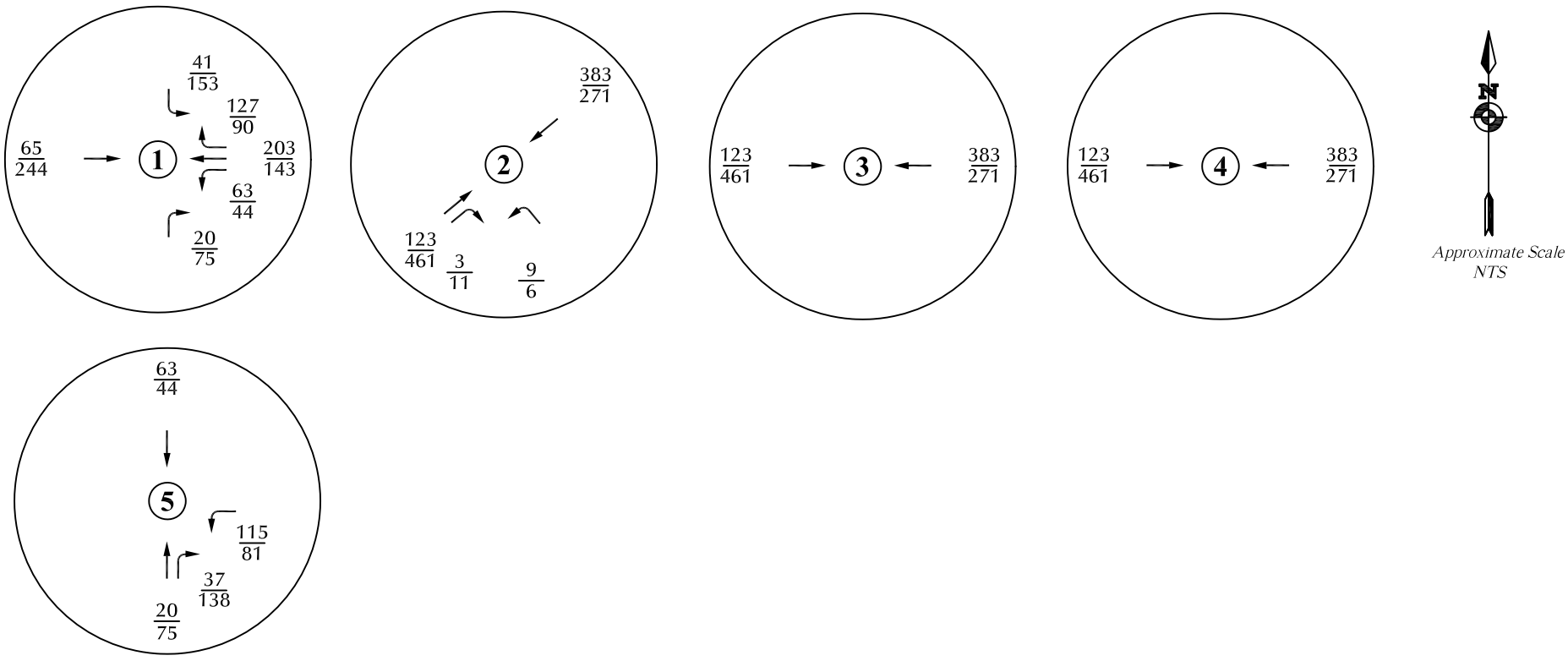
* Assumes no trip distribution east or north of the greater Lorson Ranch boundary within the 20-year horizon.

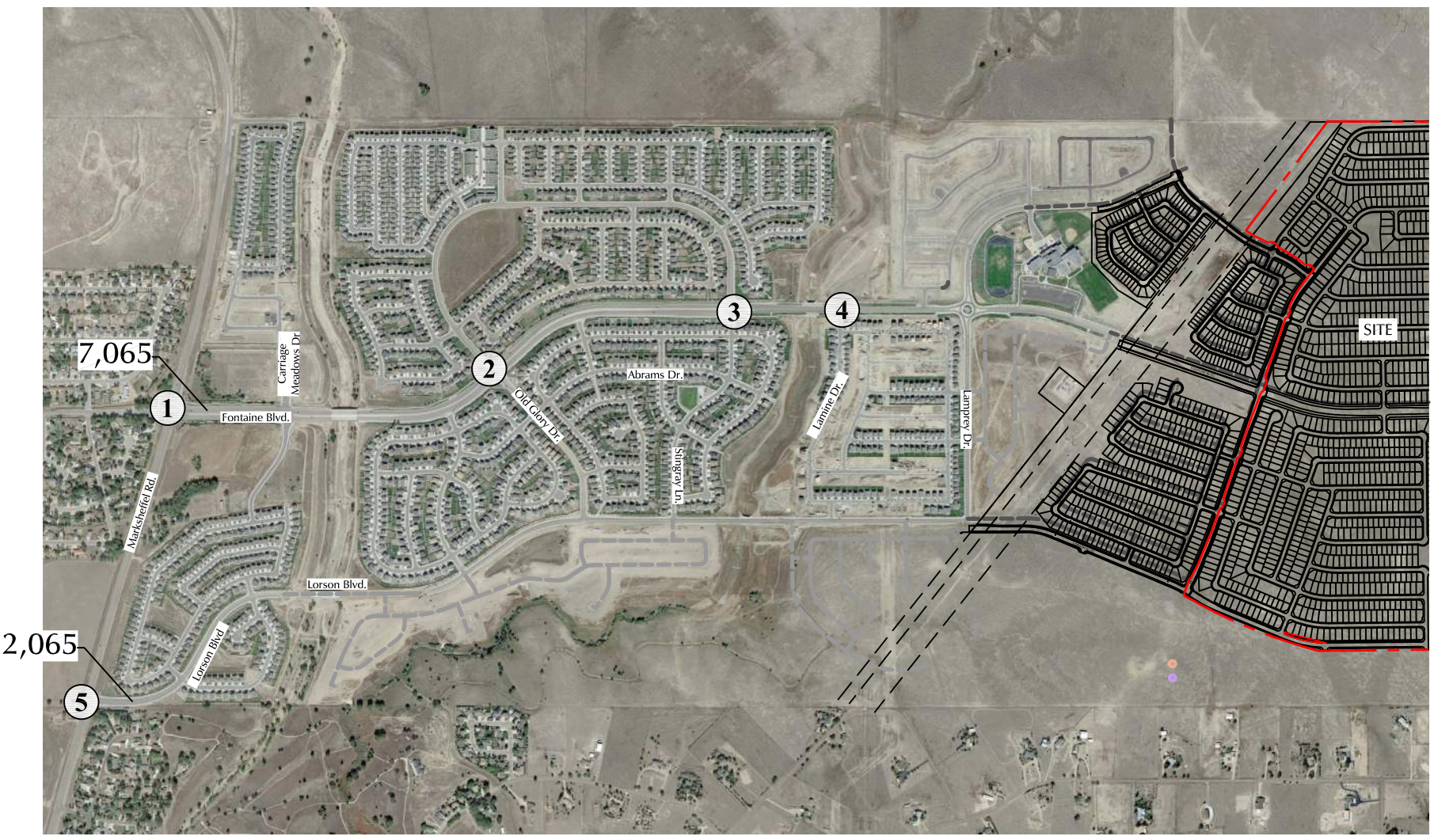
TRANSPORTATION CONSULTANTS, INC.

Figure 5b

Directional Distribution of Long-Term Site-Generated Traffic

Ridges at Lorson Ranch (LSC #S214080)





LEGEND:

(#) = Intersection Number

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

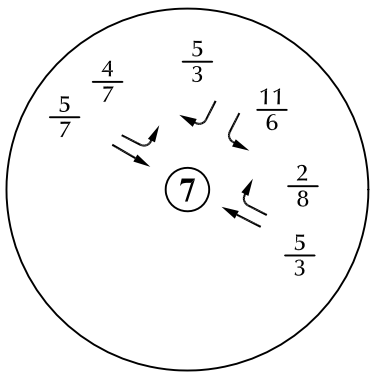
X,XXX= Average Weekday Traffic (vehicles per day)

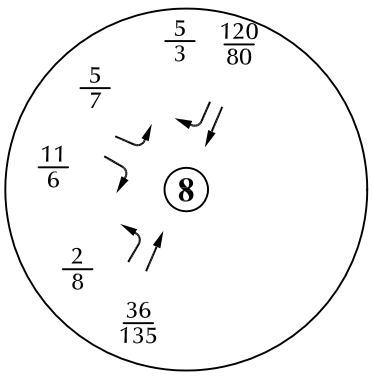
Figure 6a

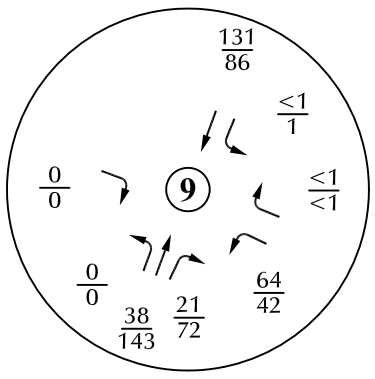
Assignment of Short-Term Site-Generated Traffic at the External Intersections

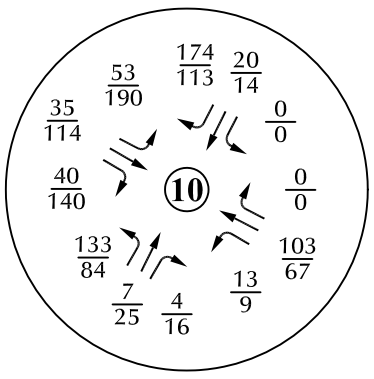
Ridges at Lorson Ranch (LSC #S214080)

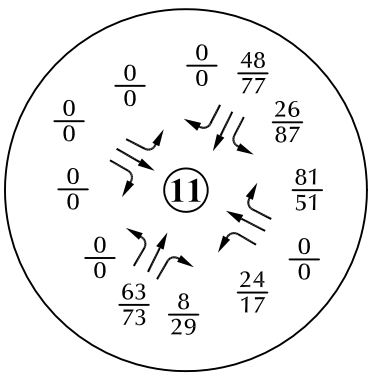
LSC TRANSPORTATION CONSULTANTS, INC.

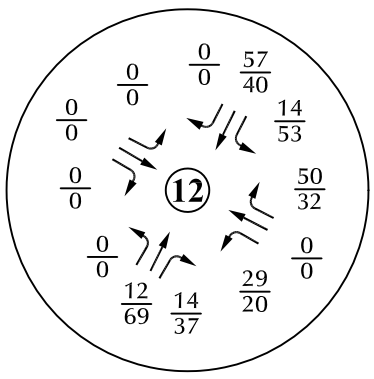


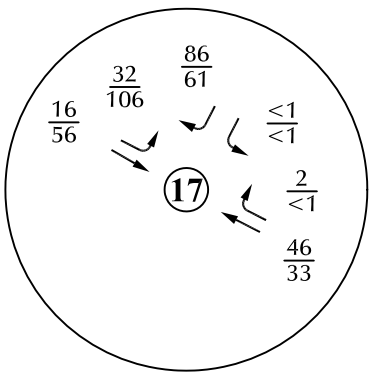


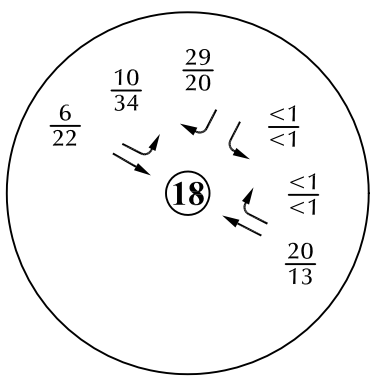


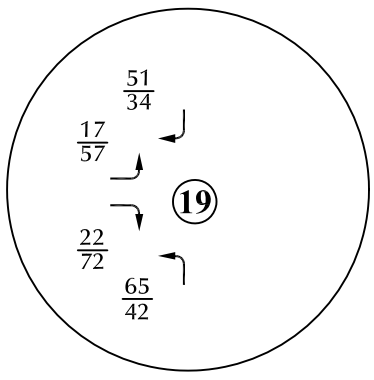


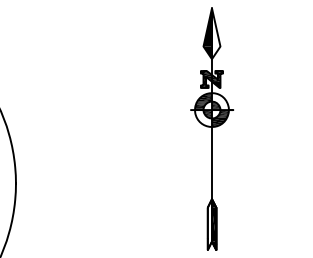












LEGEND:

(#) = Intersection Number

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

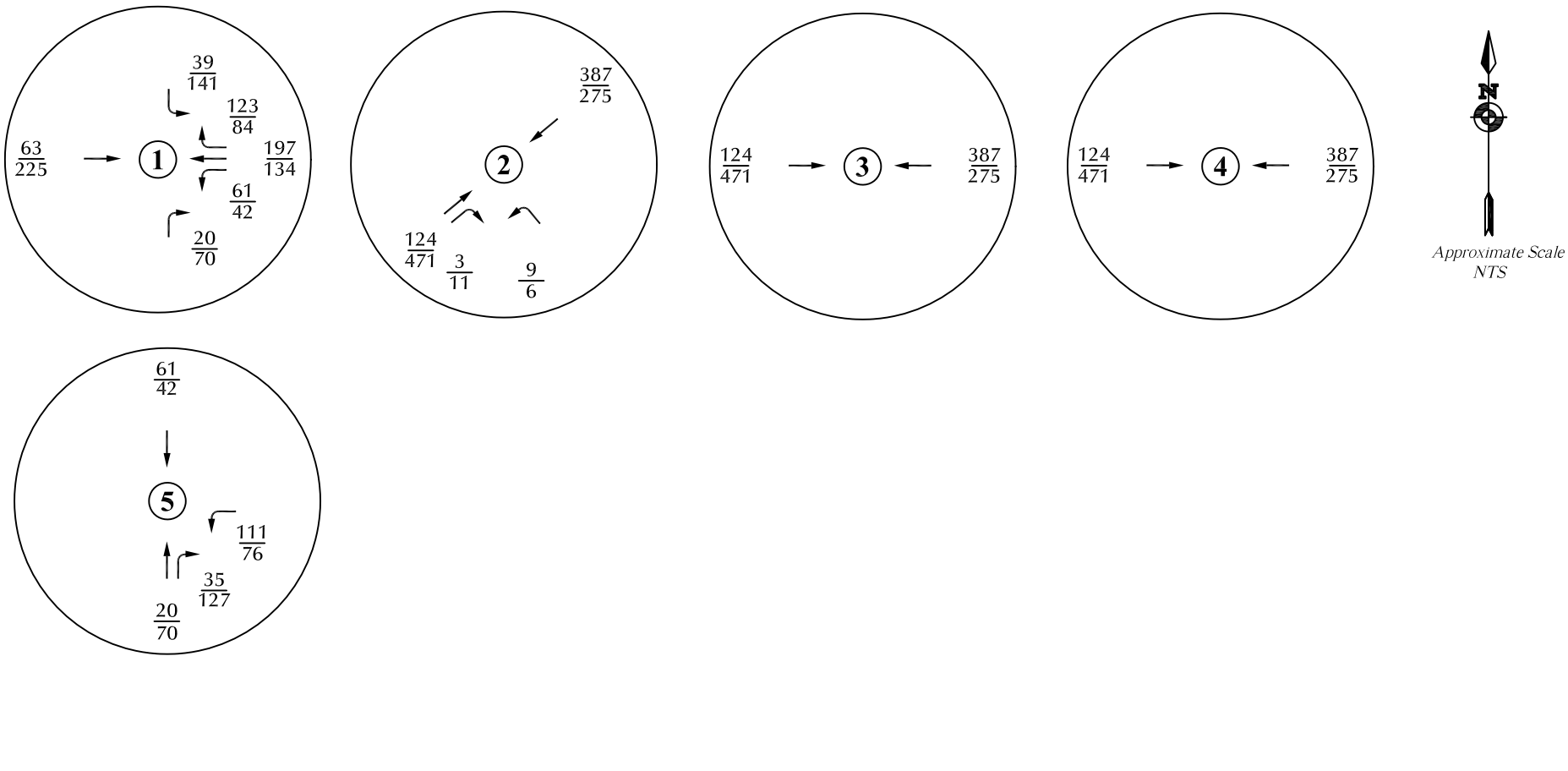
X,XXX = Average Weekday Traffic (vehicles per day)

TRANSPORTATION CONSULTANTS, INC.

Figure 6b

Assignment of Short-Term Site-Generated Traffic at the Internal Intersections

Ridges at Lorson Ranch (LSC #S214080)



LEGEND:

(#) = Intersection Number

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

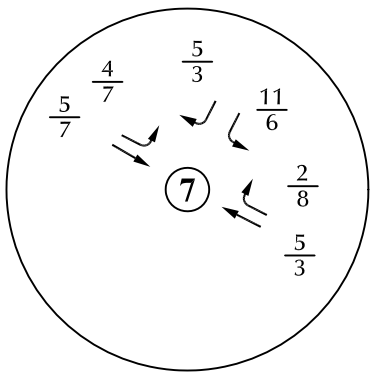
X,XXX= Average Weekday Traffic (vehicles per day)

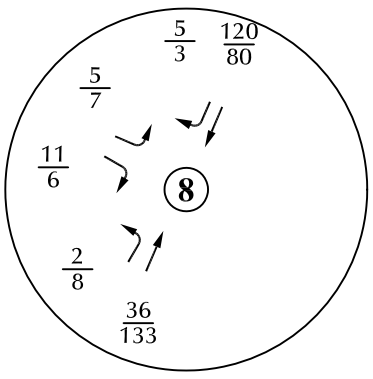
Figure 7a

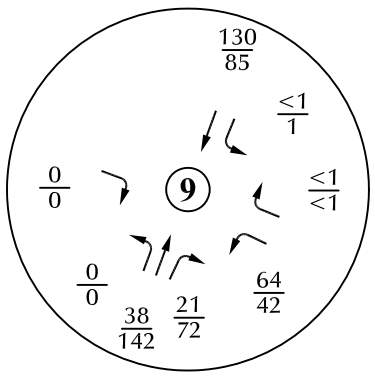
Assignment of Long-Term Site-Generated Traffic at the External Intersections

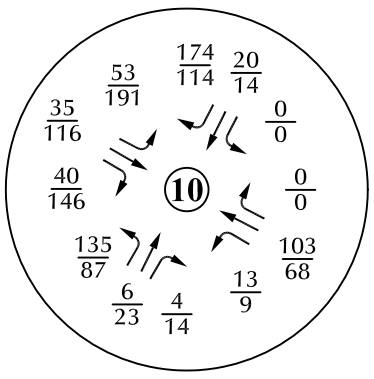
Ridges at Lorson Ranch (LSC #S214080)

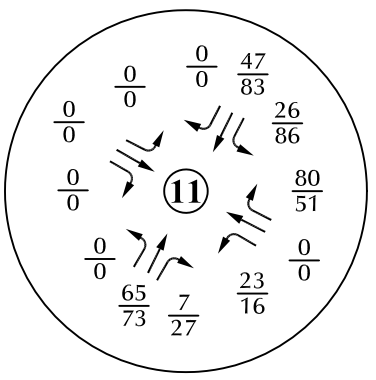
LSC TRANSPORTATION CONSULTANTS, INC.

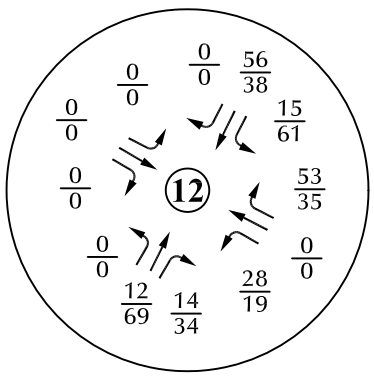


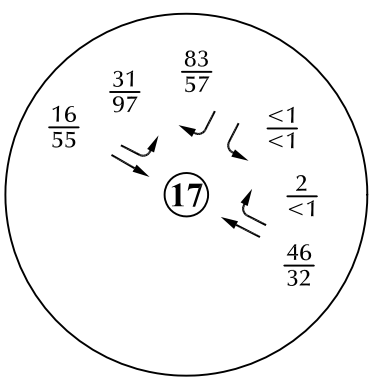


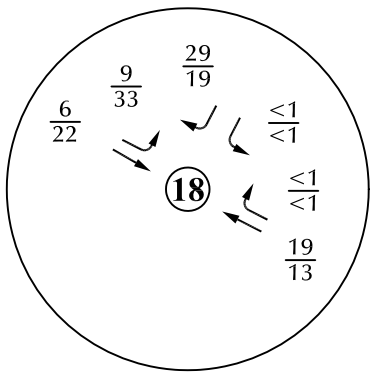


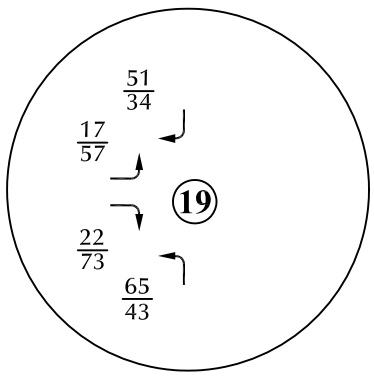












Approximate Scale
NTS

LEGEND:

(#) = Intersection Number

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

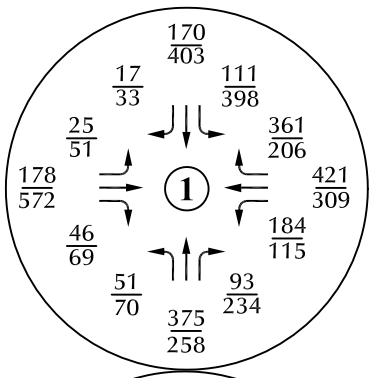
X,XXX= Average Weekday Traffic (vehicles per day)

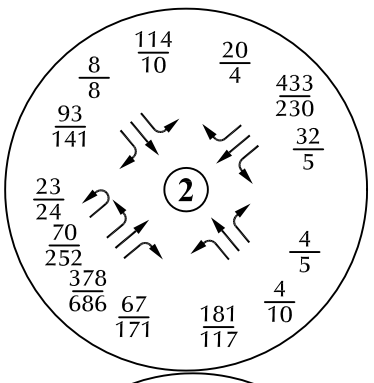
LSC TRANSPORTATION CONSULTANTS, INC.

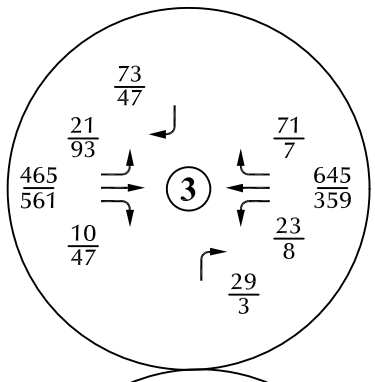
Figure 7b

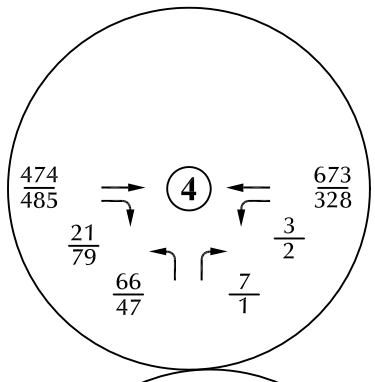
Assignment of Long-Term Site-Generated Traffic at the Internal Intersections

Ridges at Lorson Ranch (LSC #S214080)

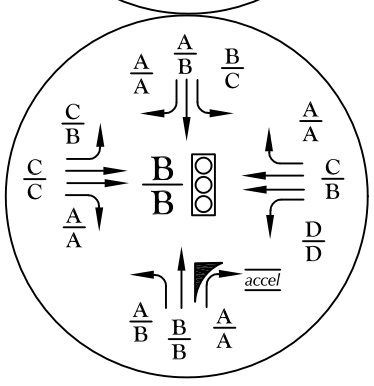


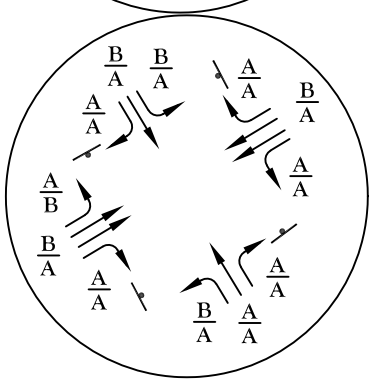


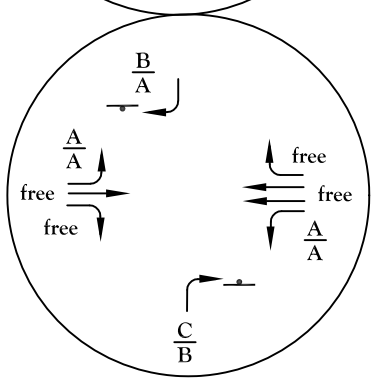


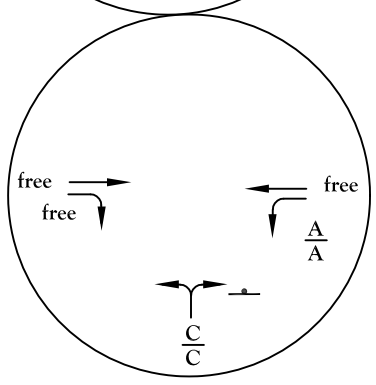


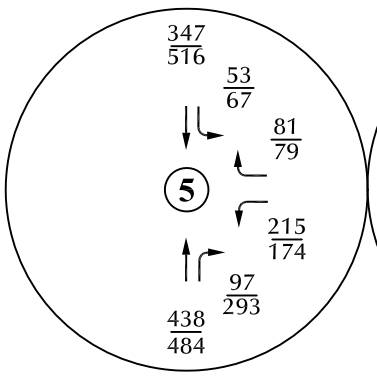
Approximate Scale
NTS

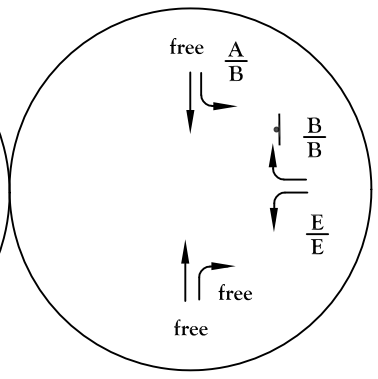


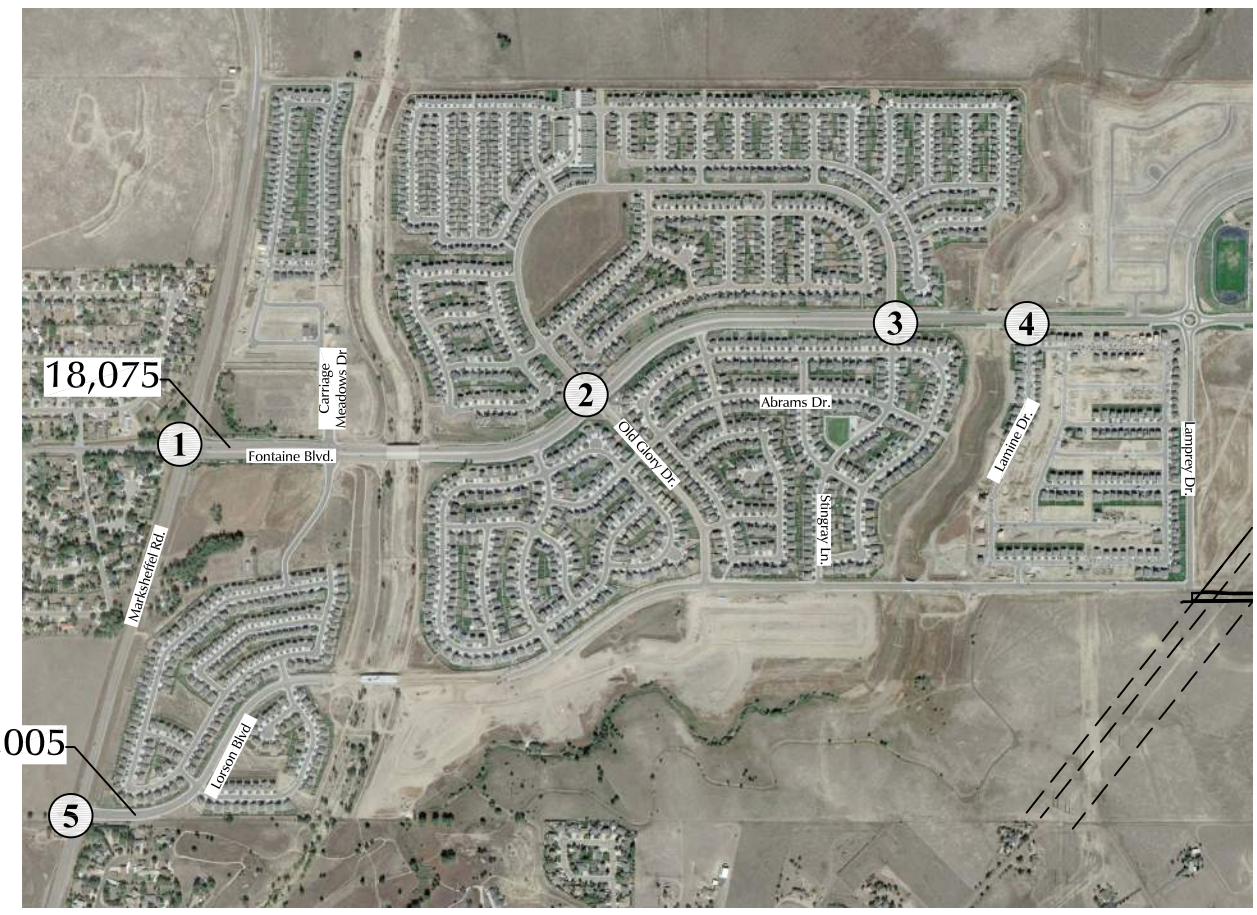












LEGEND:

(#) = Intersection Number

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

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

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

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

= Stop Sign

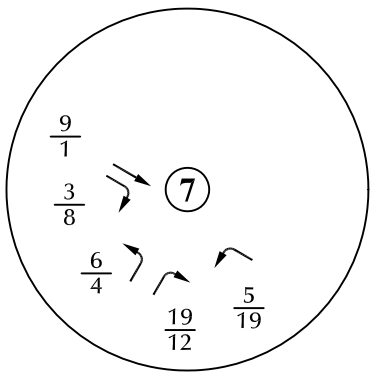
= Traffic Signal

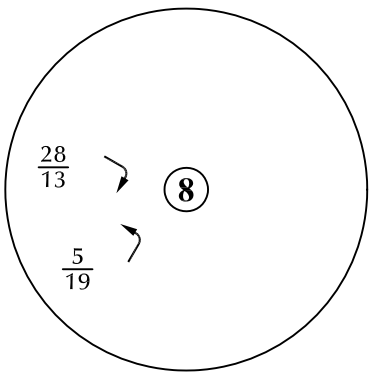
Figure 8a

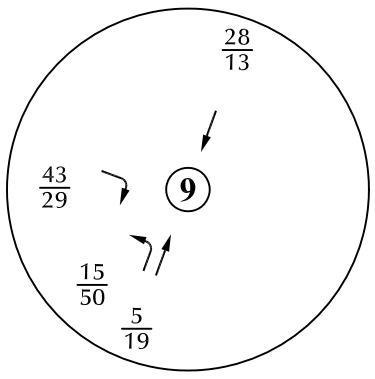
Short-Term Background Traffic, Lane Geometry, and Levels of Service at External Intersections

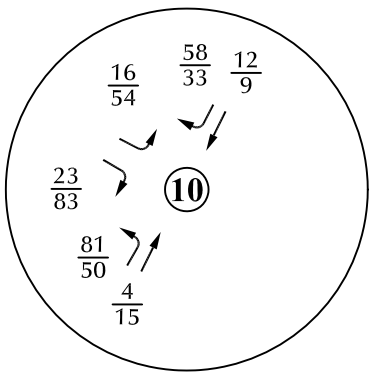
Ridges at Lorson Ranch (LSC #S214080)

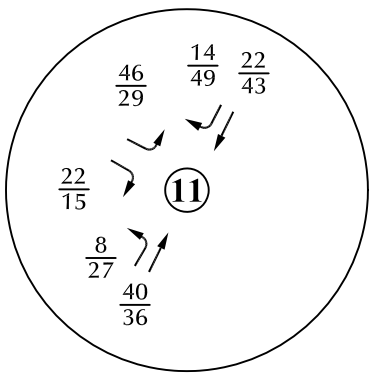
LSC TRANSPORTATION CONSULTANTS, INC.

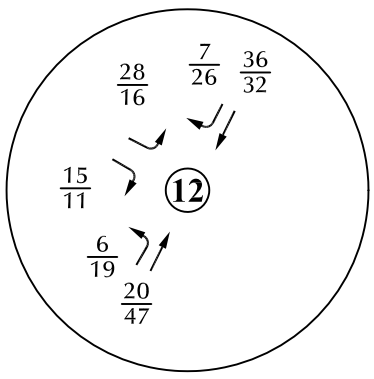


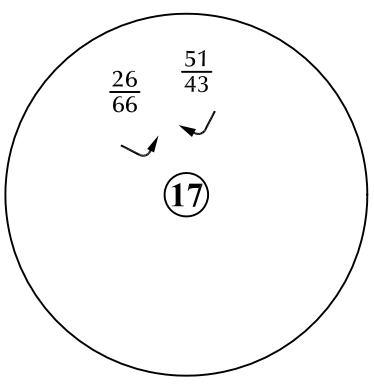












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Approximate Scale
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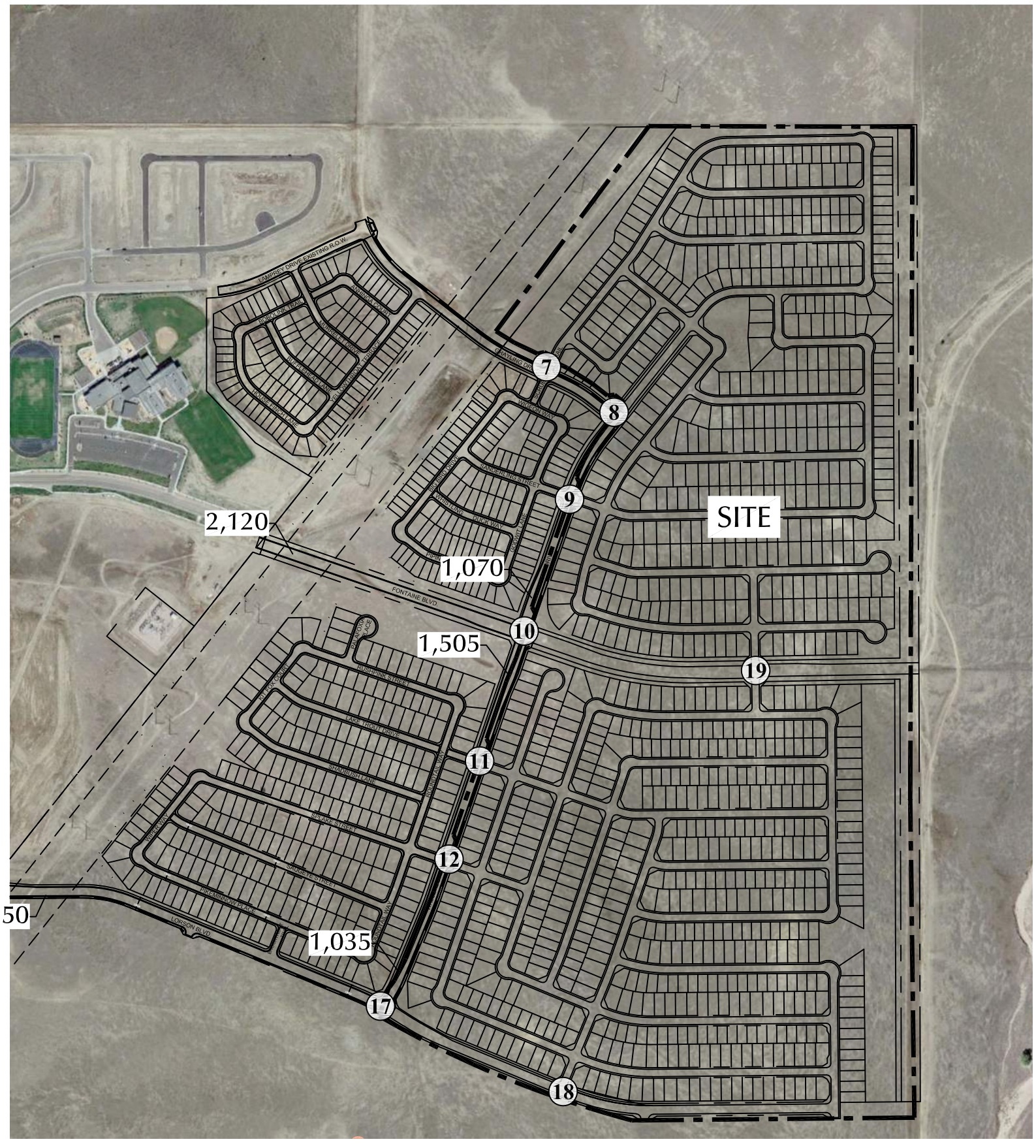


LEGEND:

(#) = Intersection Number

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

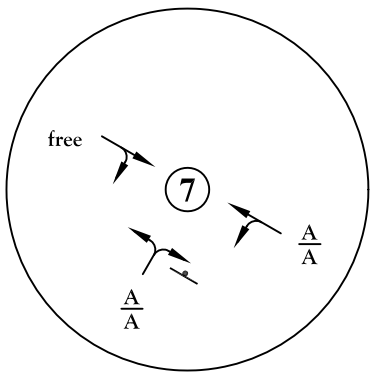
X,XXX = Average Weekday Traffic (vehicles per day)

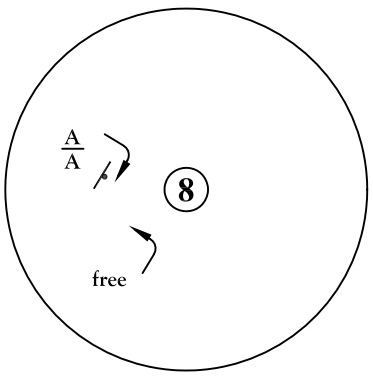
LSC TRANSPORTATION CONSULTANTS, INC.

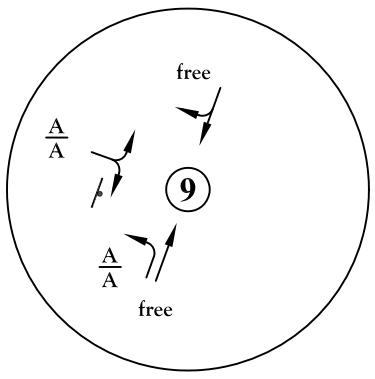
Figure 8b

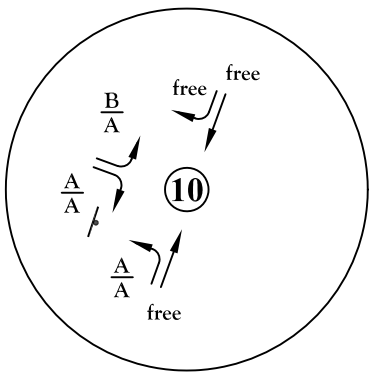
Short-Term Background Traffic at the Internal Intersections

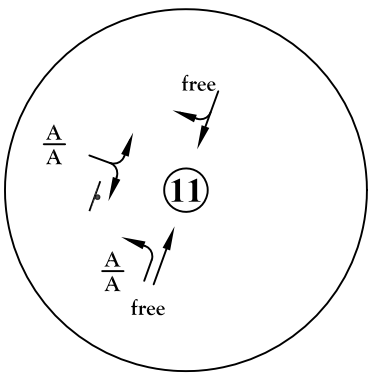
Ridges at Lorson Ranch (LSC #S214080)

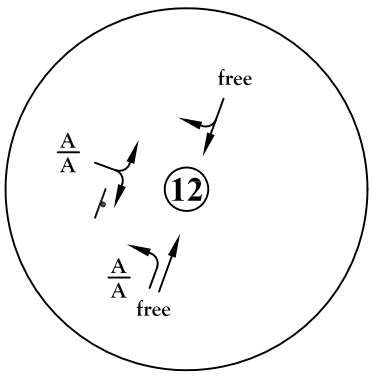


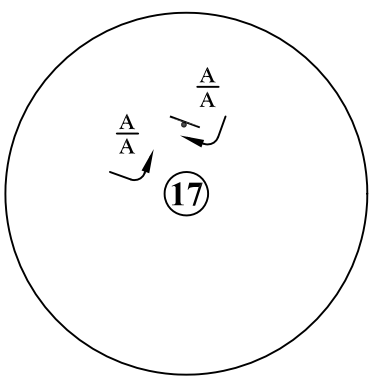












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Approximate Scale
NTS

Figure 8c

Short-Term Background Lane Geometry and Traffic Control at the Internal Intersections

Ridges at Lorson Ranch (LSC #S214080)

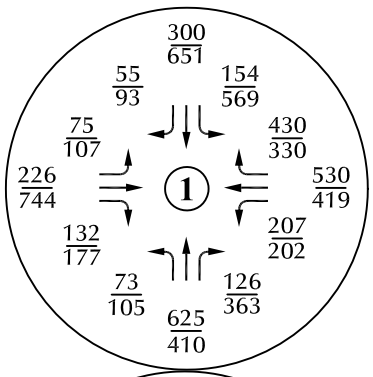
LEGEND:

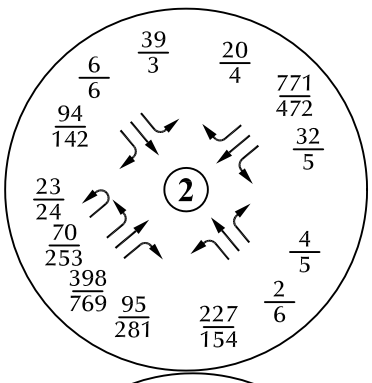
(#) = Intersection Number

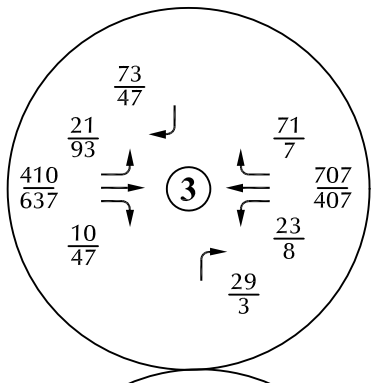
⊦ = Stop Sign

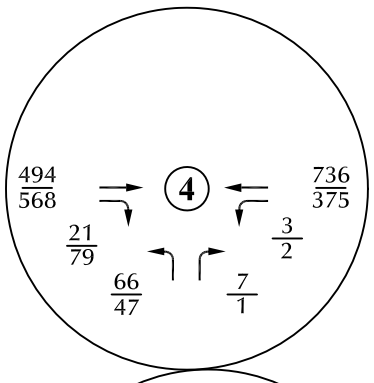
$\frac{A}{B}$ = $\frac{\text{AM Individual Movement Peak-Hour Level of Service}}{\text{PM Individual Movement Peak-Hour Level of Service}}$

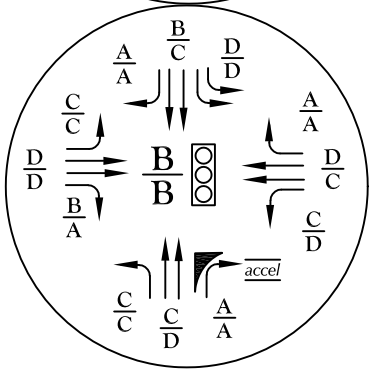
LSC TRANSPORTATION CONSULTANTS, INC.

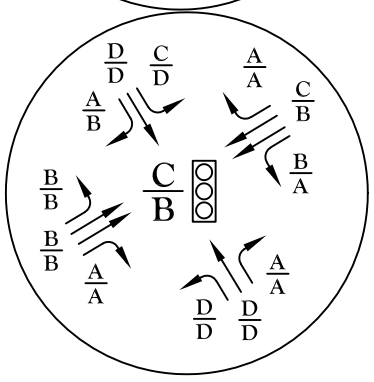


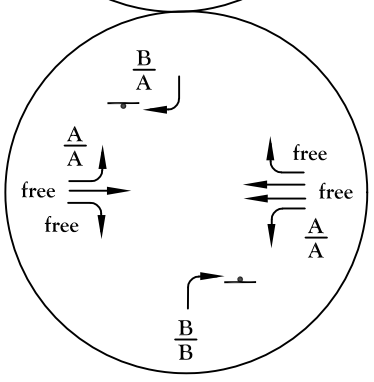


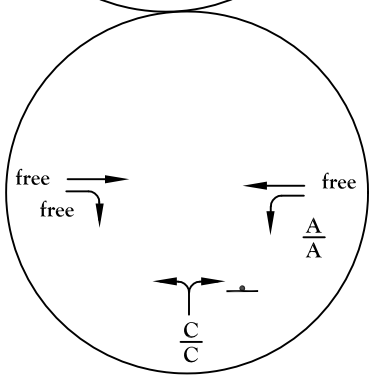


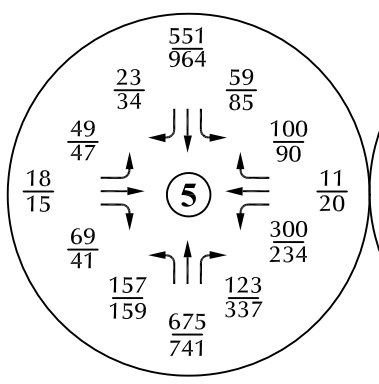


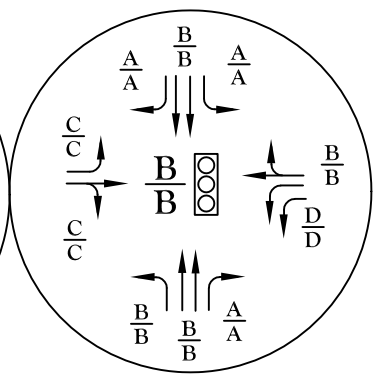












LEGEND:

(#) = Intersection Number

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

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

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

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

= Stop Sign

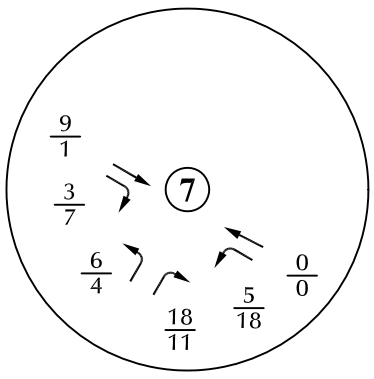
= Traffic Signal

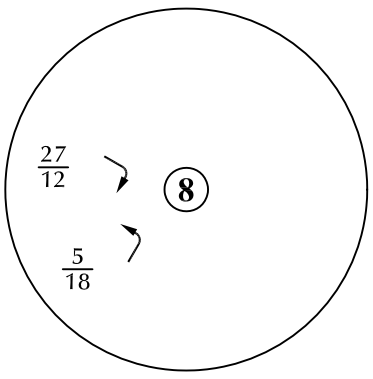
Figure 9a

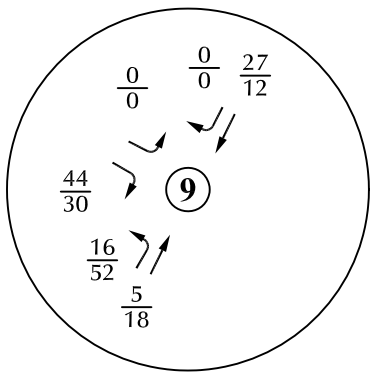
2040 Background Traffic, Lane Geometry, and Levels of Service at the External Intersections

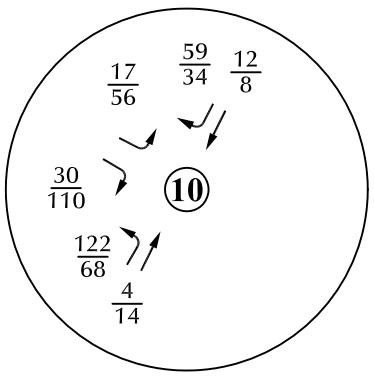
Ridges at Lorson Ranch (LSC #S214080)

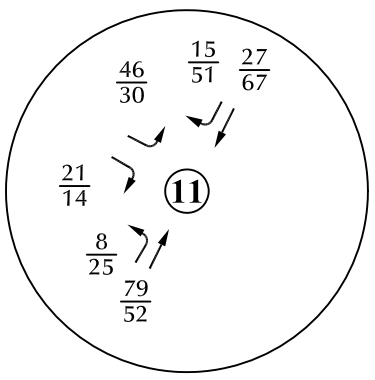
LSC TRANSPORTATION CONSULTANTS, INC.

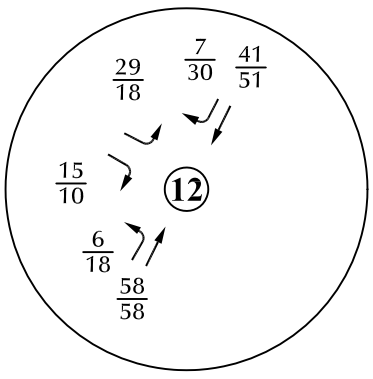


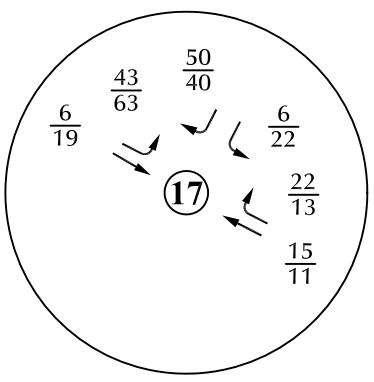


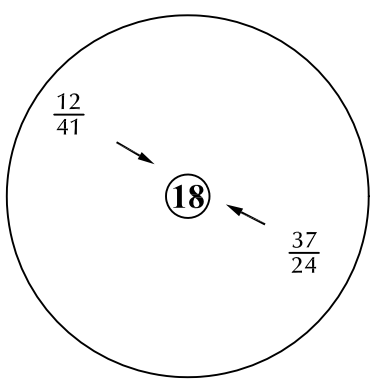






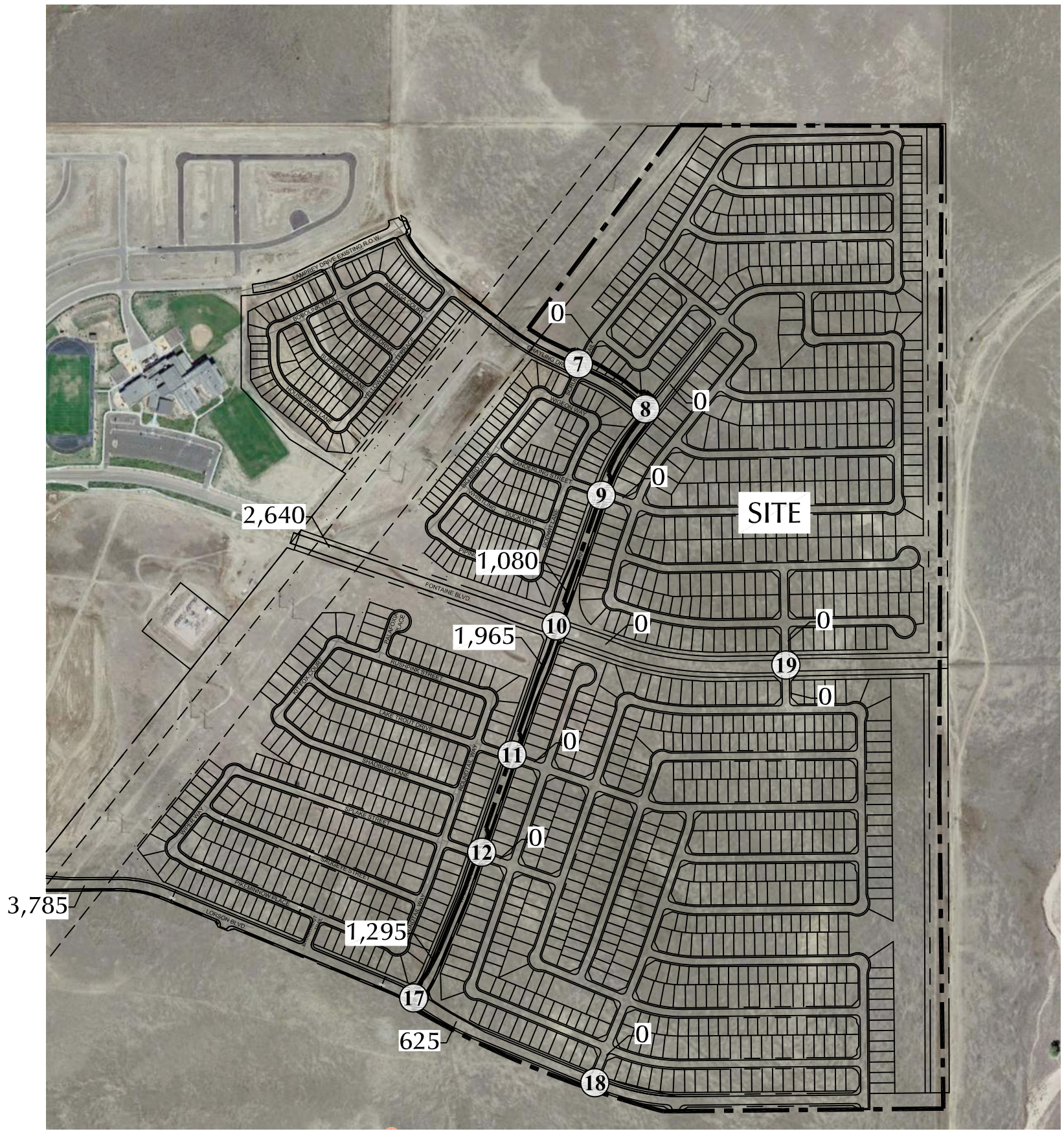






Intentionally
19
Left Blank

Approximate Scale
NTS



LEGEND:

(#) = Intersection Number

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

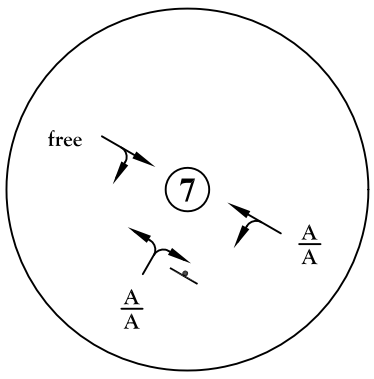
X,XXX= Average Weekday Traffic (vehicles per day)

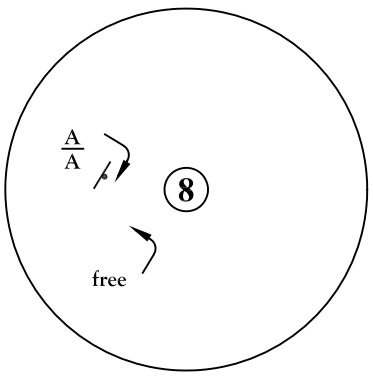
TRANSPORTATION CONSULTANTS, INC.

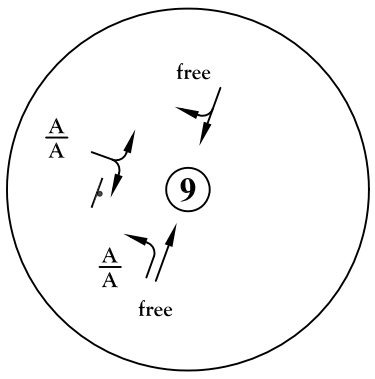
Figure 9b

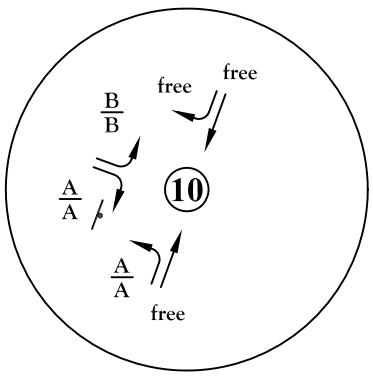
Year 2040 Background Traffic at the Internal Intersections

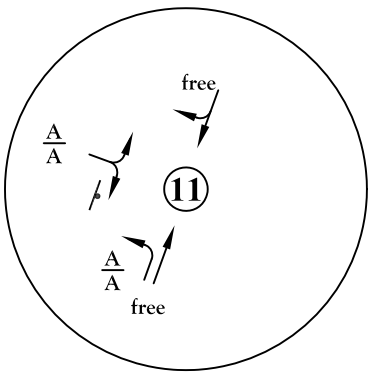
Ridges at Lorson Ranch (LSC #S214080)

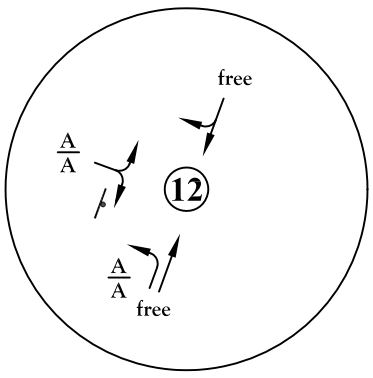


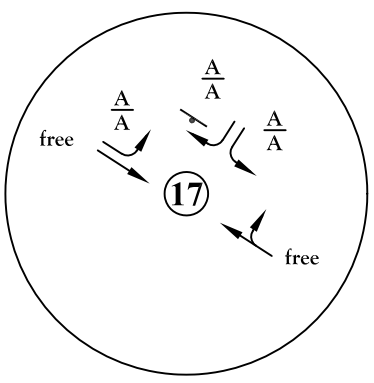












Intentionally
18
Left Blank

Intentionally
19
Left Blank

Approximate Scale
NTS

LEGEND:

(#) = Intersection Number

= Stop Sign

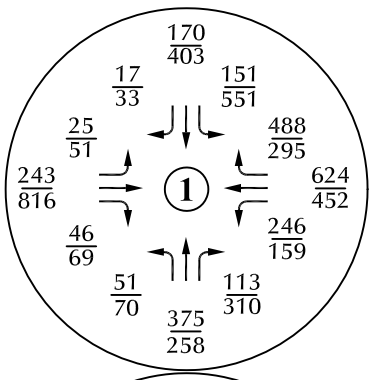
$\frac{A}{B}$ = AM Individual Movement Peak–Hour Level of Service / PM Individual Movement Peak–Hour Level of Service

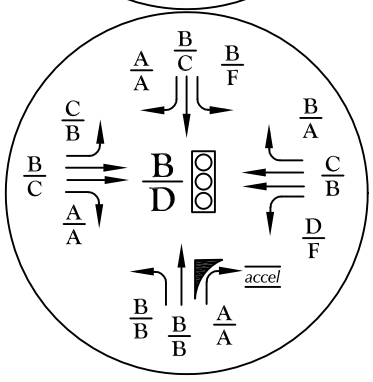
Figure 9c

2040 Background Lane Geometry and Traffic Control at the Internal Intersections

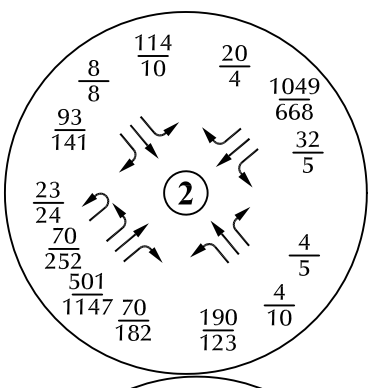
Ridges at Lorson Ranch (LSC #S214080)

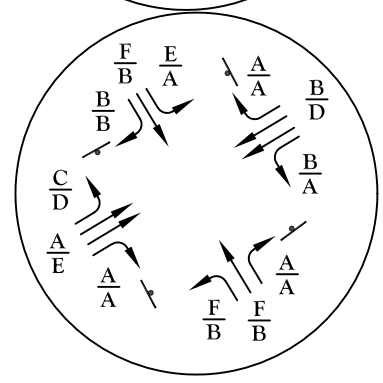
LSC TRANSPORTATION CONSULTANTS, INC.



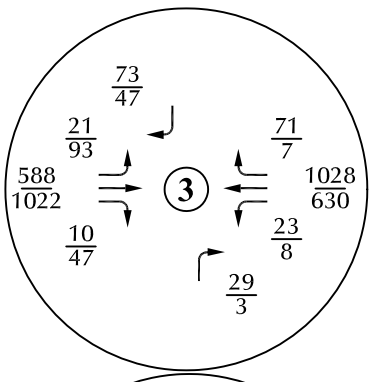


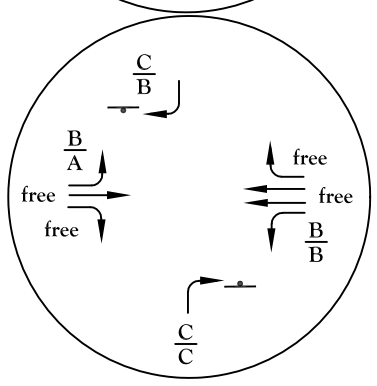
With Permitted Only Phasing



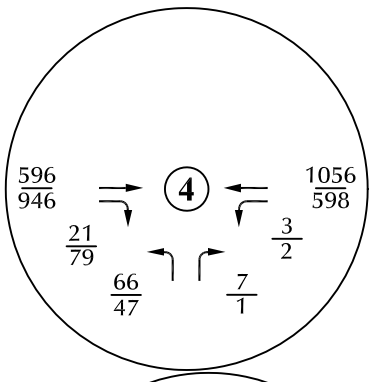


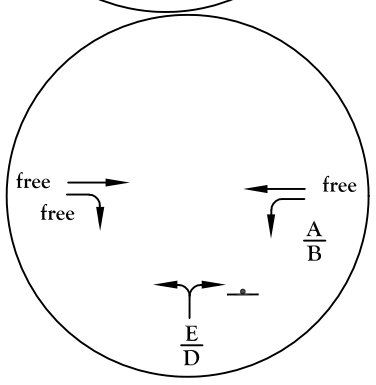
All-Way Stop Control

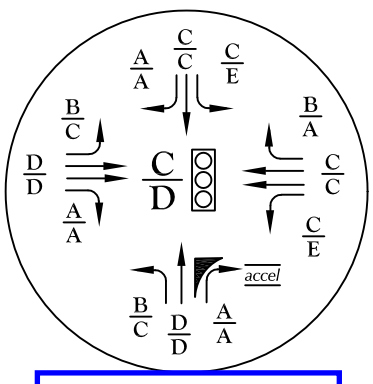




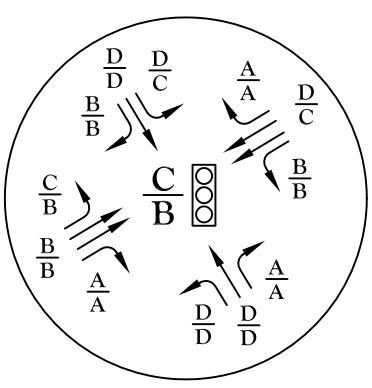
Three-Quarter Intersection



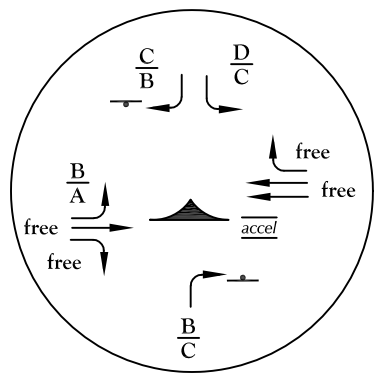




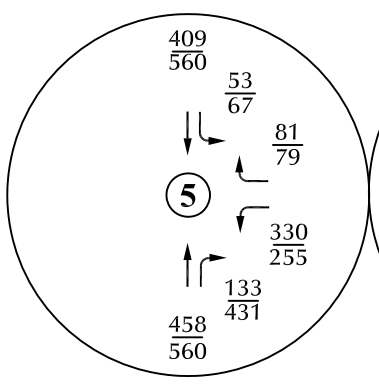
With Protected/Permitted Phasing

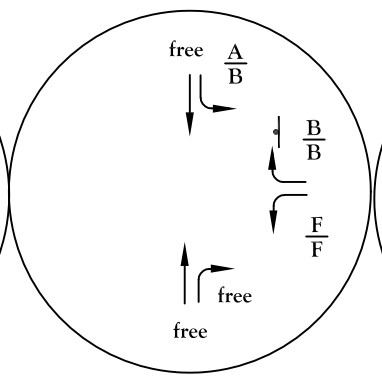


Signal Control

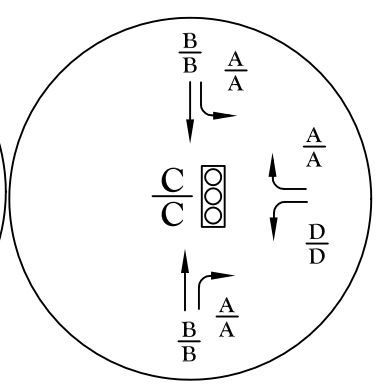


Channelized "T" Intersection

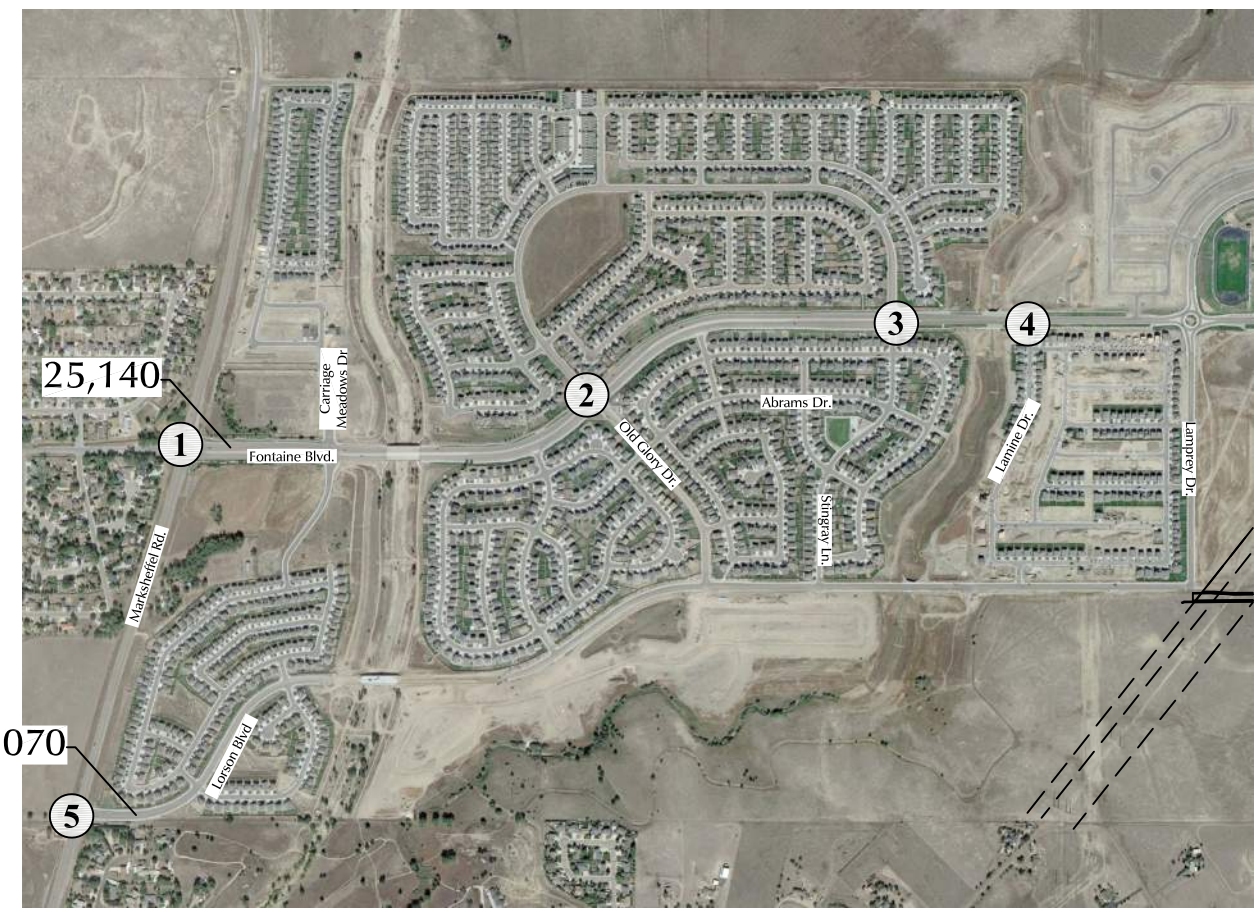




Two-Way Stop Control



Signal Control



Approximate Scale
NTS

LEGEND:

(#) = Intersection Number

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

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

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

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

= Stop Sign

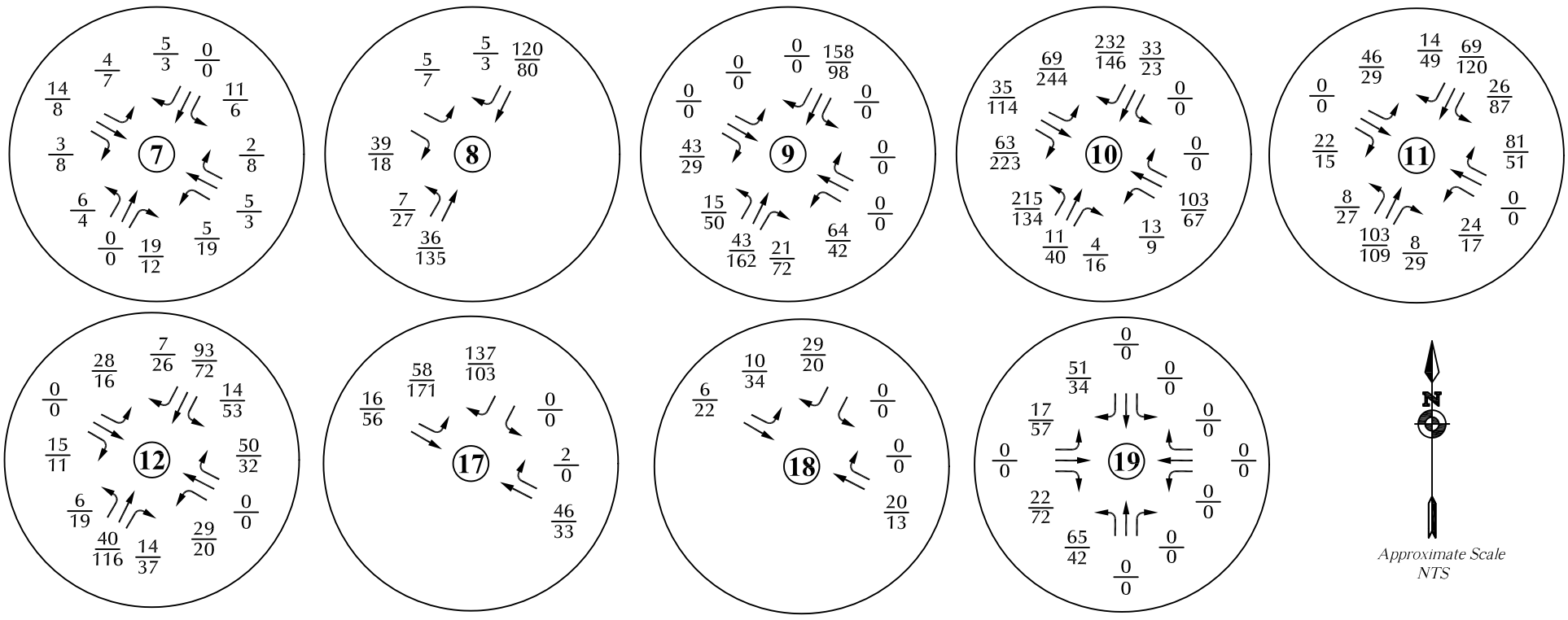
= Traffic Signal

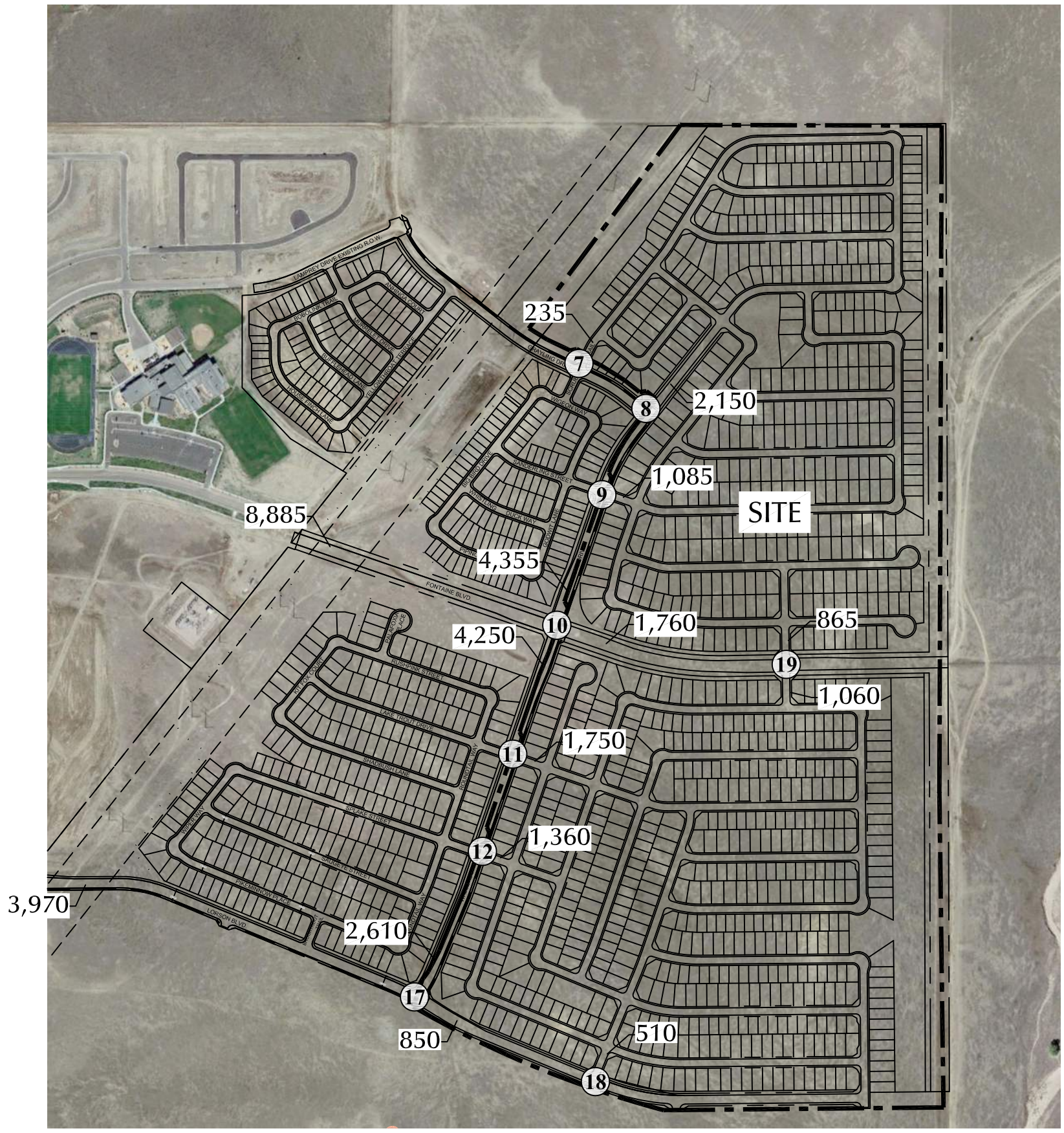
TRANSPORTATION CONSULTANTS, INC.

Figure 10a

Short-Term Total Traffic, Lane Geometry, and Levels of Service at External Intersections

Ridges at Lorson Ranch (LSC #S214080)





LEGEND:

(#) = Intersection Number

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

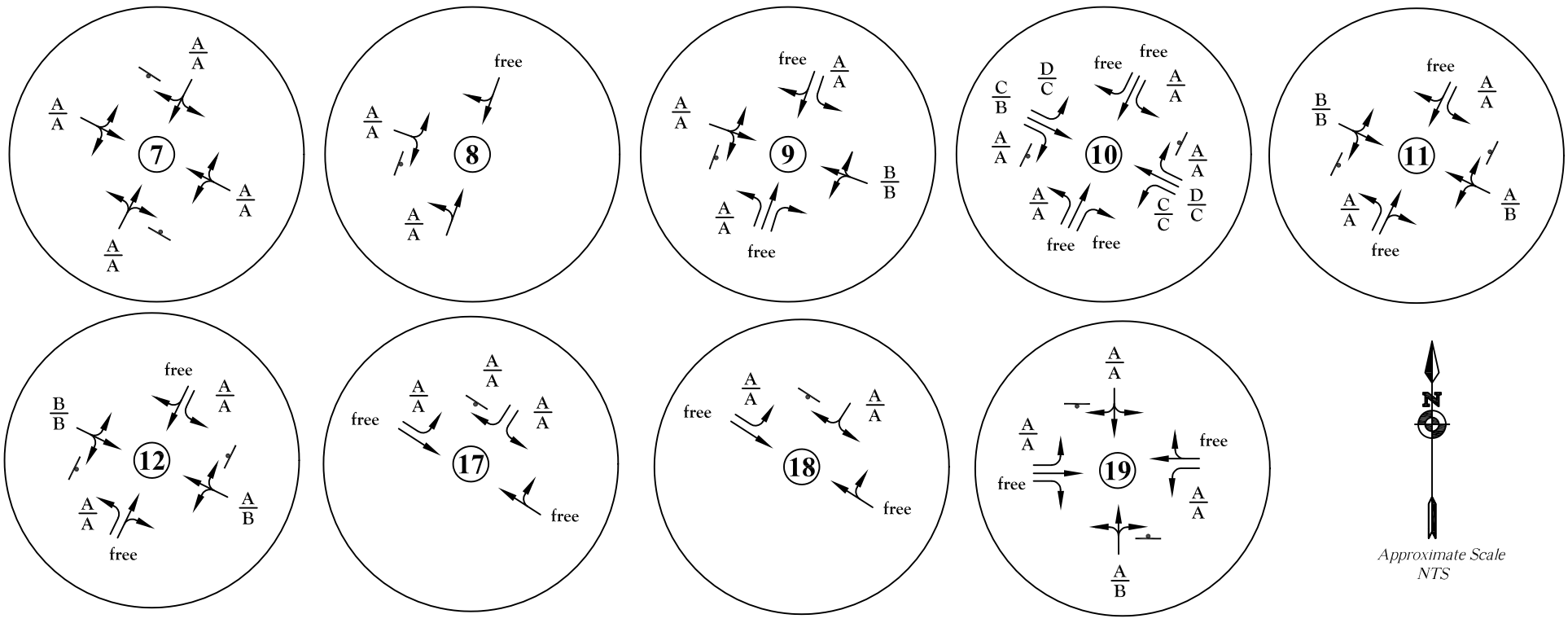
X,XXX= Average Weekday Traffic (vehicles per day)

TRANSPORTATION CONSULTANTS, INC.

Figure 10b

Short-Term Total Traffic at the Internal Intersections

Ridges at Lorson Ranch (LSC #S214080)



LEGEND:

(#) = Intersection Number

= Stop Sign

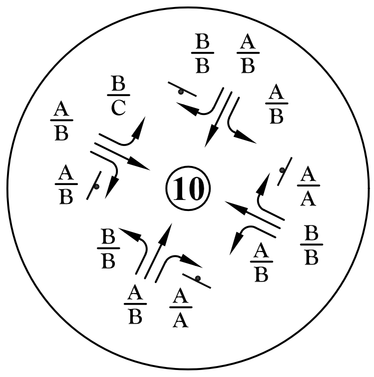
$\frac{A}{B} = \frac{\text{AM Individual Movement Peak-Hour Level of Service}}{\text{PM Individual Movement Peak-Hour Level of Service}}$

TRANSPORTATION CONSULTANTS, INC.

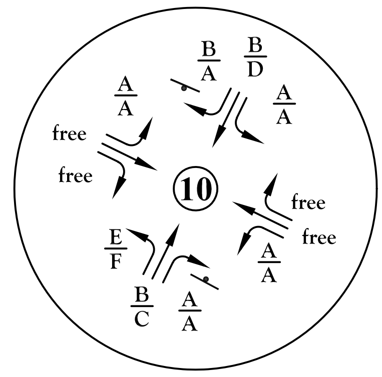
Figure 10c

Short-Term Total Lane Geometry and Traffic Control at the Internal Intersections

Ridges at Lorson Ranch (LSC #S214080)

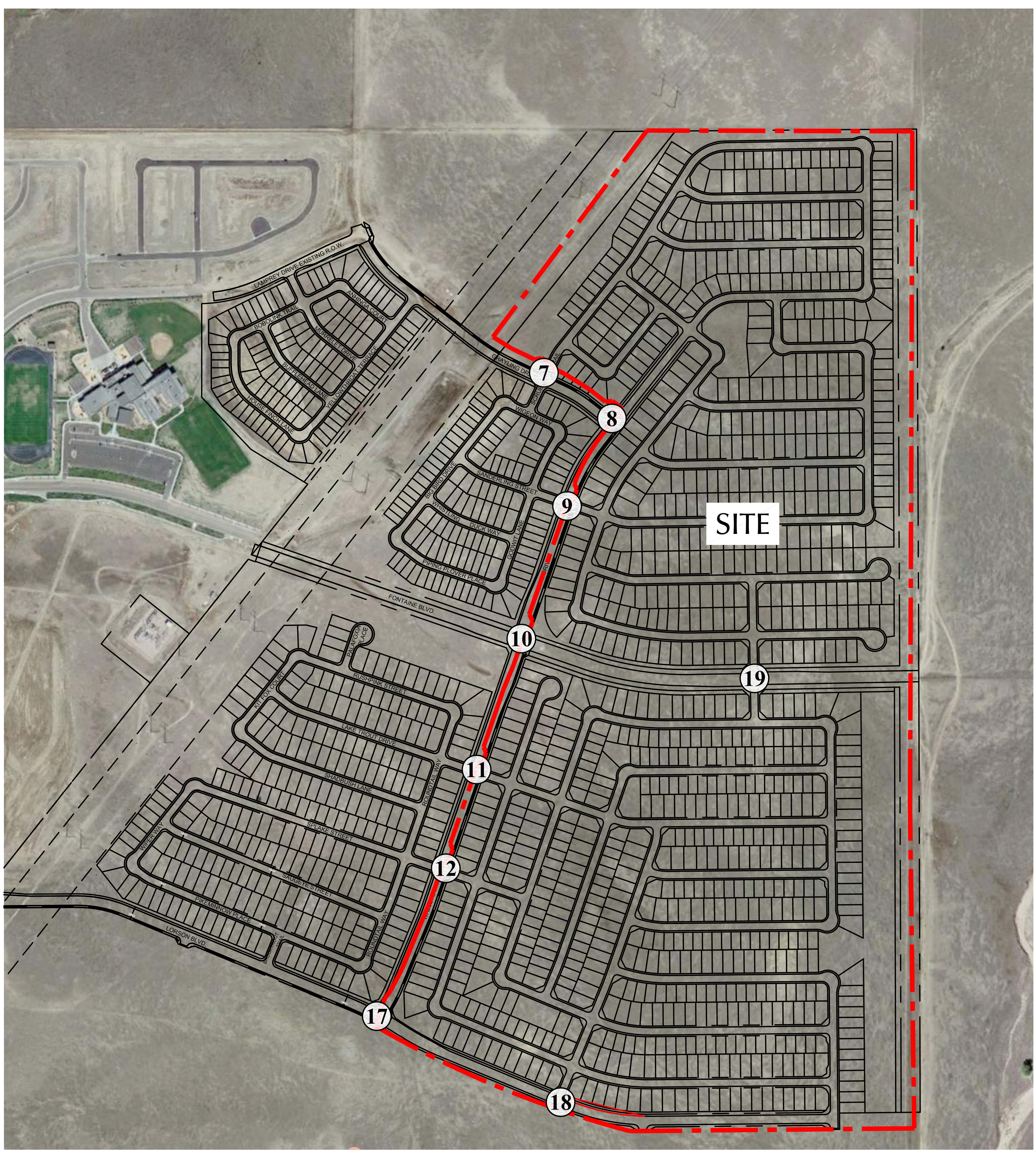


All-Way Stop Control



Two-Way Stop Control - with stop signs on north and south legs

Approximate Scale
NTS



LEGEND:

(#) = Intersection Number

Stop Sign

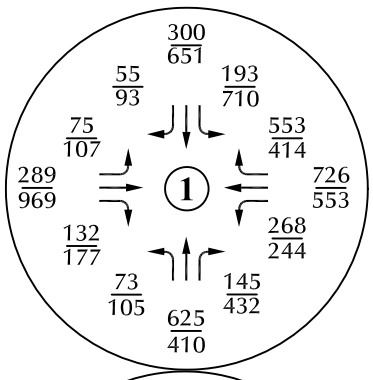
A/B = AM Individual Movement Peak–Hour Level of Service / PM Individual Movement Peak–Hour Level of Service

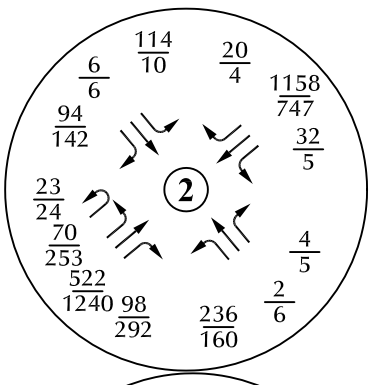
TRANSPORTATION CONSULTANTS, INC.

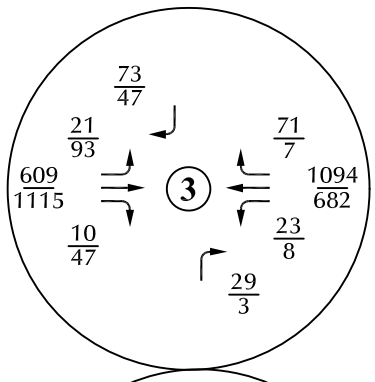
Figure 10d

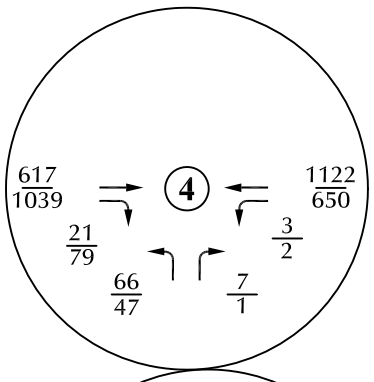
Short-Term Total Lane Geometry and Alternate Traffic Control

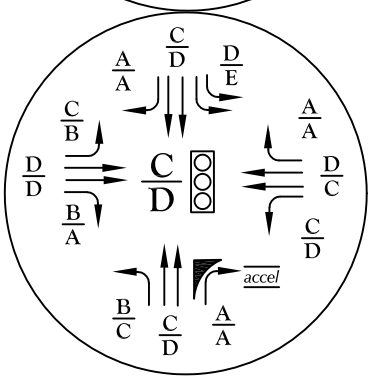
Ridges at Lorson Ranch (LSC #S214080)

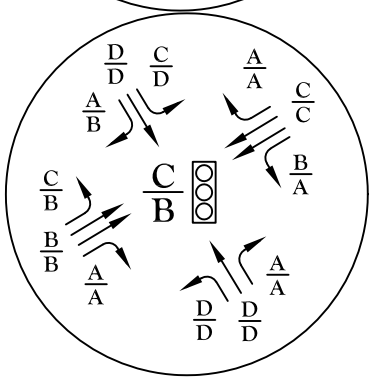


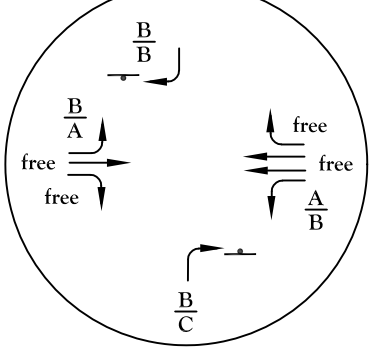


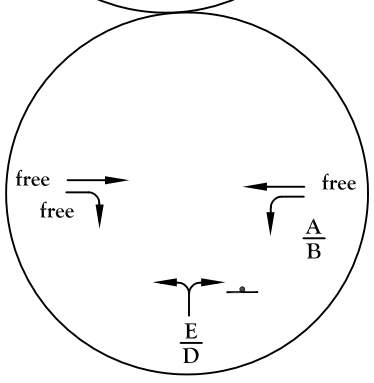




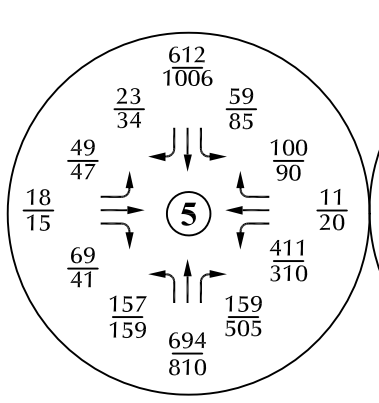


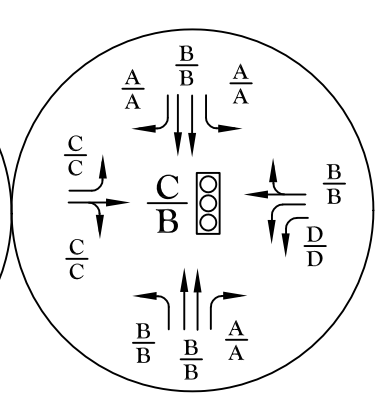


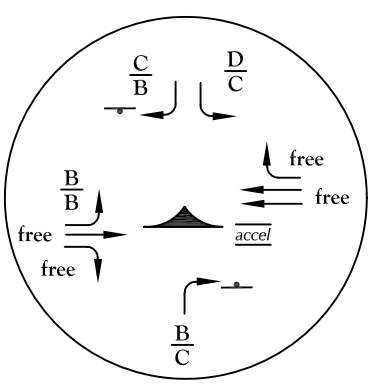




Three-Quarter Intersection







Channelized "T" Intersection

Approximate Scale
NTS

A. Please refer to *Carriage Meadows Townhomes Traffic Impact Analysis* PUDSP-19-005 May, 28 2020
B. This existing intersection is restricted to right-in/right-out only
C. Please refer to *Lorson Ranch East Updated Traffic Impact and Access Analysis* November 9, 2017
D. Please refer to *The Hills at Lorson Ranch Full Traffic Impact Analysis* PUDSP 203 October 26, 2020
E. Please refer to *Carriage Meadows South at Lorson Ranch Filing No. 1 Updated Traffic Impact and Access Analysis* August 14, 2017
F. Please refer to *Creekside at Lorson Ranch Filing No. 1 Traffic Impact and Access Analysis* PUDSP-18-005 October 25, 2018

Note: Excerpts of key pages from the above references reports are attached to this report for quick reference

LEGEND:

(#) = Intersection Number

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

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

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

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

= Stop Sign

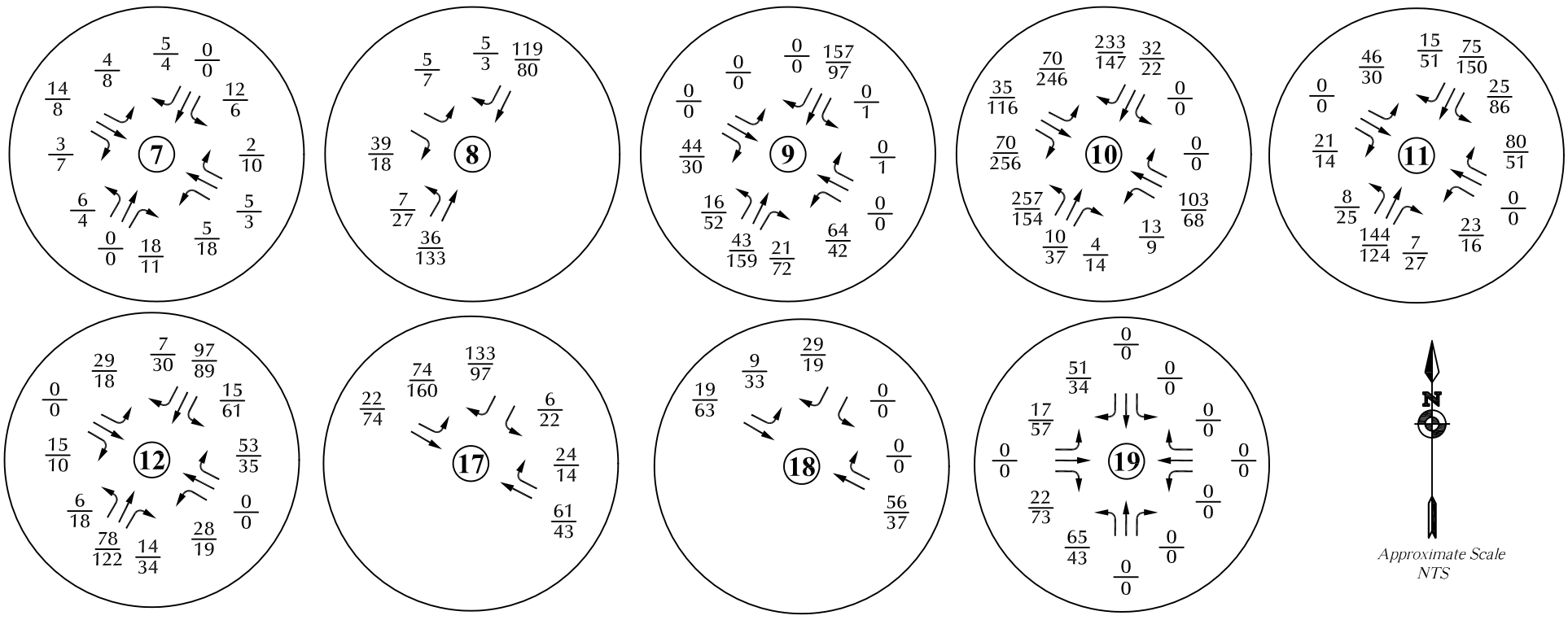
= Traffic Signal

Figure 11a

2040 Total Traffic, Lane Geometry, and Levels of Service at the External Intersections

Ridges at Lorson Ranch (LSC #S214080)

TRANSPORTATION CONSULTANTS, INC.



LEGEND:

(#) = Intersection Number

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

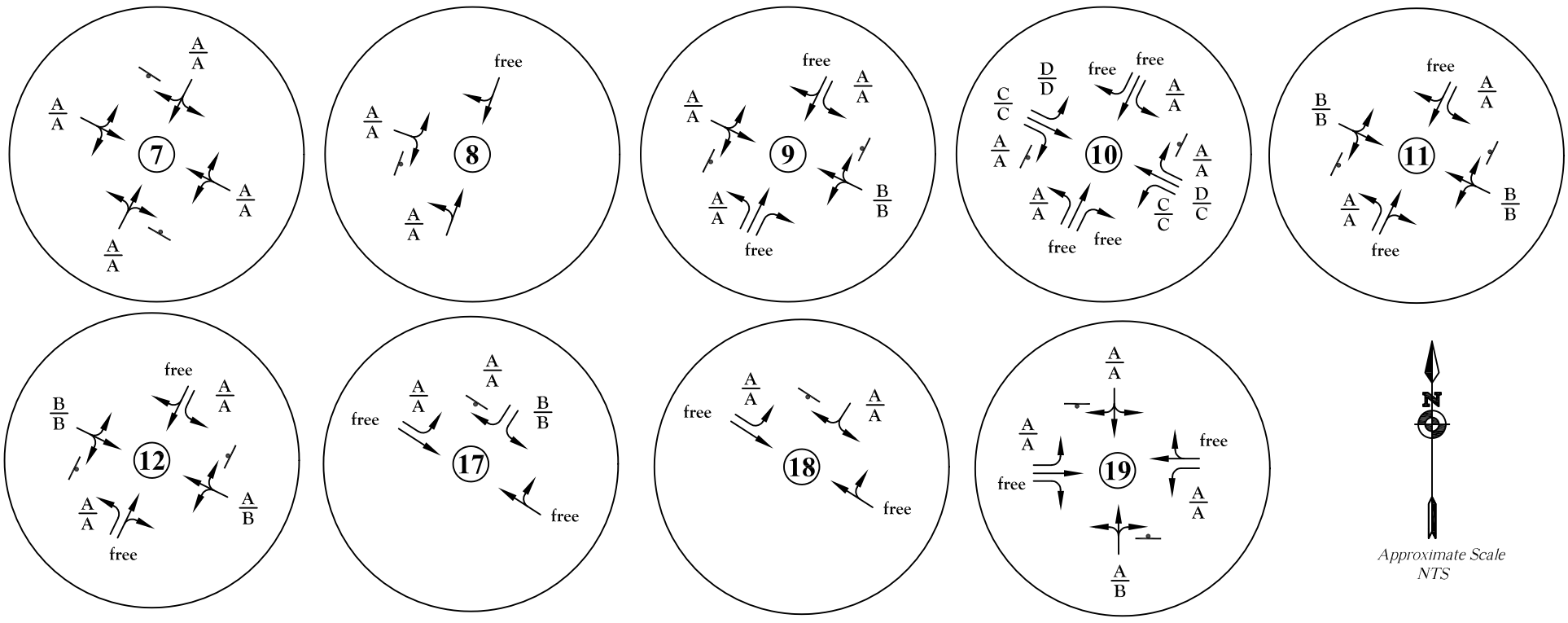
X,XXX= Average Weekday Traffic (vehicles per day)

LSC TRANSPORTATION CONSULTANTS, INC.

Figure 11b

2040 Total Traffic at the Internal Intersections

Ridges at Lorson Ranch (LSC #S214080)



LEGEND:

(#) = Intersection Number

⊦ = Stop Sign

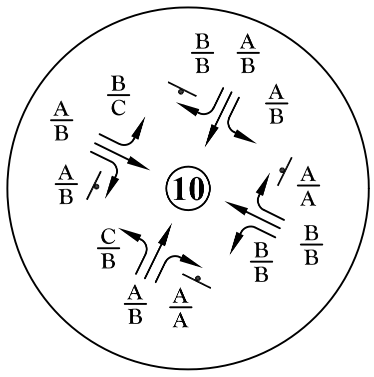
$\frac{A}{B}$ = $\frac{\text{AM Individual Movement Peak–Hour Level of Service}}{\text{PM Individual Movement Peak–Hour Level of Service}}$

LSC TRANSPORTATION CONSULTANTS, INC.

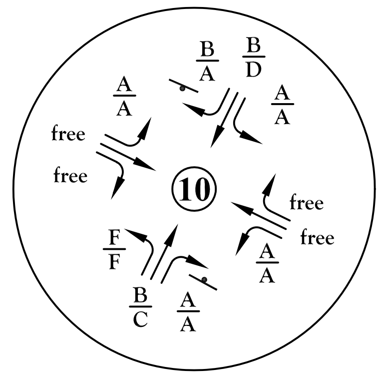
Figure 11c

2040 Total Lane Geometry and Traffic Control at the Internal Intersections

Ridges at Lorson Ranch (LSC #S214080)



All-Way Stop Control



Two-Way Stop Control - with stop signs on north and south legs

Approximate Scale
NTS

LEGEND:

(#) = Intersection Number

Stop Sign

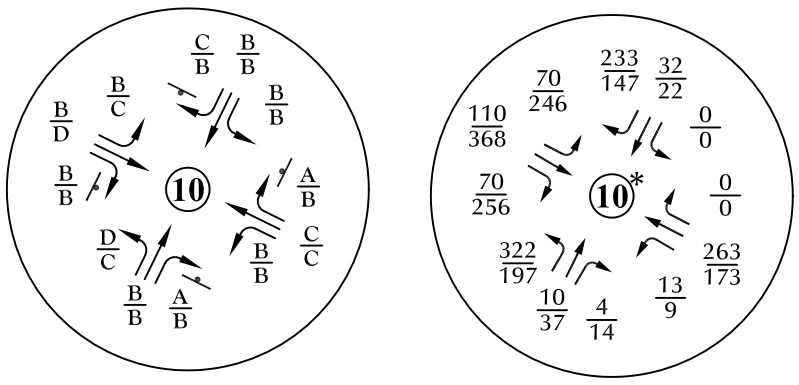
$\frac{A}{B}$ = AM Individual Movement Peak–Hour Level of Service / PM Individual Movement Peak–Hour Level of Service

LSC TRANSPORTATION CONSULTANTS, INC.

Figure 11d

Year 2040 Total Lane Geometry and Alternate Traffic Control

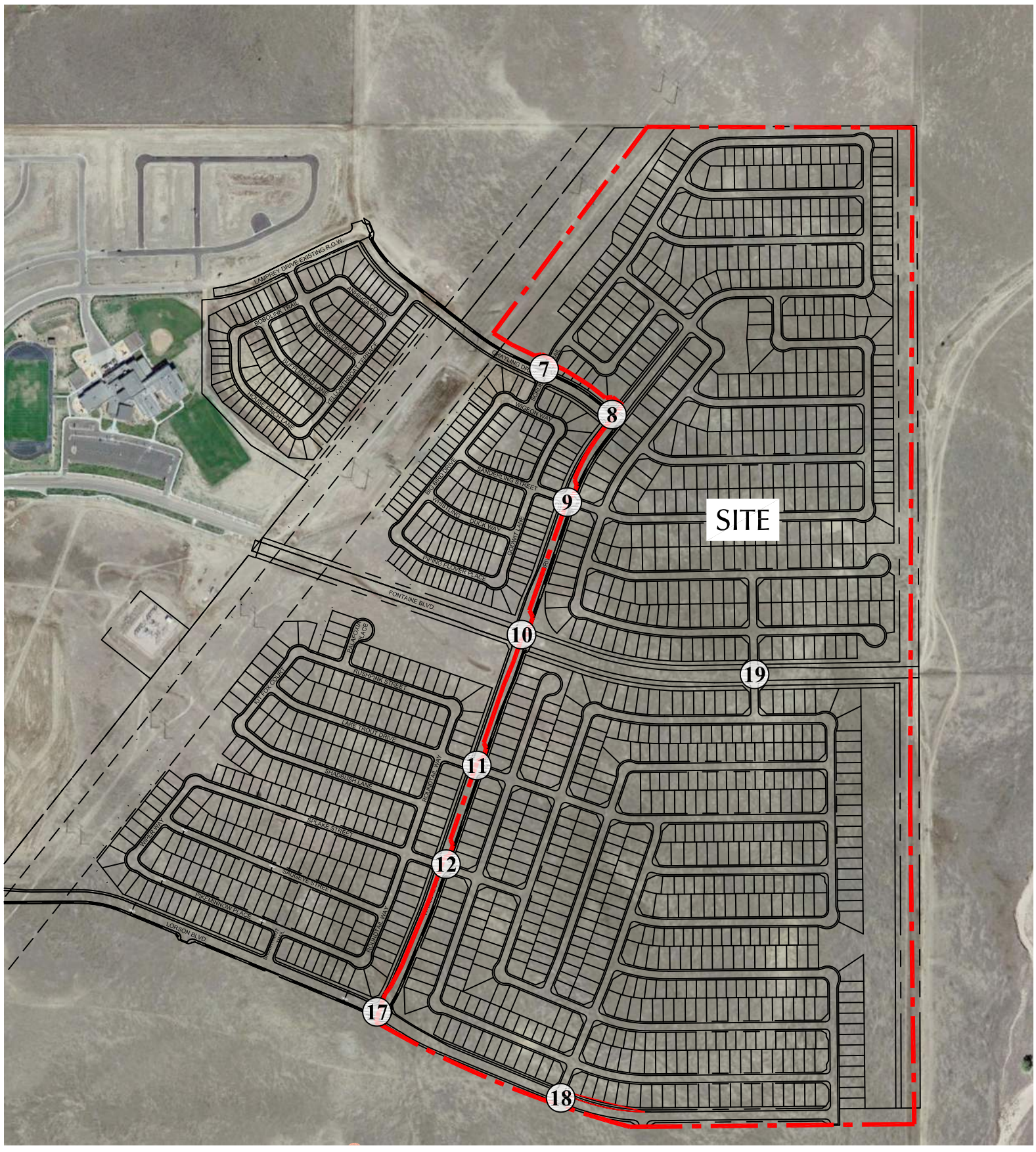
Ridges at Lorson Ranch (LSC #S214080)



All-Way Stop Control

Approximate Scale
NTS

*The Long-Term (Beyond 2040) Volumes shown assume a minor connection to Fontaine/Meridian that adds about 5,000 vehicles per day to Fontaine Boulevard. The volumes also assume intersection #19 has been restricted to three-quarter movement (left-in/right-in/right-out only)



LEGEND:

(#) = Intersection Number

⊢ = Stop Sign

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

Figure 11e

Long-Term (Beyond 2040) Traffic Volumes, Lane Geometry, Traffic Control, and Levels-of-Service

Ridges at Lorson Ranch (LSC #S214080)

LSC TRANSPORTATION CONSULTANTS, INC.

LEGEND:

= 4-Lane Principal Arterial (Ultimate Classification) Interim/Lorson Buildout 2-Lane Urban Non-Residential Collector in 100' R.O.W.
= Urban Local
= Urban Residential Collector (64'to 72' R.O.W.)
= Urban Residential Collector (60' R.O.W.)

X,XXX = Projected Average Daily Traffic (veh/day)
(X,XXX) = Design Average Daily Traffic (veh/day)

Approximate Scale
NTS

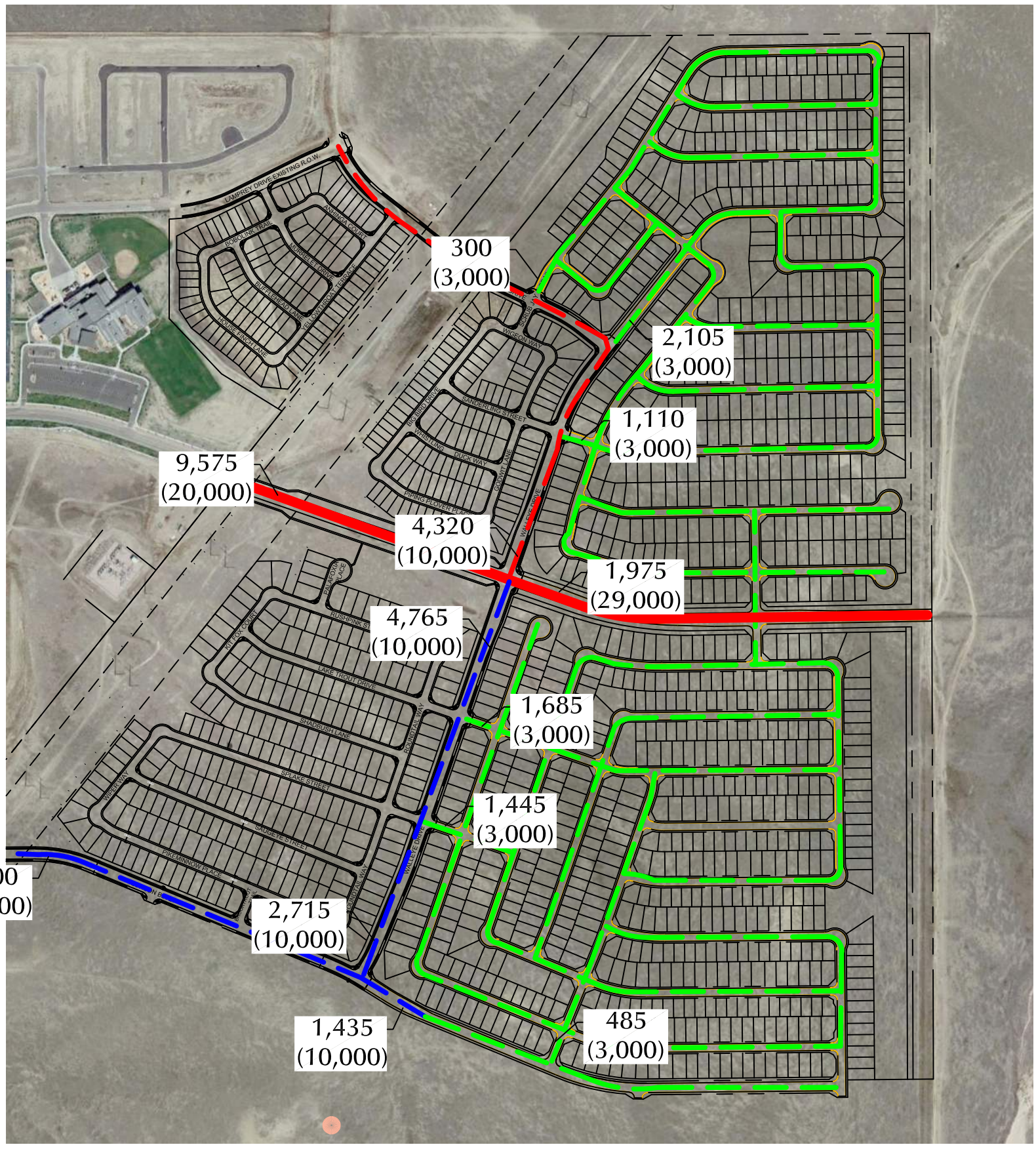


Figure 12
Street Classifications
Ridges at Lorson Ranch (LSC #S214080)

TRANSPORTATION CONSULTANTS, INC.

Traffic Counts

TRANSPORTATION
CONSULTANTS, INC.

LSC Transportation Consultants, Inc.

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

File Name : Marksheffel Rd - Fontaine Blvd AM
Site Code : 00214350
Start Date : 6/17/2021
Page No : 1

Groups Printed- Unshifted

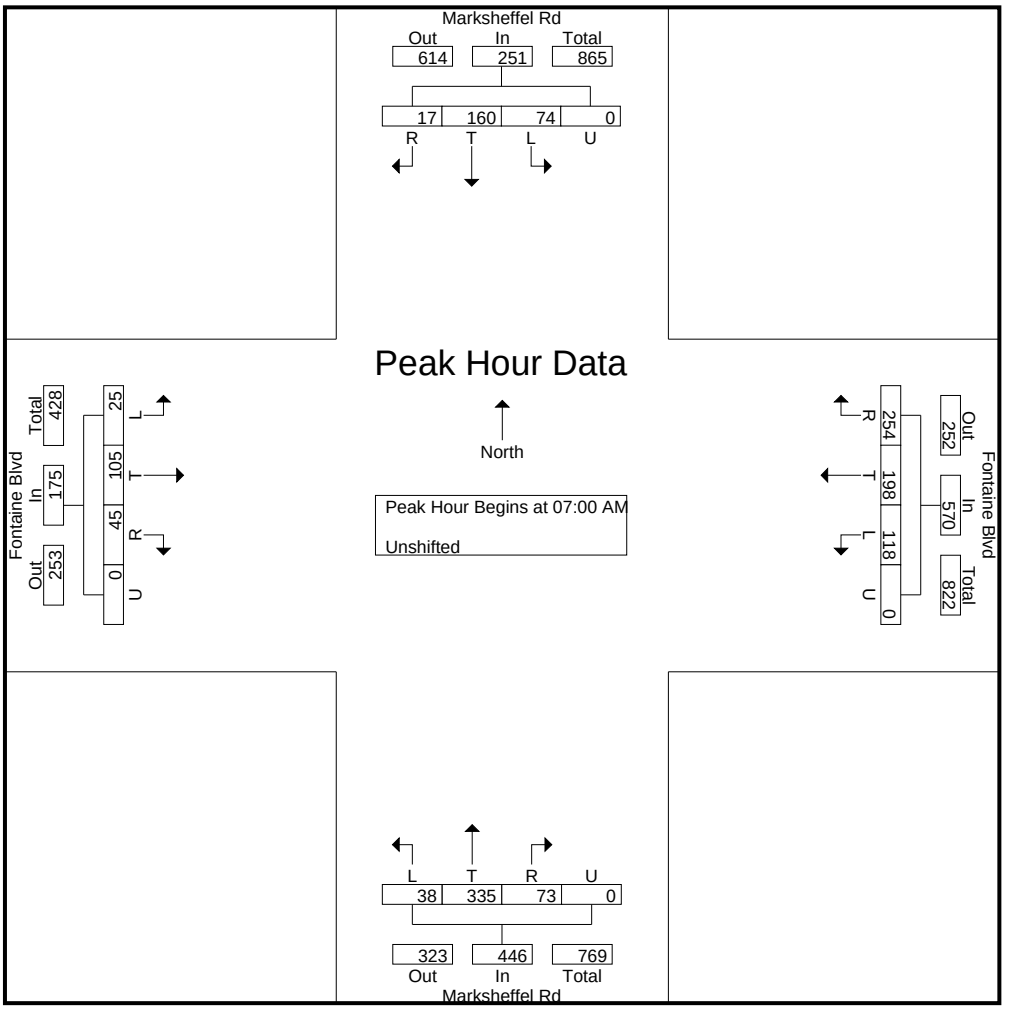
	Marksheffel Rd Southbound					Fontaine Blvd Westbound					Marksheffel Rd Northbound					Fontaine Blvd Eastbound					
Start Time	**L**	**T**	**R**	**U**	App. Total	**L**	**T**	**R**	**U**	App. Total	**L**	**T**	**R**	**U**	App. Total	**L**	**T**	**R**	**U**	App. Total	Int. Total
07:00 AM	6	18	5	0	29	6	12	20	0	38	2	34	7	0	43	2	10	5	0	17	127
07:05 AM	4	12	0	0	16	10	20	29	0	59	1	26	5	0	32	1	6	4	0	11	118
07:10 AM	5	7	0	0	12	11	19	27	0	57	6	32	6	0	44	3	6	2	0	11	124
07:15 AM	6	16	1	0	23	9	17	17	0	43	1	18	6	0	25	1	12	8	0	21	112
07:20 AM	7	16	3	0	26	13	15	27	0	55	1	34	6	0	41	2	7	1	0	10	132
07:25 AM	10	11	1	0	22	11	15	14	0	40	4	25	3	0	32	3	15	4	0	22	116
07:30 AM	2	10	0	0	12	10	20	25	0	55	4	30	3	0	37	3	13	3	0	19	123
07:35 AM	8	10	1	0	19	7	22	20	0	49	7	43	5	0	55	3	5	6	0	14	137
07:40 AM	7	19	1	0	27	10	22	29	0	61	4	34	7	0	45	2	8	0	0	10	143
07:45 AM	10	10	2	0	22	11	20	17	0	48	5	22	11	0	38	0	9	5	0	14	122
07:50 AM	5	19	2	0	26	13	10	20	0	43	3	21	4	0	28	2	7	4	0	13	110
07:55 AM	4	12	1	0	17	7	6	9	0	22	0	16	10	0	26	3	7	3	0	13	78
Total	74	160	17	0	251	118	198	254	0	570	38	335	73	0	446	25	105	45	0	175	1442
08:00 AM	7	10	0	0	17	12	16	19	0	47	1	14	6	0	21	2	7	1	0	10	95
08:05 AM	7	12	0	0	19	11	10	6	0	27	1	24	6	0	31	0	4	1	0	5	82
08:10 AM	8	13	0	0	21	9	25	12	0	46	5	28	4	0	37	0	12	6	0	18	122
08:15 AM	5	5	1	0	11	11	24	13	0	48	6	24	6	0	36	5	10	3	0	18	113
08:20 AM	12	11	0	0	23	19	19	13	0	51	4	17	8	0	29	1	11	7	0	19	122
08:25 AM	9	12	1	0	22	16	26	15	0	57	1	31	4	0	36	1	4	1	0	6	121
08:30 AM	15	13	2	0	30	8	17	27	0	52	1	12	7	0	20	2	6	4	0	12	114
08:35 AM	7	9	3	0	19	15	19	18	0	52	1	17	7	0	25	1	9	0	0	10	106
08:40 AM	7	8	1	0	16	13	25	16	0	54	3	18	3	0	24	0	12	1	0	13	107
08:45 AM	4	16	1	0	21	7	8	5	0	20	2	20	8	0	30	4	5	3	0	12	83
08:50 AM	6	14	3	0	23	8	28	8	0	44	3	16	3	0	22	1	8	1	0	10	99
08:55 AM	7	19	1	0	27	8	12	12	0	32	4	8	5	0	17	3	6	2	0	11	87
Total	94	142	13	0	249	137	229	164	0	530	32	229	67	0	328	20	94	30	0	144	1251
Grand Total	168	302	30	0	500	255	427	418	0	1100	70	564	140	0	774	45	199	75	0	319	2693
Apprch %	33.6	60.4	6	0		23.2	38.8	38	0		9	72.9	18.1	0		14.1	62.4	23.5	0		
Total %	6.2	11.2	1.1	0	18.6	9.5	15.9	15.5	0	40.8	2.6	20.9	5.2	0	28.7	1.7	7.4	2.8	0	11.8	

LSC Transportation Consultants, Inc.

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

File Name : Marksheffel Rd - Fontaine Blvd AM
Site Code : 00214350
Start Date : 6/17/2021
Page No : 2

	Marksheffel Rd Southbound					Fontaine Blvd Westbound					Marksheffel Rd Northbound					Fontaine Blvd 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**
Peak Hour Analysis From 07:00 AM to 08:55 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	6	18	**5**	0	**29**	6	12	20	0	38	2	34	7	0	43	2	10	5	0	17	127
07:05 AM	4	12	0	0	16	10	20	**29**	0	59	1	26	5	0	32	1	6	4	0	11	118
07:10 AM	5	7	0	0	12	11	19	27	0	57	6	32	6	0	44	**3**	6	2	0	11	124
07:15 AM	6	16	1	0	23	9	17	17	0	43	1	18	6	0	25	1	12	**8**	0	21	112
07:20 AM	7	16	3	0	26	**13**	15	27	0	55	1	34	6	0	41	2	7	1	0	10	132
07:25 AM	**10**	11	1	0	22	11	15	14	0	40	4	25	3	0	32	3	**15**	4	0	**22**	116
07:30 AM	2	10	0	0	12	10	20	25	0	55	4	30	3	0	37	3	13	3	0	19	123
07:35 AM	8	10	1	0	19	7	**22**	20	0	49	**7**	**43**	5	0	**55**	3	5	6	0	14	137
07:40 AM	7	**19**	1	0	27	10	22	29	0	**61**	4	34	7	0	45	2	8	0	0	10	**143**
07:45 AM	10	10	2	0	22	11	20	17	0	48	5	22	**11**	0	38	0	9	5	0	14	122
07:50 AM	5	19	2	0	26	13	10	20	0	43	3	21	4	0	28	2	7	4	0	13	110
07:55 AM	4	12	1	0	17	7	6	9	0	22	0	16	10	0	26	3	7	3	0	13	78
Total Volume	74	160	17	0	251	118	198	254	0	570	38	335	73	0	446	25	105	45	0	175	1442
% App. Total	29.5	63.7	6.8	0		20.7	34.7	44.6	0		8.5	75.1	16.4	0		14.3	60	25.7	0		
PHF	.617	.702	.283	.000	.721	.756	.750	.730	.000	.779	.452	.649	.553	.000	.676	.694	.583	.469	.000	.663	.840



LSC Transportation Consultants, Inc.

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

File Name : Marksheffel Rd - Fontaine Blvd PM
Site Code : 00214350
Start Date : 6/15/2021
Page No : 1

Groups Printed- Unshifted

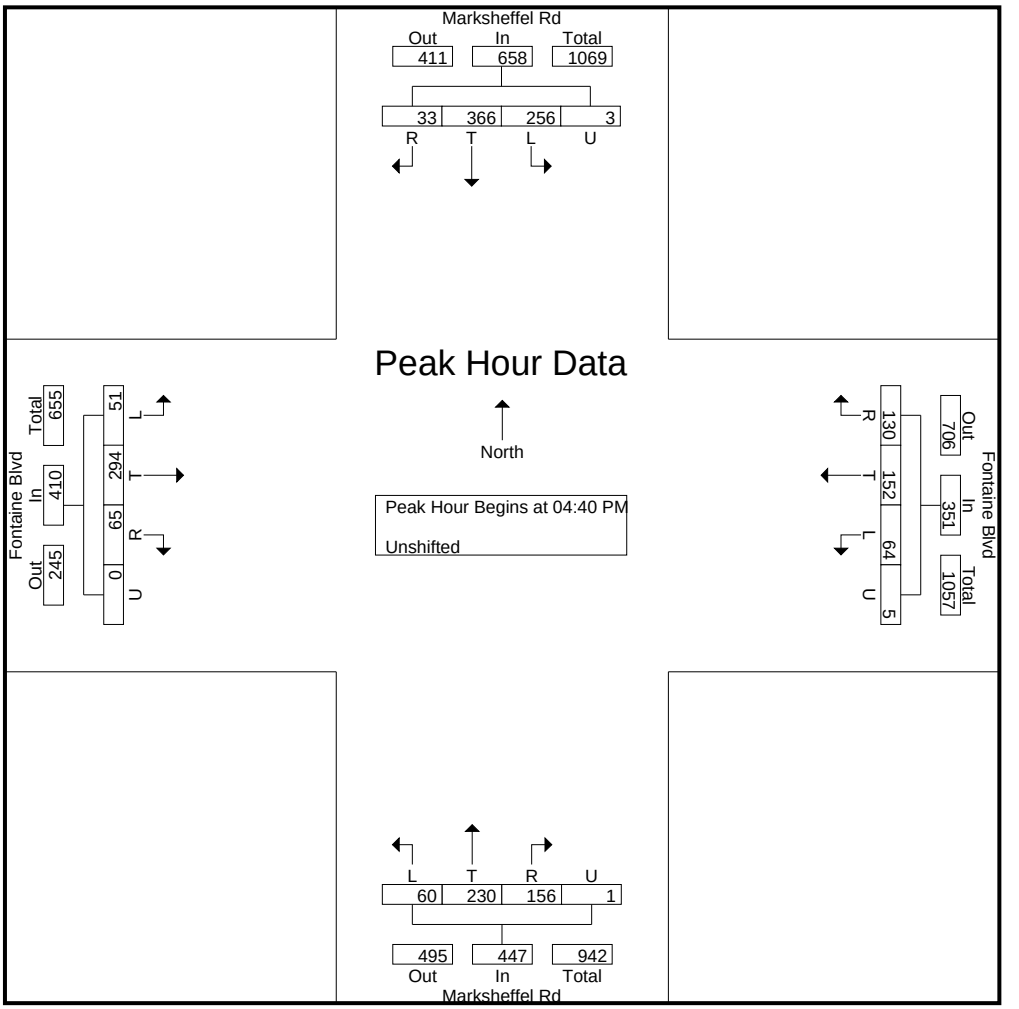
	Marksheffel Rd Southbound					Fontaine Blvd Westbound					Marksheffel Rd Northbound					Fontaine Blvd Eastbound					
Start Time	**L**	**T**	**R**	**U**	App. Total	**L**	**T**	**R**	**U**	App. Total	**L**	**T**	**R**	**U**	App. Total	**L**	**T**	**R**	**U**	App. Total	Int. Total
04:00 PM	20	24	2	0	46	5	7	8	0	20	5	24	12	0	41	2	18	4	0	24	131
04:05 PM	17	26	2	0	45	7	9	6	0	22	8	18	11	0	37	2	16	7	0	25	129
04:10 PM	23	18	1	0	42	11	14	12	0	37	0	17	13	0	30	3	27	5	0	35	144
04:15 PM	15	27	0	0	42	5	5	10	0	20	0	19	10	0	29	4	25	4	0	33	124
04:20 PM	23	30	0	0	53	4	11	7	0	22	4	23	8	0	35	5	29	4	0	38	148
04:25 PM	29	38	1	0	68	4	13	11	0	28	3	18	11	0	32	1	18	1	0	20	148
04:30 PM	20	35	0	0	55	7	12	14	0	33	3	24	8	0	35	2	25	4	0	31	154
04:35 PM	26	23	1	0	50	5	17	12	0	34	2	24	14	0	40	1	20	4	0	25	149
04:40 PM	28	39	0	0	67	5	21	12	1	39	0	22	13	0	35	2	24	7	0	33	174
04:45 PM	19	23	2	0	44	2	17	8	0	27	1	15	9	0	25	4	20	9	0	33	129
04:50 PM	25	32	1	0	58	7	6	10	0	23	4	19	14	0	37	4	26	7	0	37	155
04:55 PM	25	32	1	1	59	6	10	7	0	23	1	22	16	0	39	7	22	3	0	32	153
Total	270	347	11	1	629	68	142	117	1	328	31	245	139	0	415	37	270	59	0	366	1738
05:00 PM	20	33	2	0	55	6	14	13	1	34	5	15	13	0	33	3	24	6	0	33	155
05:05 PM	25	19	1	0	45	7	12	14	0	33	9	20	22	0	51	0	22	7	0	29	158
05:10 PM	24	34	5	0	63	3	6	12	0	21	6	26	11	0	43	3	22	7	0	32	159
05:15 PM	12	37	1	0	50	10	9	14	0	33	5	25	17	0	47	0	29	2	0	31	161
05:20 PM	20	41	3	0	64	6	13	13	0	32	5	18	16	0	39	3	19	1	0	23	158
05:25 PM	24	29	1	0	54	2	8	8	3	21	5	20	14	1	40	2	26	9	0	37	152
05:30 PM	8	23	6	0	37	5	22	10	0	37	6	17	3	0	26	10	28	5	0	43	143
05:35 PM	26	24	10	2	62	5	14	9	0	28	13	11	8	0	32	13	32	2	0	47	169
05:40 PM	17	26	0	0	43	9	10	7	0	26	1	19	21	0	41	2	35	4	0	41	151
05:45 PM	32	13	2	0	47	10	20	13	0	43	1	18	11	0	30	1	24	3	0	28	148
05:50 PM	19	24	1	0	44	5	17	12	0	34	4	18	14	0	36	4	24	5	0	33	147
05:55 PM	28	21	1	0	50	7	13	5	0	25	7	15	16	0	38	1	21	6	0	28	141
Total	255	324	33	2	614	75	158	130	4	367	67	222	166	1	456	42	306	57	0	405	1842
Grand Total	525	671	44	3	1243	143	300	247	5	695	98	467	305	1	871	79	576	116	0	771	3580
Apprch %	42.2	54	3.5	0.2		20.6	43.2	35.5	0.7		11.3	53.6	35	0.1		10.2	74.7	15	0		
Total %	14.7	18.7	1.2	0.1	34.7	4	8.4	6.9	0.1	19.4	2.7	13	8.5	0	24.3	2.2	16.1	3.2	0	21.5	

LSC Transportation Consultants, Inc.

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

File Name : Marksheffel Rd - Fontaine Blvd PM
Site Code : 00214350
Start Date : 6/15/2021
Page No : 2

	Marksheffel Rd Southbound					Fontaine Blvd Westbound					Marksheffel Rd Northbound					Fontaine Blvd 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
Peak Hour Analysis From 04:00 PM to 05:55 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:40 PM																					
04:40 PM	**28**	39	0	0	**67**	5	21	12	1	**39**	0	22	13	0	35	2	24	7	0	33	**174**
04:45 PM	19	23	2	0	44	2	17	8	0	27	1	15	9	0	25	4	20	**9**	0	33	129
04:50 PM	25	32	1	0	58	7	6	10	0	23	4	19	14	0	37	4	26	7	0	37	155
04:55 PM	25	32	1	1	59	6	10	7	0	23	1	22	16	0	39	7	22	3	0	32	153
05:00 PM	20	33	2	0	55	6	14	13	1	34	5	15	13	0	33	3	24	6	0	33	155
05:05 PM	25	19	1	0	45	7	12	**14**	0	33	9	20	**22**	0	**51**	0	22	7	0	29	158
05:10 PM	24	34	5	0	63	3	6	12	0	21	6	**26**	11	0	43	3	22	7	0	32	159
05:15 PM	12	37	1	0	50	**10**	9	14	0	33	5	25	17	0	47	0	29	2	0	31	161
05:20 PM	20	**41**	3	0	64	6	13	13	0	32	5	18	16	0	39	3	19	1	0	23	158
05:25 PM	24	29	1	0	54	2	8	8	**3**	21	5	20	14	**1**	40	2	26	9	0	37	152
05:30 PM	8	23	6	0	37	5	**22**	10	0	37	6	17	3	0	26	10	28	5	0	43	143
05:35 PM	26	24	**10**	**2**	62	5	14	9	0	28	**13**	11	8	0	32	**13**	**32**	2	0	**47**	169
Total Volume	256	366	33	3	658	64	152	130	5	351	60	230	156	1	447	51	294	65	0	410	1866
% App. Total	38.9	55.6	5	0.5		18.2	43.3	37	1.4		13.4	51.5	34.9	0.2		12.4	71.7	15.9	0		
PHF	.762	.744	.275	.125	.818	.533	.576	.774	.139	.750	.385	.737	.591	.083	.730	.327	.766	.602	.000	.727	.894



LSC Transportation Consultants, Inc.

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

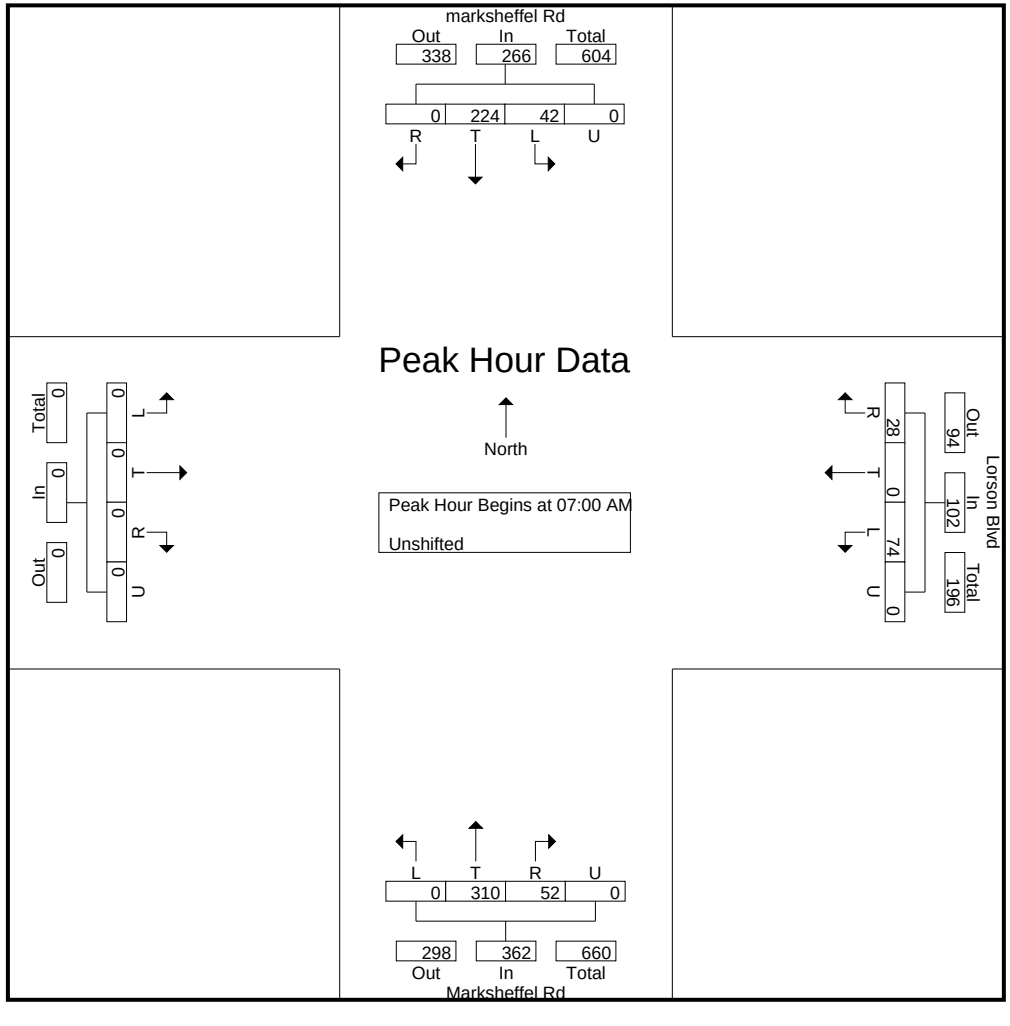
File Name : Marksheffel Rd - Lorson Blvd AM 7-20
Site Code : 00204050
Start Date : 7/28/2020
Page No : 1

Groups Printed- Unshifted

	markshеffel 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**
07:00 AM	12	50	0	0	62	17	0	5	0	22	0	95	11	0	106	0	0	0	0	0	190
07:15 AM	18	50	0	0	68	23	0	10	0	33	0	75	18	0	93	0	0	0	0	0	194
07:30 AM	3	64	0	0	67	22	0	6	0	28	0	84	9	0	93	0	0	0	0	0	188
07:45 AM	9	60	0	0	69	12	0	7	0	19	0	56	14	0	70	0	0	0	0	0	158
Total	42	224	0	0	266	74	0	28	0	102	0	310	52	0	362	0	0	0	0	0	730
08:00 AM	4	53	0	0	57	30	0	6	0	36	0	52	16	0	68	0	0	0	0	0	161
08:15 AM	5	46	0	0	51	26	0	10	0	36	0	58	10	0	68	0	0	0	0	0	155
08:30 AM	7	42	0	0	49	22	0	3	0	25	0	46	12	0	58	0	0	0	0	0	132
08:45 AM	3	46	0	0	49	32	0	10	0	42	0	43	8	0	51	0	0	0	0	0	142
Total	19	187	0	0	206	110	0	29	0	139	0	199	46	0	245	0	0	0	0	0	590
Grand Total	61	411	0	0	472	184	0	57	0	241	0	509	98	0	607	0	0	0	0	0	1320
Apprch %	12.9	87.1	0	0		76.3	0	23.7	0		0	83.9	16.1	0		0	0	0	0		
Total %	4.6	31.1	0	0	35.8	13.9	0	4.3	0	18.3	0	38.6	7.4	0	46	0	0	0	0	0	

LSC Transportation Consultants, Inc.
545 E Pikes Peak Ave, Suite 210
Colorado Springs, CO 80905
719-633-2868

File Name : Marksheffel Rd - Lorson Blvd AM 7-20
Site Code : 00204050
Start Date : 7/28/2020
Page No : 3



LSC Transportation Consultants, Inc.

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

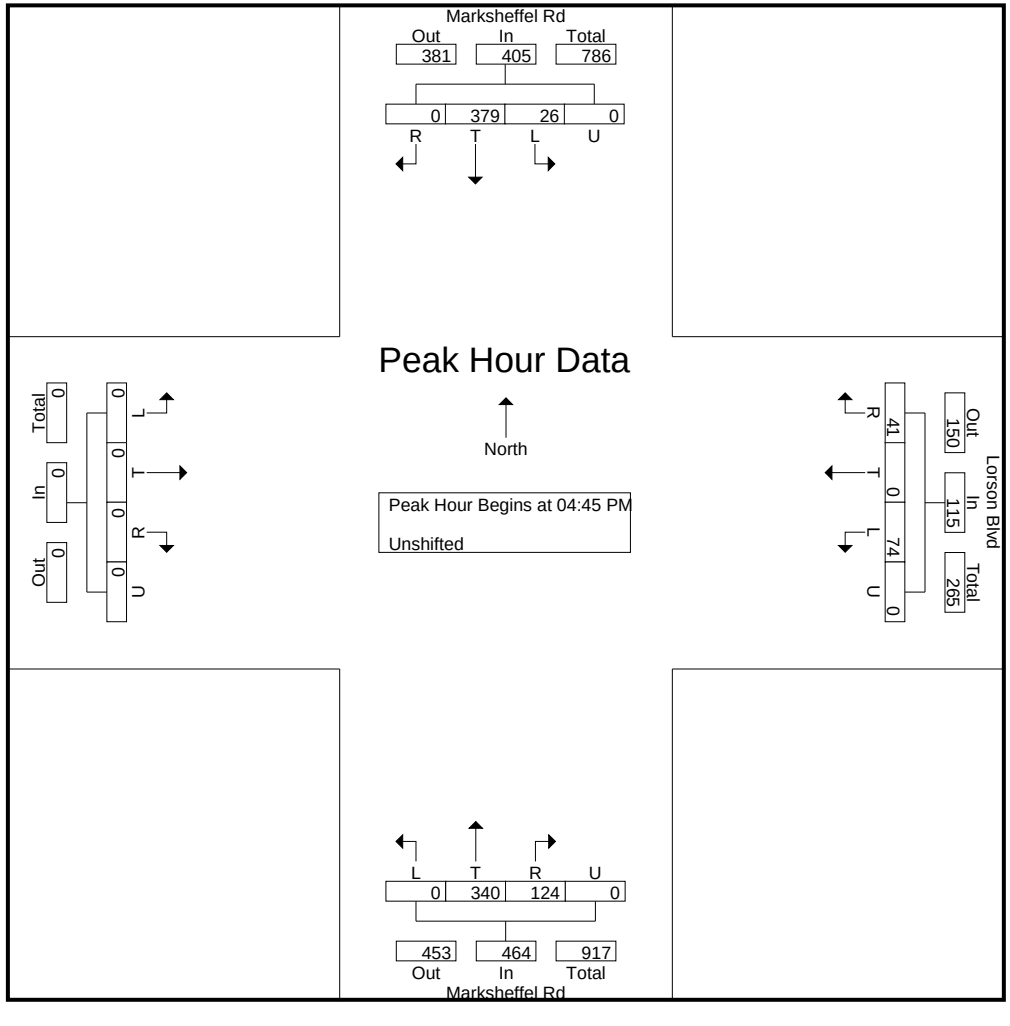
File Name : Marksheffel Rd - Lorson Blvd PM 8-20
Site Code : 00204050
Start Date : 8/12/2020
Page No : 1

Groups Printed- Unshifted

	Marksheffel Rd Southbound					Lorson Blvd Westbound					Marksheffel Rd Northbound					Eastbound					
Start Time	**L**	**T**	**R**	**U**	**App. Total**	**L**	**T**	**R**	**U**	**App. Total**	**L**	**T**	**R**	**U**	**App. Total**	**L**	**T**	**R**	**U**	**App. Total**	**Int. Total**
04:00 PM	9	75	0	0	84	15	0	10	0	25	0	93	25	0	118	0	0	0	0	0	227
04:15 PM	6	102	0	0	108	15	0	6	0	21	0	74	45	0	119	0	0	0	0	0	248
04:30 PM	9	72	0	0	81	12	0	11	0	23	0	64	23	0	87	0	0	0	0	0	191
04:45 PM	6	88	0	0	94	18	0	8	0	26	0	81	32	0	113	0	0	0	0	0	233
Total	30	337	0	0	367	60	0	35	0	95	0	312	125	0	437	0	0	0	0	0	899
05:00 PM	6	89	0	0	95	23	0	12	0	35	0	80	26	0	106	0	0	0	0	0	236
05:15 PM	3	108	0	0	111	17	0	7	0	24	0	96	35	0	131	0	0	0	0	0	266
05:30 PM	11	94	0	0	105	16	0	14	0	30	0	83	31	0	114	0	0	0	0	0	249
05:45 PM	6	74	0	0	80	19	0	11	0	30	0	59	30	0	89	0	0	0	0	0	199
Total	26	365	0	0	391	75	0	44	0	119	0	318	122	0	440	0	0	0	0	0	950
Grand Total	56	702	0	0	758	135	0	79	0	214	0	630	247	0	877	0	0	0	0	0	1849
Apprch %	7.4	92.6	0	0		63.1	0	36.9	0		0	71.8	28.2	0		0	0	0	0		
Total %	3	38	0	0	41	7.3	0	4.3	0	11.6	0	34.1	13.4	0	47.4	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 8-20
Site Code : 00204050
Start Date : 8/12/2020
Page No : 3



LSC Transportation Consultants, Inc.

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

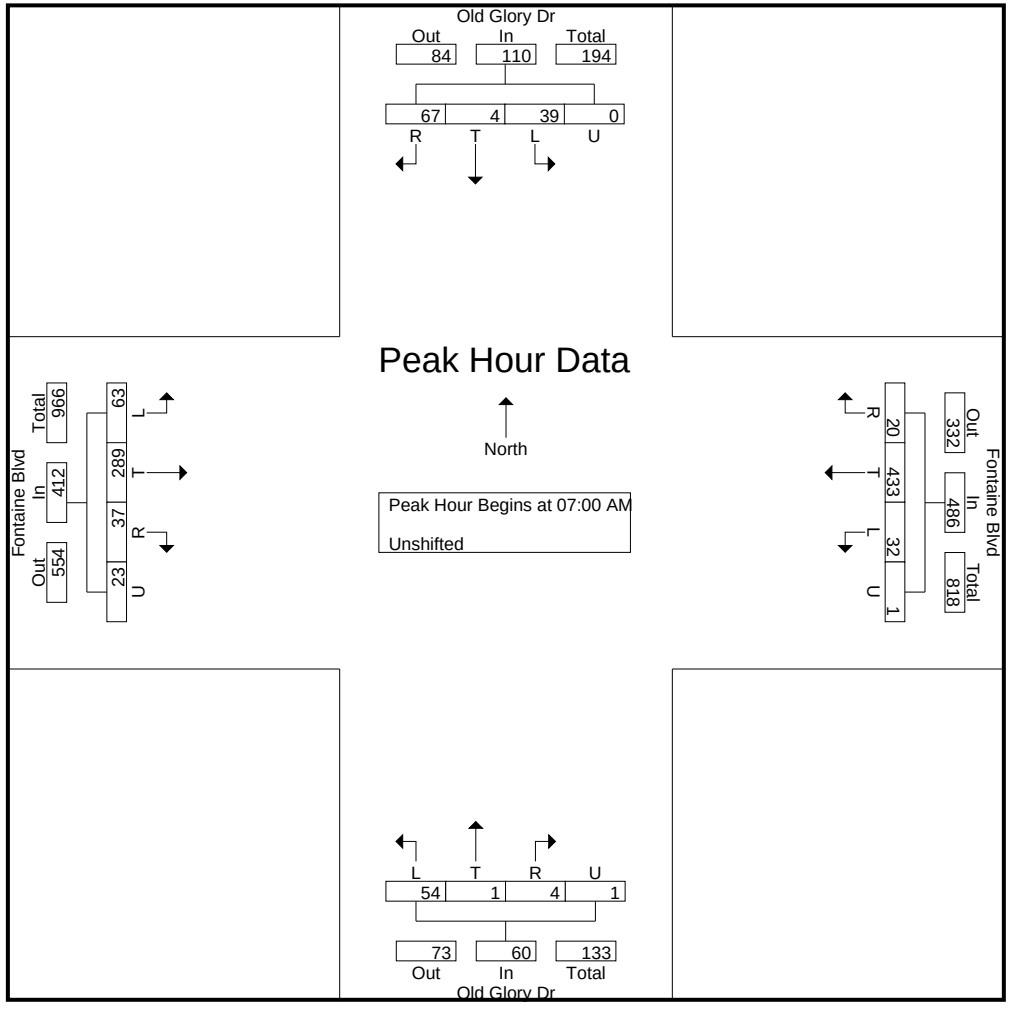
File Name : Old Glory Dr W - Fontaine Blvd AM 4-20 video
Site Code : 184181
Start Date : 4/29/2021
Page No : 1

Groups Printed- Unshifted

	Old Glory Dr Southbound					Fontaine Blvd Westbound					Old Glory Dr Northbound					Fontaine Blvd 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**
07:00 AM	7	2	22	0	31	2	92	0	0	94	19	0	3	1	23	11	63	8	8	90	238
07:15 AM	24	1	17	0	42	11	120	9	0	140	13	1	1	0	15	16	108	11	10	145	342
07:30 AM	8	1	12	0	21	15	137	9	1	162	13	0	0	0	13	18	72	10	3	103	299
07:45 AM	0	0	16	0	16	4	84	2	0	90	9	0	0	0	9	18	46	8	2	74	189
Total	39	4	67	0	110	32	433	20	1	486	54	1	4	1	60	63	289	37	23	412	1068
08:00 AM	0	1	19	0	20	2	61	0	0	63	11	1	0	1	13	25	39	8	4	76	172
08:15 AM	1	2	22	0	25	1	72	0	0	73	13	0	0	0	13	25	44	6	2	77	188
08:30 AM	1	1	16	0	18	1	67	2	0	70	17	1	0	0	18	6	36	2	3	47	153
*** BREAK ***																					
Total	2	4	57	0	63	4	200	2	0	206	41	2	0	1	44	56	119	16	9	200	513
Grand Total	41	8	124	0	173	36	633	22	1	692	95	3	4	2	104	119	408	53	32	612	1581
Apprch %	23.7	4.6	71.7	0		5.2	91.5	3.2	0.1		91.3	2.9	3.8	1.9		19.4	66.7	8.7	5.2		
Total %	2.6	0.5	7.8	0	10.9	2.3	40	1.4	0.1	43.8	6	0.2	0.3	0.1	6.6	7.5	25.8	3.4	2	38.7	

LSC Transportation Consultants, Inc.
545 E Pikes Peak Ave, Suite 210
Colorado Springs, CO 80905
719-633-2868

File Name : Old Glory Dr W - Fontaine Blvd AM 4-20 video
Site Code : 184181
Start Date : 4/29/2021
Page No : 3



LSC Transportation Consultants, Inc.

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

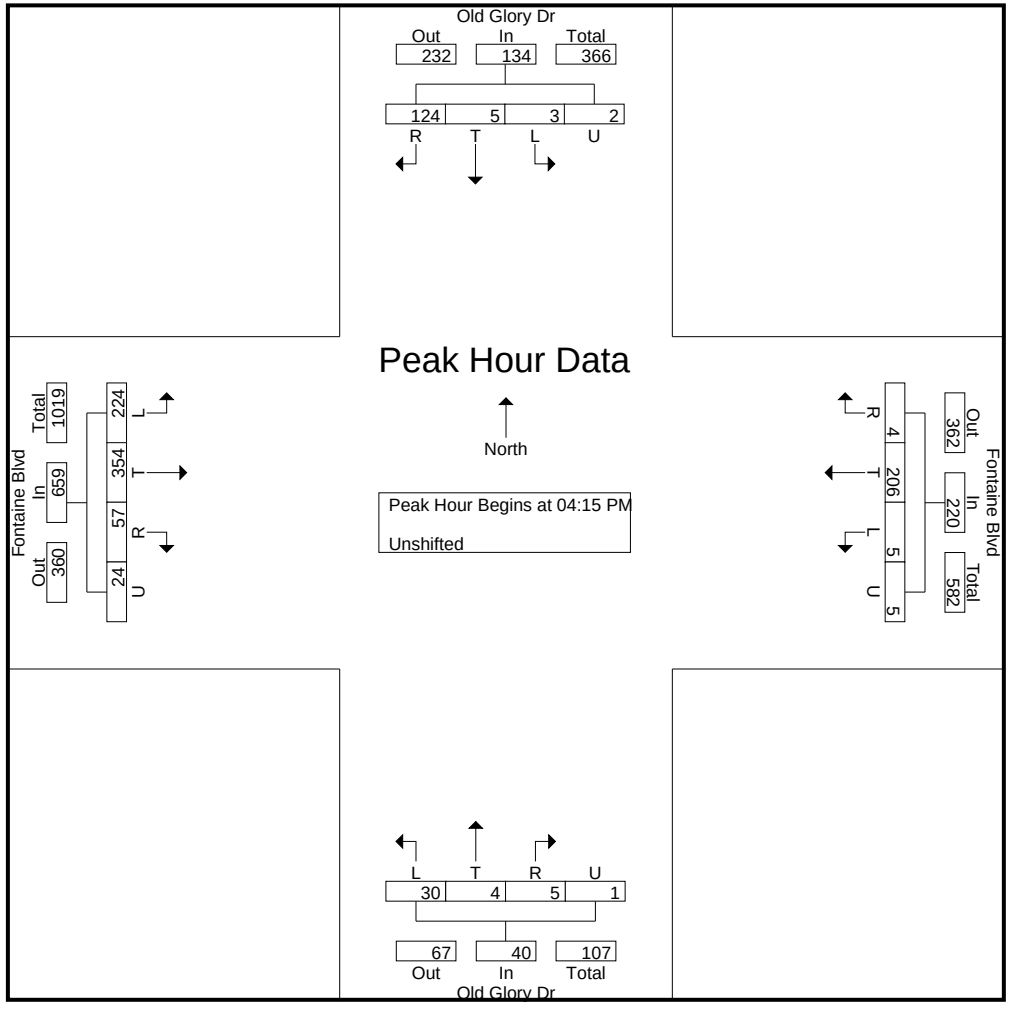
File Name : Old Glory Dr W - Fontaine Blvd PM 5-20
Site Code : 00184181
Start Date : 5/6/2021
Page No : 1

Groups Printed- Unshifted

	Old Glory Dr Southbound					Fontaine Blvd Westbound					Old Glory Dr Northbound					Fontaine Blvd 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	0	0	33	1	34	0	52	1	0	53	15	1	0	1	17	49	65	11	4	129	233
04:15 PM	0	2	30	0	32	1	52	1	1	55	7	2	2	0	11	46	98	17	4	165	263
04:30 PM	2	0	30	1	33	1	47	0	2	50	9	1	0	0	10	62	79	12	8	161	254
04:45 PM	1	2	24	1	28	1	46	2	1	50	11	1	1	0	13	61	108	15	8	192	283
Total	3	4	117	3	127	3	197	4	4	208	42	5	3	1	51	218	350	55	24	647	1033
05:00 PM	0	1	40	0	41	2	61	1	1	65	3	0	2	1	6	55	69	13	4	141	253
05:15 PM	0	0	39	0	39	0	51	0	0	51	9	1	3	1	14	50	84	14	6	154	258
05:30 PM	0	0	24	1	25	1	50	1	2	54	10	0	0	2	12	44	80	12	5	141	232
05:45 PM	0	0	27	0	27	1	50	0	0	51	14	0	0	1	15	56	74	13	2	145	238
Total	0	1	130	1	132	4	212	2	3	221	36	1	5	5	47	205	307	52	17	581	981
Grand Total	3	5	247	4	259	7	409	6	7	429	78	6	8	6	98	423	657	107	41	1228	2014
Apprch %	1.2	1.9	95.4	1.5		1.6	95.3	1.4	1.6		79.6	6.1	8.2	6.1		34.4	53.5	8.7	3.3		
Total %	0.1	0.2	12.3	0.2	12.9	0.3	20.3	0.3	0.3	21.3	3.9	0.3	0.4	0.3	4.9	21	32.6	5.3	2	61	

LSC Transportation Consultants, Inc.
545 E Pikes Peak Ave, Suite 210
Colorado Springs, CO 80905
719-633-2868

File Name : Old Glory Dr W - Fontaine Blvd PM 5-20
Site Code : 00184181
Start Date : 5/6/2021
Page No : 3



LSC Transportation Consultants, Inc.

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

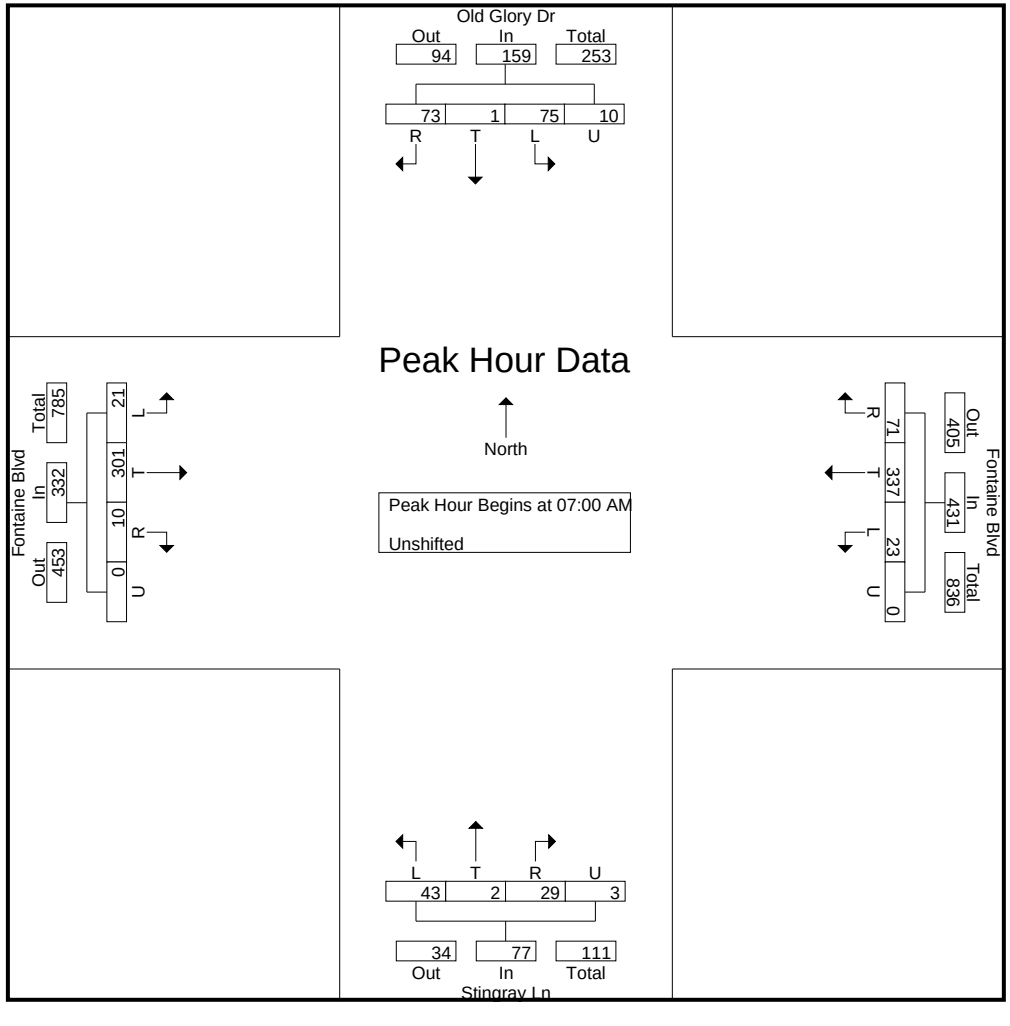
File Name : Stingray Ln - Fontaine Blvd AM 4-21
Site Code : 184181
Start Date : 4/22/2021
Page No : 1

Groups Printed- Unshifted

	Old Glory Dr Southbound					Fontaine Blvd Westbound					Stingray Ln Northbound					Fontaine Blvd 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**
07:00 AM	25	1	16	2	44	1	49	3	0	53	16	1	6	3	26	4	59	1	0	64	187
07:15 AM	33	0	14	8	55	10	114	32	0	156	11	0	15	0	26	6	145	2	0	153	390
07:30 AM	9	0	24	0	33	10	127	31	0	168	5	0	7	0	12	7	65	2	0	74	287
07:45 AM	8	0	19	0	27	2	47	5	0	54	11	1	1	0	13	4	32	5	0	41	135
Total	75	1	73	10	159	23	337	71	0	431	43	2	29	3	77	21	301	10	0	332	999
08:00 AM	7	0	24	0	31	2	43	5	0	50	6	1	3	0	10	5	44	1	0	50	141
08:15 AM	4	1	19	0	24	0	58	3	0	61	11	0	1	1	13	9	34	5	0	48	146
08:30 AM	2	0	17	1	20	1	44	2	0	47	4	0	1	0	5	8	28	4	0	40	112
08:45 AM	0	0	5	0	5	0	37	0	0	37	5	0	0	0	5	7	27	1	0	35	82
Total	13	1	65	1	80	3	182	10	0	195	26	1	5	1	33	29	133	11	0	173	481
Grand Total	88	2	138	11	239	26	519	81	0	626	69	3	34	4	110	50	434	21	0	505	1480
Apprch %	36.8	0.8	57.7	4.6		4.2	82.9	12.9	0		62.7	2.7	30.9	3.6		9.9	85.9	4.2	0		
Total %	5.9	0.1	9.3	0.7	16.1	1.8	35.1	5.5	0	42.3	4.7	0.2	2.3	0.3	7.4	3.4	29.3	1.4	0	34.1	

LSC Transportation Consultants, Inc.
545 E Pikes Peak Ave, Suite 210
Colorado Springs, CO 80905
719-633-2868

File Name : Stingray Ln - Fontaine Blvd AM 4-21
Site Code : 184181
Start Date : 4/22/2021
Page No : 3



LSC Transportation Consultants, Inc.

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

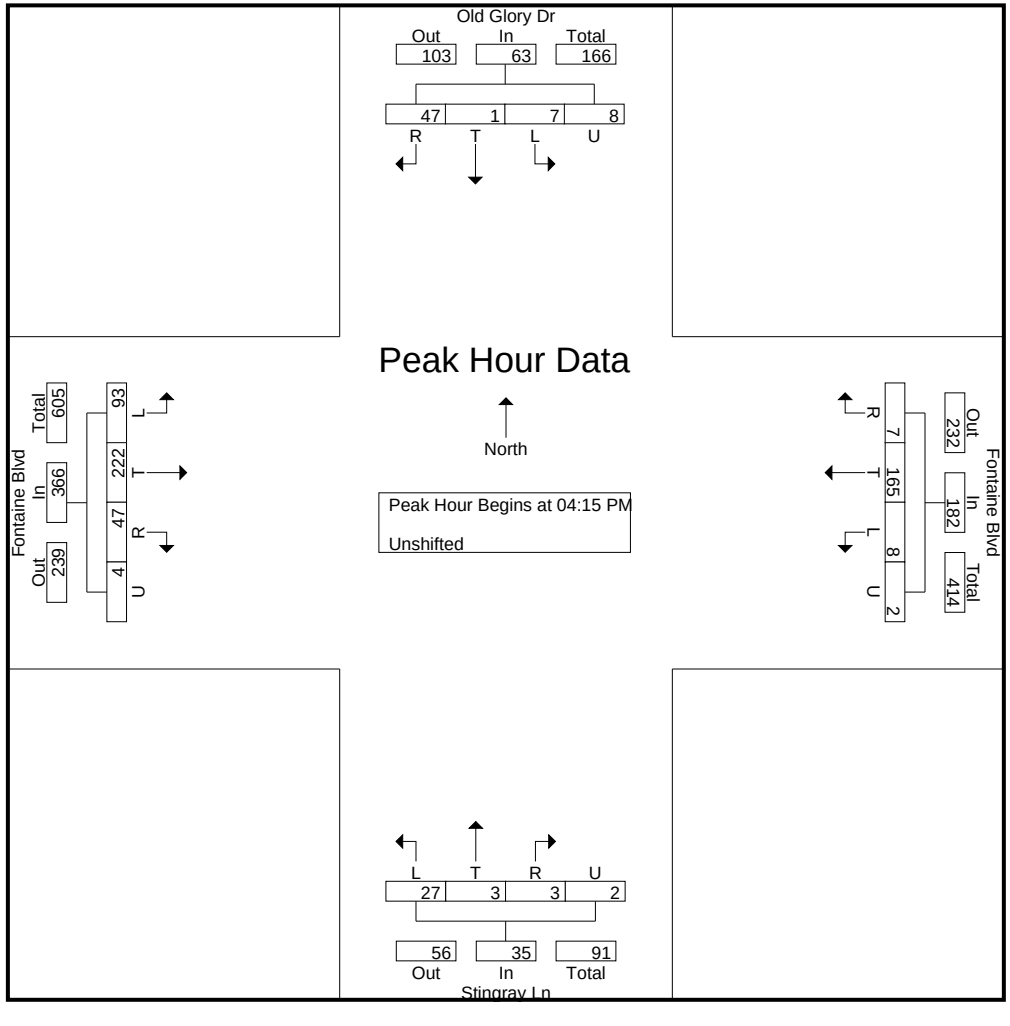
File Name : Stingray Ln - Fontaine Blvd PM 4-21
Site Code : 184181
Start Date : 4/22/2021
Page No : 1

Groups Printed- Unshifted

	Old Glory Dr Southbound					Fontaine Blvd Westbound					Stingray Ln Northbound					Fontaine Blvd 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	0	2	14	0	16	2	39	2	2	45	6	5	3	0	14	18	56	10	0	84	159
04:15 PM	3	1	10	3	17	6	49	1	0	56	4	1	0	1	6	26	46	12	0	84	163
04:30 PM	0	0	13	4	17	0	28	0	0	28	5	0	0	0	5	29	56	10	1	96	146
04:45 PM	3	0	12	1	16	1	38	5	1	45	7	1	2	0	10	19	54	15	0	88	159
Total	6	3	49	8	66	9	154	8	3	174	22	7	5	1	35	92	212	47	1	352	627
05:00 PM	1	0	12	0	13	1	50	1	1	53	11	1	1	1	14	19	66	10	3	98	178
05:15 PM	2	1	11	0	14	0	35	0	0	35	6	1	0	0	7	25	46	8	0	79	135
05:30 PM	3	1	10	0	14	3	36	2	0	41	8	0	2	0	10	34	50	12	0	96	161
05:45 PM	4	0	9	0	13	2	52	6	0	60	6	1	2	0	9	18	63	5	0	86	168
Total	10	2	42	0	54	6	173	9	1	189	31	3	5	1	40	96	225	35	3	359	642
Grand Total	16	5	91	8	120	15	327	17	4	363	53	10	10	2	75	188	437	82	4	711	1269
Apprch %	13.3	4.2	75.8	6.7		4.1	90.1	4.7	1.1		70.7	13.3	13.3	2.7		26.4	61.5	11.5	0.6		
Total %	1.3	0.4	7.2	0.6	9.5	1.2	25.8	1.3	0.3	28.6	4.2	0.8	0.8	0.2	5.9	14.8	34.4	6.5	0.3	56	

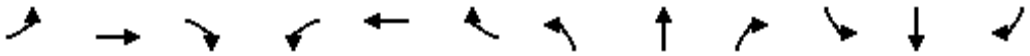
LSC Transportation Consultants, Inc.
545 E Pikes Peak Ave, Suite 210
Colorado Springs, CO 80905
719-633-2868

File Name : Stingray Ln - Fontaine Blvd PM 4-21
Site Code : 184181
Start Date : 4/22/2021
Page No : 3



Levels of Service

TRANSPORTATION
CONSULTANTS, INC.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	25	105	45	118	198	254	38	335	73	74	160	17
Future Volume (vph)	25	105	45	118	198	254	38	335	73	74	160	17
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.83	0.83	0.83	0.86	0.86	0.86	0.81	0.81	0.81	0.87	0.87	0.87
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	30	127	54	137	230	295	47	414	90	85	184	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	30	127	54	137	230	295	47	414	90	85	184	20

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	105	45	118	198	254	38	335	73	74	160	17
Future Volume (vph)	25	105	45	118	198	254	38	335	73	74	160	17
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Free	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		Free	6		6
Detector Phase	4	4	4	8	8	8	2	2		6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0		23.0	23.0	23.0
Total Split (s)	35.0	35.0	35.0	35.0	35.0	35.0	55.0	55.0		55.0	55.0	55.0
Total Split (%)	38.9%	38.9%	38.9%	38.9%	38.9%	38.9%	61.1%	61.1%		61.1%	61.1%	61.1%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None	None	Max	Max		Max	Max	Max
Act Effct Green (s)	14.3	14.3	14.3	14.3	14.3	14.3	50.3	50.3	74.6	50.3	50.3	50.3
Actuated g/C Ratio	0.19	0.19	0.19	0.19	0.19	0.19	0.67	0.67	1.00	0.67	0.67	0.67
v/c Ratio	0.14	0.19	0.16	0.57	0.34	0.55	0.06	0.33	0.06	0.14	0.15	0.02
Control Delay	25.4	25.0	8.3	36.7	26.8	7.4	5.8	6.9	0.1	6.4	5.7	2.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.4	25.0	8.3	36.7	26.8	7.4	5.8	6.9	0.1	6.4	5.7	2.5
LOS	C	C	A	D	C	A	A	A	A	A	A	A
Approach Delay		20.8			20.2			5.7			5.7	
Approach LOS		C			C			A			A	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 74.6	
Natural Cycle: 50	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.57	
Intersection Signal Delay: 13.2	Intersection LOS: B
Intersection Capacity Utilization 50.0%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 1: Marksheffel Rd & Fontaine Blvd

Intersection	
Int Delay, s/veh	6.2

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	23	63	289	37	32	433	20	54	1	4	39	4	67
Future Vol, veh/h	23	63	289	37	32	433	20	54	1	4	39	4	67
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	800	-	800	350	-	350	170	-	0	185	-	340
Veh in Median Storage, #	-	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	71	71	71	71	87	87	87	78	78	78	65	65	65
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	32	89	407	52	37	498	23	69	1	5	60	6	103

Major/Minor	Major1				Major2			Minor1			Minor2		
Conflicting Flow All	498	521	0	0	459	0	0	975	1244	204	1018	1273	249
Stage 1	-	-	-	-	-	-	-	649	649	-	572	572	-
Stage 2	-	-	-	-	-	-	-	326	595	-	446	701	-
Critical Hdwy	6.44	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.52	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	694	1041	-	-	1098	-	-	206	173	803	191	166	751
Stage 1	-	-	-	-	-	-	-	425	464	-	472	502	-
Stage 2	-	-	-	-	-	-	-	661	491	-	561	439	-
Platoon blocked, %			-	-		-	-						
Mov Cap-1 Maneuver	887	887	-	-	1098	-	-	150	144	803	165	139	751
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	150	144	-	165	139	-
Stage 1	-	-	-	-	-	-	-	367	401	-	408	485	-
Stage 2	-	-	-	-	-	-	-	544	474	-	480	379	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2	0.6	45.2	21.4
HCM LOS			E	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	150	144	803	887	-	-	1098	-	-	165	139	751
HCM Lane V/C Ratio	0.462	0.009	0.006	0.137	-	-	0.033	-	-	0.364	0.044	0.137
HCM Control Delay (s)	48.1	30.2	9.5	9.7	-	-	8.4	-	-	38.8	32.1	10.6
HCM Lane LOS	E	D	A	A	-	-	A	-	-	E	D	B
HCM 95th %tile Q(veh)	2.1	0	0	0.5	-	-	0.1	-	-	1.5	0.1	0.5

Intersection	
Int Delay, s/veh	7.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	21	301	10	23	369	71	43	2	29	75	1	73
Future Vol, veh/h	21	301	10	23	369	71	43	2	29	75	1	73
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	275	-	275	150	-	150	0	-	-	0	-	280
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	54	54	54	87	87	87	71	71	71	79	79	79
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	39	557	19	26	424	82	61	3	41	95	1	92

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	506	0	0	576	0	0	900	1193	557	1143	1130	212
Stage 1	-	-	-	-	-	-	635	635	-	476	476	-
Stage 2	-	-	-	-	-	-	265	558	-	667	654	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.33	6.53	6.23	7.33	6.53	6.93
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.53	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.53	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.219	-	-	2.219	-	-	3.519	4.019	3.319	3.519	4.019	3.319
Pot Cap-1 Maneuver	1057	-	-	995	-	-	246	186	529	166	203	794
Stage 1	-	-	-	-	-	-	466	471	-	540	556	-
Stage 2	-	-	-	-	-	-	718	511	-	447	462	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1057	-	-	995	-	-	206	174	529	144	190	794
Mov Cap-2 Maneuver	-	-	-	-	-	-	206	174	-	144	190	-
Stage 1	-	-	-	-	-	-	449	454	-	520	542	-
Stage 2	-	-	-	-	-	-	616	498	-	395	445	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.4	22.9	39.6
HCM LOS			C	E

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	206	467	1057	-	-	995	-	-	144	190	794
HCM Lane V/C Ratio	0.294	0.093	0.037	-	-	0.027	-	-	0.659	0.007	0.116
HCM Control Delay (s)	29.6	13.5	8.5	-	-	8.7	-	-	68.6	24.1	10.1
HCM Lane LOS	D	B	A	-	-	A	-	-	F	C	B
HCM 95th %tile Q(veh)	1.2	0.3	0.1	-	-	0.1	-	-	3.6	0	0.4

Intersection	
Int Delay, s/veh	1.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	384	21	3	397	66	7
Future Vol, veh/h	384	21	3	397	66	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	145	85	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	452	25	4	467	78	8

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	477	0	927	452
Stage 1	-	-	-	-	452	-
Stage 2	-	-	-	-	475	-
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	-	-	1085	-	298	608
Stage 1	-	-	-	-	641	-
Stage 2	-	-	-	-	626	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1085	-	297	608
Mov Cap-2 Maneuver	-	-	-	-	424	-
Stage 1	-	-	-	-	641	-
Stage 2	-	-	-	-	623	-

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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	437	-	-	1085	-
HCM Lane V/C Ratio	0.197	-	-	0.003	-
HCM Control Delay (s)	15.2	-	-	8.3	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.7	-	-	0	-

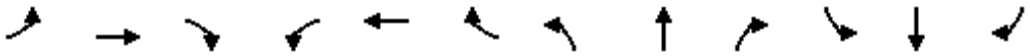
Intersection	
Int Delay, s/veh	2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	74	42	406	124	26	470
Future Vol, veh/h	74	42	406	124	26	470
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	250	-	250	400	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	77	77	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	96	55	467	143	30	540

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1067	467	0	0	610	0
Stage 1	467	-	-	-	-	-
Stage 2	600	-	-	-	-	-
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	246	596	-	-	969	-
Stage 1	631	-	-	-	-	-
Stage 2	548	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	238	596	-	-	969	-
Mov Cap-2 Maneuver	370	-	-	-	-	-
Stage 1	631	-	-	-	-	-
Stage 2	531	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.7	0	0.5
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	370	596	969	-
HCM Lane V/C Ratio	-	-	0.26	0.092	0.031	-
HCM Control Delay (s)	-	-	18.1	11.6	8.8	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	1	0.3	0.1	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	51	294	65	69	152	254	61	230	156	259	366	33
Future Volume (vph)	51	294	65	69	152	254	61	230	156	259	366	33
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.93	0.93	0.93	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	59	338	75	79	175	292	66	247	168	270	381	34
Shared Lane Traffic (%)												
Lane Group Flow (vph)	59	338	75	79	175	292	66	247	168	270	381	34

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	51	294	65	69	152	254	61	230	156	259	366	33
Future Volume (vph)	51	294	65	69	152	254	61	230	156	259	366	33
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Free	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		Free	6		6
Detector Phase	4	4	4	8	8	8	2	2		6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0		23.0	23.0	23.0
Total Split (s)	35.0	35.0	35.0	35.0	35.0	35.0	55.0	55.0		55.0	55.0	55.0
Total Split (%)	38.9%	38.9%	38.9%	38.9%	38.9%	38.9%	61.1%	61.1%		61.1%	61.1%	61.1%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None	None	Max	Max		Max	Max	Max
Act Effct Green (s)	12.9	12.9	12.9	12.9	12.9	12.9	50.1	50.1	73.0	50.1	50.1	50.1
Actuated g/C Ratio	0.18	0.18	0.18	0.18	0.18	0.18	0.69	0.69	1.00	0.69	0.69	0.69
v/c Ratio	0.28	0.54	0.23	0.50	0.28	0.56	0.10	0.19	0.11	0.35	0.30	0.03
Control Delay	29.1	30.5	13.5	38.4	26.8	8.1	5.1	5.2	0.1	6.9	5.8	2.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.1	30.5	13.5	38.4	26.8	8.1	5.1	5.2	0.1	6.9	5.8	2.0
LOS	C	C	B	D	C	A	A	A	A	A	A	A
Approach Delay		27.6			18.5			3.4			6.1	
Approach LOS		C			B			A			A	

Intersection Summary			
Cycle Length: 90			
Actuated Cycle Length: 73			
Natural Cycle: 50			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.56			
Intersection Signal Delay: 13.2		Intersection LOS: B	
Intersection Capacity Utilization 55.4%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 1: Marksheffel Rd & Fontaine Blvd

Intersection	
Int Delay, s/veh	5.5

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	24	224	354	87	5	230	4	30	4	5	3	5	124
Future Vol, veh/h	24	224	354	87	5	230	4	30	4	5	3	5	124
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	800	-	800	350	-	350	170	-	0	185	-	340
Veh in Median Storage, #	-	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	87	87	87	77	77	77	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	28	260	412	101	6	264	5	39	5	6	4	6	149

Major/Minor	Major1				Major2			Minor1			Minor2		
Conflicting Flow All	264	269	0	0	513	0	0	1135	1269	206	1061	1365	132
Stage 1	-	-	-	-	-	-	-	988	988	-	276	276	-
Stage 2	-	-	-	-	-	-	-	147	281	-	785	1089	-
Critical Hdwy	6.44	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.52	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	976	1292	-	-	1049	-	-	157	167	800	178	146	893
Stage 1	-	-	-	-	-	-	-	265	323	-	707	680	-
Stage 2	-	-	-	-	-	-	-	841	677	-	352	290	-
Platoon blocked, %			-	-		-	-						
Mov Cap-1 Maneuver	1228	1228	-	-	1049	-	-	102	127	800	140	111	893
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	102	127	-	140	111	-
Stage 1	-	-	-	-	-	-	-	203	247	-	541	676	-
Stage 2	-	-	-	-	-	-	-	690	673	-	262	222	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	3.2	0.2	51.4	11.4
HCM LOS			F	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	102	127	800	1228	-	-	1049	-	-	140	111	893
HCM Lane V/C Ratio	0.382	0.041	0.008	0.235	-	-	0.005	-	-	0.026	0.054	0.167
HCM Control Delay (s)	60.6	34.6	9.5	8.8	-	-	8.5	-	-	31.4	39.3	9.8
HCM Lane LOS	F	D	A	A	-	-	A	-	-	D	E	A
HCM 95th %tile Q(veh)	1.5	0.1	0	0.9	-	-	0	-	-	0.1	0.2	0.6

Intersection	
Int Delay, s/veh	4.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	93	222	57	5	230	4	30	4	5	3	5	124
Future Vol, veh/h	93	222	57	5	230	4	30	4	5	3	5	124
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	275	-	275	150	-	150	0	-	-	0	-	280
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	83	83	83	63	63	63	78	78	78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	98	234	60	6	277	5	48	6	8	4	6	159

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	282	0	0	294	0	0	584	724	234	756	779	139
Stage 1	-	-	-	-	-	-	430	430	-	289	289	-
Stage 2	-	-	-	-	-	-	154	294	-	467	490	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.33	6.53	6.23	7.33	6.53	6.93
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.53	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.53	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.219	-	-	2.219	-	-	3.519	4.019	3.319	3.519	4.019	3.319
Pot Cap-1 Maneuver	1279	-	-	1266	-	-	409	351	804	310	326	884
Stage 1	-	-	-	-	-	-	603	583	-	695	672	-
Stage 2	-	-	-	-	-	-	833	669	-	575	548	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1279	-	-	1266	-	-	310	322	804	284	299	884
Mov Cap-2 Maneuver	-	-	-	-	-	-	310	322	-	284	299	-
Stage 1	-	-	-	-	-	-	557	538	-	641	669	-
Stage 2	-	-	-	-	-	-	673	666	-	519	506	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2	0.2	17.3	10.5
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	310	483	1279	-	-	1266	-	-	284	299	884
HCM Lane V/C Ratio	0.154	0.03	0.077	-	-	0.005	-	-	0.014	0.021	0.18
HCM Control Delay (s)	18.7	12.7	8	-	-	7.9	-	-	17.9	17.3	10
HCM Lane LOS	C	B	A	-	-	A	-	-	C	C	B
HCM 95th %tile Q(veh)	0.5	0.1	0.2	-	-	0	-	-	0	0.1	0.7

Intersection	
Int Delay, s/veh	1.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	153	79	2	133	47	1
Future Vol, veh/h	153	79	2	133	47	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	145	85	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	180	93	2	156	55	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	273	0	340	180
Stage 1	-	-	-	-	180	-
Stage 2	-	-	-	-	160	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1290	-	656	863
Stage 1	-	-	-	-	851	-
Stage 2	-	-	-	-	869	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1290	-	655	863
Mov Cap-2 Maneuver	-	-	-	-	691	-
Stage 1	-	-	-	-	851	-
Stage 2	-	-	-	-	867	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	10.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	694	-	-	1290	-
HCM Lane V/C Ratio	0.081	-	-	0.002	-
HCM Control Delay (s)	10.6	-	-	7.8	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.3	-	-	0	-

Intersection	
Int Delay, s/veh	1.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	74	41	406	124	26	470
Future Vol, veh/h	74	41	406	124	26	470
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	250	-	250	400	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	83	83	89	89	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	89	49	456	139	29	516

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1030	456	0	0	595	0
Stage 1	456	-	-	-	-	-
Stage 2	574	-	-	-	-	-
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	259	604	-	-	981	-
Stage 1	638	-	-	-	-	-
Stage 2	563	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	251	604	-	-	981	-
Mov Cap-2 Maneuver	382	-	-	-	-	-
Stage 1	638	-	-	-	-	-
Stage 2	546	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.2	0	0.5
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	382	604	981	-
HCM Lane V/C Ratio	-	-	0.233	0.082	0.029	-
HCM Control Delay (s)	-	-	17.3	11.5	8.8	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.9	0.3	0.1	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	178	46	184	421	361	51	375	93	111	170	17
Future Volume (vph)	25	178	46	184	421	361	51	375	93	111	170	17
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Free	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		Free	6		6
Detector Phase	4	4	4	8	8	8	2	2		6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0		23.0	23.0	23.0
Total Split (s)	35.0	35.0	35.0	35.0	35.0	35.0	55.0	55.0		55.0	55.0	55.0
Total Split (%)	38.9%	38.9%	38.9%	38.9%	38.9%	38.9%	61.1%	61.1%		61.1%	61.1%	61.1%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None	None	Max	Max		Max	Max	Max
Act Effct Green (s)	22.6	22.6	22.6	22.6	22.6	22.6	50.3	50.3	83.0	50.3	50.3	50.3
Actuated g/C Ratio	0.27	0.27	0.27	0.27	0.27	0.27	0.61	0.61	1.00	0.61	0.61	0.61
v/c Ratio	0.16	0.22	0.12	0.68	0.51	0.60	0.09	0.41	0.07	0.26	0.17	0.02
Control Delay	24.0	23.2	6.8	38.4	26.9	8.0	9.0	11.2	0.1	11.1	9.0	3.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.0	23.2	6.8	38.4	26.9	8.0	9.0	11.2	0.1	11.1	9.0	3.4
LOS	C	C	A	D	C	A	A	B	A	B	A	A
Approach Delay		20.3			22.0			9.0			9.5	
Approach LOS		C			C			A			A	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 83	
Natural Cycle: 50	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.68	
Intersection Signal Delay: 16.5	Intersection LOS: B
Intersection Capacity Utilization 58.8%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 1: Marksheffel Rd & Fontaine Blvd

2: Old Glory Dr & Fontaine Blvd Performance by movement Interval #1 7:00

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Stop Del/Veh (s)	6.2	5.8	5.2	2.5	4.6	5.4	4.0	6.4		1.4	5.4	9.2

2: Old Glory Dr & Fontaine Blvd Performance by movement Interval #1 7:00

Movement	SBR	All
Stop Del/Veh (s)	5.1	5.3

2: Old Glory Dr & Fontaine Blvd Performance by movement Interval #2 7:15

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Stop Del/Veh (s)	9.1	9.0	10.6	4.0	6.9	14.0	3.4	14.5	4.6	3.8	12.1	10.5

2: Old Glory Dr & Fontaine Blvd Performance by movement Interval #2 7:15

Movement	SBR	All
Stop Del/Veh (s)	8.5	11.6

2: Old Glory Dr & Fontaine Blvd Performance by movement Interval #3 7:30

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Stop Del/Veh (s)	5.9	7.1	5.3	2.8	5.4	7.1	2.6	7.8	5.7	2.2	6.3	5.4

2: Old Glory Dr & Fontaine Blvd Performance by movement Interval #3 7:30

Movement	SBR	All
Stop Del/Veh (s)	5.3	6.4

2: Old Glory Dr & Fontaine Blvd Performance by movement Interval #4 7:45

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Stop Del/Veh (s)	5.9	5.9	4.8	2.6	5.3	6.7	2.5	6.6	4.4	2.0	6.7	8.3

2: Old Glory Dr & Fontaine Blvd Performance by movement Interval #4 7:45

Movement	SBR	All
Stop Del/Veh (s)	5.3	6.0

2: Old Glory Dr & Fontaine Blvd Performance by movement Entire Run

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Stop Del/Veh (s)	7.6	7.4	7.2	3.2	5.8	8.8	3.2	9.4	5.7	3.1	8.6	8.1

2: Old Glory Dr & Fontaine Blvd Performance by movement Entire Run

Movement	SBR	All
Stop Del/Veh (s)	6.7	7.9

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	21	465	10	23	645	71	0	0	29	0	0	73
Future Vol, veh/h	21	465	10	23	645	71	0	0	29	0	0	73
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	275	-	275	150	-	150	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	54	54	54	87	87	87	71	71	71	79	79	79
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	39	861	19	26	741	82	0	0	41	0	0	92

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	823	0	0	880	0	0	-	-	861	-	-	371
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.13	-	-	4.13	-	-	-	-	6.23	-	-	6.93
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.219	-	-	2.219	-	-	-	-	3.319	-	-	3.319
Pot Cap-1 Maneuver	805	-	-	766	-	-	0	0	354	0	0	627
Stage 1	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	805	-	-	766	-	-	-	-	354	-	-	627
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.3	16.5	11.7
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	354	805	-	-	766	-	-	627
HCM Lane V/C Ratio	0.115	0.048	-	-	0.035	-	-	0.147
HCM Control Delay (s)	16.5	9.7	-	-	9.9	-	-	11.7
HCM Lane LOS	C	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.4	0.2	-	-	0.1	-	-	0.5

Intersection	
Int Delay, s/veh	1.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	474	21	3	673	66	7
Future Vol, veh/h	474	21	3	673	66	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	145	85	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	558	25	4	792	78	8

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	583	0	1358	558
Stage 1	-	-	-	-	558	-
Stage 2	-	-	-	-	800	-
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	-	-	991	-	164	529
Stage 1	-	-	-	-	573	-
Stage 2	-	-	-	-	442	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	991	-	163	529
Mov Cap-2 Maneuver	-	-	-	-	300	-
Stage 1	-	-	-	-	573	-
Stage 2	-	-	-	-	440	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	20.8
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	313	-	-	991	-
HCM Lane V/C Ratio	0.274	-	-	0.004	-
HCM Control Delay (s)	20.8	-	-	8.6	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	1.1	-	-	0	-

Intersection	
Int Delay, s/veh	8.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	215	81	438	97	53	347
Future Vol, veh/h	215	81	438	97	53	347
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	250	-	250	400	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	77	77	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	279	105	503	111	61	399

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1024	503	0	0	614	0
Stage 1	503	-	-	-	-	-
Stage 2	521	-	-	-	-	-
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	~ 261	569	-	-	965	-
Stage 1	607	-	-	-	-	-
Stage 2	596	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 245	569	-	-	965	-
Mov Cap-2 Maneuver	377	-	-	-	-	-
Stage 1	607	-	-	-	-	-
Stage 2	558	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	30.7	0	1.2
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	377	569	965	-
HCM Lane V/C Ratio	-	-	0.741	0.185	0.063	-
HCM Control Delay (s)	-	-	37.4	12.8	9	-
HCM Lane LOS	-	-	E	B	A	-
HCM 95th %tile Q(veh)	-	-	5.8	0.7	0.2	-

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

Intersection	
Int Delay, s/veh	6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	9	3	5	0	6	19
Future Vol, veh/h	9	3	5	0	6	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	4	6	0	7	22

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	15	0	25	13
Stage 1	-	-	-	-	13	-
Stage 2	-	-	-	-	12	-
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	-	-	1603	-	991	1067
Stage 1	-	-	-	-	1010	-
Stage 2	-	-	-	-	1011	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1603	-	987	1067
Mov Cap-2 Maneuver	-	-	-	-	911	-
Stage 1	-	-	-	-	1010	-
Stage 2	-	-	-	-	1007	-

Approach	EB	WB	NB
HCM Control Delay, s	0	7.3	8.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1025	-	-	1603	-
HCM Lane V/C Ratio	0.029	-	-	0.004	-
HCM Control Delay (s)	8.6	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	5.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	43	15	5	28	0
Future Vol, veh/h	0	43	15	5	28	0
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	-	105	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	51	18	6	33	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	75	33	33	0	-	0
Stage 1	33	-	-	-	-	-
Stage 2	42	-	-	-	-	-
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	928	1041	1579	-	-	-
Stage 1	989	-	-	-	-	-
Stage 2	980	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	918	1041	1579	-	-	-
Mov Cap-2 Maneuver	866	-	-	-	-	-
Stage 1	978	-	-	-	-	-
Stage 2	980	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.6	5.5	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1579	-	1041	-	-
HCM Lane V/C Ratio	0.011	-	0.049	-	-
HCM Control Delay (s)	7.3	-	8.6	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection	
Int Delay, s/veh	5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	16	23	81	4	12	58
Future Vol, veh/h	16	23	81	4	12	58
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	205	-	205	-	-	155
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	19	27	95	5	14	68

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	209	14	82	0	-	0
Stage 1	14	-	-	-	-	-
Stage 2	195	-	-	-	-	-
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	779	1066	1515	-	-	-
Stage 1	1009	-	-	-	-	-
Stage 2	838	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	730	1066	1515	-	-	-
Mov Cap-2 Maneuver	730	-	-	-	-	-
Stage 1	945	-	-	-	-	-
Stage 2	838	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.2	7.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1515	-	730	1066	-	-
HCM Lane V/C Ratio	0.063	-	0.026	0.025	-	-
HCM Control Delay (s)	7.5	-	10.1	8.5	-	-
HCM Lane LOS	A	-	B	A	-	-
HCM 95th %tile Q(veh)	0.2	-	0.1	0.1	-	-

Intersection	
Int Delay, s/veh	4.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	46	22	8	40	22	14
Future Vol, veh/h	46	22	8	40	22	14
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	-	205	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	54	26	9	47	26	16

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	99	34	42	0	-	0
Stage 1	34	-	-	-	-	-
Stage 2	65	-	-	-	-	-
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	900	1039	1567	-	-	-
Stage 1	988	-	-	-	-	-
Stage 2	958	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	895	1039	1567	-	-	-
Mov Cap-2 Maneuver	895	-	-	-	-	-
Stage 1	982	-	-	-	-	-
Stage 2	958	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.2	1.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1567	-	937	-	-
HCM Lane V/C Ratio	0.006	-	0.085	-	-
HCM Control Delay (s)	7.3	-	9.2	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-

Intersection	
Int Delay, s/veh	3.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	28	15	6	20	36	7
Future Vol, veh/h	28	15	6	20	36	7
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	-	205	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	33	18	7	24	42	8

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	84	46	50	0	-	0
Stage 1	46	-	-	-	-	-
Stage 2	38	-	-	-	-	-
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	918	1023	1557	-	-	-
Stage 1	976	-	-	-	-	-
Stage 2	984	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	914	1023	1557	-	-	-
Mov Cap-2 Maneuver	863	-	-	-	-	-
Stage 1	972	-	-	-	-	-
Stage 2	984	-	-	-	-	-

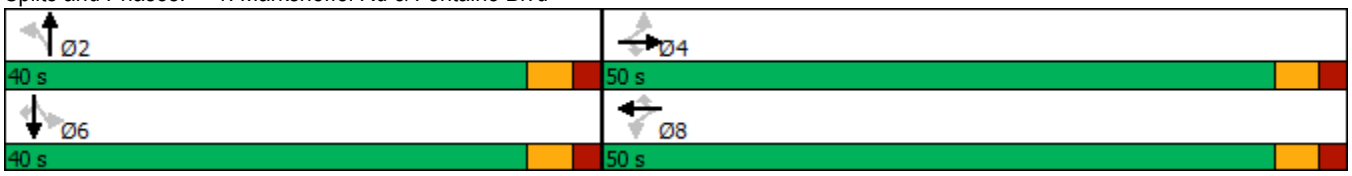
Approach	EB	NB	SB
HCM Control Delay, s	9.2	1.7	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1557	-	913	-	-
HCM Lane V/C Ratio	0.005	-	0.055	-	-
HCM Control Delay (s)	7.3	-	9.2	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	51	572	69	115	309	206	70	258	234	398	403	33
Future Volume (vph)	51	572	69	115	309	206	70	258	234	398	403	33
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Free	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		Free	6		6
Detector Phase	4	4	4	8	8	8	2	2		6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0		23.0	23.0	23.0
Total Split (s)	50.0	50.0	50.0	50.0	50.0	50.0	40.0	40.0		40.0	40.0	40.0
Total Split (%)	55.6%	55.6%	55.6%	55.6%	55.6%	55.6%	44.4%	44.4%		44.4%	44.4%	44.4%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None	None	Max	Max		Max	Max	Max
Act Effct Green (s)	20.4	20.4	20.4	20.4	20.4	20.4	35.5	35.5	66.0	35.5	35.5	35.5
Actuated g/C Ratio	0.31	0.31	0.31	0.31	0.31	0.31	0.54	0.54	1.00	0.54	0.54	0.54
v/c Ratio	0.19	0.60	0.15	0.80	0.32	0.36	0.16	0.28	0.16	0.71	0.42	0.04
Control Delay	17.1	21.1	9.8	53.9	17.5	4.0	11.6	11.1	0.2	23.6	12.6	4.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.1	21.1	9.8	53.9	17.5	4.0	11.6	11.1	0.2	23.6	12.6	4.6
LOS	B	C	A	D	B	A	B	B	A	C	B	A
Approach Delay		19.7			19.7			6.6			17.5	
Approach LOS		B			B			A			B	

Intersection Summary			
Cycle Length: 90			
Actuated Cycle Length: 66			
Natural Cycle: 55			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.80			
Intersection Signal Delay: 16.4		Intersection LOS: B	
Intersection Capacity Utilization 74.5%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 1: Marksheffel Rd & Fontaine Blvd



2: Old Glory Dr & Fontaine Blvd Performance by movement Interval #1 5:00

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Stop Del/Veh (s)	7.8	7.6	4.8	2.5	4.6	5.2	2.8	5.9	7.1	4.0	3.8	5.8

2: Old Glory Dr & Fontaine Blvd Performance by movement Interval #1 5:00

Movement	SBR	All
Stop Del/Veh (s)	4.5	5.2

2: Old Glory Dr & Fontaine Blvd Performance by movement Interval #2 5:15

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Stop Del/Veh (s)	10.6	9.3	7.0	2.9	7.2	5.6	4.5	7.3	4.5	2.8	7.0	7.6

2: Old Glory Dr & Fontaine Blvd Performance by movement Interval #2 5:15

Movement	SBR	All
Stop Del/Veh (s)	5.5	6.5

2: Old Glory Dr & Fontaine Blvd Performance by movement Interval #3 5:30

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Stop Del/Veh (s)	6.8	7.4	5.3	2.8	9.4	5.3	3.5	6.4	5.0	2.5	5.4	7.5

2: Old Glory Dr & Fontaine Blvd Performance by movement Interval #3 5:30

Movement	SBR	All
Stop Del/Veh (s)	4.3	5.4

2: Old Glory Dr & Fontaine Blvd Performance by movement Interval #4 5:45

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Stop Del/Veh (s)	5.6	6.4	5.8	2.7	2.8	4.9		6.8	4.8	4.1	6.4	6.5

2: Old Glory Dr & Fontaine Blvd Performance by movement Interval #4 5:45

Movement	SBR	All
Stop Del/Veh (s)	5.3	5.4

2: Old Glory Dr & Fontaine Blvd Performance by movement Entire Run

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Stop Del/Veh (s)	7.7	8.0	6.0	2.8	5.7	5.5	4.5	6.7	5.7	3.5	5.8	6.7

2: Old Glory Dr & Fontaine Blvd Performance by movement Entire Run

Movement	SBR	All
Stop Del/Veh (s)	5.0	5.9

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	93	561	47	8	359	7	0	0	3	0	0	47
Future Vol, veh/h	93	561	47	8	359	7	0	0	3	0	0	47
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	275	-	275	150	-	150	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	83	83	83	63	63	63	78	78	78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	98	591	49	10	433	8	0	0	5	0	0	60

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	441	0	0	640	0	0	-	-	591	-	-	217
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.13	-	-	4.13	-	-	-	-	6.23	-	-	6.93
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.219	-	-	2.219	-	-	-	-	3.319	-	-	3.319
Pot Cap-1 Maneuver	1117	-	-	942	-	-	0	0	506	0	0	788
Stage 1	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1117	-	-	942	-	-	-	-	506	-	-	788
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.1	0.2	12.2	9.9
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	506	1117	-	-	942	-	-	788
HCM Lane V/C Ratio	0.009	0.088	-	-	0.01	-	-	0.076
HCM Control Delay (s)	12.2	8.5	-	-	8.9	-	-	9.9
HCM Lane LOS	B	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0	0.3	-	-	0	-	-	0.2

Intersection	
Int Delay, s/veh	0.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	485	79	2	328	47	1
Future Vol, veh/h	485	79	2	328	47	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	145	85	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	571	93	2	386	55	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	664	0	961	571
Stage 1	-	-	-	-	571	-
Stage 2	-	-	-	-	390	-
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	-	-	925	-	284	520
Stage 1	-	-	-	-	565	-
Stage 2	-	-	-	-	684	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	925	-	283	520
Mov Cap-2 Maneuver	-	-	-	-	409	-
Stage 1	-	-	-	-	565	-
Stage 2	-	-	-	-	683	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	15.1
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	411	-	-	925	-
HCM Lane V/C Ratio	0.137	-	-	0.003	-
HCM Control Delay (s)	15.1	-	-	8.9	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.5	-	-	0	-

Intersection	
Int Delay, s/veh	5.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	174	79	484	293	67	516
Future Vol, veh/h	174	79	484	293	67	516
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	250	-	250	400	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	83	83	89	89	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	210	95	544	329	74	567

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1259	544	0	0	873	0
Stage 1	544	-	-	-	-	-
Stage 2	715	-	-	-	-	-
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	~ 188	539	-	-	773	-
Stage 1	582	-	-	-	-	-
Stage 2	485	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 170	539	-	-	773	-
Mov Cap-2 Maneuver	303	-	-	-	-	-
Stage 1	582	-	-	-	-	-
Stage 2	438	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	31.5	0	1.2
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	303	539	773	-
HCM Lane V/C Ratio	-	-	0.692	0.177	0.095	-
HCM Control Delay (s)	-	-	39.8	13.1	10.1	-
HCM Lane LOS	-	-	E	B	B	-
HCM 95th %tile Q(veh)	-	-	4.8	0.6	0.3	-

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

Intersection	
Int Delay, s/veh	6.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1	8	19	0	4	12
Future Vol, veh/h	1	8	19	0	4	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	9	22	0	5	14

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	10	0	50	6
Stage 1	-	-	-	-	6	-
Stage 2	-	-	-	-	44	-
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	-	-	1610	-	959	1077
Stage 1	-	-	-	-	1017	-
Stage 2	-	-	-	-	978	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1610	-	946	1077
Mov Cap-2 Maneuver	-	-	-	-	877	-
Stage 1	-	-	-	-	1017	-
Stage 2	-	-	-	-	964	-

Approach	EB	WB	NB
HCM Control Delay, s	0	7.3	8.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1019	-	-	1610	-
HCM Lane V/C Ratio	0.018	-	-	0.014	-
HCM Control Delay (s)	8.6	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	5.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	29	50	19	13	0
Future Vol, veh/h	0	29	50	19	13	0
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	-	105	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	34	59	22	15	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	155	15	15	0	-	0
Stage 1	15	-	-	-	-	-
Stage 2	140	-	-	-	-	-
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	836	1065	1603	-	-	-
Stage 1	1008	-	-	-	-	-
Stage 2	887	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	805	1065	1603	-	-	-
Mov Cap-2 Maneuver	785	-	-	-	-	-
Stage 1	971	-	-	-	-	-
Stage 2	887	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.5	5.3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1603	-	1065	-	-
HCM Lane V/C Ratio	0.037	-	0.032	-	-
HCM Control Delay (s)	7.3	-	8.5	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Intersection	
Int Delay, s/veh	6.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	54	83	50	15	9	33
Future Vol, veh/h	54	83	50	15	9	33
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	205	-	205	-	-	155
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	64	98	59	18	11	39

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	147	11	50	0	-	0
Stage 1	11	-	-	-	-	-
Stage 2	136	-	-	-	-	-
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	845	1070	1557	-	-	-
Stage 1	1012	-	-	-	-	-
Stage 2	890	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	813	1070	1557	-	-	-
Mov Cap-2 Maneuver	813	-	-	-	-	-
Stage 1	974	-	-	-	-	-
Stage 2	890	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.1	5.7	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1557	-	813	1070	-	-
HCM Lane V/C Ratio	0.038	-	0.078	0.091	-	-
HCM Control Delay (s)	7.4	-	9.8	8.7	-	-
HCM Lane LOS	A	-	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.3	0.3	-	-

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	29	15	27	36	43	49
Future Vol, veh/h	29	15	27	36	43	49
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	-	205	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	34	18	32	42	51	58

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	186	80	109	0	-	0
Stage 1	80	-	-	-	-	-
Stage 2	106	-	-	-	-	-
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	803	980	1481	-	-	-
Stage 1	943	-	-	-	-	-
Stage 2	918	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	785	980	1481	-	-	-
Mov Cap-2 Maneuver	785	-	-	-	-	-
Stage 1	922	-	-	-	-	-
Stage 2	918	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.6	3.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1481	-	842	-	-
HCM Lane V/C Ratio	0.021	-	0.061	-	-
HCM Control Delay (s)	7.5	-	9.6	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	16	11	19	47	32	26
Future Vol, veh/h	16	11	19	47	32	26
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	-	205	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	19	13	22	55	38	31

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	153	54	69	0	-	0
Stage 1	54	-	-	-	-	-
Stage 2	99	-	-	-	-	-
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	839	1013	1532	-	-	-
Stage 1	969	-	-	-	-	-
Stage 2	925	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	827	1013	1532	-	-	-
Mov Cap-2 Maneuver	806	-	-	-	-	-
Stage 1	955	-	-	-	-	-
Stage 2	925	-	-	-	-	-

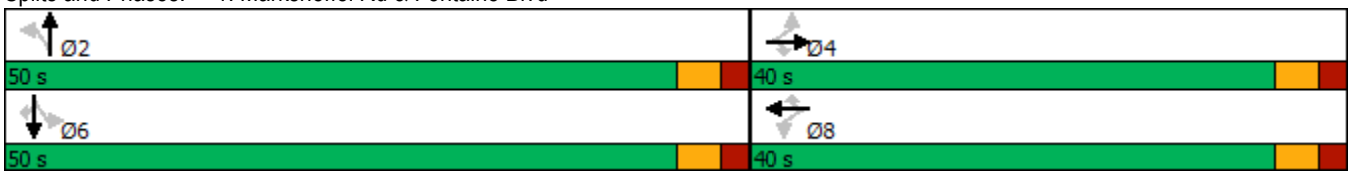
Approach	EB	NB	SB
HCM Control Delay, s	9.2	2.1	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1532	-	879	-	-
HCM Lane V/C Ratio	0.015	-	0.036	-	-
HCM Control Delay (s)	7.4	-	9.2	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	243	46	246	624	488	51	375	113	151	170	17
Future Volume (vph)	25	243	46	246	624	488	51	375	113	151	170	17
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Free	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		Free	6		6
Detector Phase	4	4	4	8	8	8	2	2		6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0		23.0	23.0	23.0
Total Split (s)	40.0	40.0	40.0	40.0	40.0	40.0	50.0	50.0		50.0	50.0	50.0
Total Split (%)	44.4%	44.4%	44.4%	44.4%	44.4%	44.4%	55.6%	55.6%		55.6%	55.6%	55.6%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None	None	Max	Max		Max	Max	Max
Act Effct Green (s)	29.8	29.8	29.8	29.8	29.8	29.8	45.3	45.3	85.1	45.3	45.3	45.3
Actuated g/C Ratio	0.35	0.35	0.35	0.35	0.35	0.35	0.53	0.53	1.00	0.53	0.53	0.53
v/c Ratio	0.18	0.24	0.09	0.77	0.59	0.74	0.10	0.47	0.09	0.44	0.20	0.02
Control Delay	21.6	19.6	7.1	39.6	24.4	15.9	12.2	15.6	0.1	18.4	12.4	4.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.6	19.6	7.1	39.6	24.4	15.9	12.2	15.6	0.1	18.4	12.4	4.4
LOS	C	B	A	D	C	B	B	B	A	B	B	A
Approach Delay		17.9			24.1			12.0			14.6	
Approach LOS		B			C			B			B	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 85.1	
Natural Cycle: 50	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.77	
Intersection Signal Delay: 19.4	Intersection LOS: B
Intersection Capacity Utilization 66.6%	ICU Level of Service C
Analysis Period (min) 15	

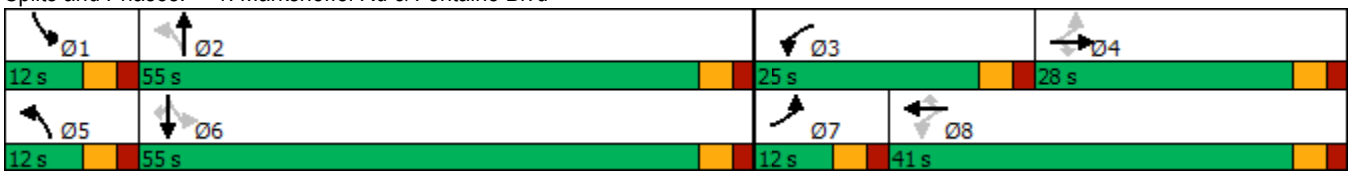
Splits and Phases: 1: Marksheffel Rd & Fontaine Blvd



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	243	46	246	624	488	51	375	113	151	170	17
Future Volume (vph)	25	243	46	246	624	488	51	375	113	151	170	17
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Free	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		Free	6		6
Detector Phase	7	4	4	3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	23.0		5.0	23.0	23.0
Minimum Split (s)	10.0	23.0	23.0	10.0	23.0	23.0	10.0	28.0		10.0	28.0	28.0
Total Split (s)	12.0	28.0	28.0	25.0	41.0	41.0	12.0	55.0		12.0	55.0	55.0
Total Split (%)	10.0%	23.3%	23.3%	20.8%	34.2%	34.2%	10.0%	45.8%		10.0%	45.8%	45.8%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min		None	Min	Min
Act Effct Green (s)	22.4	16.0	16.0	36.2	29.9	29.9	36.5	29.8	88.7	38.4	33.0	33.0
Actuated g/C Ratio	0.25	0.18	0.18	0.41	0.34	0.34	0.41	0.34	1.00	0.43	0.37	0.37
v/c Ratio	0.12	0.46	0.13	0.60	0.61	0.71	0.12	0.74	0.09	0.59	0.28	0.03
Control Delay	19.2	36.0	0.7	24.6	28.8	13.6	15.5	35.4	0.1	25.9	23.9	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.2	36.0	0.7	24.6	28.8	13.6	15.5	35.4	0.1	25.9	23.9	0.1
LOS	B	D	A	C	C	B	B	D	A	C	C	A
Approach Delay		29.6			22.6			26.1			23.6	
Approach LOS		C			C			C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 88.7	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.74	
Intersection Signal Delay: 24.4	Intersection LOS: C
Intersection Capacity Utilization 66.6%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 1: Marksheffel Rd & Fontaine Blvd



2: Old Glory Dr & Fontaine Blvd Performance by movement Interval #1 7:00

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	7.6	5.0	0.6	9.4	6.0	0.3	50.7	119.6	4.5	40.9	52.4	8.0

2: Old Glory Dr & Fontaine Blvd Performance by movement Interval #1 7:00

Movement	All
Stop Del/Veh (s)	12.2

2: Old Glory Dr & Fontaine Blvd Performance by movement Interval #2 7:15

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	17.3	7.9	1.1	11.9	10.9	1.8	70.4	59.8	4.6	39.6	58.1	12.2

2: Old Glory Dr & Fontaine Blvd Performance by movement Interval #2 7:15

Movement	All
Stop Del/Veh (s)	18.3

2: Old Glory Dr & Fontaine Blvd Performance by movement Interval #3 7:30

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	13.2	3.7	0.9	7.5	6.4	0.7	62.9	86.3	2.4	45.8	36.8	9.1

2: Old Glory Dr & Fontaine Blvd Performance by movement Interval #3 7:30

Movement	All
Stop Del/Veh (s)	13.6

2: Old Glory Dr & Fontaine Blvd Performance by movement Interval #4 7:45

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	13.8	3.3	0.8	5.5	5.4	1.7	52.3	90.2	2.9	40.0	94.8	8.2

2: Old Glory Dr & Fontaine Blvd Performance by movement Interval #4 7:45

Movement	All
Stop Del/Veh (s)	11.3

2: Old Glory Dr & Fontaine Blvd Performance by movement Entire Run

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	14.4	5.5	0.9	9.4	7.4	1.2	65.3	71.7	4.7	44.1	55.5	10.0

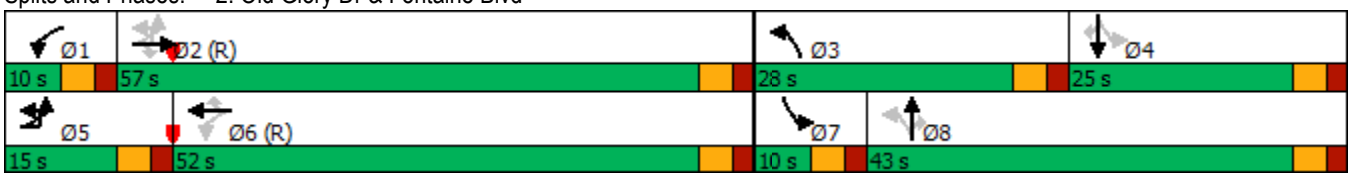
2: Old Glory Dr & Fontaine Blvd Performance by movement Entire Run

Movement	All
Stop Del/Veh (s)	14.7

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	23	70	501	70	32	1049	20	190	4	4	114	8
Future Volume (vph)	23	70	501	70	32	1049	20	190	4	4	114	8
Turn Type	pm+pt	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA
Protected Phases	5	5	2		1	6		3	8		7	4
Permitted Phases	2	2		2	6		6	8		8	4	
Detector Phase	5	5	2	2	1	6	6	3	8	8	7	4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	15.0	15.0	15.0	15.0
Minimum Split (s)	10.0	10.0	23.0	23.0	10.0	23.0	23.0	10.0	23.0	23.0	20.0	20.0
Total Split (s)	15.0	15.0	57.0	57.0	10.0	52.0	52.0	28.0	43.0	43.0	10.0	25.0
Total Split (%)	12.5%	12.5%	47.5%	47.5%	8.3%	43.3%	43.3%	23.3%	35.8%	35.8%	8.3%	20.8%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None
Act Effct Green (s)		69.2	62.3	62.3	60.9	54.2	54.2	24.4	18.6	18.6	35.8	15.0
Actuated g/C Ratio		0.58	0.52	0.52	0.51	0.45	0.45	0.20	0.16	0.16	0.30	0.12
v/c Ratio		0.60	0.38	0.11	0.10	0.75	0.03	0.70	0.02	0.01	0.35	0.05
Control Delay		29.9	19.6	0.8	11.5	35.5	0.1	53.9	38.2	0.0	36.0	47.0
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		29.9	19.6	0.8	11.5	35.5	0.1	53.9	38.2	0.0	36.0	47.0
LOS		C	B	A	B	D	A	D	D	A	D	D
Approach Delay			19.1			34.2			52.5			25.3
Approach LOS			B			C			D			C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.75	
Intersection Signal Delay: 29.7	Intersection LOS: C
Intersection Capacity Utilization 73.8%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 2: Old Glory Dr & Fontaine Blvd



Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	93
Future Volume (vph)	93
Turn Type	Perm
Protected Phases	
Permitted Phases	4
Detector Phase	4
Switch Phase	
Minimum Initial (s)	15.0
Minimum Split (s)	20.0
Total Split (s)	25.0
Total Split (%)	20.8%
Yellow Time (s)	3.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	0.0
Total Lost Time (s)	5.0
Lead/Lag	Lag
Lead-Lag Optimize?	Yes
Recall Mode	None
Act Effct Green (s)	15.0
Actuated g/C Ratio	0.12
v/c Ratio	0.43
Control Delay	10.3
Queue Delay	0.0
Total Delay	10.3
LOS	B
Approach Delay	
Approach LOS	

Intersection Summary

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	21	588	10	23	1028	71	0	0	29	0	0	73
Future Vol, veh/h	21	588	10	23	1028	71	0	0	29	0	0	73
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	275	-	275	150	-	150	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	54	54	54	87	87	87	71	71	71	79	79	79
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	39	1089	19	26	1182	82	0	0	41	0	0	92

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1264	0	0	1108	0	0	-	-	1089	-	-	591
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.13	-	-	4.13	-	-	-	-	6.23	-	-	6.93
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.219	-	-	2.219	-	-	-	-	3.319	-	-	3.319
Pot Cap-1 Maneuver	548	-	-	628	-	-	0	0	261	0	0	451
Stage 1	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	548	-	-	628	-	-	-	-	261	-	-	451
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.2	21.3	15
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	261	548	-	-	628	-	-	451
HCM Lane V/C Ratio	0.156	0.071	-	-	0.042	-	-	0.205
HCM Control Delay (s)	21.3	12.1	-	-	11	-	-	15
HCM Lane LOS	C	B	-	-	B	-	-	C
HCM 95th %tile Q(veh)	0.5	0.2	-	-	0.1	-	-	0.8

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	21	0	1028	71	75	73
Future Vol, veh/h	21	0	1028	71	75	73
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	150	0	-
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	87	87	79	79
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	25	0	1182	82	95	92

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1264	0	-	0	1232	591
Stage 1	-	-	-	-	1182	-
Stage 2	-	-	-	-	50	-
Critical Hdwy	4.13	-	-	-	6.63	6.93
Critical Hdwy Stg 1	-	-	-	-	5.83	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	2.219	-	-	-	3.519	3.319
Pot Cap-1 Maneuver	548	-	-	-	182	451
Stage 1	-	-	-	-	254	-
Stage 2	-	-	-	-	972	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	548	-	-	-	174	451
Mov Cap-2 Maneuver	-	-	-	-	216	-
Stage 1	-	-	-	-	242	-
Stage 2	-	-	-	-	972	-

Approach	EB	WB	SB
HCM Control Delay, s	11.9	0	24.7
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	548	-	-	-	216	451
HCM Lane V/C Ratio	0.045	-	-	-	0.44	0.205
HCM Control Delay (s)	11.9	0	-	-	34.1	15
HCM Lane LOS	B	A	-	-	D	C
HCM 95th %tile Q(veh)	0.1	-	-	-	2.1	0.8

Intersection	
Int Delay, s/veh	0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	513	10	0	0	0	29
Future Vol, veh/h	513	10	0	0	0	29
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	0
Veh in Median Storage, #	0	-	-	16983	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	558	11	0	0	0	32

Major/Minor	Major1			Minor1	
Conflicting Flow All	0	0		-	558
Stage 1	-	-		-	-
Stage 2	-	-		-	-
Critical Hdwy	-	-		-	6.22
Critical Hdwy Stg 1	-	-		-	-
Critical Hdwy Stg 2	-	-		-	-
Follow-up Hdwy	-	-		-	3.318
Pot Cap-1 Maneuver	-	-		0	529
Stage 1	-	-		0	-
Stage 2	-	-		0	-
Platoon blocked, %	-	-			
Mov Cap-1 Maneuver	-	-		-	529
Mov Cap-2 Maneuver	-	-		-	-
Stage 1	-	-		-	-
Stage 2	-	-		-	-

Approach	EB	NB
HCM Control Delay, s	0	12.2
HCM LOS		B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR
Capacity (veh/h)	529	-	-
HCM Lane V/C Ratio	0.06	-	-
HCM Control Delay (s)	12.2	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0.2	-	-

Intersection	
Int Delay, s/veh	1.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	596	21	3	1056	66	7
Future Vol, veh/h	596	21	3	1056	66	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	145	85	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	701	25	4	1242	78	8

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	726	0	1951	701
Stage 1	-	-	-	-	701	-
Stage 2	-	-	-	-	1250	-
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	-	-	877	-	~ 71	439
Stage 1	-	-	-	-	492	-
Stage 2	-	-	-	-	270	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	877	-	~ 71	439
Mov Cap-2 Maneuver	-	-	-	-	188	-
Stage 1	-	-	-	-	492	-
Stage 2	-	-	-	-	269	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	36.2
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	199	-	-	877	-
HCM Lane V/C Ratio	0.432	-	-	0.004	-
HCM Control Delay (s)	36.2	-	-	9.1	-
HCM Lane LOS	E	-	-	A	-
HCM 95th %tile Q(veh)	2	-	-	0	-

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

Intersection	
Int Delay, s/veh	39.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	330	81	458	133	53	409
Future Vol, veh/h	330	81	458	133	53	409
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	250	-	250	400	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	77	77	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	429	105	526	153	61	470

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1118	526	0	0	679	0
Stage 1	526	-	-	-	-	-
Stage 2	592	-	-	-	-	-
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	~ 229	552	-	-	913	-
Stage 1	593	-	-	-	-	-
Stage 2	553	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 214	552	-	-	913	-
Mov Cap-2 Maneuver	~ 349	-	-	-	-	-
Stage 1	593	-	-	-	-	-
Stage 2	516	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	129.4	0	1.1
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	349	552	913	-
HCM Lane V/C Ratio	-	-	1.228	0.191	0.067	-
HCM Control Delay (s)	-	-	157.9	13.1	9.2	-
HCM Lane LOS	-	-	F	B	A	-
HCM 95th %tile Q(veh)	-	-	18.6	0.7	0.2	-

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

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	330	81	458	133	53	409
Future Volume (vph)	330	81	458	133	53	409
Turn Type	Prot	Perm	NA	Perm	Perm	NA
Protected Phases	8		2			6
Permitted Phases		8		2	6	
Detector Phase	8	8	2	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.0	23.0	23.0	23.0	23.0	23.0
Total Split (s)	35.0	35.0	65.0	65.0	65.0	65.0
Total Split (%)	35.0%	35.0%	65.0%	65.0%	65.0%	65.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	Max	Max	Max	Max
Act Effct Green (s)	26.8	26.8	60.1	60.1	60.1	60.1
Actuated g/C Ratio	0.28	0.28	0.62	0.62	0.62	0.62
v/c Ratio	0.88	0.20	0.46	0.15	0.14	0.41
Control Delay	53.7	6.4	11.9	1.8	9.5	11.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.7	6.4	11.9	1.8	9.5	11.2
LOS	D	A	B	A	A	B
Approach Delay	44.4		9.6			11.0
Approach LOS	D		A			B

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 96.9	
Natural Cycle: 50	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay: 20.7	Intersection LOS: C
Intersection Capacity Utilization 59.1%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 5: Marksheffel Rd & Lorson Blvd

Intersection	
Int Delay, s/veh	5.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	14	3	5	5	2	6	0	19	11	0	5
Future Vol, veh/h	4	14	3	5	5	2	6	0	19	11	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	15	3	5	5	2	7	0	21	12	0	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	7	0	0	18	0	0	44	42	17	51	42	6
Stage 1	-	-	-	-	-	-	25	25	-	16	16	-
Stage 2	-	-	-	-	-	-	19	17	-	35	26	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1614	-	-	1599	-	-	958	850	1062	948	850	1077
Stage 1	-	-	-	-	-	-	993	874	-	1004	882	-
Stage 2	-	-	-	-	-	-	1000	881	-	981	874	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1614	-	-	1599	-	-	948	845	1062	925	845	1077
Mov Cap-2 Maneuver	-	-	-	-	-	-	948	845	-	925	845	-
Stage 1	-	-	-	-	-	-	990	871	-	1001	879	-
Stage 2	-	-	-	-	-	-	992	878	-	959	871	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.4	3	8.6	8.8
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	1032	1614	-	-	1599	-	-	968
HCM Lane V/C Ratio	0.026	0.003	-	-	0.003	-	-	0.018
HCM Control Delay (s)	8.6	7.2	0	-	7.3	0	-	8.8
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	39	7	36	120	5
Future Vol, veh/h	5	39	7	36	120	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	42	8	39	130	5

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	188	133	135	0	-	0
Stage 1	133	-	-	-	-	-
Stage 2	55	-	-	-	-	-
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	801	916	1449	-	-	-
Stage 1	893	-	-	-	-	-
Stage 2	968	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	796	916	1449	-	-	-
Mov Cap-2 Maneuver	781	-	-	-	-	-
Stage 1	888	-	-	-	-	-
Stage 2	968	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.2	1.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1449	-	898	-	-
HCM Lane V/C Ratio	0.005	-	0.053	-	-
HCM Control Delay (s)	7.5	0	9.2	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection	
Int Delay, s/veh	3.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	43	64	0	0	15	43	21	0	158	0
Future Vol, veh/h	0	0	43	64	0	0	15	43	21	0	158	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	-	-	-	-	-	-	105	-	155	105	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	47	70	0	0	16	47	23	0	172	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	263	274	172	275	251	47	172	0	0	70	0	0
Stage 1	172	172	-	79	79	-	-	-	-	-	-	-
Stage 2	91	102	-	196	172	-	-	-	-	-	-	-
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	690	633	872	677	652	1022	1405	-	-	1531	-	-
Stage 1	830	756	-	930	829	-	-	-	-	-	-	-
Stage 2	916	811	-	806	756	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	684	626	872	635	645	1022	1405	-	-	1531	-	-
Mov Cap-2 Maneuver	684	626	-	635	645	-	-	-	-	-	-	-
Stage 1	821	756	-	920	820	-	-	-	-	-	-	-
Stage 2	906	802	-	763	756	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.4	11.4	1.4	0
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1405	-	-	872	635	1531	-	-
HCM Lane V/C Ratio	0.012	-	-	0.054	0.11	-	-	-
HCM Control Delay (s)	7.6	-	-	9.4	11.4	0	-	-
HCM Lane LOS	A	-	-	A	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.4	0	-	-

Intersection	
Int Delay, s/veh	9.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	69	35	63	13	103	0	215	11	4	0	33	232
Future Vol, veh/h	69	35	63	13	103	0	215	11	4	0	33	232
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	205	-	155	205	-	155	205	-	155	205	-	155
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	75	38	68	14	112	0	234	12	4	0	36	252

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	574	520	36	695	768	12	288	0	0	16	0	0
Stage 1	36	36	-	480	480	-	-	-	-	-	-	-
Stage 2	538	484	-	215	288	-	-	-	-	-	-	-
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	430	461	1037	357	332	1069	1274	-	-	1602	-	-
Stage 1	980	865	-	567	554	-	-	-	-	-	-	-
Stage 2	527	552	-	787	674	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	253	376	1037	265	271	1069	1274	-	-	1602	-	-
Mov Cap-2 Maneuver	253	376	-	265	271	-	-	-	-	-	-	-
Stage 1	800	865	-	463	452	-	-	-	-	-	-	-
Stage 2	324	450	-	703	674	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16.9	26.4	7.9	0
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBL	SBT	SBR
Capacity (veh/h)	1274	-	-	253	376	1037	265	271	-	1602	-	-
HCM Lane V/C Ratio	0.183	-	-	0.296	0.101	0.066	0.053	0.413	-	-	-	-
HCM Control Delay (s)	8.5	-	-	25.1	15.6	8.7	19.3	27.3	0	0	-	-
HCM Lane LOS	A	-	-	D	C	A	C	D	A	A	-	-
HCM 95th %tile Q(veh)	0.7	-	-	1.2	0.3	0.2	0.2	1.9	-	0	-	-

Intersection	
Int Delay, s/veh	15.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	69	35	63	13	103	0	215	11	4	0	33	232
Future Vol, veh/h	69	35	63	13	103	0	215	11	4	0	33	232
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	205	-	155	205	-	155	205	-	155	205	-	155
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	75	38	68	14	112	0	234	12	4	0	36	252

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	112	0	0	106	0	0	472	328	38	370	396	112
Stage 1	-	-	-	-	-	-	188	188	-	140	140	-
Stage 2	-	-	-	-	-	-	284	140	-	230	256	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1478	-	-	1485	-	-	502	591	1034	587	541	941
Stage 1	-	-	-	-	-	-	814	745	-	863	781	-
Stage 2	-	-	-	-	-	-	723	781	-	773	696	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1478	-	-	1485	-	-	332	556	1034	549	509	941
Mov Cap-2 Maneuver	-	-	-	-	-	-	332	556	-	549	509	-
Stage 1	-	-	-	-	-	-	772	707	-	819	774	-
Stage 2	-	-	-	-	-	-	500	774	-	718	661	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	3.1	0.8	36.2	10.5
HCM LOS			E	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	332	556	1034	1478	-	-	1485	-	-	-	509	941
HCM Lane V/C Ratio	0.704	0.022	0.004	0.051	-	-	0.01	-	-	-	0.07	0.268
HCM Control Delay (s)	38	11.6	8.5	7.6	-	-	7.4	-	-	0	12.6	10.2
HCM Lane LOS	E	B	A	A	-	-	A	-	-	A	B	B
HCM 95th %tile Q(veh)	5.1	0.1	0	0.2	-	-	0	-	-	-	0.2	1.1

HCM 6th AWSC Short-Term Total Traffic
10: Walleye Dr & Fontaine Blvd AM Peak Hour

Intersection	
Intersection Delay, s/veh	11.8
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	1	1	1	1	1	1	1	1	1	1	1	1
Traffic Vol, veh/h	69	35	63	13	103	1	215	11	4	1	33	232
Future Vol, veh/h	69	35	63	13	103	1	215	11	4	1	33	232
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	75	38	68	14	112	1	234	12	4	1	36	252
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1

Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	3			3			3			3		
Conflicting Approach Left		SB			NB			EB			WB	
Conflicting Lanes Left	3			3			3			3		
Conflicting Approach Right		NB			SB			WB			EB	
Conflicting Lanes Right		3			3			3			3	
HCM Control Delay	10			10.9			14			11.3		
HCM LOS	A			B			B			B		

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%
Vol Right, %	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	215	11	4	69	35	63	13	103	1	1	33	232
LT Vol	215	0	0	69	0	0	13	0	0	1	0	0
Through Vol	0	11	0	0	35	0	0	103	0	0	33	0

RT Vol	0	0	4	0	0	63	0	0	1	0	0	232
Lane Flow Rate	234	12	4	75	38	68	14	112	1	1	36	252
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.432	0.02	0.007	0.145	0.068	0.11	0.028	0.205	0.002	0.002	0.062	0.384
Departure Headway (Hd)	6.656	6.156	5.456	6.982	6.482	5.782	7.09	6.59	5.89	6.681	6.181	5.481
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	542	581	655	513	552	618	504	544	606	536	579	656
Service Time	4.397	3.897	3.197	4.732	4.232	3.532	4.84	4.34	3.64	4.422	3.922	3.222
HCM Lane V/C Ratio	0.432	0.021	0.006	0.146	0.069	0.11	0.028	0.206	0.002	0.002	0.062	0.384
HCM Control Delay	14.4	9	8.2	10.9	9.7	9.3	10	11	8.7	9.4	9.3	11.6
HCM Lane LOS	B	A	A	B	A	A	A	B	A	A	A	B
HCM 95th-tile Q	2.2	0.1	0	0.5	0.2	0.4	0.1	0.8	0	0	0.2	1.8

Intersection	
Int Delay, s/veh	5.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	46	0	22	24	0	81	8	103	8	26	69	14
Future Vol, veh/h	46	0	22	24	0	81	8	103	8	26	69	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	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	205	-	-	205	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	50	0	24	26	0	88	9	112	9	28	75	15

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	318	278	83	286	281	117	90	0	0	121	0	0
Stage 1	139	139	-	135	135	-	-	-	-	-	-	-
Stage 2	179	139	-	151	146	-	-	-	-	-	-	-
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	635	630	976	666	627	935	1505	-	-	1467	-	-
Stage 1	864	782	-	868	785	-	-	-	-	-	-	-
Stage 2	823	782	-	851	776	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	565	614	976	637	611	935	1505	-	-	1467	-	-
Mov Cap-2 Maneuver	565	614	-	637	611	-	-	-	-	-	-	-
Stage 1	859	767	-	863	780	-	-	-	-	-	-	-
Stage 2	741	777	-	814	761	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.2	9.9	0.5	1.8
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1505	-	-	654	845	1467	-	-
HCM Lane V/C Ratio	0.006	-	-	0.113	0.135	0.019	-	-
HCM Control Delay (s)	7.4	-	-	11.2	9.9	7.5	-	-
HCM Lane LOS	A	-	-	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.4	0.5	0.1	-	-

Intersection	
Int Delay, s/veh	4.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	28	0	15	29	0	50	6	40	14	14	93	7
Future Vol, veh/h	28	0	15	29	0	50	6	40	14	14	93	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	205	-	-	205	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	30	0	16	32	0	54	7	43	15	15	101	8

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	227	207	105	208	204	51	109	0	0	58	0	0
Stage 1	135	135	-	65	65	-	-	-	-	-	-	-
Stage 2	92	72	-	143	139	-	-	-	-	-	-	-
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	728	690	949	749	692	1017	1481	-	-	1546	-	-
Stage 1	868	785	-	946	841	-	-	-	-	-	-	-
Stage 2	915	835	-	860	782	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	681	680	949	728	682	1017	1481	-	-	1546	-	-
Mov Cap-2 Maneuver	681	680	-	728	682	-	-	-	-	-	-	-
Stage 1	864	777	-	941	837	-	-	-	-	-	-	-
Stage 2	862	831	-	837	774	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.1	9.5	0.7	0.9
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1481	-	-	755	888	1546	-	-
HCM Lane V/C Ratio	0.004	-	-	0.062	0.097	0.01	-	-
HCM Control Delay (s)	7.4	-	-	10.1	9.5	7.4	-	-
HCM Lane LOS	A	-	-	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.3	0	-	-

Intersection	
Int Delay, s/veh	6.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	58	16	46	2	0	137
Future Vol, veh/h	58	16	46	2	0	137
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	205	-	-	-	205	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	63	17	50	2	0	149

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	52	0	-	0	194	51
Stage 1	-	-	-	-	51	-
Stage 2	-	-	-	-	143	-
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	1554	-	-	-	795	1017
Stage 1	-	-	-	-	971	-
Stage 2	-	-	-	-	884	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1554	-	-	-	762	1017
Mov Cap-2 Maneuver	-	-	-	-	760	-
Stage 1	-	-	-	-	931	-
Stage 2	-	-	-	-	884	-

Approach	EB	WB	SB
HCM Control Delay, s	5.8	0	9.1
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1554	-	-	-	-	1017
HCM Lane V/C Ratio	0.041	-	-	-	-	0.146
HCM Control Delay (s)	7.4	-	-	-	0	9.1
HCM Lane LOS	A	-	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	-	-	0.5

Intersection	
Int Delay, s/veh	4.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	10	6	20	0	0	29
Future Vol, veh/h	10	6	20	0	0	29
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	205	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	7	22	0	0	32

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	22	0	-	0	51	22
Stage 1	-	-	-	-	22	-
Stage 2	-	-	-	-	29	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1593	-	-	-	958	1055
Stage 1	-	-	-	-	1001	-
Stage 2	-	-	-	-	994	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1593	-	-	-	951	1055
Mov Cap-2 Maneuver	-	-	-	-	888	-
Stage 1	-	-	-	-	994	-
Stage 2	-	-	-	-	994	-

Approach	EB	WB	SB
HCM Control Delay, s	4.5	0	8.5
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1593	-	-	-	1055
HCM Lane V/C Ratio	0.007	-	-	-	0.03
HCM Control Delay (s)	7.3	-	-	-	8.5
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	7.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	17	1	22	0	1	0	65	0	0	0	0	51
Future Vol, veh/h	17	1	22	0	1	0	65	0	0	0	0	51
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	205	-	155	205	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	18	1	24	0	1	0	71	0	0	0	0	55

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1	0	0	25	0	0	66	38	1	50	62	1
Stage 1	-	-	-	-	-	-	37	37	-	1	1	-
Stage 2	-	-	-	-	-	-	29	1	-	49	61	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1622	-	-	1589	-	-	927	854	1084	950	829	1084
Stage 1	-	-	-	-	-	-	978	864	-	1022	895	-
Stage 2	-	-	-	-	-	-	988	895	-	964	844	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1622	-	-	1589	-	-	872	845	1084	942	820	1084
Mov Cap-2 Maneuver	-	-	-	-	-	-	872	845	-	942	820	-
Stage 1	-	-	-	-	-	-	967	854	-	1011	895	-
Stage 2	-	-	-	-	-	-	937	895	-	953	835	-

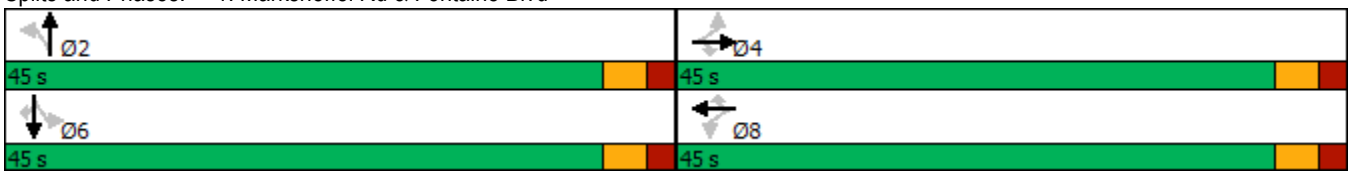
Approach	EB	WB	NB	SB
HCM Control Delay, s	3.1	0	9.5	8.5
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	872	1622	-	-	1589	-	-	1084
HCM Lane V/C Ratio	0.081	0.011	-	-	-	-	-	0.051
HCM Control Delay (s)	9.5	7.2	-	-	0	-	-	8.5
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	0.2

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	51	816	69	159	452	295	70	258	310	551	403	33
Future Volume (vph)	51	816	69	159	452	295	70	258	310	551	403	33
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Free	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		Free	6		6
Detector Phase	4	4	4	8	8	8	2	2		6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0		23.0	23.0	23.0
Total Split (s)	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0		45.0	45.0	45.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%		50.0%	50.0%	50.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None	None	Max	Max		Max	Max	Max
Act Effct Green (s)	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	90.0	40.0	40.0	40.0
Actuated g/C Ratio	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	1.00	0.44	0.44	0.44
v/c Ratio	0.17	0.60	0.11	1.12	0.33	0.38	0.24	0.33	0.21	1.31	0.51	0.05
Control Delay	16.8	20.9	11.2	133.4	17.0	3.1	18.1	17.8	0.3	182.3	20.6	5.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.8	20.9	11.2	133.4	17.0	3.1	18.1	17.8	0.3	182.3	20.6	5.2
LOS	B	C	B	F	B	A	B	B	A	F	C	A
Approach Delay		19.9			33.0			9.3			110.4	
Approach LOS		B			C			A			F	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Natural Cycle: 50	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 1.31	
Intersection Signal Delay: 45.8	Intersection LOS: D
Intersection Capacity Utilization 92.1%	ICU Level of Service F
Analysis Period (min) 15	

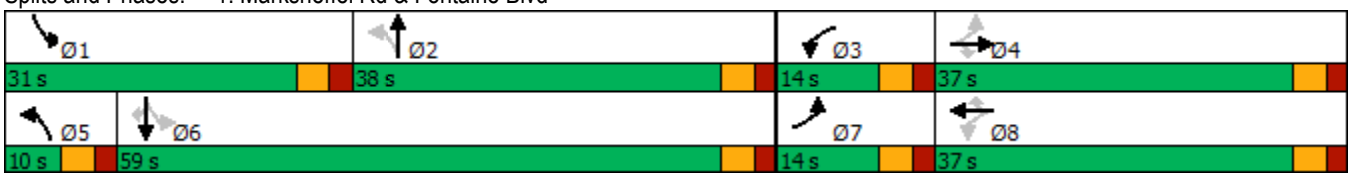
Splits and Phases: 1: Marksheffel Rd & Fontaine Blvd



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	51	816	69	159	452	295	70	258	310	551	403	33
Future Volume (vph)	51	816	69	159	452	295	70	258	310	551	403	33
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Free	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		Free	6		6
Detector Phase	7	4	4	3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	23.0		15.0	23.0	23.0
Minimum Split (s)	10.0	23.0	23.0	10.0	23.0	23.0	10.0	28.0		20.0	28.0	28.0
Total Split (s)	14.0	37.0	37.0	14.0	37.0	37.0	10.0	38.0		31.0	59.0	59.0
Total Split (%)	11.7%	30.8%	30.8%	11.7%	30.8%	30.8%	8.3%	31.7%		25.8%	49.2%	49.2%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min		None	Min	Min
Act Effct Green (s)	39.5	32.0	32.0	42.8	35.7	35.7	29.5	24.5	111.6	55.6	47.6	47.6
Actuated g/C Ratio	0.35	0.29	0.29	0.38	0.32	0.32	0.26	0.22	1.00	0.50	0.43	0.43
v/c Ratio	0.19	0.92	0.14	0.89	0.46	0.46	0.26	0.68	0.21	1.04	0.53	0.05
Control Delay	22.3	54.3	0.5	66.8	33.2	5.7	20.2	49.0	0.3	73.9	27.3	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.3	54.3	0.5	66.8	33.2	5.7	20.2	49.0	0.3	73.9	27.3	0.1
LOS	C	D	A	E	C	A	C	D	A	E	C	A
Approach Delay		48.6			30.2			22.2			52.4	
Approach LOS		D			C			C			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 111.6	
Natural Cycle: 95	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.04	
Intersection Signal Delay: 39.9	Intersection LOS: D
Intersection Capacity Utilization 97.7%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 1: Marksheffel Rd & Fontaine Blvd



SimTraffic Performance Report

2: Old Glory Dr & Fontaine Blvd Performance by movement Interval #1 5:00

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Stop Del/Veh (s)	10.4	10.5	9.5	3.0	4.6	7.7	2.7	9.8	5.7	3.8	6.4	8.2

2: Old Glory Dr & Fontaine Blvd Performance by movement Interval #1 5:00

Movement	SBR	All
Stop Del/Veh (s)	6.6	8.5

2: Old Glory Dr & Fontaine Blvd Performance by movement Interval #2 5:15

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Stop Del/Veh (s)	28.8	30.5	49.2	3.3	7.0	27.2	2.1	13.7	10.6	6.1	8.1	13.4

2: Old Glory Dr & Fontaine Blvd Performance by movement Interval #2 5:15

Movement	SBR	All
Stop Del/Veh (s)	11.9	33.7

2: Old Glory Dr & Fontaine Blvd Performance by movement Interval #3 5:30

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Stop Del/Veh (s)	13.6	13.9	47.1	3.0	9.8	10.9	2.9	9.3	6.3	3.3	9.1	5.2

2: Old Glory Dr & Fontaine Blvd Performance by movement Interval #3 5:30

Movement	SBR	All
Stop Del/Veh (s)	6.7	27.1

2: Old Glory Dr & Fontaine Blvd Performance by movement Interval #4 5:45

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Stop Del/Veh (s)	13.3	11.2	10.7	3.2	5.0	7.5	3.3	7.5	8.7	6.4	7.9	10.0

2: Old Glory Dr & Fontaine Blvd Performance by movement Interval #4 5:45

Movement	SBR	All
Stop Del/Veh (s)	6.0	9.0

2: Old Glory Dr & Fontaine Blvd Performance by movement Entire Run

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Stop Del/Veh (s)	17.0	17.9	33.0	3.2	6.3	14.7	3.4	10.6	8.3	5.3	8.7	9.8

2: Old Glory Dr & Fontaine Blvd Performance by movement Entire Run

Movement	SBR	All
Stop Del/Veh (s)	8.3	21.6

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	24	252	1147	182	5	668	4	123	10	5	10	8
Future Volume (vph)	24	252	1147	182	5	668	4	123	10	5	10	8
Turn Type	pm+pt	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA
Protected Phases	5	5	2		1	6		3	8		7	4
Permitted Phases	2	2		2	6		6	8		8	4	
Detector Phase	5	5	2	2	1	6	6	3	8	8	7	4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	15.0	15.0	15.0	15.0
Minimum Split (s)	10.0	10.0	23.0	23.0	10.0	23.0	23.0	10.0	23.0	23.0	20.0	20.0
Total Split (s)	15.0	15.0	65.0	65.0	10.0	60.0	60.0	15.0	30.0	30.0	15.0	30.0
Total Split (%)	12.5%	12.5%	54.2%	54.2%	8.3%	50.0%	50.0%	12.5%	25.0%	25.0%	12.5%	25.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None
Act Effct Green (s)		80.1	77.9	77.9	65.0	59.3	59.3	28.9	26.9	26.9	25.0	15.0
Actuated g/C Ratio		0.67	0.65	0.65	0.54	0.49	0.49	0.24	0.22	0.22	0.21	0.12
v/c Ratio		0.67	0.58	0.19	0.03	0.44	0.01	0.50	0.03	0.01	0.04	0.04
Control Delay		15.4	13.7	1.8	10.4	29.9	0.0	43.9	40.5	0.0	34.6	46.9
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		15.4	13.7	1.8	10.4	29.9	0.0	43.9	40.5	0.0	34.6	46.9
LOS		B	B	A	B	C	A	D	D	A	C	D
Approach Delay			12.6			29.5			42.1			15.5
Approach LOS			B			C			D			B

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.67	
Intersection Signal Delay: 18.9	Intersection LOS: B
Intersection Capacity Utilization 69.7%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 2: Old Glory Dr & Fontaine Blvd

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	141
Future Volume (vph)	141
Turn Type	Perm
Protected Phases	
Permitted Phases	4
Detector Phase	4
Switch Phase	
Minimum Initial (s)	15.0
Minimum Split (s)	20.0
Total Split (s)	30.0
Total Split (%)	25.0%
Yellow Time (s)	3.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	0.0
Total Lost Time (s)	5.0
Lead/Lag	Lag
Lead-Lag Optimize?	Yes
Recall Mode	None
Act Effct Green (s)	15.0
Actuated g/C Ratio	0.12
v/c Ratio	0.49
Control Delay	12.3
Queue Delay	0.0
Total Delay	12.3
LOS	B
Approach Delay	
Approach LOS	

Intersection Summary

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	93	1022	47	8	630	7	0	0	3	0	0	47
Future Vol, veh/h	93	1022	47	8	630	7	0	0	3	0	0	47
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	275	-	275	150	-	150	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	83	83	83	63	63	63	78	78	78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	98	1076	49	10	759	8	0	0	5	0	0	60

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	767	0	0	1125	0	0	-	-	1076	-	-	380
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.13	-	-	4.13	-	-	-	-	6.23	-	-	6.93
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.219	-	-	2.219	-	-	-	-	3.319	-	-	3.319
Pot Cap-1 Maneuver	845	-	-	619	-	-	0	0	266	0	0	619
Stage 1	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	845	-	-	619	-	-	-	-	266	-	-	619
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	0.1	18.8	11.4
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	266	845	-	-	619	-	-	619
HCM Lane V/C Ratio	0.018	0.116	-	-	0.016	-	-	0.097
HCM Control Delay (s)	18.8	9.8	-	-	10.9	-	-	11.4
HCM Lane LOS	C	A	-	-	B	-	-	B
HCM 95th %tile Q(veh)	0.1	0.4	-	-	0	-	-	0.3

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	93	0	630	7	7	47
Future Vol, veh/h	93	0	630	7	7	47
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	150	0	-
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	83	83	78	78
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	98	0	759	8	9	60

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	767	0	-	0	955	380
Stage 1	-	-	-	-	759	-
Stage 2	-	-	-	-	196	-
Critical Hdwy	4.13	-	-	-	6.63	6.93
Critical Hdwy Stg 1	-	-	-	-	5.83	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	2.219	-	-	-	3.519	3.319
Pot Cap-1 Maneuver	845	-	-	-	271	619
Stage 1	-	-	-	-	424	-
Stage 2	-	-	-	-	836	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	845	-	-	-	240	619
Mov Cap-2 Maneuver	-	-	-	-	320	-
Stage 1	-	-	-	-	375	-
Stage 2	-	-	-	-	836	-

Approach	EB	WB	SB
HCM Control Delay, s	9.8	0	12.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	845	-	-	-	320	619
HCM Lane V/C Ratio	0.116	-	-	-	0.028	0.097
HCM Control Delay (s)	9.8	0	-	-	16.6	11.4
HCM Lane LOS	A	A	-	-	C	B
HCM 95th %tile Q(veh)	0.4	-	-	-	0.1	0.3

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↱				↱
Traffic Vol, veh/h	1015	47	0	0	0	3
Future Vol, veh/h	1015	47	0	0	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	0
Veh in Median Storage, #	0	-	-	16983	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	83	83	63	63
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1068	49	0	0	0	5

Major/Minor	Major1			Minor1	
Conflicting Flow All	0	0		-	1068
Stage 1	-	-		-	-
Stage 2	-	-		-	-
Critical Hdwy	-	-		-	6.22
Critical Hdwy Stg 1	-	-		-	-
Critical Hdwy Stg 2	-	-		-	-
Follow-up Hdwy	-	-		-	3.318
Pot Cap-1 Maneuver	-	-		0	269
Stage 1	-	-		0	-
Stage 2	-	-		0	-
Platoon blocked, %	-	-			
Mov Cap-1 Maneuver	-	-		-	269
Mov Cap-2 Maneuver	-	-		-	-
Stage 1	-	-		-	-
Stage 2	-	-		-	-

Approach	EB	NB
HCM Control Delay, s	0	18.6
HCM LOS		C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR
Capacity (veh/h)	269	-	-
HCM Lane V/C Ratio	0.018	-	-
HCM Control Delay (s)	18.6	-	-
HCM Lane LOS	C	-	-
HCM 95th %tile Q(veh)	0.1	-	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	946	79	2	598	47	1
Future Vol, veh/h	946	79	2	598	47	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	145	85	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1113	93	2	704	55	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1206	0	1821	1113
Stage 1	-	-	-	-	1113	-
Stage 2	-	-	-	-	708	-
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	-	-	579	-	85	254
Stage 1	-	-	-	-	314	-
Stage 2	-	-	-	-	488	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	579	-	85	254
Mov Cap-2 Maneuver	-	-	-	-	211	-
Stage 1	-	-	-	-	314	-
Stage 2	-	-	-	-	487	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	28
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	212	-	-	579	-
HCM Lane V/C Ratio	0.266	-	-	0.004	-
HCM Control Delay (s)	28	-	-	11.2	-
HCM Lane LOS	D	-	-	B	-
HCM 95th %tile Q(veh)	1	-	-	0	-

Intersection	
Int Delay, s/veh	19.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	255	79	560	431	67	560
Future Vol, veh/h	255	79	560	431	67	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	250	-	250	400	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	83	83	89	89	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	307	95	629	484	74	615

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1392	629	0	0	1113	0
Stage 1	629	-	-	-	-	-
Stage 2	763	-	-	-	-	-
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	~ 156	482	-	-	627	-
Stage 1	531	-	-	-	-	-
Stage 2	460	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 138	482	-	-	627	-
Mov Cap-2 Maneuver	~ 271	-	-	-	-	-
Stage 1	531	-	-	-	-	-
Stage 2	406	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	107.2	0	1.2
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	271	482	627	-
HCM Lane V/C Ratio	-	-	1.134	0.197	0.117	-
HCM Control Delay (s)	-	-	136	14.3	11.5	-
HCM Lane LOS	-	-	F	B	B	-
HCM 95th %tile Q(veh)	-	-	13.2	0.7	0.4	-

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

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	255	79	560	431	67	560
Future Volume (vph)	255	79	560	431	67	560
Turn Type	Prot	Perm	NA	Perm	Perm	NA
Protected Phases	8		2			6
Permitted Phases		8		2	6	
Detector Phase	8	8	2	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.0	23.0	23.0	23.0	23.0	23.0
Total Split (s)	35.0	35.0	65.0	65.0	65.0	65.0
Total Split (%)	35.0%	35.0%	65.0%	65.0%	65.0%	65.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	Max	Max	Max	Max
Act Effct Green (s)	20.8	20.8	60.3	60.3	60.3	60.3
Actuated g/C Ratio	0.23	0.23	0.66	0.66	0.66	0.66
v/c Ratio	0.76	0.22	0.51	0.40	0.17	0.50
Control Delay	45.4	7.1	10.7	1.8	8.6	10.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.4	7.1	10.7	1.8	8.6	10.5
LOS	D	A	B	A	A	B
Approach Delay	36.3		6.8			10.3
Approach LOS	D		A			B

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 91.1	
Natural Cycle: 55	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.76	
Intersection Signal Delay: 13.3	Intersection LOS: B
Intersection Capacity Utilization 60.3%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 5: Marksheffel Rd & Lorson Blvd

Intersection	
Int Delay, s/veh	5.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	7	8	8	19	3	8	4	0	12	6	0	3
Future Vol, veh/h	7	8	8	19	3	8	4	0	12	6	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	9	9	21	3	9	4	0	13	7	0	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	12	0	0	18	0	0	81	84	14	86	84	8
Stage 1	-	-	-	-	-	-	30	30	-	50	50	-
Stage 2	-	-	-	-	-	-	51	54	-	36	34	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1607	-	-	1599	-	-	907	806	1066	900	806	1074
Stage 1	-	-	-	-	-	-	987	870	-	963	853	-
Stage 2	-	-	-	-	-	-	962	850	-	980	867	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1607	-	-	1599	-	-	892	791	1066	877	791	1074
Mov Cap-2 Maneuver	-	-	-	-	-	-	892	791	-	877	791	-
Stage 1	-	-	-	-	-	-	982	866	-	958	842	-
Stage 2	-	-	-	-	-	-	947	839	-	963	863	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.2	4.6	8.6	8.9
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	1016	1607	-	-	1599	-	-	934
HCM Lane V/C Ratio	0.017	0.005	-	-	0.013	-	-	0.01
HCM Control Delay (s)	8.6	7.3	0	-	7.3	0	-	8.9
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	7	18	27	135	80	3
Future Vol, veh/h	7	18	27	135	80	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	20	29	147	87	3

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	294	89	90	0	-	0
Stage 1	89	-	-	-	-	-
Stage 2	205	-	-	-	-	-
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	697	969	1505	-	-	-
Stage 1	934	-	-	-	-	-
Stage 2	829	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	682	969	1505	-	-	-
Mov Cap-2 Maneuver	705	-	-	-	-	-
Stage 1	914	-	-	-	-	-
Stage 2	829	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.2	1.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1505	-	877	-	-
HCM Lane V/C Ratio	0.02	-	0.031	-	-
HCM Control Delay (s)	7.4	0	9.2	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	29	42	0	0	50	162	72	0	98	0
Future Vol, veh/h	0	0	29	42	0	0	50	162	72	0	98	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	-	-	-	-	-	-	105	-	155	105	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	32	46	0	0	54	176	78	0	107	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	430	469	107	407	391	176	107	0	0	254	0	0
Stage 1	107	107	-	284	284	-	-	-	-	-	-	-
Stage 2	323	362	-	123	107	-	-	-	-	-	-	-
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	535	492	947	555	545	867	1484	-	-	1311	-	-
Stage 1	898	807	-	723	676	-	-	-	-	-	-	-
Stage 2	689	625	-	881	807	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	520	474	947	522	525	867	1484	-	-	1311	-	-
Mov Cap-2 Maneuver	520	474	-	522	525	-	-	-	-	-	-	-
Stage 1	866	807	-	697	652	-	-	-	-	-	-	-
Stage 2	664	603	-	852	807	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.9	12.6	1.3	0
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1484	-	-	947	522	1311	-	-
HCM Lane V/C Ratio	0.037	-	-	0.033	0.087	-	-	-
HCM Control Delay (s)	7.5	-	-	8.9	12.6	0	-	-
HCM Lane LOS	A	-	-	A	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.3	0	-	-

Intersection	
Int Delay, s/veh	11.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	244	114	223	9	67	0	134	40	16	0	23	146
Future Vol, veh/h	244	114	223	9	67	0	134	40	16	0	23	146
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	205	-	155	205	-	155	205	-	155	205	-	155
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	265	124	242	10	73	0	146	43	17	0	25	159

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	405	377	25	623	519	43	184	0	0	60	0	0
Stage 1	25	25	-	335	335	-	-	-	-	-	-	-
Stage 2	380	352	-	288	184	-	-	-	-	-	-	-
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	556	555	1051	398	461	1027	1391	-	-	1544	-	-
Stage 1	993	874	-	679	643	-	-	-	-	-	-	-
Stage 2	642	632	-	720	747	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	443	497	1051	228	413	1027	1391	-	-	1544	-	-
Mov Cap-2 Maneuver	443	497	-	228	413	-	-	-	-	-	-	-
Stage 1	889	874	-	608	575	-	-	-	-	-	-	-
Stage 2	502	566	-	475	747	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16.8	16.3	5.6	0
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBL	SBT	SBR
Capacity (veh/h)	1391	-	-	443	497	1051	228	413	-	1544	-	-
HCM Lane V/C Ratio	0.105	-	-	0.599	0.249	0.231	0.043	0.176	-	-	-	-
HCM Control Delay (s)	7.9	-	-	24.5	14.6	9.4	21.5	15.6	0	0	-	-
HCM Lane LOS	A	-	-	C	B	A	C	C	A	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	3.8	1	0.9	0.1	0.6	-	0	-	-

Intersection	
Int Delay, s/veh	14.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	244	114	223	9	67	0	134	40	16	0	23	146
Future Vol, veh/h	244	114	223	9	67	0	134	40	16	0	23	146
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	205	-	155	205	-	155	205	-	155	205	-	155
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	265	124	242	10	73	0	146	43	17	0	25	159

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	73	0	0	366	0	0	839	747	124	898	989	73
Stage 1	-	-	-	-	-	-	654	654	-	93	93	-
Stage 2	-	-	-	-	-	-	185	93	-	805	896	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1527	-	-	1193	-	-	285	341	927	260	247	989
Stage 1	-	-	-	-	-	-	456	463	-	914	818	-
Stage 2	-	-	-	-	-	-	817	818	-	376	359	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1527	-	-	1193	-	-	187	279	927	194	202	989
Mov Cap-2 Maneuver	-	-	-	-	-	-	187	279	-	194	202	-
Stage 1	-	-	-	-	-	-	377	382	-	755	811	-
Stage 2	-	-	-	-	-	-	659	811	-	270	297	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	3.3	1	54.8	11.5
HCM LOS			F	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	187	279	927	1527	-	-	1193	-	-	-	202	989
HCM Lane V/C Ratio	0.779	0.156	0.019	0.174	-	-	0.008	-	-	-	0.124	0.16
HCM Control Delay (s)	70.5	20.3	9	7.9	-	-	8	-	-	0	25.3	9.3
HCM Lane LOS	F	C	A	A	-	-	A	-	-	A	D	A
HCM 95th %tile Q(veh)	5.2	0.5	0.1	0.6	-	-	0	-	-	-	0.4	0.6

HCM 6th AWSC Short Term Total Traffic
10: Walleye Dr & Fontaine Blvd PM Peak Hour

Intersection	
Intersection Delay, s/veh	12.3
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	1	1	1	1	1	1	1	1	1	1	1	1
Traffic Vol, veh/h	244	114	223	9	67	1	134	40	16	1	23	146
Future Vol, veh/h	244	114	223	9	67	1	134	40	16	1	23	146
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	265	124	242	10	73	1	146	43	17	1	25	159
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1

Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	3			3			3			3		
Conflicting Approach Left		SB			NB			EB			WB	
Conflicting Lanes Left	3			3			3			3		
Conflicting Approach Right		NB			SB			WB			EB	
Conflicting Lanes Right		3			3			3			3	
HCM Control Delay	12.8			11			12.3			11.3		
HCM LOS	B			B			B			B		

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%
Vol Right, %	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	134	40	16	244	114	223	9	67	1	1	23	146
LT Vol	134	0	0	244	0	0	9	0	0	1	0	0
Through Vol	0	40	0	0	114	0	0	67	0	0	23	0

RT Vol	0	0	16	0	0	223	0	0	1	0	0	146
Lane Flow Rate	146	43	17	265	124	242	10	73	1	1	25	159
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.299	0.083	0.03	0.485	0.209	0.362	0.021	0.144	0.002	0.002	0.049	0.278
Departure Headway (Hd)	7.398	6.898	6.198	6.583	6.083	5.383	7.614	7.114	6.414	7.502	7.002	6.302
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	485	518	575	546	589	667	468	502	555	476	510	568
Service Time	5.16	4.66	3.96	4.331	3.831	3.131	5.386	4.886	4.186	5.263	4.763	4.063
HCM Lane V/C Ratio	0.301	0.083	0.03	0.485	0.211	0.363	0.021	0.145	0.002	0.002	0.049	0.28
HCM Control Delay	13.3	10.3	9.2	15.4	10.4	11.2	10.6	11.1	9.2	10.3	10.1	11.5
HCM Lane LOS	B	B	A	C	B	B	B	B	A	B	B	B
HCM 95th-tile Q	1.2	0.3	0.1	2.6	0.8	1.7	0.1	0.5	0	0	0.2	1.1

Intersection	
Int Delay, s/veh	4.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	29	0	15	17	0	51	27	109	29	87	120	49
Future Vol, veh/h	29	0	15	17	0	51	27	109	29	87	120	49
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	-	-	-	-	-	-	205	-	-	205	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	32	0	16	18	0	55	29	118	32	95	130	53

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	567	555	157	547	565	134	183	0	0	150	0	0
Stage 1	347	347	-	192	192	-	-	-	-	-	-	-
Stage 2	220	208	-	355	373	-	-	-	-	-	-	-
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	434	440	889	448	434	915	1392	-	-	1431	-	-
Stage 1	669	635	-	810	742	-	-	-	-	-	-	-
Stage 2	782	730	-	662	618	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	381	402	889	411	397	915	1392	-	-	1431	-	-
Mov Cap-2 Maneuver	381	402	-	411	397	-	-	-	-	-	-	-
Stage 1	655	593	-	793	726	-	-	-	-	-	-	-
Stage 2	719	715	-	607	577	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.5	10.7	1.3	2.6
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1392	-	-	473	700	1431	-	-
HCM Lane V/C Ratio	0.021	-	-	0.101	0.106	0.066	-	-
HCM Control Delay (s)	7.6	-	-	13.5	10.7	7.7	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.3	0.4	0.2	-	-

Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↰	↱		↰	↱	
Traffic Vol, veh/h	16	0	11	20	0	32	19	116	37	53	72	26
Future Vol, veh/h	16	0	11	20	0	32	19	116	37	53	72	26
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	-	-	-	-	-	-	205	-	-	205	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	0	12	22	0	35	21	126	40	58	78	28

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	414	416	92	402	410	146	106	0	0	166	0	0
Stage 1	208	208	-	188	188	-	-	-	-	-	-	-
Stage 2	206	208	-	214	222	-	-	-	-	-	-	-
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	549	527	965	559	531	901	1485	-	-	1412	-	-
Stage 1	794	730	-	814	745	-	-	-	-	-	-	-
Stage 2	796	730	-	788	720	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	506	499	965	529	502	901	1485	-	-	1412	-	-
Mov Cap-2 Maneuver	506	499	-	529	502	-	-	-	-	-	-	-
Stage 1	783	700	-	803	735	-	-	-	-	-	-	-
Stage 2	754	720	-	746	690	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11	10.5	0.8	2.7
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1485	-	-	628	709	1412	-	-
HCM Lane V/C Ratio	0.014	-	-	0.047	0.08	0.041	-	-
HCM Control Delay (s)	7.5	-	-	11	10.5	7.7	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.3	0.1	-	-

Intersection	
Int Delay, s/veh	6.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	171	56	33	0	0	103
Future Vol, veh/h	171	56	33	0	0	103
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	205	-	-	-	205	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	186	61	36	0	0	112

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	36	0	-	0	469	36
Stage 1	-	-	-	-	36	-
Stage 2	-	-	-	-	433	-
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	1575	-	-	-	553	1037
Stage 1	-	-	-	-	986	-
Stage 2	-	-	-	-	654	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1575	-	-	-	488	1037
Mov Cap-2 Maneuver	-	-	-	-	551	-
Stage 1	-	-	-	-	870	-
Stage 2	-	-	-	-	654	-

Approach	EB	WB	SB
HCM Control Delay, s	5.7	0	8.9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1575	-	-	-	-	1037
HCM Lane V/C Ratio	0.118	-	-	-	-	0.108
HCM Control Delay (s)	7.6	-	-	-	0	8.9
HCM Lane LOS	A	-	-	-	A	A
HCM 95th %tile Q(veh)	0.4	-	-	-	-	0.4

Intersection	
Int Delay, s/veh	4.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	34	22	13	0	0	20
Future Vol, veh/h	34	22	13	0	0	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	205	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	37	24	14	0	0	22

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	14	0	-	0	112	14
Stage 1	-	-	-	-	14	-
Stage 2	-	-	-	-	98	-
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	1604	-	-	-	885	1066
Stage 1	-	-	-	-	1009	-
Stage 2	-	-	-	-	926	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1604	-	-	-	865	1066
Mov Cap-2 Maneuver	-	-	-	-	827	-
Stage 1	-	-	-	-	986	-
Stage 2	-	-	-	-	926	-

Approach	EB	WB	SB
HCM Control Delay, s	4.4	0	8.4
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1604	-	-	-	1066
HCM Lane V/C Ratio	0.023	-	-	-	0.02
HCM Control Delay (s)	7.3	-	-	-	8.4
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1

Intersection	
Int Delay, s/veh	5.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	57	1	72	0	1	0	42	0	0	0	0	34
Future Vol, veh/h	57	1	72	0	1	0	42	0	0	0	0	34
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	205	-	155	205	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	62	1	78	0	1	0	46	0	0	0	0	37

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1	0	0	79	0	0	145	126	1	165	204	1
Stage 1	-	-	-	-	-	-	125	125	-	1	1	-
Stage 2	-	-	-	-	-	-	20	1	-	164	203	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1622	-	-	1519	-	-	824	764	1084	800	692	1084
Stage 1	-	-	-	-	-	-	879	792	-	1022	895	-
Stage 2	-	-	-	-	-	-	999	895	-	838	733	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1622	-	-	1519	-	-	773	735	1084	777	666	1084
Mov Cap-2 Maneuver	-	-	-	-	-	-	773	735	-	777	666	-
Stage 1	-	-	-	-	-	-	846	762	-	983	895	-
Stage 2	-	-	-	-	-	-	965	895	-	806	705	-

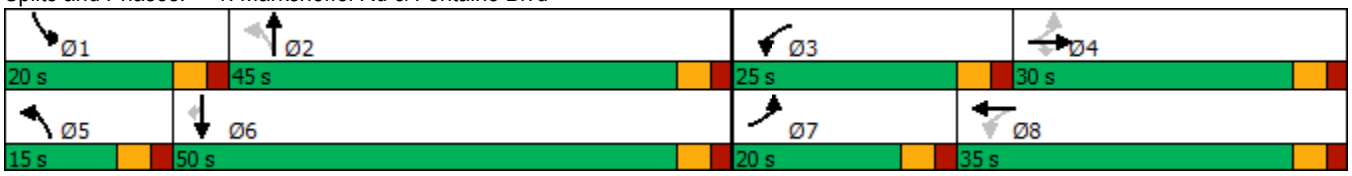
Approach	EB	WB	NB	SB
HCM Control Delay, s	3.2	0	9.9	8.4
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	773	1622	-	-	1519	-	-	1084
HCM Lane V/C Ratio	0.059	0.038	-	-	-	-	-	0.034
HCM Control Delay (s)	9.9	7.3	-	-	0	-	-	8.4
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0.2	0.1	-	-	0	-	-	0.1

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	75	226	132	207	530	430	73	625	126	154	300	55
Future Volume (vph)	75	226	132	207	530	430	73	625	126	154	300	55
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Free	pm+pt	NA	Free	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		Free	2		Free			6
Detector Phase	7	4	4	3	8		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	10.0	23.0	23.0	10.0	23.0		10.0	23.0		10.0	23.0	23.0
Total Split (s)	20.0	30.0	30.0	25.0	35.0		15.0	45.0		20.0	50.0	50.0
Total Split (%)	16.7%	25.0%	25.0%	20.8%	29.2%		12.5%	37.5%		16.7%	41.7%	41.7%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None		None	Max		None	Max	Max
Act Effct Green (s)	24.0	15.2	15.2	35.0	23.7	102.5	49.8	42.1	102.5	10.2	47.2	47.2
Actuated g/C Ratio	0.23	0.15	0.15	0.34	0.23	1.00	0.49	0.41	1.00	0.10	0.46	0.46
v/c Ratio	0.32	0.46	0.43	0.53	0.68	0.29	0.14	0.45	0.08	0.47	0.19	0.07
Control Delay	27.2	43.4	16.6	30.3	41.8	0.5	13.2	24.7	0.1	49.9	19.4	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.2	43.4	16.6	30.3	41.8	0.5	13.2	24.7	0.1	49.9	19.4	0.4
LOS	C	D	B	C	D	A	B	C	A	D	B	A
Approach Delay		32.4			24.5			19.9			26.5	
Approach LOS		C			C			B			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 102.5	
Natural Cycle: 70	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.68	
Intersection Signal Delay: 24.7	Intersection LOS: C
Intersection Capacity Utilization 57.2%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 1: Marksheffel Rd & Fontaine Blvd



Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	24	70	398	95	32	771	20	227	2	4	39	6
Future Volume (vph)	24	70	398	95	32	771	20	227	2	4	39	6
Turn Type	pm+pt	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA
Protected Phases	5	5	2		1	6		3	8		7	4
Permitted Phases	2	2		2	6		6	8		8	4	
Detector Phase	5	5	2	2	1	6	6	3	8	8	7	4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	15.0	15.0	5.0	15.0
Minimum Split (s)	10.0	10.0	23.0	23.0	10.0	23.0	23.0	10.0	23.0	23.0	10.0	20.0
Total Split (s)	11.0	11.0	60.0	60.0	10.0	59.0	59.0	25.0	40.0	40.0	10.0	25.0
Total Split (%)	9.2%	9.2%	50.0%	50.0%	8.3%	49.2%	49.2%	20.8%	33.3%	33.3%	8.3%	20.8%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None
Act Effct Green (s)		70.1	64.3	64.3	64.6	58.0	58.0	30.4	26.4	26.4	28.0	15.0
Actuated g/C Ratio		0.58	0.54	0.54	0.54	0.48	0.48	0.25	0.22	0.22	0.23	0.12
v/c Ratio		0.31	0.23	0.11	0.06	0.49	0.03	0.61	0.00	0.01	0.11	0.03
Control Delay		13.4	16.4	0.9	11.2	22.8	0.1	46.8	39.0	0.0	29.2	46.7
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		13.4	16.4	0.9	11.2	22.8	0.1	46.8	39.0	0.0	29.2	46.7
LOS		B	B	A	B	C	A	D	D	A	C	D
Approach Delay			13.4			21.8			46.0			13.0
Approach LOS			B			C			D			B

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.61	
Intersection Signal Delay: 21.5	Intersection LOS: C
Intersection Capacity Utilization 68.3%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 2: Old Glory Dr & Fontaine Blvd

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	94
Future Volume (vph)	94
Turn Type	Perm
Protected Phases	
Permitted Phases	4
Detector Phase	4
Switch Phase	
Minimum Initial (s)	15.0
Minimum Split (s)	20.0
Total Split (s)	25.0
Total Split (%)	20.8%
Yellow Time (s)	3.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	0.0
Total Lost Time (s)	5.0
Lead/Lag	Lag
Lead-Lag Optimize?	Yes
Recall Mode	None
Act Effct Green (s)	15.0
Actuated g/C Ratio	0.12
v/c Ratio	0.31
Control Delay	4.0
Queue Delay	0.0
Total Delay	4.0
LOS	A
Approach Delay	
Approach LOS	

Intersection Summary

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	21	410	10	23	707	71	43	2	29	75	1	73
Future Vol, veh/h	21	410	10	23	707	71	43	2	29	75	1	73
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	275	-	275	150	-	150	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	23	446	11	25	768	77	47	2	32	82	1	79

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	845	0	0	457	0	0	927	1387	446	1333	1321	384
Stage 1	-	-	-	-	-	-	492	492	-	818	818	-
Stage 2	-	-	-	-	-	-	435	895	-	515	503	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.33	6.53	6.23	7.33	6.53	6.93
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.53	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.53	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.219	-	-	2.219	-	-	3.519	4.019	3.319	3.519	4.019	3.319
Pot Cap-1 Maneuver	789	-	-	1102	-	-	236	142	611	121	156	615
Stage 1	-	-	-	-	-	-	558	547	-	337	389	-
Stage 2	-	-	-	-	-	-	571	358	-	542	541	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	789	-	-	1102	-	-	196	135	611	109	148	615
Mov Cap-2 Maneuver	-	-	-	-	-	-	196	135	-	109	148	-
Stage 1	-	-	-	-	-	-	542	531	-	327	380	-
Stage 2	-	-	-	-	-	-	485	350	-	497	525	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.2	11.2	11.7
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	611	789	-	-	1102	-	-	615
HCM Lane V/C Ratio	0.052	0.029	-	-	0.023	-	-	0.129
HCM Control Delay (s)	11.2	9.7	-	-	8.3	-	-	11.7
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.2	0.1	-	-	0.1	-	-	0.4

Intersection	
Int Delay, s/veh	1.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	494	21	3	736	66	7
Future Vol, veh/h	494	21	3	736	66	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	145	85	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	537	23	3	800	72	8

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	560	0	1343	537
Stage 1	-	-	-	-	537	-
Stage 2	-	-	-	-	806	-
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	-	-	1011	-	168	544
Stage 1	-	-	-	-	586	-
Stage 2	-	-	-	-	439	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1011	-	167	544
Mov Cap-2 Maneuver	-	-	-	-	303	-
Stage 1	-	-	-	-	586	-
Stage 2	-	-	-	-	438	-

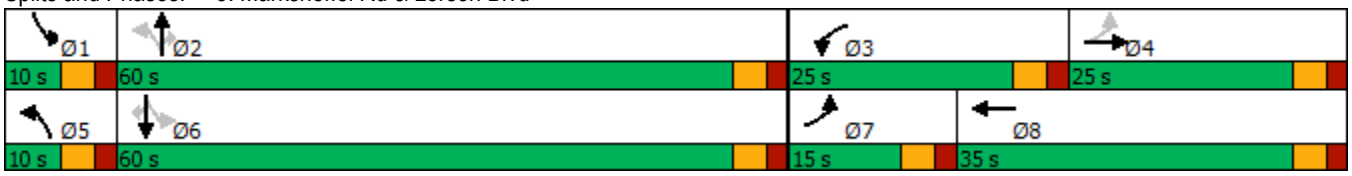
Approach	EB	WB	NB
HCM Control Delay, s	0	0	20.2
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	316	-	-	1011	-
HCM Lane V/C Ratio	0.251	-	-	0.003	-
HCM Control Delay (s)	20.2	-	-	8.6	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	1	-	-	0	-

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	49	18	300	11	157	675	123	59	551	23
Future Volume (vph)	49	18	300	11	157	675	123	59	551	23
Turn Type	pm+pt	NA	Prot	NA	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4	3	8	5	2		1	6	
Permitted Phases	4				2		2	6		6
Detector Phase	7	4	3	8	5	2	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	23.0	23.0	23.0	10.0	23.0	23.0	10.0	23.0	23.0
Total Split (s)	15.0	25.0	25.0	35.0	10.0	60.0	60.0	10.0	60.0	60.0
Total Split (%)	12.5%	20.8%	20.8%	29.2%	8.3%	50.0%	50.0%	8.3%	50.0%	50.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)	13.8	7.4	14.6	14.3	61.6	57.7	57.7	60.4	55.4	55.4
Actuated g/C Ratio	0.14	0.07	0.15	0.14	0.62	0.58	0.58	0.60	0.55	0.55
v/c Ratio	0.24	0.49	0.63	0.37	0.33	0.35	0.13	0.14	0.30	0.03
Control Delay	31.4	24.9	47.0	13.2	10.7	13.9	1.8	9.1	13.7	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.4	24.9	47.0	13.2	10.7	13.9	1.8	9.1	13.7	0.0
LOS	C	C	D	B	B	B	A	A	B	A
Approach Delay		27.2		37.9		11.8			12.8	
Approach LOS		C		D		B			B	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 100.1	
Natural Cycle: 80	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.63	
Intersection Signal Delay: 18.1	Intersection LOS: B
Intersection Capacity Utilization 51.7%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 5: Marksheffel Rd & Lorson Blvd



Intersection	
Int Delay, s/veh	5.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	9	3	5	0	6	18
Future Vol, veh/h	9	3	5	0	6	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	10	3	5	0	7	20

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	13	0	22	12
Stage 1	-	-	-	-	12	-
Stage 2	-	-	-	-	10	-
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	-	-	1606	-	995	1069
Stage 1	-	-	-	-	1011	-
Stage 2	-	-	-	-	1013	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1606	-	992	1069
Mov Cap-2 Maneuver	-	-	-	-	914	-
Stage 1	-	-	-	-	1011	-
Stage 2	-	-	-	-	1010	-

Approach	EB	WB	NB
HCM Control Delay, s	0	7.2	8.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1026	-	-	1606	-
HCM Lane V/C Ratio	0.025	-	-	0.003	-
HCM Control Delay (s)	8.6	-	-	7.2	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	5.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	44	16	5	27	0
Future Vol, veh/h	0	44	16	5	27	0
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	-	105	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	48	17	5	29	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	68	29	29	0	-	0
Stage 1	29	-	-	-	-	-
Stage 2	39	-	-	-	-	-
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	937	1046	1584	-	-	-
Stage 1	994	-	-	-	-	-
Stage 2	983	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	927	1046	1584	-	-	-
Mov Cap-2 Maneuver	872	-	-	-	-	-
Stage 1	983	-	-	-	-	-
Stage 2	983	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.6	5.6	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1584	-	1046	-	-
HCM Lane V/C Ratio	0.011	-	0.046	-	-
HCM Control Delay (s)	7.3	-	8.6	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	5.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	17	30	122	4	12	59
Future Vol, veh/h	17	30	122	4	12	59
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	205	-	205	-	-	155
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	18	33	133	4	13	64

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	283	13	77	0	-	0
Stage 1	13	-	-	-	-	-
Stage 2	270	-	-	-	-	-
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	707	1067	1522	-	-	-
Stage 1	1010	-	-	-	-	-
Stage 2	775	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	645	1067	1522	-	-	-
Mov Cap-2 Maneuver	670	-	-	-	-	-
Stage 1	922	-	-	-	-	-
Stage 2	775	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.2	7.4	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1522	-	670	1067	-	-
HCM Lane V/C Ratio	0.087	-	0.028	0.031	-	-
HCM Control Delay (s)	7.6	-	10.5	8.5	-	-
HCM Lane LOS	A	-	B	A	-	-
HCM 95th %tile Q(veh)	0.3	-	0.1	0.1	-	-

Intersection	
Int Delay, s/veh	3.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	46	21	8	79	27	15
Future Vol, veh/h	46	21	8	79	27	15
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	-	205	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	50	23	9	86	29	16

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	141	37	45	0	-	0
Stage 1	37	-	-	-	-	-
Stage 2	104	-	-	-	-	-
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	852	1035	1563	-	-	-
Stage 1	985	-	-	-	-	-
Stage 2	920	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	847	1035	1563	-	-	-
Mov Cap-2 Maneuver	816	-	-	-	-	-
Stage 1	979	-	-	-	-	-
Stage 2	920	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.5	0.7	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1563	-	874	-	-
HCM Lane V/C Ratio	0.006	-	0.083	-	-
HCM Control Delay (s)	7.3	-	9.5	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	29	15	6	58	41	7
Future Vol, veh/h	29	15	6	58	41	7
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	-	205	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	32	16	7	63	45	8

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	126	49	53	0	-	0
Stage 1	49	-	-	-	-	-
Stage 2	77	-	-	-	-	-
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	869	1020	1553	-	-	-
Stage 1	973	-	-	-	-	-
Stage 2	946	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	865	1020	1553	-	-	-
Mov Cap-2 Maneuver	831	-	-	-	-	-
Stage 1	968	-	-	-	-	-
Stage 2	946	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.3	0.7	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1553	-	887	-	-
HCM Lane V/C Ratio	0.004	-	0.054	-	-
HCM Control Delay (s)	7.3	-	9.3	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection	
Int Delay, s/veh	5.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	43	6	15	22	6	50
Future Vol, veh/h	43	6	15	22	6	50
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	205	-	-	-	205	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	47	7	16	24	7	54

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	40	0	-	0	129	28
Stage 1	-	-	-	-	28	-
Stage 2	-	-	-	-	101	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1570	-	-	-	865	1047
Stage 1	-	-	-	-	995	-
Stage 2	-	-	-	-	923	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1570	-	-	-	839	1047
Mov Cap-2 Maneuver	-	-	-	-	812	-
Stage 1	-	-	-	-	965	-
Stage 2	-	-	-	-	923	-

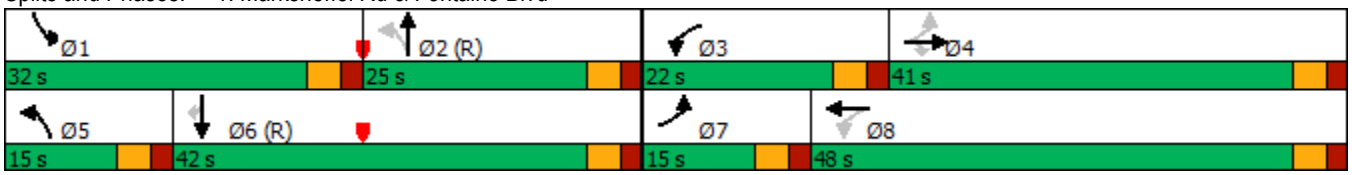
Approach	EB	WB	SB
HCM Control Delay, s	6.5	0	8.7
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1570	-	-	-	812	1047
HCM Lane V/C Ratio	0.03	-	-	-	0.008	0.052
HCM Control Delay (s)	7.4	-	-	-	9.5	8.6
HCM Lane LOS	A	-	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0	0.2

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	107	744	177	202	419	330	105	410	363	569	651	93
Future Volume (vph)	107	744	177	202	419	330	105	410	363	569	651	93
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Free	pm+pt	NA	Free	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		Free	2		Free			6
Detector Phase	7	4	4	3	8		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	15.0	5.0		5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	10.0	23.0	23.0	20.0	23.0		10.0	23.0		10.0	23.0	23.0
Total Split (s)	15.0	41.0	41.0	22.0	48.0		15.0	25.0		32.0	42.0	42.0
Total Split (%)	12.5%	34.2%	34.2%	18.3%	40.0%		12.5%	20.8%		26.7%	35.0%	35.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		-1.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		4.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None		None	C-Max		None	C-Max	C-Max
Act Effct Green (s)	41.2	32.0	32.0	52.6	38.4	120.0	37.0	27.9	120.0	25.5	43.2	43.2
Actuated g/C Ratio	0.34	0.27	0.27	0.44	0.32	1.00	0.31	0.23	1.00	0.21	0.36	0.36
v/c Ratio	0.30	0.80	0.33	0.72	0.39	0.22	0.37	0.53	0.24	0.80	0.54	0.15
Control Delay	22.0	48.1	5.1	38.8	32.3	0.3	24.6	44.9	0.4	53.5	33.6	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.0	48.1	5.1	38.8	32.3	0.3	24.6	44.9	0.4	53.5	33.6	1.2
LOS	C	D	A	D	C	A	C	D	A	D	C	A
Approach Delay		37.8			22.6			24.1			39.7	
Approach LOS		D			C			C			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 38 (32%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.80	
Intersection Signal Delay: 32.0	Intersection LOS: C
Intersection Capacity Utilization 75.5%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 1: Marksheffel Rd & Fontaine Blvd



Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	24	253	769	281	5	472	4	154	6	5	3	6
Future Volume (vph)	24	253	769	281	5	472	4	154	6	5	3	6
Turn Type	pm+pt	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA
Protected Phases	5	5	2		1	6		3	8		7	4
Permitted Phases	2	2		2	6		6	8		8	4	
Detector Phase	5	5	2	2	1	6	6	3	8	8	7	4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	15.0	15.0	5.0	15.0
Minimum Split (s)	10.0	10.0	23.0	23.0	10.0	23.0	23.0	10.0	23.0	23.0	10.0	23.0
Total Split (s)	20.0	20.0	75.0	75.0	10.0	65.0	65.0	20.0	25.0	25.0	20.0	25.0
Total Split (%)	15.4%	15.4%	57.7%	57.7%	7.7%	50.0%	50.0%	15.4%	19.2%	19.2%	15.4%	19.2%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None
Act Effct Green (s)		86.3	84.1	84.1	72.3	66.6	66.6	33.7	31.4	31.4	20.8	15.0
Actuated g/C Ratio		0.66	0.65	0.65	0.56	0.51	0.51	0.26	0.24	0.24	0.16	0.12
v/c Ratio		0.51	0.37	0.27	0.01	0.28	0.00	0.47	0.02	0.01	0.01	0.03
Control Delay		12.3	11.8	1.9	9.0	19.3	0.0	43.8	40.0	0.0	35.7	51.7
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		12.3	11.8	1.9	9.0	19.3	0.0	43.8	40.0	0.0	35.7	51.7
LOS		B	B	A	A	B	A	D	D	A	D	D
Approach Delay			9.8			19.1			42.5			15.4
Approach LOS			A			B			D			B

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 109 (84%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.51	
Intersection Signal Delay: 14.8	Intersection LOS: B
Intersection Capacity Utilization 66.1%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 2: Old Glory Dr & Fontaine Blvd

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	142
Future Volume (vph)	142
Turn Type	Perm
Protected Phases	
Permitted Phases	4
Detector Phase	4
Switch Phase	
Minimum Initial (s)	15.0
Minimum Split (s)	23.0
Total Split (s)	25.0
Total Split (%)	19.2%
Yellow Time (s)	3.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	0.0
Total Lost Time (s)	5.0
Lead/Lag	Lag
Lead-Lag Optimize?	Yes
Recall Mode	None
Act Effct Green (s)	15.0
Actuated g/C Ratio	0.12
v/c Ratio	0.48
Control Delay	13.4
Queue Delay	0.0
Total Delay	13.4
LOS	B
Approach Delay	
Approach LOS	

Intersection Summary

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	93	637	47	8	407	7	27	3	3	7	1	47
Future Vol, veh/h	93	637	47	8	407	7	27	3	3	7	1	47
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	275	-	275	150	-	150	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	101	692	51	9	442	8	29	3	3	8	1	51

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	450	0	0	743	0	0	1134	1362	692	1383	1405	221
Stage 1	-	-	-	-	-	-	894	894	-	460	460	-
Stage 2	-	-	-	-	-	-	240	468	-	923	945	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.33	6.53	6.23	7.33	6.53	6.93
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.53	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.53	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.219	-	-	2.219	-	-	3.519	4.019	3.319	3.519	4.019	3.319
Pot Cap-1 Maneuver	1109	-	-	862	-	-	168	147	443	112	139	783
Stage 1	-	-	-	-	-	-	335	359	-	551	565	-
Stage 2	-	-	-	-	-	-	743	560	-	323	340	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1109	-	-	862	-	-	144	132	443	101	125	783
Mov Cap-2 Maneuver	-	-	-	-	-	-	144	132	-	101	125	-
Stage 1	-	-	-	-	-	-	305	326	-	501	559	-
Stage 2	-	-	-	-	-	-	686	554	-	289	309	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1	0.2	13.2	9.9
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	443	1109	-	-	862	-	-	783
HCM Lane V/C Ratio	0.007	0.091	-	-	0.01	-	-	0.065
HCM Control Delay (s)	13.2	8.6	-	-	9.2	-	-	9.9
HCM Lane LOS	B	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0	0.3	-	-	0	-	-	0.2

Intersection	
Int Delay, s/veh	0.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	568	79	2	375	47	1
Future Vol, veh/h	568	79	2	375	47	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	145	85	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	598	83	2	395	49	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	681	0	997	598
Stage 1	-	-	-	-	598	-
Stage 2	-	-	-	-	399	-
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	-	-	912	-	271	502
Stage 1	-	-	-	-	549	-
Stage 2	-	-	-	-	678	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	912	-	270	502
Mov Cap-2 Maneuver	-	-	-	-	398	-
Stage 1	-	-	-	-	549	-
Stage 2	-	-	-	-	677	-

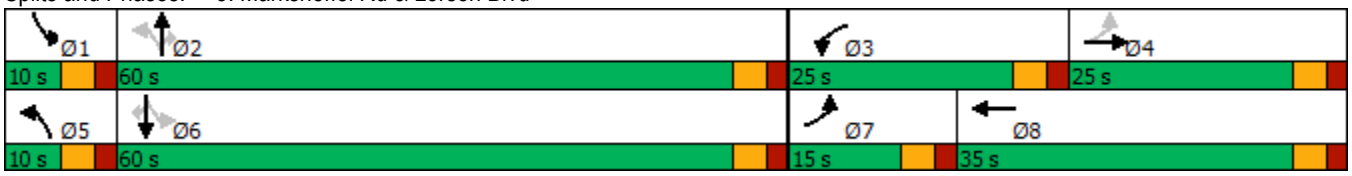
Approach	EB	WB	NB
HCM Control Delay, s	0	0	15.3
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	400	-	-	912	-
HCM Lane V/C Ratio	0.126	-	-	0.002	-
HCM Control Delay (s)	15.3	-	-	9	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.4	-	-	0	-

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	47	15	234	20	159	741	377	85	964	34
Future Volume (vph)	47	15	234	20	159	741	377	85	964	34
Turn Type	pm+pt	NA	Prot	NA	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4	3	8	5	2		1	6	
Permitted Phases	4				2		2	6		6
Detector Phase	7	4	3	8	5	2	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	23.0	23.0	23.0	10.0	23.0	23.0	10.0	23.0	23.0
Total Split (s)	15.0	25.0	25.0	35.0	10.0	60.0	60.0	10.0	60.0	60.0
Total Split (%)	12.5%	20.8%	20.8%	29.2%	8.3%	50.0%	50.0%	8.3%	50.0%	50.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)	13.3	7.0	12.2	11.6	61.6	57.7	57.7	60.4	55.4	55.4
Actuated g/C Ratio	0.14	0.07	0.13	0.12	0.63	0.59	0.59	0.62	0.57	0.57
v/c Ratio	0.23	0.37	0.57	0.42	0.52	0.37	0.36	0.21	0.50	0.04
Control Delay	31.7	26.4	46.2	17.1	14.3	12.9	2.3	8.4	14.9	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.7	26.4	46.2	17.1	14.3	12.9	2.3	8.4	14.9	0.1
LOS	C	C	D	B	B	B	A	A	B	A
Approach Delay		28.8		36.9		9.9			13.9	
Approach LOS		C		D		A			B	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 97.3	
Natural Cycle: 90	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.57	
Intersection Signal Delay: 15.5	Intersection LOS: B
Intersection Capacity Utilization 61.3%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 5: Marksheffel Rd & Lorson Blvd



Intersection	
Int Delay, s/veh	6.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1	7	18	0	4	11
Future Vol, veh/h	1	7	18	0	4	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	8	20	0	4	12

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	9	0	45	5
Stage 1	-	-	-	-	5	-
Stage 2	-	-	-	-	40	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1611	-	965	1078
Stage 1	-	-	-	-	1018	-
Stage 2	-	-	-	-	982	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1611	-	953	1078
Mov Cap-2 Maneuver	-	-	-	-	882	-
Stage 1	-	-	-	-	1018	-
Stage 2	-	-	-	-	970	-

Approach	EB	WB	NB
HCM Control Delay, s	0	7.3	8.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1018	-	-	1611	-
HCM Lane V/C Ratio	0.016	-	-	0.012	-
HCM Control Delay (s)	8.6	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	7.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	12	18	0	0	0
Future Vol, veh/h	0	12	18	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	13	20	0	0	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	41	1	1	0	-	0
Stage 1	1	-	-	-	-	-
Stage 2	40	-	-	-	-	-
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	970	1084	1622	-	-	-
Stage 1	1022	-	-	-	-	-
Stage 2	982	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	958	1084	1622	-	-	-
Mov Cap-2 Maneuver	889	-	-	-	-	-
Stage 1	1010	-	-	-	-	-
Stage 2	982	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.4	7.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1622	-	1084	-	-
HCM Lane V/C Ratio	0.012	-	0.012	-	-
HCM Control Delay (s)	7.2	0	8.4	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Int Delay, s/veh	5.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	30	52	18	12	0
Future Vol, veh/h	0	30	52	18	12	0
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	-	105	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	33	57	20	13	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	147	13	13	0	-	0
Stage 1	13	-	-	-	-	-
Stage 2	134	-	-	-	-	-
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	845	1067	1606	-	-	-
Stage 1	1010	-	-	-	-	-
Stage 2	892	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	815	1067	1606	-	-	-
Mov Cap-2 Maneuver	791	-	-	-	-	-
Stage 1	975	-	-	-	-	-
Stage 2	892	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.5	5.4	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1606	-	1067	-	-
HCM Lane V/C Ratio	0.035	-	0.031	-	-
HCM Control Delay (s)	7.3	-	8.5	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Intersection	
Int Delay, s/veh	7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	56	110	68	14	8	34
Future Vol, veh/h	56	110	68	14	8	34
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	205	-	205	-	-	155
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	61	120	74	15	9	37

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	172	9	46	0	-	0
Stage 1	9	-	-	-	-	-
Stage 2	163	-	-	-	-	-
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	818	1073	1562	-	-	-
Stage 1	1014	-	-	-	-	-
Stage 2	866	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	780	1073	1562	-	-	-
Mov Cap-2 Maneuver	766	-	-	-	-	-
Stage 1	966	-	-	-	-	-
Stage 2	866	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.2	6.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1562	-	766	1073	-	-
HCM Lane V/C Ratio	0.047	-	0.079	0.111	-	-
HCM Control Delay (s)	7.4	-	10.1	8.8	-	-
HCM Lane LOS	A	-	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.3	0.4	-	-

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	30	14	25	52	67	51
Future Vol, veh/h	30	14	25	52	67	51
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	-	205	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	33	15	27	57	73	55

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	212	101	128	0	-	0
Stage 1	101	-	-	-	-	-
Stage 2	111	-	-	-	-	-
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	776	954	1458	-	-	-
Stage 1	923	-	-	-	-	-
Stage 2	914	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	761	954	1458	-	-	-
Mov Cap-2 Maneuver	762	-	-	-	-	-
Stage 1	905	-	-	-	-	-
Stage 2	914	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.7	2.4	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1458	-	814	-	-
HCM Lane V/C Ratio	0.019	-	0.059	-	-
HCM Control Delay (s)	7.5	-	9.7	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	18	10	18	58	51	30
Future Vol, veh/h	18	10	18	58	51	30
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	-	205	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	20	11	20	63	55	33

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	175	72	88	0	-	0
Stage 1	72	-	-	-	-	-
Stage 2	103	-	-	-	-	-
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	815	990	1508	-	-	-
Stage 1	951	-	-	-	-	-
Stage 2	921	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	804	990	1508	-	-	-
Mov Cap-2 Maneuver	791	-	-	-	-	-
Stage 1	939	-	-	-	-	-
Stage 2	921	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.4	1.8	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1508	-	852	-	-
HCM Lane V/C Ratio	0.013	-	0.036	-	-
HCM Control Delay (s)	7.4	-	9.4	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	6.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	63	19	11	13	22	40
Future Vol, veh/h	63	19	11	13	22	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	205	-	-	-	205	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	68	21	12	14	24	43

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	26	0	-	0	176	19
Stage 1	-	-	-	-	19	-
Stage 2	-	-	-	-	157	-
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	1588	-	-	-	814	1059
Stage 1	-	-	-	-	1004	-
Stage 2	-	-	-	-	871	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1588	-	-	-	779	1059
Mov Cap-2 Maneuver	-	-	-	-	767	-
Stage 1	-	-	-	-	961	-
Stage 2	-	-	-	-	871	-

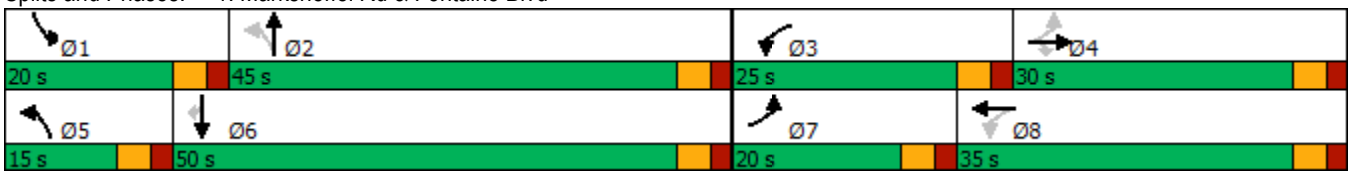
Approach	EB	WB	SB
HCM Control Delay, s	5.7	0	9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1588	-	-	-	767	1059
HCM Lane V/C Ratio	0.043	-	-	-	0.031	0.041
HCM Control Delay (s)	7.4	-	-	-	9.8	8.5
HCM Lane LOS	A	-	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1	0.1

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	75	289	132	268	726	553	73	625	145	193	300	55
Future Volume (vph)	75	289	132	268	726	553	73	625	145	193	300	55
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Free	pm+pt	NA	Free	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		Free	2		Free			6
Detector Phase	7	4	4	3	8		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	10.0	23.0	23.0	10.0	23.0		10.0	23.0		10.0	23.0	23.0
Total Split (s)	20.0	30.0	30.0	25.0	35.0		15.0	45.0		20.0	50.0	50.0
Total Split (%)	16.7%	25.0%	25.0%	20.8%	29.2%		12.5%	37.5%		16.7%	41.7%	41.7%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None		None	Max		None	Max	Max
Act Effct Green (s)	26.8	18.0	18.0	40.1	28.9	107.9	48.9	41.0	107.9	11.6	47.3	47.3
Actuated g/C Ratio	0.25	0.17	0.17	0.37	0.27	1.00	0.45	0.38	1.00	0.11	0.44	0.44
v/c Ratio	0.38	0.51	0.39	0.67	0.81	0.37	0.15	0.49	0.10	0.55	0.20	0.08
Control Delay	28.5	44.7	15.8	33.6	45.6	0.7	14.9	28.4	0.1	52.6	21.5	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.5	44.7	15.8	33.6	45.6	0.7	14.9	28.4	0.1	52.6	21.5	0.4
LOS	C	D	B	C	D	A	B	C	A	D	C	A
Approach Delay		34.5			27.4			22.4			30.3	
Approach LOS		C			C			C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 107.9	
Natural Cycle: 70	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay: 27.7	Intersection LOS: C
Intersection Capacity Utilization 63.7%	ICU Level of Service B
Analysis Period (min) 15	

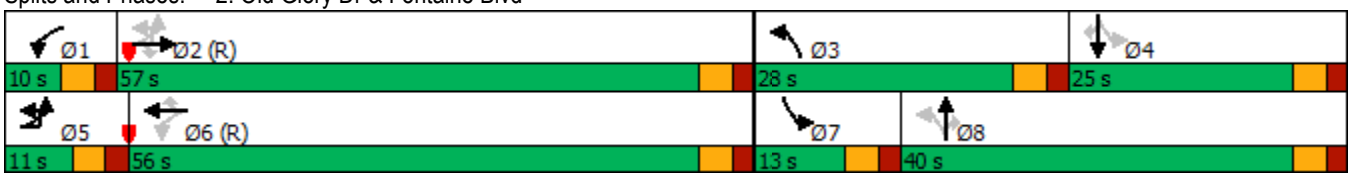
Splits and Phases: 1: Marksheffel Rd & Fontaine Blvd



Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	23	70	522	98	32	1158	20	236	2	4	114	6
Future Volume (vph)	23	70	522	98	32	1158	20	236	2	4	114	6
Turn Type	pm+pt	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA
Protected Phases	5	5	2		1	6		3	8		7	4
Permitted Phases	2	2		2	6		6	8		8	4	
Detector Phase	5	5	2	2	1	6	6	3	8	8	7	4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	15.0	15.0	5.0	15.0
Minimum Split (s)	10.0	10.0	23.0	23.0	10.0	23.0	23.0	10.0	23.0	23.0	10.0	20.0
Total Split (s)	11.0	11.0	57.0	57.0	10.0	56.0	56.0	28.0	40.0	40.0	13.0	25.0
Total Split (%)	9.2%	9.2%	47.5%	47.5%	8.3%	46.7%	46.7%	23.3%	33.3%	33.3%	10.8%	20.8%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None
Act Effct Green (s)		67.9	61.8	61.8	61.8	55.2	55.2	24.9	18.0	18.0	36.9	15.0
Actuated g/C Ratio		0.57	0.52	0.52	0.52	0.46	0.46	0.21	0.15	0.15	0.31	0.12
v/c Ratio		0.51	0.31	0.12	0.08	0.77	0.03	0.73	0.01	0.01	0.24	0.03
Control Delay		25.1	18.8	1.1	12.6	32.1	0.1	54.9	39.0	0.0	30.6	46.7
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		25.1	18.8	1.1	12.6	32.1	0.1	54.9	39.0	0.0	30.6	46.7
LOS		C	B	A	B	C	A	D	D	A	C	D
Approach Delay			17.2			31.0			53.9			19.5
Approach LOS			B			C			D			B

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.77	
Intersection Signal Delay: 28.2	Intersection LOS: C
Intersection Capacity Utilization 79.4%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 2: Old Glory Dr & Fontaine Blvd



Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	94
Future Volume (vph)	94
Turn Type	Perm
Protected Phases	
Permitted Phases	4
Detector Phase	4
Switch Phase	
Minimum Initial (s)	15.0
Minimum Split (s)	20.0
Total Split (s)	25.0
Total Split (%)	20.8%
Yellow Time (s)	3.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	0.0
Total Lost Time (s)	5.0
Lead/Lag	Lag
Lead-Lag Optimize?	Yes
Recall Mode	None
Act Effct Green (s)	15.0
Actuated g/C Ratio	0.12
v/c Ratio	0.31
Control Delay	4.0
Queue Delay	0.0
Total Delay	4.0
LOS	A
Approach Delay	
Approach LOS	

Intersection Summary

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	21	609	10	23	1094	71	43	2	29	75	1	73
Future Vol, veh/h	21	609	10	23	1094	71	43	2	29	75	1	73
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	275	-	275	150	-	150	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	23	662	11	25	1189	77	47	2	32	82	1	79

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1266	0	0	673	0	0	1353	2024	662	1970	1958	595
Stage 1	-	-	-	-	-	-	708	708	-	1239	1239	-
Stage 2	-	-	-	-	-	-	645	1316	-	731	719	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.33	6.53	6.23	7.33	6.53	6.93
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.53	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.53	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.219	-	-	2.219	-	-	3.519	4.019	3.319	3.519	4.019	3.319
Pot Cap-1 Maneuver	547	-	-	916	-	-	117	57	461	~ 42	63	448
Stage 1	-	-	-	-	-	-	425	437	-	186	247	-
Stage 2	-	-	-	-	-	-	428	226	-	412	432	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	547	-	-	916	-	-	90	53	461	~ 36	59	448
Mov Cap-2 Maneuver	-	-	-	-	-	-	90	53	-	~ 36	59	-
Stage 1	-	-	-	-	-	-	407	419	-	178	240	-
Stage 2	-	-	-	-	-	-	341	220	-	366	414	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.2	13.4	14.8
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	461	547	-	-	916	-	-	448
HCM Lane V/C Ratio	0.068	0.042	-	-	0.027	-	-	0.177
HCM Control Delay (s)	13.4	11.9	-	-	9	-	-	14.8
HCM Lane LOS	B	B	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.2	0.1	-	-	0.1	-	-	0.6

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

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	21	0	1094	71	75	73
Future Vol, veh/h	21	0	1094	71	75	73
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	150	0	-
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	79	79
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	23	0	1189	77	95	92

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1266	0	-	0	1235	595
Stage 1	-	-	-	-	1189	-
Stage 2	-	-	-	-	46	-
Critical Hdwy	4.13	-	-	-	6.63	6.93
Critical Hdwy Stg 1	-	-	-	-	5.83	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	2.219	-	-	-	3.519	3.319
Pot Cap-1 Maneuver	547	-	-	-	181	448
Stage 1	-	-	-	-	252	-
Stage 2	-	-	-	-	976	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	547	-	-	-	173	448
Mov Cap-2 Maneuver	-	-	-	-	215	-
Stage 1	-	-	-	-	241	-
Stage 2	-	-	-	-	976	-

Approach	EB	WB	SB
HCM Control Delay, s	11.9	0	24.9
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	547	-	-	-	215	448
HCM Lane V/C Ratio	0.042	-	-	-	0.442	0.206
HCM Control Delay (s)	11.9	0	-	-	34.4	15.1
HCM Lane LOS	B	A	-	-	D	C
HCM 95th %tile Q(veh)	0.1	-	-	-	2.1	0.8

Intersection	
Int Delay, s/veh	0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	537	10	0	0	0	29
Future Vol, veh/h	537	10	0	0	0	29
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	0
Veh in Median Storage, #	0	-	-	16983	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	584	11	0	0	0	32

Major/Minor	Major1			Minor1	
Conflicting Flow All	0	0		-	584
Stage 1	-	-		-	-
Stage 2	-	-		-	-
Critical Hdwy	-	-		-	6.22
Critical Hdwy Stg 1	-	-		-	-
Critical Hdwy Stg 2	-	-		-	-
Follow-up Hdwy	-	-		-	3.318
Pot Cap-1 Maneuver	-	-		0	512
Stage 1	-	-		0	-
Stage 2	-	-		0	-
Platoon blocked, %	-	-			
Mov Cap-1 Maneuver	-	-		-	512
Mov Cap-2 Maneuver	-	-		-	-
Stage 1	-	-		-	-
Stage 2	-	-		-	-

Approach	EB	NB
HCM Control Delay, s	0	12.5
HCM LOS		B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR
Capacity (veh/h)	512	-	-
HCM Lane V/C Ratio	0.062	-	-
HCM Control Delay (s)	12.5	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0.2	-	-

Intersection	
Int Delay, s/veh	1.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	617	21	3	1122	66	7
Future Vol, veh/h	617	21	3	1122	66	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	145	85	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	726	25	4	1320	78	8

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	751	0	2054	726
Stage 1	-	-	-	-	726	-
Stage 2	-	-	-	-	1328	-
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	-	-	858	-	~ 61	425
Stage 1	-	-	-	-	479	-
Stage 2	-	-	-	-	247	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	858	-	~ 61	425
Mov Cap-2 Maneuver	-	-	-	-	173	-
Stage 1	-	-	-	-	479	-
Stage 2	-	-	-	-	246	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	41
HCM LOS			E

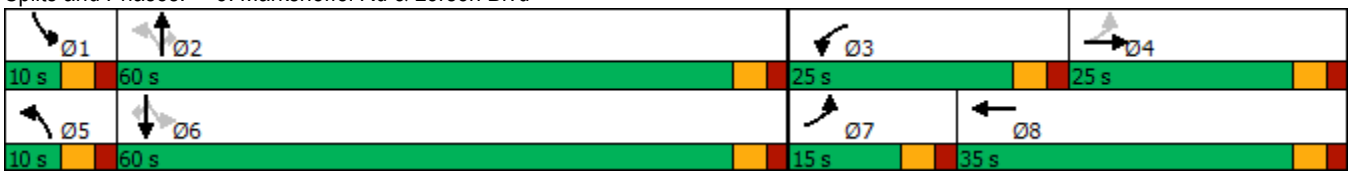
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	183	-	-	858	-
HCM Lane V/C Ratio	0.469	-	-	0.004	-
HCM Control Delay (s)	41	-	-	9.2	-
HCM Lane LOS	E	-	-	A	-
HCM 95th %tile Q(veh)	2.2	-	-	0	-

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

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	49	18	411	11	157	694	159	59	612	23
Future Volume (vph)	49	18	411	11	157	694	159	59	612	23
Turn Type	pm+pt	NA	Prot	NA	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4	3	8	5	2		1	6	
Permitted Phases	4				2		2	6		6
Detector Phase	7	4	3	8	5	2	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	23.0	23.0	23.0	10.0	23.0	23.0	10.0	23.0	23.0
Total Split (s)	15.0	25.0	25.0	35.0	10.0	60.0	60.0	10.0	60.0	60.0
Total Split (%)	12.5%	20.8%	20.8%	29.2%	8.3%	50.0%	50.0%	8.3%	50.0%	50.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)	13.9	7.5	17.5	17.3	61.6	57.7	57.7	60.4	55.4	55.4
Actuated g/C Ratio	0.13	0.07	0.17	0.17	0.60	0.56	0.56	0.59	0.54	0.54
v/c Ratio	0.25	0.49	0.74	0.33	0.37	0.37	0.17	0.15	0.34	0.03
Control Delay	31.2	25.5	49.7	12.3	12.3	15.2	2.8	10.0	15.2	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.2	25.5	49.7	12.3	12.3	15.2	2.8	10.0	15.2	0.0
LOS	C	C	D	B	B	B	A	A	B	A
Approach Delay		27.6		41.8		12.8			14.3	
Approach LOS		C		D		B			B	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 103.1	
Natural Cycle: 80	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.74	
Intersection Signal Delay: 20.5	Intersection LOS: C
Intersection Capacity Utilization 56.5%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 5: Marksheffel Rd & Lorson Blvd



Intersection	
Int Delay, s/veh	5.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	14	3	5	5	2	6	0	18	12	0	5
Future Vol, veh/h	4	14	3	5	5	2	6	0	18	12	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	15	3	5	5	2	7	0	20	13	0	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	7	0	0	18	0	0	44	42	17	51	42	6
Stage 1	-	-	-	-	-	-	25	25	-	16	16	-
Stage 2	-	-	-	-	-	-	19	17	-	35	26	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1614	-	-	1599	-	-	958	850	1062	948	850	1077
Stage 1	-	-	-	-	-	-	993	874	-	1004	882	-
Stage 2	-	-	-	-	-	-	1000	881	-	981	874	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1614	-	-	1599	-	-	948	845	1062	926	845	1077
Mov Cap-2 Maneuver	-	-	-	-	-	-	948	845	-	926	845	-
Stage 1	-	-	-	-	-	-	990	871	-	1001	879	-
Stage 2	-	-	-	-	-	-	992	878	-	960	871	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.4	3	8.6	8.8
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	1031	1614	-	-	1599	-	-	966
HCM Lane V/C Ratio	0.025	0.003	-	-	0.003	-	-	0.019
HCM Control Delay (s)	8.6	7.2	0	-	7.3	0	-	8.8
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	39	7	36	119	5
Future Vol, veh/h	5	39	7	36	119	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	42	8	39	129	5

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	187	132	134	0	-	0
Stage 1	132	-	-	-	-	-
Stage 2	55	-	-	-	-	-
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	802	917	1451	-	-	-
Stage 1	894	-	-	-	-	-
Stage 2	968	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	797	917	1451	-	-	-
Mov Cap-2 Maneuver	782	-	-	-	-	-
Stage 1	889	-	-	-	-	-
Stage 2	968	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.2	1.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1451	-	899	-	-
HCM Lane V/C Ratio	0.005	-	0.053	-	-
HCM Control Delay (s)	7.5	0	9.2	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection	
Int Delay, s/veh	3.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	44	64	0	0	16	43	21	0	157	0
Future Vol, veh/h	0	0	44	64	0	0	16	43	21	0	157	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	-	-	-	-	-	-	105	-	155	105	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	48	70	0	0	17	47	23	0	171	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	264	275	171	276	252	47	171	0	0	70	0	0
Stage 1	171	171	-	81	81	-	-	-	-	-	-	-
Stage 2	93	104	-	195	171	-	-	-	-	-	-	-
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	689	632	873	676	651	1022	1406	-	-	1531	-	-
Stage 1	831	757	-	927	828	-	-	-	-	-	-	-
Stage 2	914	809	-	807	757	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	683	624	873	633	643	1022	1406	-	-	1531	-	-
Mov Cap-2 Maneuver	683	624	-	633	643	-	-	-	-	-	-	-
Stage 1	821	757	-	916	818	-	-	-	-	-	-	-
Stage 2	903	799	-	763	757	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.4	11.4	1.5	0
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1406	-	-	873	633	1531	-	-
HCM Lane V/C Ratio	0.012	-	-	0.055	0.11	-	-	-
HCM Control Delay (s)	7.6	-	-	9.4	11.4	0	-	-
HCM Lane LOS	A	-	-	A	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.4	0	-	-

Intersection	
Int Delay, s/veh	11.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	70	35	70	13	103	0	257	10	4	0	32	233
Future Vol, veh/h	70	35	70	13	103	0	257	10	4	0	32	233
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	205	-	155	205	-	155	205	-	155	205	-	155
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	76	38	76	14	112	0	279	11	4	0	35	253

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	662	608	35	788	857	11	288	0	0	15	0	0
Stage 1	35	35	-	569	569	-	-	-	-	-	-	-
Stage 2	627	573	-	219	288	-	-	-	-	-	-	-
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	375	410	1038	309	295	1070	1274	-	-	1603	-	-
Stage 1	981	866	-	507	506	-	-	-	-	-	-	-
Stage 2	471	504	-	783	674	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	196	320	1038	217	230	1070	1274	-	-	1603	-	-
Mov Cap-2 Maneuver	196	320	-	217	230	-	-	-	-	-	-	-
Stage 1	766	866	-	396	395	-	-	-	-	-	-	-
Stage 2	264	394	-	694	674	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	20.9	33.3	8.2	0
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBL	SBT	SBR
Capacity (veh/h)	1274	-	-	196	320	1038	217	230	-	1603	-	-
HCM Lane V/C Ratio	0.219	-	-	0.388	0.119	0.073	0.065	0.487	-	-	-	-
HCM Control Delay (s)	8.6	-	-	34.6	17.8	8.7	22.7	34.6	0	0	-	-
HCM Lane LOS	A	-	-	D	C	A	C	D	A	A	-	-
HCM 95th %tile Q(veh)	0.8	-	-	1.7	0.4	0.2	0.2	2.4	-	0	-	-

Intersection	
Int Delay, s/veh	21.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	70	35	70	13	103	0	257	10	4	0	32	233
Future Vol, veh/h	70	35	70	13	103	0	257	10	4	0	32	233
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	205	-	155	205	-	155	205	-	155	205	-	155
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	76	38	76	14	112	0	279	11	4	0	35	253

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	112	0	0	114	0	0	474	330	38	376	406	112
Stage 1	-	-	-	-	-	-	190	190	-	140	140	-
Stage 2	-	-	-	-	-	-	284	140	-	236	266	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1478	-	-	1475	-	-	501	589	1034	581	534	941
Stage 1	-	-	-	-	-	-	812	743	-	863	781	-
Stage 2	-	-	-	-	-	-	723	781	-	767	689	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1478	-	-	1475	-	-	331	554	1034	544	502	941
Mov Cap-2 Maneuver	-	-	-	-	-	-	331	554	-	544	502	-
Stage 1	-	-	-	-	-	-	771	705	-	819	774	-
Stage 2	-	-	-	-	-	-	500	774	-	713	654	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	3	0.8	51.8	10.5
HCM LOS			F	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	331	554	1034	1478	-	-	1475	-	-	-	502	941
HCM Lane V/C Ratio	0.844	0.02	0.004	0.051	-	-	0.01	-	-	-	0.069	0.269
HCM Control Delay (s)	54	11.6	8.5	7.6	-	-	7.5	-	-	0	12.7	10.2
HCM Lane LOS	F	B	A	A	-	-	A	-	-	A	B	B
HCM 95th %tile Q(veh)	7.5	0.1	0	0.2	-	-	0	-	-	-	0.2	1.1

HCM 6th AWSC 2040 Total Traffic
10: Walleye Dr & Fontaine Blvd AM Peak Hour

Intersection	
Intersection Delay, s/veh	12.9
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	1	1	1	1	1	1	1	1	1	1	1	1
Traffic Vol, veh/h	70	35	70	13	103	1	257	10	4	1	32	233
Future Vol, veh/h	70	35	70	13	103	1	257	10	4	1	32	233
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	76	38	76	14	112	1	279	11	4	1	35	253
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1

Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	3			3			3			3		
Conflicting Approach Left		SB			NB			EB			WB	
Conflicting Lanes Left	3			3			3			3		
Conflicting Approach Right		NB			SB			WB			EB	
Conflicting Lanes Right		3			3			3			3	
HCM Control Delay	10.3			11.3			16.2			11.8		
HCM LOS	B			B			C			B		

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%
Vol Right, %	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	257	10	4	70	35	70	13	103	1	1	32	233
LT Vol	257	0	0	70	0	0	13	0	0	1	0	0
Through Vol	0	10	0	0	35	0	0	103	0	0	32	0

RT Vol	0	0	4	0	0	70	0	0	1	0	0	233
Lane Flow Rate	279	11	4	76	38	76	14	112	1	1	35	253
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.521	0.019	0.007	0.151	0.07	0.126	0.029	0.211	0.002	0.002	0.061	0.397
Departure Headway (Hd)	6.714	6.214	5.514	7.152	6.652	5.952	7.278	6.778	6.078	6.842	6.342	5.642
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	536	575	647	500	537	600	490	527	586	522	563	636
Service Time	4.465	3.965	3.265	4.913	4.413	3.713	5.043	4.543	3.843	4.597	4.097	3.397
HCM Lane V/C Ratio	0.521	0.019	0.006	0.152	0.071	0.127	0.029	0.213	0.002	0.002	0.062	0.398
HCM Control Delay	16.6	9.1	8.3	11.2	9.9	9.6	10.3	11.4	8.9	9.6	9.5	12.1
HCM Lane LOS	C	A	A	B	A	A	B	B	A	A	A	B
HCM 95th-tile Q	3	0.1	0	0.5	0.2	0.4	0.1	0.8	0	0	0.2	1.9

HCM 6th AWSC Long Term (Beyond 2040) Traffic
10: Walleye Dr & Fontaine Blvd AM Peak Hour

Intersection	
Intersection Delay, s/veh	21.2
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	1	1	1	1	1	1	1	1	1	1	1	1
Traffic Vol, veh/h	70	110	70	13	263	1	322	10	4	1	32	233
Future Vol, veh/h	70	110	70	13	263	1	322	10	4	1	32	233
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	76	120	76	14	286	1	350	11	4	1	35	253
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1

Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	3			3			3			3		
Conflicting Approach Left		SB			NB			EB			WB	
Conflicting Lanes Left	3			3			3			3		
Conflicting Approach Right		NB			SB			WB			EB	
Conflicting Lanes Right		3			3			3			3	
HCM Control Delay	12.6			21.3			31.7			15.9		
HCM LOS	B			C			D			C		

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%
Vol Right, %	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	322	10	4	70	110	70	13	263	1	1	32	233
LT Vol	322	0	0	70	0	0	13	0	0	1	0	0
Through Vol	0	10	0	0	110	0	0	263	0	0	32	0

RT Vol	0	0	4	0	0	70	0	0	1	0	0	233
Lane Flow Rate	350	11	4	76	120	76	14	286	1	1	35	253
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.769	0.022	0.008	0.176	0.259	0.15	0.032	0.61	0.002	0.002	0.075	0.495
Departure Headway (Hd)	7.905	7.405	6.705	8.312	7.812	7.112	8.177	7.677	6.977	8.24	7.74	7.04
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	459	483	532	431	459	503	437	469	512	434	462	512
Service Time	5.662	5.162	4.462	6.076	5.576	4.876	5.936	5.436	4.736	6.001	5.501	4.801
HCM Lane V/C Ratio	0.763	0.023	0.008	0.176	0.261	0.151	0.032	0.61	0.002	0.002	0.076	0.494
HCM Control Delay	32.6	10.3	9.5	12.9	13.3	11.1	11.2	21.8	9.8	11	11.1	16.6
HCM Lane LOS	D	B	A	B	B	B	B	C	A	B	B	C
HCM 95th-tile Q	6.6	0.1	0	0.6	1	0.5	0.1	4	0	0	0.2	2.7

Intersection	
Int Delay, s/veh	4.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↰	↑		↰	↑	
Traffic Vol, veh/h	46	0	21	23	0	80	8	144	7	25	75	15
Future Vol, veh/h	46	0	21	23	0	80	8	144	7	25	75	15
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	-	-	-	-	-	-	205	-	-	205	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	50	0	23	25	0	87	9	157	8	27	82	16

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	367	327	90	335	331	161	98	0	0	165	0	0
Stage 1	144	144	-	179	179	-	-	-	-	-	-	-
Stage 2	223	183	-	156	152	-	-	-	-	-	-	-
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	589	591	968	619	588	884	1495	-	-	1413	-	-
Stage 1	859	778	-	823	751	-	-	-	-	-	-	-
Stage 2	780	748	-	846	772	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	521	576	968	593	573	884	1495	-	-	1413	-	-
Mov Cap-2 Maneuver	521	576	-	593	573	-	-	-	-	-	-	-
Stage 1	854	763	-	818	746	-	-	-	-	-	-	-
Stage 2	699	744	-	810	757	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.7	10.3	0.4	1.7
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1495	-	-	609	797	1413	-	-
HCM Lane V/C Ratio	0.006	-	-	0.12	0.14	0.019	-	-
HCM Control Delay (s)	7.4	-	-	11.7	10.3	7.6	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.4	0.5	0.1	-	-

Intersection	
Int Delay, s/veh	4.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↰	↱		↰	↱	
Traffic Vol, veh/h	29	0	15	28	0	53	6	78	14	15	97	7
Future Vol, veh/h	29	0	15	28	0	53	6	78	14	15	97	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	-	-	-	-	-	-	205	-	-	205	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	32	0	16	30	0	58	7	85	15	16	105	8

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	277	255	109	256	252	93	113	0	0	100	0	0
Stage 1	141	141	-	107	107	-	-	-	-	-	-	-
Stage 2	136	114	-	149	145	-	-	-	-	-	-	-
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	675	649	945	697	651	964	1476	-	-	1493	-	-
Stage 1	862	780	-	898	807	-	-	-	-	-	-	-
Stage 2	867	801	-	854	777	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	627	639	945	677	641	964	1476	-	-	1493	-	-
Mov Cap-2 Maneuver	627	639	-	677	641	-	-	-	-	-	-	-
Stage 1	858	771	-	894	803	-	-	-	-	-	-	-
Stage 2	811	797	-	830	768	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.5	9.8	0.5	0.9
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1476	-	-	708	841	1493	-	-
HCM Lane V/C Ratio	0.004	-	-	0.068	0.105	0.011	-	-
HCM Control Delay (s)	7.5	-	-	10.5	9.8	7.4	-	-
HCM Lane LOS	A	-	-	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.3	0	-	-

Intersection	
Int Delay, s/veh	5.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	74	22	61	24	6	133
Future Vol, veh/h	74	22	61	24	6	133
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	205	-	-	-	205	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	80	24	66	26	7	145

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	92	0	-	0	263	79
Stage 1	-	-	-	-	79	-
Stage 2	-	-	-	-	184	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1503	-	-	-	726	981
Stage 1	-	-	-	-	944	-
Stage 2	-	-	-	-	848	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1503	-	-	-	688	981
Mov Cap-2 Maneuver	-	-	-	-	710	-
Stage 1	-	-	-	-	894	-
Stage 2	-	-	-	-	848	-

Approach	EB	WB	SB
HCM Control Delay, s	5.8	0	9.3
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1503	-	-	-	710	981
HCM Lane V/C Ratio	0.054	-	-	-	0.009	0.147
HCM Control Delay (s)	7.5	-	-	-	10.1	9.3
HCM Lane LOS	A	-	-	-	B	A
HCM 95th %tile Q(veh)	0.2	-	-	-	0	0.5

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	9	19	56	0	0	29
Future Vol, veh/h	9	19	56	0	0	29
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	205	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	10	21	61	0	0	32

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	61	0	-	0	102	61
Stage 1	-	-	-	-	61	-
Stage 2	-	-	-	-	41	-
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	1542	-	-	-	896	1004
Stage 1	-	-	-	-	962	-
Stage 2	-	-	-	-	981	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1542	-	-	-	891	1004
Mov Cap-2 Maneuver	-	-	-	-	848	-
Stage 1	-	-	-	-	956	-
Stage 2	-	-	-	-	981	-

Approach	EB	WB	SB
HCM Control Delay, s	2.4	0	8.7
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1542	-	-	-	1004
HCM Lane V/C Ratio	0.006	-	-	-	0.031
HCM Control Delay (s)	7.3	-	-	-	8.7
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	7.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	17	1	22	0	1	0	65	0	0	0	0	51
Future Vol, veh/h	17	1	22	0	1	0	65	0	0	0	0	51
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	205	-	155	205	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	18	1	24	0	1	0	71	0	0	0	0	55

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1	0	0	25	0	0	66	38	1	50	62	1
Stage 1	-	-	-	-	-	-	37	37	-	1	1	-
Stage 2	-	-	-	-	-	-	29	1	-	49	61	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1622	-	-	1589	-	-	927	854	1084	950	829	1084
Stage 1	-	-	-	-	-	-	978	864	-	1022	895	-
Stage 2	-	-	-	-	-	-	988	895	-	964	844	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1622	-	-	1589	-	-	872	845	1084	942	820	1084
Mov Cap-2 Maneuver	-	-	-	-	-	-	872	845	-	942	820	-
Stage 1	-	-	-	-	-	-	967	854	-	1011	895	-
Stage 2	-	-	-	-	-	-	937	895	-	953	835	-

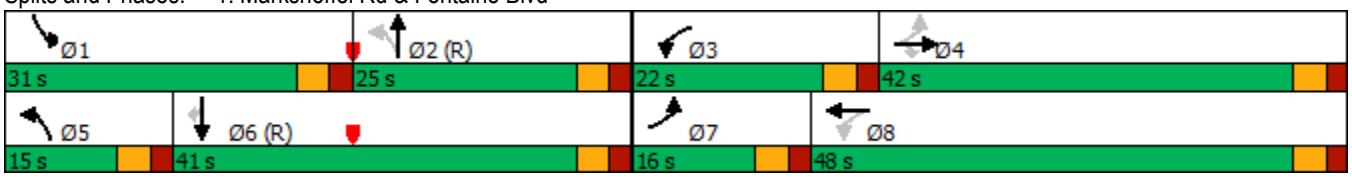
Approach	EB	WB	NB	SB
HCM Control Delay, s	3.1	0	9.5	8.5
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	872	1622	-	-	1589	-	-	1084
HCM Lane V/C Ratio	0.081	0.011	-	-	-	-	-	0.051
HCM Control Delay (s)	9.5	7.2	-	-	0	-	-	8.5
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	0.2

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	107	969	177	244	553	414	105	410	432	710	651	93
Future Volume (vph)	107	969	177	244	553	414	105	410	432	710	651	93
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Free	pm+pt	NA	Free	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		Free	2		Free			6
Detector Phase	7	4	4	3	8		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	15.0	5.0		5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	10.0	23.0	23.0	20.0	23.0		10.0	23.0		10.0	23.0	23.0
Total Split (s)	16.0	42.0	42.0	22.0	48.0		15.0	25.0		31.0	41.0	41.0
Total Split (%)	13.3%	35.0%	35.0%	18.3%	40.0%		12.5%	20.8%		25.8%	34.2%	34.2%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		-1.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		4.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None		None	C-Max		None	C-Max	C-Max
Act Effct Green (s)	45.9	36.6	36.6	58.0	43.6	120.0	30.2	21.1	120.0	27.0	37.9	37.9
Actuated g/C Ratio	0.38	0.30	0.30	0.48	0.36	1.00	0.25	0.18	1.00	0.22	0.32	0.32
v/c Ratio	0.31	0.92	0.30	0.85	0.45	0.28	0.42	0.70	0.29	0.94	0.61	0.16
Control Delay	20.0	54.1	4.7	54.2	30.5	0.4	28.6	53.6	0.5	66.6	38.2	1.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.0	54.1	4.7	54.2	30.5	0.4	28.6	53.6	0.5	66.6	38.2	1.4
LOS	B	D	A	D	C	A	C	D	A	E	D	A
Approach Delay		43.9			25.0			26.6			49.5	
Approach LOS		D			C			C			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 38 (32%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.94	
Intersection Signal Delay: 37.4	Intersection LOS: D
Intersection Capacity Utilization 87.7%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 1: Marksheffel Rd & Fontaine Blvd



Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	24	253	1240	292	5	747	4	160	6	5	10	6
Future Volume (vph)	24	253	1240	292	5	747	4	160	6	5	10	6
Turn Type	pm+pt	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA
Protected Phases	5	5	2		1	6		3	8		7	4
Permitted Phases	2	2		2	6		6	8		8	4	
Detector Phase	5	5	2	2	1	6	6	3	8	8	7	4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	15.0	15.0	5.0	15.0
Minimum Split (s)	10.0	10.0	23.0	23.0	10.0	23.0	23.0	10.0	23.0	23.0	10.0	23.0
Total Split (s)	20.0	20.0	75.0	75.0	10.0	65.0	65.0	20.0	25.0	25.0	20.0	25.0
Total Split (%)	15.4%	15.4%	57.7%	57.7%	7.7%	50.0%	50.0%	15.4%	19.2%	19.2%	15.4%	19.2%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None
Act Effct Green (s)		86.2	84.0	84.0	72.1	66.5	66.5	33.8	31.4	31.4	21.2	15.0
Actuated g/C Ratio		0.66	0.65	0.65	0.55	0.51	0.51	0.26	0.24	0.24	0.16	0.12
v/c Ratio		0.68	0.59	0.28	0.02	0.45	0.00	0.48	0.02	0.01	0.04	0.03
Control Delay		17.5	15.2	1.9	9.2	21.9	0.0	44.2	40.3	0.0	36.2	51.7
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		17.5	15.2	1.9	9.2	21.9	0.0	44.2	40.3	0.0	36.2	51.7
LOS		B	B	A	A	C	A	D	D	A	D	D
Approach Delay			13.4			21.7			42.9			16.4
Approach LOS			B			C			D			B

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 109 (84%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.68	
Intersection Signal Delay: 17.5	Intersection LOS: B
Intersection Capacity Utilization 74.0%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 2: Old Glory Dr & Fontaine Blvd

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	142
Future Volume (vph)	142
Turn Type	Perm
Protected Phases	
Permitted Phases	4
Detector Phase	4
Switch Phase	
Minimum Initial (s)	15.0
Minimum Split (s)	23.0
Total Split (s)	25.0
Total Split (%)	19.2%
Yellow Time (s)	3.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	0.0
Total Lost Time (s)	5.0
Lead/Lag	Lag
Lead-Lag Optimize?	Yes
Recall Mode	None
Act Effct Green (s)	15.0
Actuated g/C Ratio	0.12
v/c Ratio	0.48
Control Delay	13.4
Queue Delay	0.0
Total Delay	13.4
LOS	B
Approach Delay	
Approach LOS	

Intersection Summary

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	93	1115	47	8	682	7	27	3	3	7	1	47
Future Vol, veh/h	93	1115	47	8	682	7	27	3	3	7	1	47
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	275	-	275	150	-	150	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	101	1212	51	9	741	8	29	3	3	8	1	51

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	749	0	0	1263	0	0	1803	2181	1212	2202	2224	371
Stage 1	-	-	-	-	-	-	1414	1414	-	759	759	-
Stage 2	-	-	-	-	-	-	389	767	-	1443	1465	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.33	6.53	6.23	7.33	6.53	6.93
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.53	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.53	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.219	-	-	2.219	-	-	3.519	4.019	3.319	3.519	4.019	3.319
Pot Cap-1 Maneuver	858	-	-	548	-	-	55	46	221	28	43	627
Stage 1	-	-	-	-	-	-	170	203	-	366	414	-
Stage 2	-	-	-	-	-	-	607	410	-	164	192	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	858	-	-	548	-	-	44	40	221	23	37	627
Mov Cap-2 Maneuver	-	-	-	-	-	-	44	40	-	23	37	-
Stage 1	-	-	-	-	-	-	150	179	-	323	407	-
Stage 2	-	-	-	-	-	-	547	403	-	140	169	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	0.1	21.5	11.3
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	221	858	-	-	548	-	-	627
HCM Lane V/C Ratio	0.015	0.118	-	-	0.016	-	-	0.081
HCM Control Delay (s)	21.5	9.8	-	-	11.7	-	-	11.3
HCM Lane LOS	C	A	-	-	B	-	-	B
HCM 95th %tile Q(veh)	0	0.4	-	-	0	-	-	0.3

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	93	0	682	7	7	47
Future Vol, veh/h	93	0	682	7	7	47
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	150	0	-
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	83	83	78	78
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	98	0	822	8	9	60

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	830	0	-	0	1018	411
Stage 1	-	-	-	-	822	-
Stage 2	-	-	-	-	196	-
Critical Hdwy	4.13	-	-	-	6.63	6.93
Critical Hdwy Stg 1	-	-	-	-	5.83	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	2.219	-	-	-	3.519	3.319
Pot Cap-1 Maneuver	800	-	-	-	248	591
Stage 1	-	-	-	-	393	-
Stage 2	-	-	-	-	836	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	800	-	-	-	218	591
Mov Cap-2 Maneuver	-	-	-	-	295	-
Stage 1	-	-	-	-	345	-
Stage 2	-	-	-	-	836	-

Approach	EB	WB	SB
HCM Control Delay, s	10.1	0	12.6
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	800	-	-	-	295	591
HCM Lane V/C Ratio	0.122	-	-	-	0.03	0.102
HCM Control Delay (s)	10.1	0	-	-	17.6	11.8
HCM Lane LOS	B	A	-	-	C	B
HCM 95th %tile Q(veh)	0.4	-	-	-	0.1	0.3

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1108	47	0	0	0	3
Future Vol, veh/h	1108	47	0	0	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	0
Veh in Median Storage, #	0	-	-	16983	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	83	83	63	63
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1166	49	0	0	0	5

Major/Minor	Major1			Minor1	
Conflicting Flow All	0	0		-	1166
Stage 1	-	-		-	-
Stage 2	-	-		-	-
Critical Hdwy	-	-		-	6.22
Critical Hdwy Stg 1	-	-		-	-
Critical Hdwy Stg 2	-	-		-	-
Follow-up Hdwy	-	-		-	3.318
Pot Cap-1 Maneuver	-	-		0	236
Stage 1	-	-		0	-
Stage 2	-	-		0	-
Platoon blocked, %	-	-			
Mov Cap-1 Maneuver	-	-		-	236
Mov Cap-2 Maneuver	-	-		-	-
Stage 1	-	-		-	-
Stage 2	-	-		-	-

Approach	EB	NB
HCM Control Delay, s	0	20.6
HCM LOS		C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR
Capacity (veh/h)	236	-	-
HCM Lane V/C Ratio	0.02	-	-
HCM Control Delay (s)	20.6	-	-
HCM Lane LOS	C	-	-
HCM 95th %tile Q(veh)	0.1	-	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1039	79	2	650	47	1
Future Vol, veh/h	1039	79	2	650	47	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	145	85	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1129	86	2	707	51	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1215	0	1840	1129
Stage 1	-	-	-	-	1129	-
Stage 2	-	-	-	-	711	-
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	-	-	574	-	83	248
Stage 1	-	-	-	-	309	-
Stage 2	-	-	-	-	487	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	574	-	83	248
Mov Cap-2 Maneuver	-	-	-	-	208	-
Stage 1	-	-	-	-	309	-
Stage 2	-	-	-	-	486	-

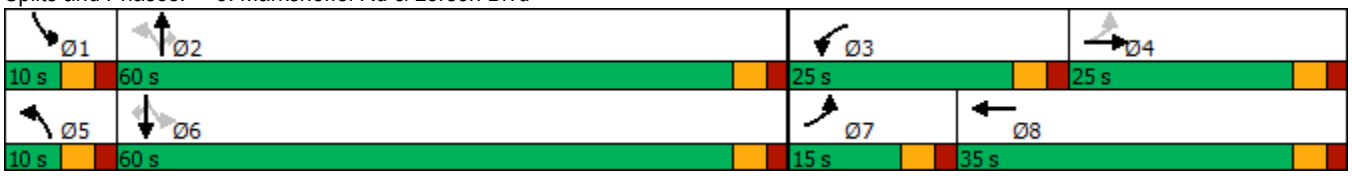
Approach	EB	WB	NB
HCM Control Delay, s	0	0	27.9
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	209	-	-	574	-
HCM Lane V/C Ratio	0.25	-	-	0.004	-
HCM Control Delay (s)	27.9	-	-	11.3	-
HCM Lane LOS	D	-	-	B	-
HCM 95th %tile Q(veh)	1	-	-	0	-

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	47	15	310	20	159	810	505	85	1006	34
Future Volume (vph)	47	15	310	20	159	810	505	85	1006	34
Turn Type	pm+pt	NA	Prot	NA	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4	3	8	5	2		1	6	
Permitted Phases	4				2		2	6		6
Detector Phase	7	4	3	8	5	2	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	23.0	23.0	23.0	10.0	23.0	23.0	10.0	23.0	23.0
Total Split (s)	15.0	25.0	25.0	35.0	10.0	60.0	60.0	10.0	60.0	60.0
Total Split (%)	12.5%	20.8%	20.8%	29.2%	8.3%	50.0%	50.0%	8.3%	50.0%	50.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)	13.3	7.0	14.7	14.1	61.6	57.7	57.7	60.4	55.4	55.4
Actuated g/C Ratio	0.13	0.07	0.15	0.14	0.62	0.58	0.58	0.61	0.56	0.56
v/c Ratio	0.23	0.38	0.65	0.37	0.57	0.42	0.47	0.23	0.54	0.04
Control Delay	31.4	27.2	47.0	15.4	18.0	14.5	2.8	9.7	16.7	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.4	27.2	47.0	15.4	18.0	14.5	2.8	9.7	16.7	0.1
LOS	C	C	D	B	B	B	A	A	B	A
Approach Delay		29.1		38.7		10.9			15.6	
Approach LOS		C		D		B			B	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 99.8	
Natural Cycle: 90	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.65	
Intersection Signal Delay: 16.9	Intersection LOS: B
Intersection Capacity Utilization 64.6%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 5: Marksheffel Rd & Lorson Blvd



Intersection	
Int Delay, s/veh	5.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	8	8	7	18	3	10	4	0	11	6	0	4
Future Vol, veh/h	8	8	7	18	3	10	4	0	11	6	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	9	8	20	3	11	4	0	12	7	0	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	14	0	0	17	0	0	82	85	13	86	84	9
Stage 1	-	-	-	-	-	-	31	31	-	49	49	-
Stage 2	-	-	-	-	-	-	51	54	-	37	35	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1604	-	-	1600	-	-	905	805	1067	900	806	1073
Stage 1	-	-	-	-	-	-	986	869	-	964	854	-
Stage 2	-	-	-	-	-	-	962	850	-	978	866	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1604	-	-	1600	-	-	889	790	1067	878	791	1073
Mov Cap-2 Maneuver	-	-	-	-	-	-	889	790	-	878	791	-
Stage 1	-	-	-	-	-	-	980	864	-	958	843	-
Stage 2	-	-	-	-	-	-	946	839	-	961	861	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.5	4.2	8.6	8.8
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	1013	1604	-	-	1600	-	-	947
HCM Lane V/C Ratio	0.016	0.005	-	-	0.012	-	-	0.011
HCM Control Delay (s)	8.6	7.3	0	-	7.3	0	-	8.8
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	7	18	27	133	80	3
Future Vol, veh/h	7	18	27	133	80	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	20	29	145	87	3

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	292	89	90	0	-	0
Stage 1	89	-	-	-	-	-
Stage 2	203	-	-	-	-	-
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	699	969	1505	-	-	-
Stage 1	934	-	-	-	-	-
Stage 2	831	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	684	969	1505	-	-	-
Mov Cap-2 Maneuver	706	-	-	-	-	-
Stage 1	914	-	-	-	-	-
Stage 2	831	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.2	1.3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1505	-	877	-	-
HCM Lane V/C Ratio	0.02	-	0.031	-	-
HCM Control Delay (s)	7.4	0	9.2	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	30	42	0	1	52	159	72	1	97	0
Future Vol, veh/h	0	0	30	42	0	1	52	159	72	1	97	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	-	-	-	-	-	-	105	-	155	105	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	33	46	0	1	57	173	78	1	105	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	434	472	105	411	394	173	105	0	0	251	0	0
Stage 1	107	107	-	287	287	-	-	-	-	-	-	-
Stage 2	327	365	-	124	107	-	-	-	-	-	-	-
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	532	490	949	551	542	871	1486	-	-	1314	-	-
Stage 1	898	807	-	720	674	-	-	-	-	-	-	-
Stage 2	686	623	-	880	807	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	516	471	949	516	521	871	1486	-	-	1314	-	-
Mov Cap-2 Maneuver	516	471	-	516	521	-	-	-	-	-	-	-
Stage 1	864	806	-	693	648	-	-	-	-	-	-	-
Stage 2	659	599	-	849	806	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.9	12.6	1.4	0.1
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1486	-	-	949	521	1314	-	-
HCM Lane V/C Ratio	0.038	-	-	0.034	0.09	0.001	-	-
HCM Control Delay (s)	7.5	-	-	8.9	12.6	7.7	-	-
HCM Lane LOS	A	-	-	A	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.3	0	-	-

Intersection	
Int Delay, s/veh	13.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	246	116	256	9	68	0	154	37	14	0	22	147
Future Vol, veh/h	246	116	256	9	68	0	154	37	14	0	22	147
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	205	-	155	205	-	155	205	-	155	205	-	155
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	267	126	278	10	74	0	167	40	15	0	24	160

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	443	413	24	680	558	40	184	0	0	55	0	0
Stage 1	24	24	-	374	374	-	-	-	-	-	-	-
Stage 2	419	389	-	306	184	-	-	-	-	-	-	-
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	525	529	1052	365	438	1031	1391	-	-	1550	-	-
Stage 1	994	875	-	647	618	-	-	-	-	-	-	-
Stage 2	612	608	-	704	747	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	407	466	1052	194	385	1031	1391	-	-	1550	-	-
Mov Cap-2 Maneuver	407	466	-	194	385	-	-	-	-	-	-	-
Stage 1	875	875	-	569	544	-	-	-	-	-	-	-
Stage 2	465	535	-	443	747	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	18.5	17.5	6	0
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBL	SBT	SBR
Capacity (veh/h)	1391	-	-	407	466	1052	194	385	-	1550	-	-
HCM Lane V/C Ratio	0.12	-	-	0.657	0.271	0.265	0.05	0.192	-	-	-	-
HCM Control Delay (s)	7.9	-	-	29.2	15.6	9.6	24.5	16.6	0	0	-	-
HCM Lane LOS	A	-	-	D	C	A	C	C	A	A	-	-
HCM 95th %tile Q(veh)	0.4	-	-	4.6	1.1	1.1	0.2	0.7	-	0	-	-

Intersection	
Int Delay, s/veh	18.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	246	116	256	9	68	0	154	37	14	0	22	147
Future Vol, veh/h	246	116	256	9	68	0	154	37	14	0	22	147
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	205	-	155	205	-	155	205	-	155	205	-	155
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	267	126	278	10	74	0	167	40	15	0	24	160

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	74	0	0	404	0	0	846	754	126	921	1032	74
Stage 1	-	-	-	-	-	-	660	660	-	94	94	-
Stage 2	-	-	-	-	-	-	186	94	-	827	938	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1526	-	-	1155	-	-	282	338	924	251	233	988
Stage 1	-	-	-	-	-	-	452	460	-	913	817	-
Stage 2	-	-	-	-	-	-	816	817	-	366	343	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1526	-	-	1155	-	-	184	276	924	189	191	988
Mov Cap-2 Maneuver	-	-	-	-	-	-	184	276	-	189	191	-
Stage 1	-	-	-	-	-	-	373	380	-	753	810	-
Stage 2	-	-	-	-	-	-	658	810	-	266	283	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	3.1	1	76.4	11.5
HCM LOS			F	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	184	276	924	1526	-	-	1155	-	-	-	191	988
HCM Lane V/C Ratio	0.91	0.146	0.016	0.175	-	-	0.008	-	-	-	0.125	0.162
HCM Control Delay (s)	96	20.3	9	7.9	-	-	8.1	-	-	0	26.5	9.3
HCM Lane LOS	F	C	A	A	-	-	A	-	-	A	D	A
HCM 95th %tile Q(veh)	7	0.5	0.1	0.6	-	-	0	-	-	-	0.4	0.6

HCM 6th AWSC Stop Signs on E & W Legs 2040 Total Traffic
10: Walleye Dr & Fontaine Blvd PM Peak Hour

Intersection	
Intersection Delay, s/veh	12.9
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	1	1	1	1	1	1	1	1	1	1	1	1
Traffic Vol, veh/h	246	116	256	9	68	1	154	37	14	1	22	147
Future Vol, veh/h	246	116	256	9	68	1	154	37	14	1	22	147
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	267	126	278	10	74	1	167	40	15	1	24	160
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1

Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	3			3			3			3		
Conflicting Approach Left		SB			NB			EB			WB	
Conflicting Lanes Left	3			3			3			3		
Conflicting Approach Right		NB			SB			WB			EB	
Conflicting Lanes Right		3			3			3			3	
HCM Control Delay	13.3			11.2			13.2			11.6		
HCM LOS	B			B			B			B		

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%
Vol Right, %	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	154	37	14	246	116	256	9	68	1	1	22	147
LT Vol	154	0	0	246	0	0	9	0	0	1	0	0
Through Vol	0	37	0	0	116	0	0	68	0	0	22	0

RT Vol	0	0	14	0	0	256	0	0	1	0	0	147
Lane Flow Rate	167	40	15	267	126	278	10	74	1	1	24	160
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.349	0.078	0.027	0.495	0.216	0.423	0.021	0.149	0.002	0.002	0.047	0.286
Departure Headway (Hd)	7.498	6.998	6.298	6.669	6.169	5.469	7.769	7.269	6.569	7.648	7.148	6.448
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	479	510	566	540	580	657	459	491	541	466	499	554
Service Time	5.267	4.767	4.067	4.422	3.922	3.222	5.549	5.049	4.349	5.42	4.92	4.22
HCM Lane V/C Ratio	0.349	0.078	0.027	0.494	0.217	0.423	0.022	0.151	0.002	0.002	0.048	0.289
HCM Control Delay	14.3	10.4	9.2	15.8	10.6	12.2	10.7	11.3	9.4	10.4	10.3	11.8
HCM Lane LOS	B	B	A	C	B	B	B	B	A	B	B	B
HCM 95th-tile Q	1.5	0.3	0.1	2.7	0.8	2.1	0.1	0.5	0	0	0.1	1.2

HCM 6th AWSC Long Term (Beyond 2040) Traffic
10: Walleye Dr & Fontaine Blvd AM Peak Hour

Intersection	
Intersection Delay, s/veh	21.2
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	1	1	1	1	1	1	1	1	1	1	1	1
Traffic Vol, veh/h	70	110	70	13	263	1	322	10	4	1	32	233
Future Vol, veh/h	70	110	70	13	263	1	322	10	4	1	32	233
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	76	120	76	14	286	1	350	11	4	1	35	253
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1

Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	3			3			3			3		
Conflicting Approach Left		SB			NB			EB			WB	
Conflicting Lanes Left	3			3			3			3		
Conflicting Approach Right		NB			SB			WB			EB	
Conflicting Lanes Right		3			3			3			3	
HCM Control Delay	12.6			21.3			31.7			15.9		
HCM LOS	B			C			D			C		

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%
Vol Right, %	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	322	10	4	70	110	70	13	263	1	1	32	233
LT Vol	322	0	0	70	0	0	13	0	0	1	0	0
Through Vol	0	10	0	0	110	0	0	263	0	0	32	0

RT Vol	0	0	4	0	0	70	0	0	1	0	0	233
Lane Flow Rate	350	11	4	76	120	76	14	286	1	1	35	253
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.769	0.022	0.008	0.176	0.259	0.15	0.032	0.61	0.002	0.002	0.075	0.495
Departure Headway (Hd)	7.905	7.405	6.705	8.312	7.812	7.112	8.177	7.677	6.977	8.24	7.74	7.04
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	459	483	532	431	459	503	437	469	512	434	462	512
Service Time	5.662	5.162	4.462	6.076	5.576	4.876	5.936	5.436	4.736	6.001	5.501	4.801
HCM Lane V/C Ratio	0.763	0.023	0.008	0.176	0.261	0.151	0.032	0.61	0.002	0.002	0.076	0.494
HCM Control Delay	32.6	10.3	9.5	12.9	13.3	11.1	11.2	21.8	9.8	11	11.1	16.6
HCM Lane LOS	D	B	A	B	B	B	B	C	A	B	B	C
HCM 95th-tile Q	6.6	0.1	0	0.6	1	0.5	0.1	4	0	0	0.2	2.7

Intersection	
Int Delay, s/veh	3.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↰	↱		↰	↱	
Traffic Vol, veh/h	30	0	14	16	0	51	25	124	27	86	150	51
Future Vol, veh/h	30	0	14	16	0	51	25	124	27	86	150	51
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	-	-	-	-	-	-	205	-	-	205	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	33	0	15	17	0	55	27	135	29	93	163	55

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	608	595	191	588	608	150	218	0	0	164	0	0
Stage 1	377	377	-	204	204	-	-	-	-	-	-	-
Stage 2	231	218	-	384	404	-	-	-	-	-	-	-
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	408	417	851	421	410	896	1352	-	-	1414	-	-
Stage 1	644	616	-	798	733	-	-	-	-	-	-	-
Stage 2	772	723	-	639	599	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	358	382	851	387	375	896	1352	-	-	1414	-	-
Mov Cap-2 Maneuver	358	382	-	387	375	-	-	-	-	-	-	-
Stage 1	631	575	-	782	718	-	-	-	-	-	-	-
Stage 2	710	709	-	586	559	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14.2	10.9	1.1	2.3
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1352	-	-	439	682	1414	-	-
HCM Lane V/C Ratio	0.02	-	-	0.109	0.107	0.066	-	-
HCM Control Delay (s)	7.7	-	-	14.2	10.9	7.7	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.4	0.4	0.2	-	-

Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↰	↱		↰	↱	
Traffic Vol, veh/h	18	0	10	19	0	35	18	122	34	61	89	30
Future Vol, veh/h	18	0	10	19	0	35	18	122	34	61	89	30
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	-	-	-	-	-	-	205	-	-	205	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	20	0	11	21	0	38	20	133	37	66	97	33

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	457	456	114	443	454	152	130	0	0	170	0	0
Stage 1	246	246	-	192	192	-	-	-	-	-	-	-
Stage 2	211	210	-	251	262	-	-	-	-	-	-	-
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	514	501	939	525	502	894	1455	-	-	1407	-	-
Stage 1	758	703	-	810	742	-	-	-	-	-	-	-
Stage 2	791	728	-	753	691	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	470	471	939	495	472	894	1455	-	-	1407	-	-
Mov Cap-2 Maneuver	470	471	-	495	472	-	-	-	-	-	-	-
Stage 1	747	670	-	799	732	-	-	-	-	-	-	-
Stage 2	747	718	-	709	659	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.6	10.6	0.8	2.6
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1455	-	-	572	696	1407	-	-
HCM Lane V/C Ratio	0.013	-	-	0.053	0.084	0.047	-	-
HCM Control Delay (s)	7.5	-	-	11.6	10.6	7.7	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.3	0.1	-	-

Intersection	
Int Delay, s/veh	5.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	160	74	43	14	22	97
Future Vol, veh/h	160	74	43	14	22	97
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	205	-	-	-	205	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	174	80	47	15	24	105

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	62	0	-	0	483	55
Stage 1	-	-	-	-	55	-
Stage 2	-	-	-	-	428	-
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	1541	-	-	-	542	1012
Stage 1	-	-	-	-	968	-
Stage 2	-	-	-	-	657	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1541	-	-	-	481	1012
Mov Cap-2 Maneuver	-	-	-	-	549	-
Stage 1	-	-	-	-	859	-
Stage 2	-	-	-	-	657	-

Approach	EB	WB	SB
HCM Control Delay, s	5.2	0	9.5
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1541	-	-	-	549	1012
HCM Lane V/C Ratio	0.113	-	-	-	0.044	0.104
HCM Control Delay (s)	7.6	-	-	-	11.9	9
HCM Lane LOS	A	-	-	-	B	A
HCM 95th %tile Q(veh)	0.4	-	-	-	0.1	0.3

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	33	63	37	0	0	19
Future Vol, veh/h	33	63	37	0	0	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	205	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	36	68	40	0	0	21

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	40	0	-	0	180	40
Stage 1	-	-	-	-	40	-
Stage 2	-	-	-	-	140	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1570	-	-	-	810	1031
Stage 1	-	-	-	-	982	-
Stage 2	-	-	-	-	887	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1570	-	-	-	791	1031
Mov Cap-2 Maneuver	-	-	-	-	778	-
Stage 1	-	-	-	-	959	-
Stage 2	-	-	-	-	887	-

Approach	EB	WB	SB
HCM Control Delay, s	2.5	0	8.6
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1570	-	-	-	1031
HCM Lane V/C Ratio	0.023	-	-	-	0.02
HCM Control Delay (s)	7.3	-	-	-	8.6
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1

Intersection	
Int Delay, s/veh	5.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	57	1	73	0	1	0	43	0	0	0	0	34
Future Vol, veh/h	57	1	73	0	1	0	43	0	0	0	0	34
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	205	-	155	205	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	62	1	79	0	1	0	47	0	0	0	0	37

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1	0	0	80	0	0	145	126	1	166	205	1
Stage 1	-	-	-	-	-	-	125	125	-	1	1	-
Stage 2	-	-	-	-	-	-	20	1	-	165	204	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1622	-	-	1518	-	-	824	764	1084	798	691	1084
Stage 1	-	-	-	-	-	-	879	792	-	1022	895	-
Stage 2	-	-	-	-	-	-	999	895	-	837	733	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1622	-	-	1518	-	-	773	735	1084	775	665	1084
Mov Cap-2 Maneuver	-	-	-	-	-	-	773	735	-	775	665	-
Stage 1	-	-	-	-	-	-	846	762	-	983	895	-
Stage 2	-	-	-	-	-	-	965	895	-	805	705	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	3.2	0	10	8.4
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	773	1622	-	-	1518	-	-	1084
HCM Lane V/C Ratio	0.06	0.038	-	-	-	-	-	0.034
HCM Control Delay (s)	10	7.3	-	-	0	-	-	8.4
HCM Lane LOS	B	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0.2	0.1	-	-	0	-	-	0.1

Appendix Tables 1-3

TRANSPORTATION
CONSULTANTS, INC.

Appendix Table 1
Area Trafffic Impact Studies by LSC
Ridges at Lorson Ranch

Study	Date
Lorson Ranch Sketch Plan Amendment 2 Traffic Impact and Access Analysis	December 17, 2018
Carriage Meadows South at Lorson Ranch Filing No. 1 Updated Traffic Impact Analysis	August 14, 2017
Carriage Meadows North at Lorson Ranch Filing No. 1 Updated Traffic Impact Analysis	January 29, 2017
Lorson Ranch East Updated Traffic Impact and Access Analysis	November 9, 2017
Lorson Ranch East Filing No. 1 Transportation Memorandum	May 2, 2018
Lorson Ranch East Filing No. 2 Transportation Memorandum	September 24, 2018
Lorson Ranch East Filing No. 3 Transportation Memorandum	January 22, 2019
Lorson Ranch East Filing No. 4 Transportation Memorandum	March 12, 2019
Lorson Ranch PK-8 School Traffic Impact and Access Analysis	October 4, 2018
Creekside at Lorson Ranch Filing No. 1 Traffic Impact and Access Analysis	October 28, 2018
Creekside at Lorson Ranch Filing No. 1 Transportation Memorandum	April 26, 2019
Carriage Meadows Townhomes Traffic Impact Analysis	May 28, 2020
Creekside South at Lorson Ranch Updated Transportation Memorandum	May 5, 2020
The Hills at Lorson Ranch Full Traffic Impact Analysis	October 26, 2020
The Hills at Lorson Ranch Full Traffic Impact Analysis (Final Plat)	July 21, 2021
Skyline at Lorson Ranch Traffic Impact Analysis	June 29, 2021
The Glen at Widefild Filing No. 10 Transportation Memorandum	February 23, 2021
The Glen at Widefild Filing No. 11 Transportation Memorandum	March 30, 2021
Grand Mountain School Safety Analysis	July 21, 2021
Source: LSC Transportation Consultants, Inc. ***(August 2021)***	

Appendix Table 2
Ridges at Lorson Ranch
Lorson Ranch Trip Generation Estimate

Traffix Zone	Name	ITE Land Use	ITE Code	Quantity	Unit	Trip Generation Rates[1] Daily	AM Peak Hour In	AM Peak Hour Out	PM Peak Hour In	PM Peak Hour Out	Raw ITE Trip Generation (Individual Driveway Trips) Daily	AM Peak Hour In	AM Peak Hour Out	PM Peak Hour In	PM Peak Hour Out	School Internal Trips[2] Daily	AM Peak Hour In	AM Peak Hour Out	PM Peak Hour In	PM Peak Hour Out	Retail Internal Trips[2] Daily	AM Peak Hour In	AM Peak Hour Out	PM Peak Hour In	PM Peak Hour Out	Pass-by[3] (%)	Pass-by Trips Daily	AM Peak Hour In	AM Peak Hour Out	PM Peak Hour In	PM Peak Hour Out	Total New External Trips Daily	AM Peak Hour In	AM Peak Hour Out	PM Peak Hour In	PM Peak Hour Out
RESIDENTIAL																																				
All Residential North of Lorson Boulevard "Between the Creeks"																																				
8	Ponderosa	Single-Family Detached Housing	210	102	DU[4]	9.44	0.19	0.56	0.62	0.37	963	19	57	64	37	26	2	5	1	1	99	0	2	5	2	0%	0	0	0	0	0	838	17	50	58	34
9	Ponderosa	Single-Family Detached Housing	210	102	DU	9.44	0.19	0.56	0.62	0.37	963	19	57	64	37	26	2	5	1	1	99	0	2	5	2	0%	0	0	0	0	0	838	17	50	58	34
10	Meadows Fil 1	Single-Family Detached Housing	210	97	DU	9.44	0.19	0.56	0.62	0.37	916	18	54	60	36	25	2	4	1	1	94	0	1	5	2	0%	0	0	0	0	0	797	16	49	54	33
11	Meadows Fil 3	Single-Family Detached Housing	210	51	DU	9.44	0.19	0.56	0.62	0.37	481	9	28	32	19	13	1	2	1	0	50	0	1	2	1	0%	0	0	0	0	0	418	8	25	29	18
12	Meadows Fil 3	Single-Family Detached Housing	210	87	DU	9.44	0.19	0.56	0.62	0.37	821	16	48	54	32	22	2	4	1	0	85	0	1	4	2	0%	0	0	0	0	0	714	14	43	49	30
3	The Meadows Fil 2	Single-Family Detached Housing	210	109	DU	9.44	0.19	0.56	0.62	0.37	1,029	20	60	68	40	28	2	5	1	1	106	1	2	5	2	0%	0	0	0	0	0	895	17	53	62	37
13	Allegiant Fil 1	Single-Family Detached Housing	210	97	DU	9.44	0.19	0.56	0.62	0.37	916	18	54	60	36	25	2	4	1	1	94	0	1	5	2	0%	0	0	0	0	0	797	16	49	54	33
5	Buffalo Crossing	Single-Family Detached Housing	210	204	DU	9.44	0.19	0.56	0.62	0.37	1,926	38	113	127	75	53	5	9	2	1	198	1	3	10	5	0%	0	0	0	0	0	1,675	32	101	115	69
	Townhomes at Lorson Ranch	Multifamily Housing	220	46	DU	7.32	0.11	0.35	0.35	0.21	337	5	16	16	10	9	1	2	0	0	35	0	1	2	1	0%	0	0	0	0	0	293	4	13	14	9
6	Pioneer Landing	Single-Family Detached Housing	210	59	DU	9.44	0.19	0.56	0.62	0.37	557	11	33	37	22	15	1	3	1	0	57	0	1	3	1	0%	0	0	0	0	0	485	10	29	33	21
7	Pioneer Landing	Single-Family Detached Housing	210	59	DU	9.44	0.19	0.56	0.62	0.37	557	11	33	37	22	15	1	3	1	0	57	0	1	3	1	0%	0	0	0	0	0	485	10	29	33	21
15	Meadows Future Fil 4 West	Single-Family Detached Housing	210	110	DU	9.44	0.19	0.56	0.62	0.37	1,038	20	61	69	40	28	2	5	1	1	107	1	2	5	2	0%	0	0	0	0	0	903	17	54	63	37
16	Meadows Future Fil 4 East	Single-Family Detached Housing	210	126	DU	9.44	0.19	0.56	0.62	0.37	1,189	23	70	79	46	32	3	6	1	1	123	1	2	6	3	0%	0	0	0	0	0	1,034	19	62	72	42
18	Ponderosa Fil 3	Multifamily Housing	220	90	DU	7.32	0.11	0.35	0.35	0.21	659	10	32	32	19	18	2	3	1	0	68	0	1	3	2	0%	0	0	0	0	0	573	8	28	28	17
39	Pioneer Landing Fil 2	Single-Family Detached Housing	210	170	DU	9.44	0.19	0.56	0.62	0.37	1,605	31	94	106	62	44	4	8	2	1	165	1	3	8	4	0%	0	0	0	0	0	1,396	26	83	96	57
		Total All Residential "Between the Creeks"		**1,509**	**DU**						**13,957**	**268**	**810**	**905**	**533**	**379**	**32**	**68**	**16**	**9**	**1,437**	**5**	**24**	**71**	**32**							**12,141**	**231**	**718**	**818**	**492**
Residential Adjacent to Marksheffel																																				
1	Carriage Meadows North	Single-Family Detached Housing	210	155	DU	9.44	0.19	0.56	0.62	0.37	1,463	29	86	97	57	40	3	7	2	1	151	1	2	7	3	0%	0	0	0	0	0	1,272	25	77	88	53
147	Carriage Meadows Town Homes	Multifamily Housing	220	49	DU	7.32	0.11	0.35	0.35	0.21	359	5	17	17	10	10	1	2	0	0	37	0	1	2	1	0%	0	0	0	0	0	312	4	14	15	9
47	Carriage Meadows South	Single-Family Detached Housing	210	86	DU	9.44	0.19	0.56	0.62	0.37	812	16	48	54	32	22	2	4	1	0	84	0	1	4	2	0%	0	0	0	0	0	706	14	43	49	30
247		Single-Family Detached Housing	210	51	DU	9.44	0.19	0.56	0.62	0.37	481	9	28	32	19	13	1	2	1	0	50	0	1	2	1	0%	0	0	0	0	0	418	8	25	29	18
347		Single-Family Detached Housing	210	97	DU	9.44	0.19	0.56	0.62	0.37	916	18	54	60	36	25	2	4	1	1	94	0	1	5	2	0%	0	0	0	0	0	797	16	49	54	33
		Total All Residential Adjacent to Marksheffel		**438**	**DU**						**4,031**	**77**	**233**	**260**	**154**	**110**	**9**	**19**	**5**	**2**	**416**	**1**	**6**	**20**	**9**							**3,505**	**67**	**208**	**235**	**143**
		Cumulative Total		**1,947**	**DU**						**17,988**	**345**	**1,043**	**1,165**	**687**	**489**	**41**	**87**	**21**	**11**	**1,853**	**6**	**30**	**91**	**41**							**15,646**	**298**	**926**	**1,053**	**635**
Lorson Ranch East																																				
42	North of Fontaine	Single-Family Detached Housing	210	277	DU	9.44	0.19	0.56	0.62	0.37	2,615	51	154	173	101	71	6	13	3	2	269	1	4	13	6	0%	0	0	0	0	0	2,275	44	137	157	93
37	East of Lamprey	Single-Family Detached Housing	210	122	DU	9.44	0.19	0.56	0.62	0.37	1,152	23	68	76	45	31	3	6	1	1	119	1	2	6	3	0%	0	0	0	0	0	1,002	19	60	69	41
27	West of Lamprey	Single-Family Detached Housing	210	303	DU	9.44	0.19	0.56	0.62	0.37	2,860	56	168	189	111	78	7	14	3	2	295	1	5	15	7	0%	0	0	0	0	0	2,487	48	149	171	102
127	South of Lorson - West	Single-Family Detached Housing	210	76	DU	9.44	0.19	0.56	0.62	0.37	717	14	42	47	28	20	2	3	1	0	74	0	1	4	2	0%	0	0	0	0	0	623	12	38	42	26
227	South of Lorson - East	Single-Family Detached Housing	210	48	DU	9.44	0.19	0.56	0.62	0.37	453	9	27	30	18	12	1	2	0	0	47	0	1	2	1	0%	0	0	0	0	0	394	8	24	28	17
		Lorson Ranch East		**826**	**DU**						**7,797**	**153**	**459**	**515**	**303**	**212**	**19**	**38**	**8**	**5**	**804**	**3**	**13**	**40**	**19**							**6,781**	**131**	**408**	**467**	**279**
		Cumulative Total		**2,773**	**DU**						**25,785**	**498**	**1,502**	**1,680**	**990**	**701**	**60**	**125**	**29**	**16**	**2,657**	**9**	**43**	**131**	**60**							**22,427**	**362**	**1,126**	**1,285**	**771**
Creekside at Lorson Ranch																																				
26	Creekside East (Filing 1)	Single-Family Detached Housing	210	97	DU	9.44	0.19	0.56	0.62	0.37	916	18	54	60	36	25	2	4	1	1	94	0	1	5	2	0%	0	0	0	0	0	797	16	49	54	33
126	Creekside West (Filing 1)	Single-Family Detached Housing	210	138	DU	9.44	0.19	0.56	0.62	0.37	1,303	26	77	86	51	36	3	6	1	1	134	1	2	7	3	0%	0	0	0	0	0	1,133	22	69	78	47
427	Creekside South Tract B (FUTURE)	Multifamily Housing	220	97	DU	7.32	0.11	0.35	0.35	0.21	710	10	34	34	20	19	2	3	1	0	73	0	1	4	2	0%	0	0	0	0	0	618	8	30	29	18
327	Creekside South	Single-Family Detached Housing	210	200	DU	9.44	0.19	0.56	0.62	0.37	1,888	37	111	125	73	52	4	9	2	1	195	1	3	10	4	0%	0	0	0	0	0	1,641	32	99	113	68
		Creekside at Lorson Ranch		**532**	**DU**						**4,817**	**91**	**276**	**305**	**180**	**132**	**11**	**22**	**5**	**3**	**496**	**2**	**7**	**26**	**11**							**4,189**	**78**	**247**	**274**	**166**
		Cumulative Total		**3,305**	**DU**						**30,602**	**589**	**1,778**	**1,985**	**1,170**	**833**	**71**	**147**	**34**	**19**	**3,153**	**11**	**50**	**157**	**71**							**26,616**	**507**	**1,581**	**1,794**	**1,080**
The Hills PUD																																				
43	Area 'B'	Single-Family Detached Housing	210	116	DU	9.44	0.19	0.56	0.62	0.37	1,095	21	64	72	42	30	3	5	1	1	113	1	2	6	3	0%	0	0	0	0	0	952	17	57	65	38
44	Area 'C'	Single-Family Detached Housing	210	123	DU	9.44	0.19	0.56	0.62	0.37	1,161	23	68	77	45	32	3	6	1	1	120	1	2	6	3	0%	0	0	0	0	0	1,009	19	60	70	41
36	Areas 'E' & 'G'	Single-Family Detached Housing	210	275	DU	9.44	0.19	0.56	0.62	0.37	2,596	51	153	172	101	71	6	13	3	2	267	1	4	13	6	0%	0	0	0	0	0	2,258	44	136	156	93
		The Hills PUD		**514**	**DU**						**4,852**	**95**	**285**	**321**	**188**	**133**	**12**	**24**	**5**	**4**	**500**	**3**	**8**	**25**	**12**							**4,219**	**80**	**253**	**291**	**172**
		Cumulative Total		**3,819**	**DU**						**35,454**	**684**	**2,063**	**2,306**	**1,358**	**966**	**83**	**171**	**39**	**23**	**3,653**	**14**	**58**	**182**	**83**							**30,835**	**587**	**1,834**	**2,085**	**1,252**
Skyline at Lorson Ranch																																				
45	Area 'A' - East of Lamprey/Grayling	Single-Family Detached Housing	210	85	DU	9.44	0.19	0.56	0.62	0.37	802	16	47	53	31	22	2	4	1	0	83	0	1	4	2	0%	0	0	0	0	0	697	14	42	48	29
		Cumulative Total		**3,904**	**DU**						**36,256**	**700**	**2,110**	**2,359**	**1,389**	**988**	**85**	**175**	**40**	**23**	**3,736**	**14**	**59**	**186**	**85**							**31,532**	**601**	**1,876**	**2,133**	**1,281**
Ranches at Lorson Ranch																																				
46	Area 'D' - NE of Fontaine/Walleye	Single-Family Detached Housing	210	459	DU	9.44	0.19	0.56	0.62	0.37	4,333	85	255	286	168	118	10	21	5	3	446	2	7	22	10	0%	0	0	0	0	0	3,769	73	227	259	155
35	Areas 'F' & 'H' - SE of Fontaine/Walleye	Single-Family Detached Housing	210	535	DU	9.44	0.19	0.56	0.62	0.37	5,050	99	297	334	196	138	12	24	5	3	520	3	8	26	12	0%	0	0	0	0	0	4,392	84	265	303	181
		Ranches at Lorson Ranch		**994**	**DU**						**9,383**	**184**	**552**	**620**	**364**	**256**	**22**	**45**	**10**	**6**	**966**	**5**	**15**	**48**	**22**							**8,161**	**157**	**492**	**562**	**336**
		Cumulative Total		**4,898**	**DU**						**45,639**	**884**	**2,662**	**2,979**	**1,753**	**1,244**	**107**	**220**	**50**	**29**	**4,702**	**19**	**74**	**234**	**107**							**39,693**	**758**	**2,368**	**2,695**	**1,617**
Future Residential Uses																																				
50	Area 'I' - South of Lorson/Walleye	Single-Family Detached Housing	210	441	DU	9.44	0.19	0.56	0.62	0.37	4,163	82	245	275	162	114	10	20	4	2	429	2	7	21	10	0%	0	0	0	0	0	3,620	70	218	250	150
		Cumulative Total		**5,339**	**DU**						**49,802**	**966**	**2,907**	**3,254**	**1,915**	**1,358**	**117**	**240**	**54**	**31**	**5,131**	**21**	**81**	**255**	**117**							**43,313**	**828**	**2,586**	**2,945**	**1,767**
NON-RESIDENTIAL LAND USES																																				
34	K-8 School	Elementary School	520	690	Students	1.89	0.36	0.31	0.07	0.08	1,304	250	213	51	53	913	175	85	20	37	0	0	0	0	0	0%	0	0	0	0	0	391	75	128	31	16
		Middle School/Junior High School	522	300	Students	2.13	0.31	0.27	0.07	0.08	639	94	80	22	23	447	66	32	9	16	0	0	0	0	0	0%	0	0	0	0	0	192	28	48	13	7
20	North of Fontaine (FUTURE)	Shopping Center	820	101	KSF[5]	46.75	0.74	0.45	2.13	2.30	4,722	75	46	215	233	0	0	0	0	0	2,361	37	12	54	116	25%	590	9	9	35	35	1,771	29	25	126	82
22	South of Fontaine (FUTURE)	Shopping Center	820	118	KSF	46.75	0.74	0.45	2.13	2.30	5,539	88	54	252	273	0	0	0	0	0	2,770	44	13	63	137	25%	692	11	11	41	41	2,077	33	30	148	95
											12,204	**507**	**393**	**540**	**582**	**1,360**	**241**	**117**	**29**	**53**	**5,131**	**81**	**25**	**117**	**253**		**1,282**	**20**	**20**	**76**	**76**	**4,431**	**165**	**231**	**318**	**200**
										Grand Total at Buildout of Lorson Ranch	**62,006**	**1,473**	**3,300**	**3,794**	**2,497**																**47,744**	**993**	**2,817**	**3,263**	**1,967**
Trip Generation Estimate From *Lorson Ranch Sketch Plan Amendment 2 Traffic Impact Analysis by LSC December 17, 2018*																																				
		Single-Family Detached Housing	210	4,408	DU	9.44	0.19	0.56	0.62	0.37	41,612	815	2,446	2,749	1,615	1,360	117	241	53	29	5,131	25	81	253	117	0%	0	0	0	0	0	0	41,665	768	2,441	2,758	1,654
		Multifamily Housing (Low-Rise)	220	894	DU	7.32	0.11	0.35	0.35	0.21	6,544	95	317	315	185											0%	0	0	0	0	0	0					
		Elementary School	520	690	Students	1.89	0.36	0.31	0.07	0.08	1,304	250	213	51	53	913	175	85	20	37	0	0	0	0	0	0%	0	0	0	0	0	0	391	75	128	31	16
		Middle School/Junior High School	522	300	Students	2.13	0.31	0.27	0.07	0.08	639	94	80	22	23	447	66	32	9	16	0	0	0	0	0	0%	0	0	0	0	0	0	192	28	48	13	7
		Shopping Center	820	219	KSF	46.75	0.74	0.45	2.13	2.30	10,261	163	100	467	506	0	0	0	0	0	5,131	81	25	117	253	25%	1,282	20	20	76	76	3,848	62	55	274	177
											60,360	**1,417**	**3,156**	**3,604**	**2,382**												**1,282**	**20**	**20**	**76**	**76**	**46,096**	**933**	**2,672**	**3,076**	**1,854**
										Change (Increase) From 2018	**1,646**	**56**	**144**	**190**	**115**																**1,648**	**60**	**145**	**187**	**113**

Notes:
(1) Source: "Trip Generation, 10th Edition, 2017" by the Institute of Transportation Engineers (ITE)
(2) See Appendix Table 3 for Internal Trip Assumptions
(3) Source: "Trip Generation Handbook - An ITE Proposed Recommended Practice 3rd Edition, 2017" by ITE
(3) DU = dwelling Unit
(4) KSF = thousand square feet of floor area

Appendix Table 3
Ridges at Lorson Ranch
Internal Trip Estimate

ITE Land Use	ITE Code	Quantity	Unit	Trip Generation Rates[1] Daily	AM Peak Hour In	AM Peak Hour Out	PM Peak Hour In	PM Peak Hour Out	Raw ITE Trip Generation (Individual Driveway Trips) Daily	AM Peak Hour In	AM Peak Hour Out	PM Peak Hour In	PM Peak Hour Out
Single-Family Detached Housing	210	5,057	DU[2]	9.44	0.19	0.56	0.62	0.37	47,738	936	2,807	3,154	1,852
Residential Condominium/Townhouse	210	282	DU	7.32	0.11	0.35	0.35	0.21	2,064	30	100	99	58
									49,802	**966**	**2,907**	**3,253**	**1,910**
Elementary School	520	690	Students	1.89	0.36	0.31	0.07	0.08	1,304	250	213	51	53
Middle School/Junior High School	522	300	Students	2.13	0.31	0.27	0.07	0.08	639	94	80	22	23
								Total School	**1,943**	**344**	**293**	**73**	**76**
Shopping Center	820	219	KSF[3]	46.75	0.74	0.45	2.13	2.30	10,261	162	99	467	506
								Total School and Retail	**12,204**	**506**	**392**	**540**	**582**

	Percent Internal Trips Daily	AM Peak Hour In	AM Peak Hour Out	PM Peak Hour In	PM Peak Hour Out	Total Internal Trips Daily	AM Peak Hour In	AM Peak Hour Out	PM Peak Hour In	PM Peak Hour Out	Total External Trips Daily	AM Peak Hour In	AM Peak Hour Out	PM Peak Hour In	PM Peak Hour Out
School	3%	12%	8%	2%	2%	1,360	117	241	53	29					
Retail	10%	3%	3%	8%	6%	5,131	25	81	253	117					
Total	13%	15%	11%	9%	8%	**6,491**	**142**	**322**	**306**	**146**	**43,311**	**824**	**2,585**	**2,947**	**1,764**
	70%	70%	40%	40%	70%	913	175	85	20	37	391	75	128	31	16
	70%	70%	40%	40%	70%	447	66	32	9	16	192	28	48	13	7
						1,360	**241**	**117**	**29**	**53**	**583**	**103**	**176**	**44**	**23**
	50%	50%	25%	25%	50%	5,131	81	25	117	253	5,129	80	74	350	252
						6,491	**322**	**142**	**146**	**306**					
											49,023	**1,007**	**2,835**	**3,341**	**2,039**

Notes:
(1) Source: "Trip Generation, 10th Edition, 2017" by the Institute of Transportation Engineers (ITE)
(2) DU = dwelling Unit
(3) KSF = thousand square feet of floor area

Crash History

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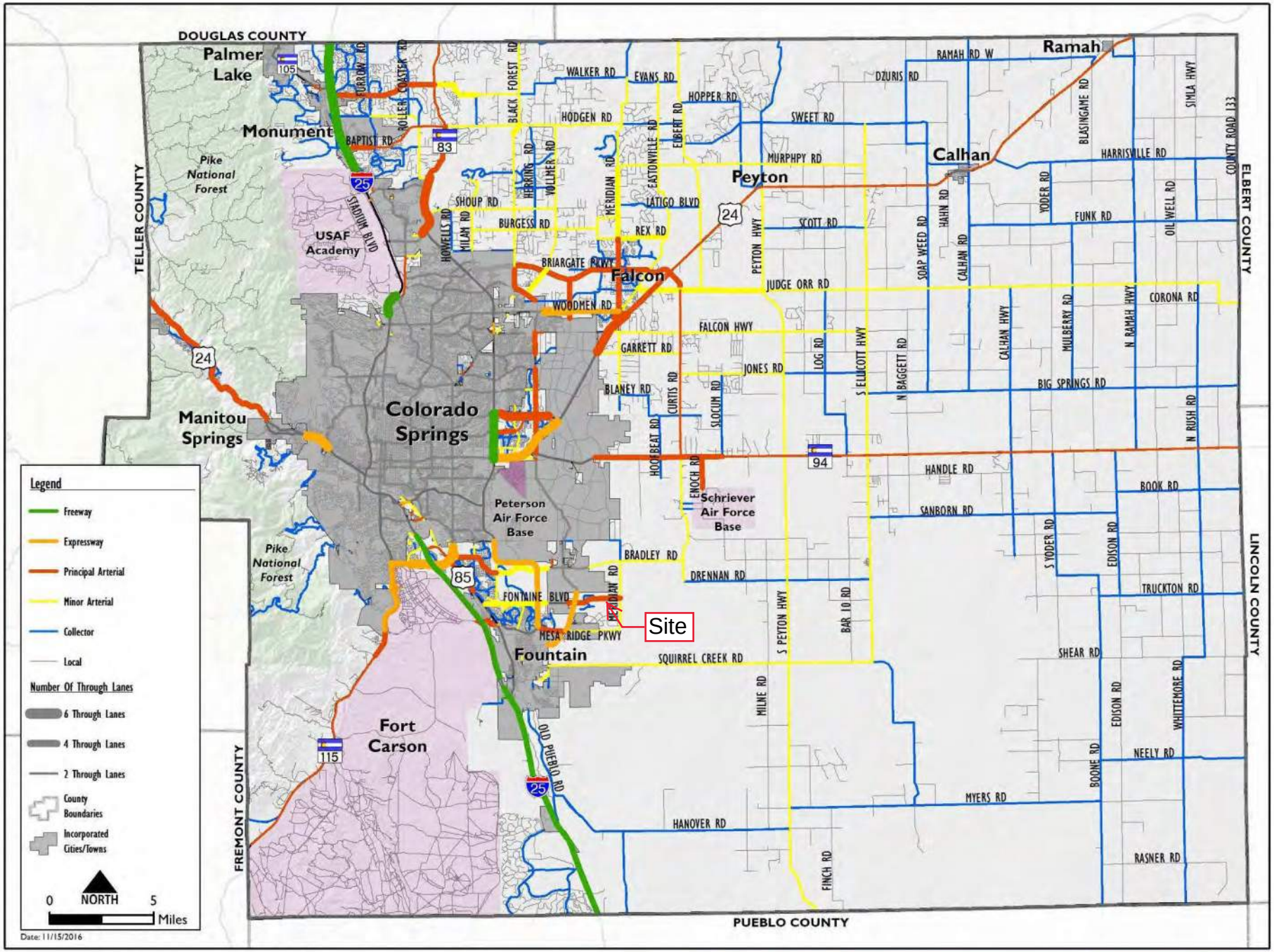
Year	Month	Day	AccidentTime	TotalVehicles	FIP	ReferencePointName	ReferencePointAtName	AccidentNarrative
MARKSHEFFEL/FONTAINE								
2018	3	19	8:25:00 AM	2	Property	MARKSHEFFEL RD	FONTAINE BLV	Vehicle #1 was westbound on Fontaine Blvd stopped at Marksheffel Rd. Vehicle #2 was northbound on Marksheffel Rd at Fontaine Blvd. Vehicle #1 pulled into the intersection and struck the right side of vehicle #2 with its front. Vehicle #1 rotated clock-wise (1/2 turn) and the left rear side of vehicle #1 struck the right front/side of vehicle #2's trailer. Vehicle #1 came to a stop facing north. Vehicle #2 veered to the left, traveled off the shoulder and came to a stop facing north.
2018	6	13	3:43:00 PM	2	Property	MARKSHEFFEL RD	FONTAINE BLV	Vehicle #1 was eastbound on Fontaine Blvd attempting to turn left onto northbound Marksheffel Road. Vehicle #2 was westbound on Fontaine Blvd. The front left of vehicle #1 collided with the right front of vehicle #1. Vehicles were moved prior to inveastigation.
2018	11	19	5:50:00 AM	2	Property	MARKSHEFFEL RD	FONTAINE BLVD	Vehicle #1 and #2 were southbound on Marksheffel Rd in the through lane approaching Fontaine Blvd. Vehicle #2 was slowing and was struck by vehicle #1. Vehicle #1's left front/quarter panel struck the right rear/side of vehicle #2. Vehicle #1 veered to the right for approximatley 90' coming to a stop off the right shoulder facing south. Vehicle #2 continued southbound and came to a stop in the thorugh lane approximately 25' from impact facing south.
2018	12	21	1:10:00 PM	2	Property	MARKSHEFFEL RD	FONTAINE BLV	Vehicle 1 was eastbound on Fontaine Boulevard. Vehicle 2 was southbound on Marksheffel Road. Vehicle 3 was northbound in the left turn lane waiting to turn left. Vehicle 2 continued southbound when Vehicle 1 ran through the red light and the front right of Vehicle 1 collided with the right rear of Vehicle 2. The bumper of Vehicle 1 came off and hit the hood and driver's side door of Vehicle 3. Vehicle 2 rotated counterclockwise facing east and slid for approximately 118 feet before continuing off road and overturning for approximately 4 and 1/2 turns before coming to rest on its right side with wheels facing north. Vehicle 1 slid for approximately 54 feet before coming to rest on all four wheels facing southeast. Vehicle 3 did not move from point of
2019	1	5	1:40:00 PM	2	Property	MARKSHEFFEL RD	FONTAINE BLVD	Vehicle 2 was westbound stopped at the light at Fontaine Boulevard, watiting to turn right onto Marksheffel Road. Vehicle 1 was also westbound behind Vehicle 2. Vehicle 1 did not notice Vehicle 2 was stopped and the front of Vehicle 1 contacted the rear of Vehicle 2. Both vehicles came to final rest facing north on all wheels.
2019	4	30	10:35:00 AM	2	Property	FONTAINE BLVD	MARKSHEFFEL RD	Vehicle 1 was westbound on Fontaine Boulevard in Traffic Lane # 4. Vehicle 2 was westbound on Fontaine Boulevard, in Traffic Lane # 4, ahead of Vehicle 1. Vehicle 2 stopped for traffic. Vehicle 1 struck Vehicle 2, on its rear, with its front. Both vehicles were moved from the scene prior to officer arrival.
2019	8	15	6:45:00 AM	2	Property	FONTAINE BLVD	MARKSHEFFEL RD	VEHICLE # 1 WAS WESTBOUND ON FONTAINE BLVD. VEHICLE # 2 WAS NORTHBOUND ON MARKSHEFFEL. VEHICLE # 1 FAILED TO YIELD RIGHT OF WAY TO VEHICLE # 2. VEHICLE # 2 COLLIDED WITH THE FRONT END OF VEHICLE # 1. BOTH VEHICLES MOVED PRIOR TO INVESTIGATION.
2019	9	26	11:05:00 AM	2	Injury	FONTAINE BLVD	MARKSHEFFEL RD	Vehicle 1 was eastbound on Fontaine Blvd making a left turn onto northbound Marksheffel Rd. Vehicle 2 was westbound on Fontaine Blvd at Marksheffel Rd. Vehicle 1 turned into vehicle 2's path. Vehicle 2 collided its front with the side of vehicle 1. Both vehicles were moved prior to investigation.
2019	11	7	7:00:00 AM	2	Property	FONTAINE BLVD	E MARKSHEFFEL RD	Vehicle #1 was in the right turn lane on westbound Fonatine Blvd for northbound Marksheffel Rd. Vehicle #2 was stopped in the right turn lane on westbound Fonatine Blvd for northbound Marksheffel Rd. Vehicle #1 did not stop and its front collided with the rear of vehicle #2. Both vehicles moved prior to investigation.
2020	2	21	7:05:00 AM	2	Property	FONTAINE BLVD	MARKSHEFFEL RD	Vehicle #1 was traveling westbound on Fontaine Boulevard in the right turn lane for northbound Marksheffel Road. Vehicle #2 was stopped on Fontaine Boulevard in the right turn lane for northbound Marksheffel Road. Vehicle #1's front right struck Vehicle #2's left rear. Both vehicles moved out of traffic prior to my arrival on scene.
2020	5	23	2:24:00 PM	2	Injury	MARKSHEFFEL RD	FONTAINE BLVD	Vehicle #1 was southbound on Marksheffel Road and Vehicle #2 was northbound Marksheffel near the intersection of Marksheffel Road/Fontaine Boulevard. Vehicle #1 turned left (east) onto Fontaine Boulevard and failed to yield right-of-way to Vehicle #2. Vehicle #2 had a green light and proceeded through the intersection when it collided its front bumper into the front bumper of Vehicle #1.
2021	2	10	6:20:00 PM	2	Property	MARKSHEFFEL RD	FONTAINE BLVD	Vehicle #1 was south on Marksheffel Road, making a left turn in the intersection to go east on Fontaine Boulevard. Vehicle #2 was north on Marksheffel, when Vehicle #1 failed to yield the right-of-way to oncoming traffic. As Vehicle #1 was turning left in the intersection, it collided its front driver side bumper into the rear driver side of Vehicle #2. Vehicles #1 and #2 came to rest on their wheels and were moved prior to investigation.
2021	4	26	5:30:00 AM	2	Injury	FONTAINE BLVD	MARKSHEFFEL RD	Vehicle #1 was northbound on Marksheffel Road approaching Fontaine Blvd. Vehicle #2 was southbound on Marksheffel Road approaching Fontaine Blvd. Vehicle #1 made a left turn to drive west on Fontaine Blvd and failed to yield the right of way to vehicle #2. Vehicle #1 collided it's front with the front of vehicle #2 in the intersection. Both vehicles drove west on Fontaine Blvd and came to final rest in the #2 lane, westbound on Fontaine Blvd.
2021	7	7	1:30:00 PM	2	Property	MARKSHEFFEL RD	FONTAINE BLVD	Vehicle#1 was travelling westbound Fontaine BLVD. Vehicle#2 was traveling southbound on Marksheffel Road. Vehicle#1 continued through a red light striking its front with the left side of Vehicle#2 within the intersection. Both vehicles were driven to the right shoulder of eastbound Fontaine BLVD.
2021	7	8	6:47:00 AM	2	Property	MARKSHEFFEL RD	FONTAINE BLVD	Vehicles #1 and #2 were westbound on Fontaine Blvd attempting to turn right onto northbound Marksheffel Road. The right front of vehicle #1 collided with the left rear of vehicle #2. Vehicles were moved prior to investigation.
2021	7	13	4:00:00 PM	1	Property	FONTAINE BLVD	MARKSHEFFEL RD	Vehicle #1 was traveling southbound on Marksheffel Road, turning left onto eastbound Fontaine Blvd. Vehicle #1 collided with the curb on the southeast corner of the intersection and drove into the grass off the roadway where it came to rest.

Year	Month	Day	Hour	TotalVehicles	FIP	ReferencePointName	Reference	ReferencePointAtName	AccidentNarrative
LORSON/MARKSHEFFEL									
2018	9	22	7	1	Fatal	MARKSHEFFEL RD		LORSON BLVD	Vehicle 1 was northbound on Marksheffel Road. Vehicle 1 drifted into the painted center median, into oncoming southbound traffic. Vehicle 1 traveled off road for 122 feet and the front driver's side collided with a concrete culvert. The Vehicle 1 came to rest on all four wheels on the westbound side of Marksheffel facing southbound.
2019	7	12	23	1	Property	MARKSHEFFEL RD		LORSON BLVD	Vehicle #1 was traveling southbound on Marksheffel Rd approaching Lorson Blvd. Vehicle #1 made a left turn onto Larson Blvd. Vehicle #1 went off the south side of Lorson Blvd into a ditch. The occupants fled to scene.
OLD GLORY/FONTAINE									
2019	1	14	12	2	Property	FONTAINE BLVD		OLD GLORY DR	Vehicle #1 was eastbound on Old Glory Rd at Fontaine Blvd. Vehicle #2 was northeast on Fontained Blvd and Old Glory Rd. Vehicle #1 failed to yield right of way to vehicle #2; vehicle #2's front struck the right side of vehicle #1. Vehicle #1traveled approximately 83' northeast and came to a stop facing northeast of the road. Vehicle #2 traveled approximately 31' while rotating clockwise and came to a stop facing east.

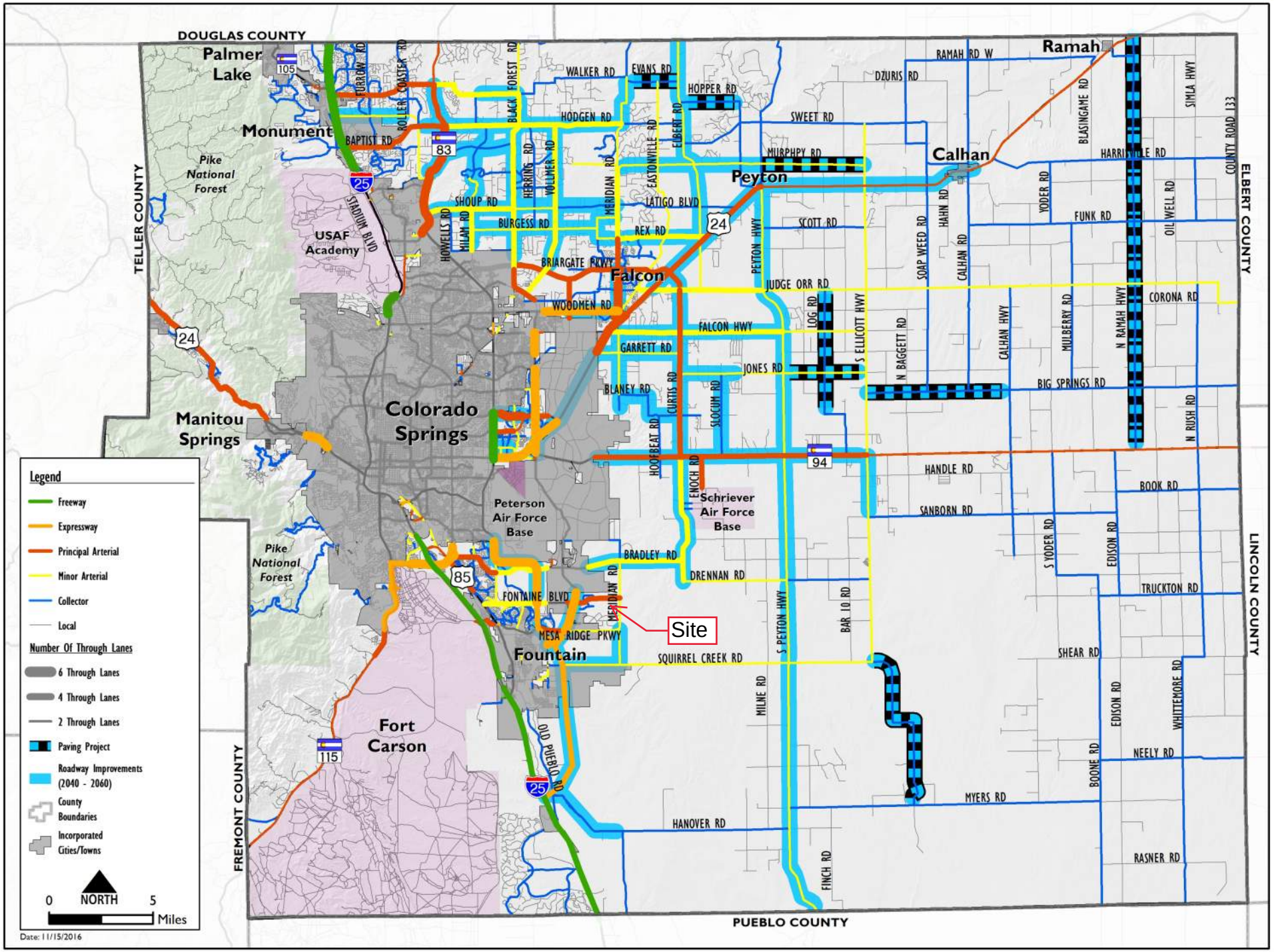
MTCP Maps

TRANSPORTATION
CONSULTANTS, INC.



Map 14: 2040 Roadway Plan (Classification and Lanes)

Map 17: 2060 Corridor Preservation



Additional Attachments

Key Pages from recent traffic impact studies

TRANSPORTATION
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LSC TRANSPORTATION CONSULTANTS, INC.
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Carriage Meadows Townhomes
Traffic Impact Analysis
PUDSP-19-005
(LSC #184720)
May 28, 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.

Developer's Statement

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

5/29/20
Date

TRAFFIC SIGNAL WARRANT ANALYSIS

Fontaine/Carriage Meadows

As shown in Figure 10a, based on the projected short-term total traffic volumes the northbound left-turn movement at the intersection of Carriage Meadows Drive and Fontaine Boulevard is projected to be 44 vehicles per hour during the morning peak hour and 29 vehicles per hour during the afternoon peak hour. The minimum threshold volume for a Four-Hour Vehicular Volume Traffic Signal Warrant is 60 vehicles per hour for a minor approach with one lane. As the projected short-term morning and afternoon peak-hour traffic volumes are both projected to be below this threshold, it is not anticipated that a traffic signal warrant will be met at this intersection until one or more of the future retail parcels are developed.

Marksheffel/Lorson

The intersection of Marksheffel/Lorson was analyzed to determine when the Four-Hour Vehicular Volume Traffic Signal Warrant thresholds would be reached or exceeded based on the projected morning and afternoon peak-hour short-term traffic volumes. The results of the analysis are shown in Figure 12. The minor approach volumes were assumed to include the westbound left-turn movements only.

As shown in the figure, the thresholds for a Four-Hour Vehicular Volume Traffic Signal Warrant are projected to be exceeded during the morning and afternoon peak hours based on the projected short-term background and total traffic volumes. In order for a Four-Hour Traffic Signal Warrant to be satisfied, the volume threshold would need to be met for two additional hours of the day. For example, the four-hour warrant would be satisfied with the volume thresholds met for the one hour in the morning, two hours (instead of the one-hour peak) during the afternoon peak period, and an hour during the mid-afternoon. 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 El Paso County Department of Transportation.

TRAFFIC SIGNAL ESCROW PERCENTAGES/AMOUNTS

Fontaine/Carriage Meadows

The intersection of Carriage Meadows/Lorson is not likely to meet a signal warrant until one or more of the retail parcels are developed. Table 3 shows the projected total traffic volumes on the minor approach volumes at the intersection of Fontaine/Carriage Meadows by development at **buildout** of Lorson Ranch. The minor approach volumes were assumed to include the northbound and southbound left-turn and through movements, plus 50 percent of the northbound right-turn movements and 10 percent of the southbound right-turn movements. As shown in Table 4, the currently proposed multifamily development is projected to contribute about 3.6 percent of the traffic on the northbound and southbound approaches to the

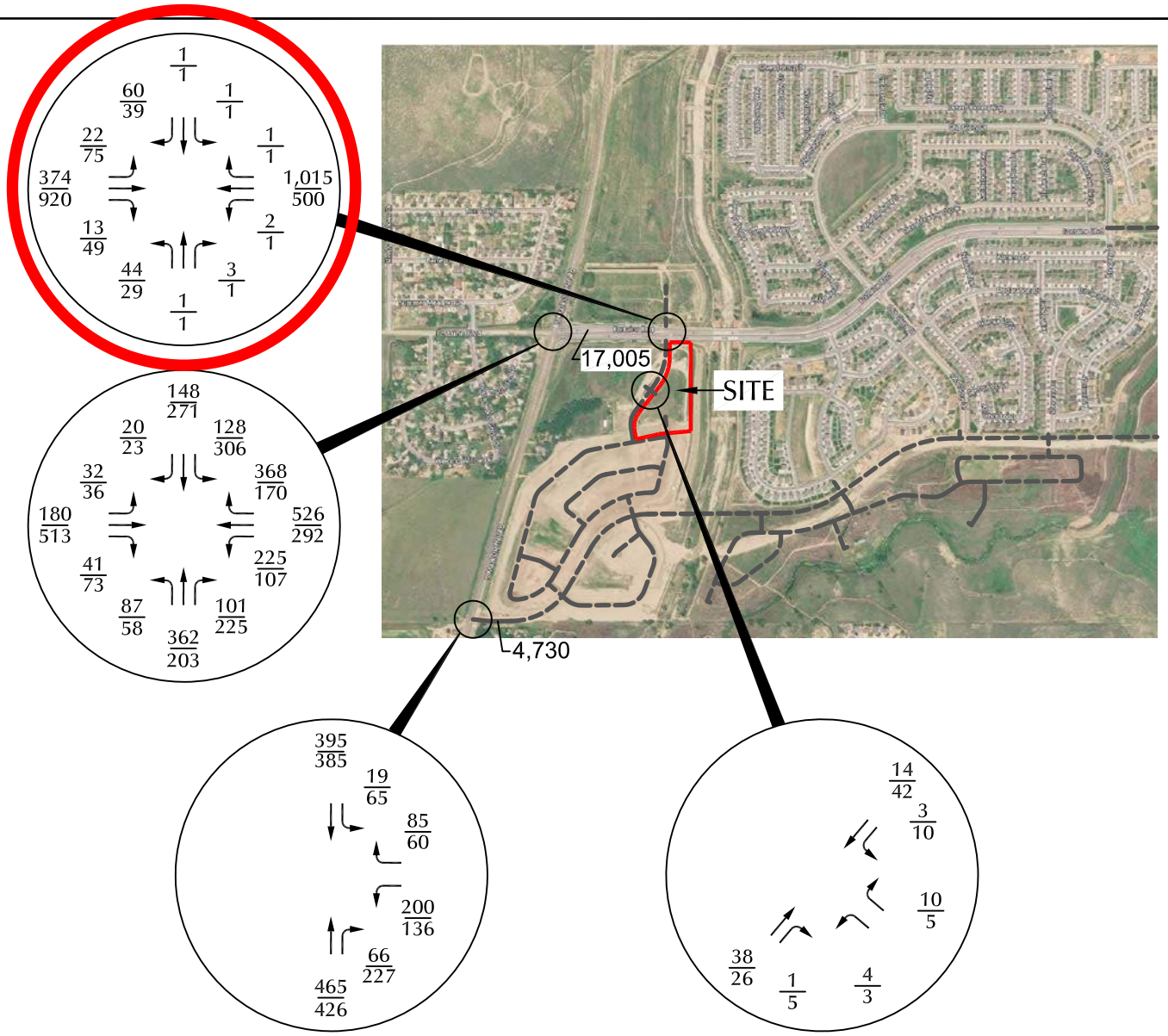


Figure 10a

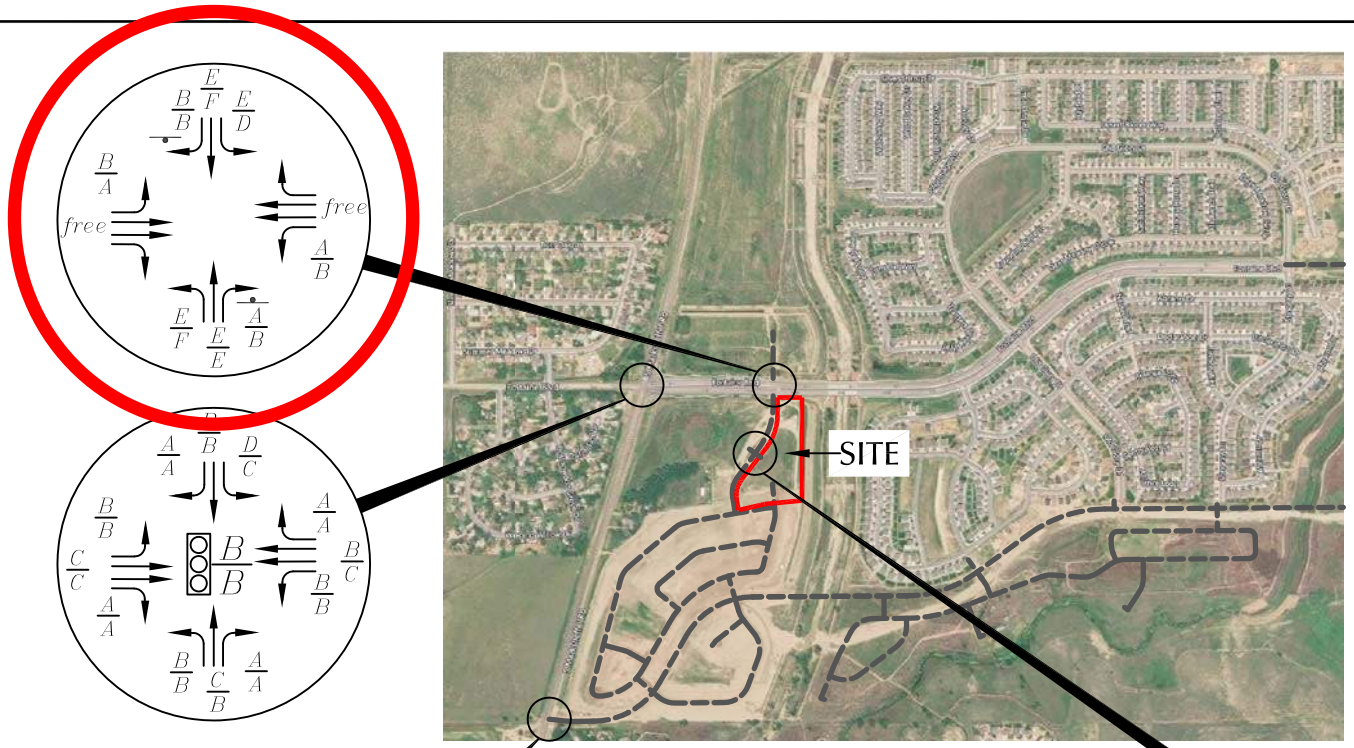
Short-Term Total Traffic

Carriage Meadows South Multi-Family (LSC #184720)

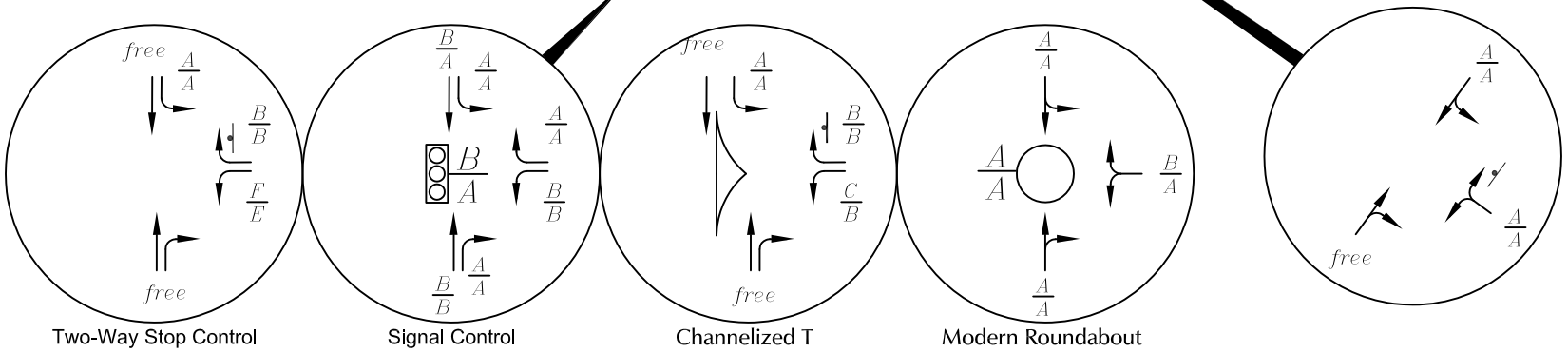
LEGEND:

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

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



Approximate Scale
Scale: 1"= 1,500'



Two-Way Stop Control | Signal Control | Channelized T | Modern Roundabout

LEGEND:

= Stop Sign

= Traffic Signal

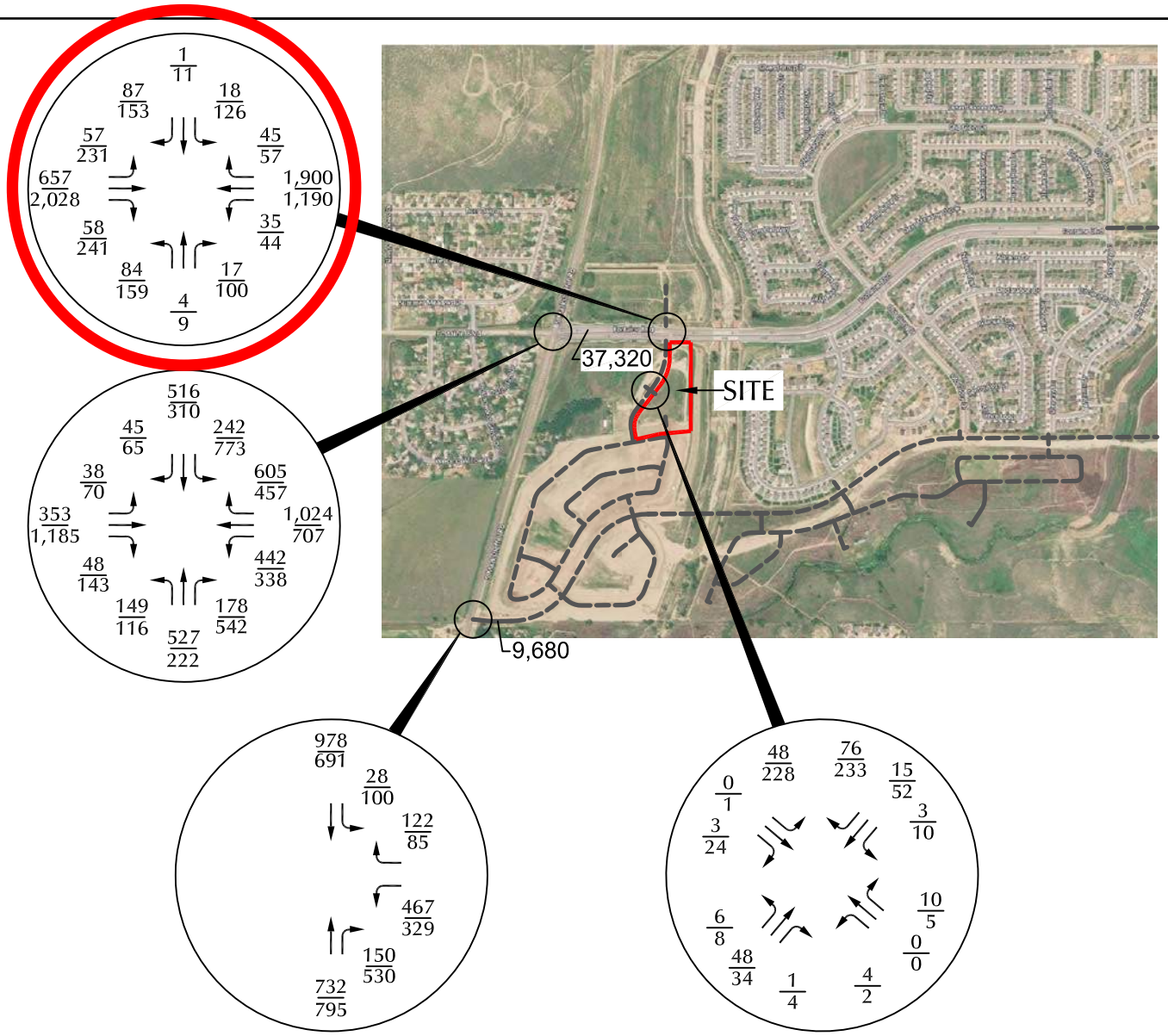
$\frac{A}{B}$ = AM Individual Movement Peak-Hour Level of Service / PM Individual Movement Peak-Hour Level of Service

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

Figure 10b

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

Carriage Meadows South Multi-Family (LSC #184720)



LEGEND:

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

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

Figure 11a

Year 2040 Total Traffic

Carriage Meadows South Multi-Family (LSC #184720)

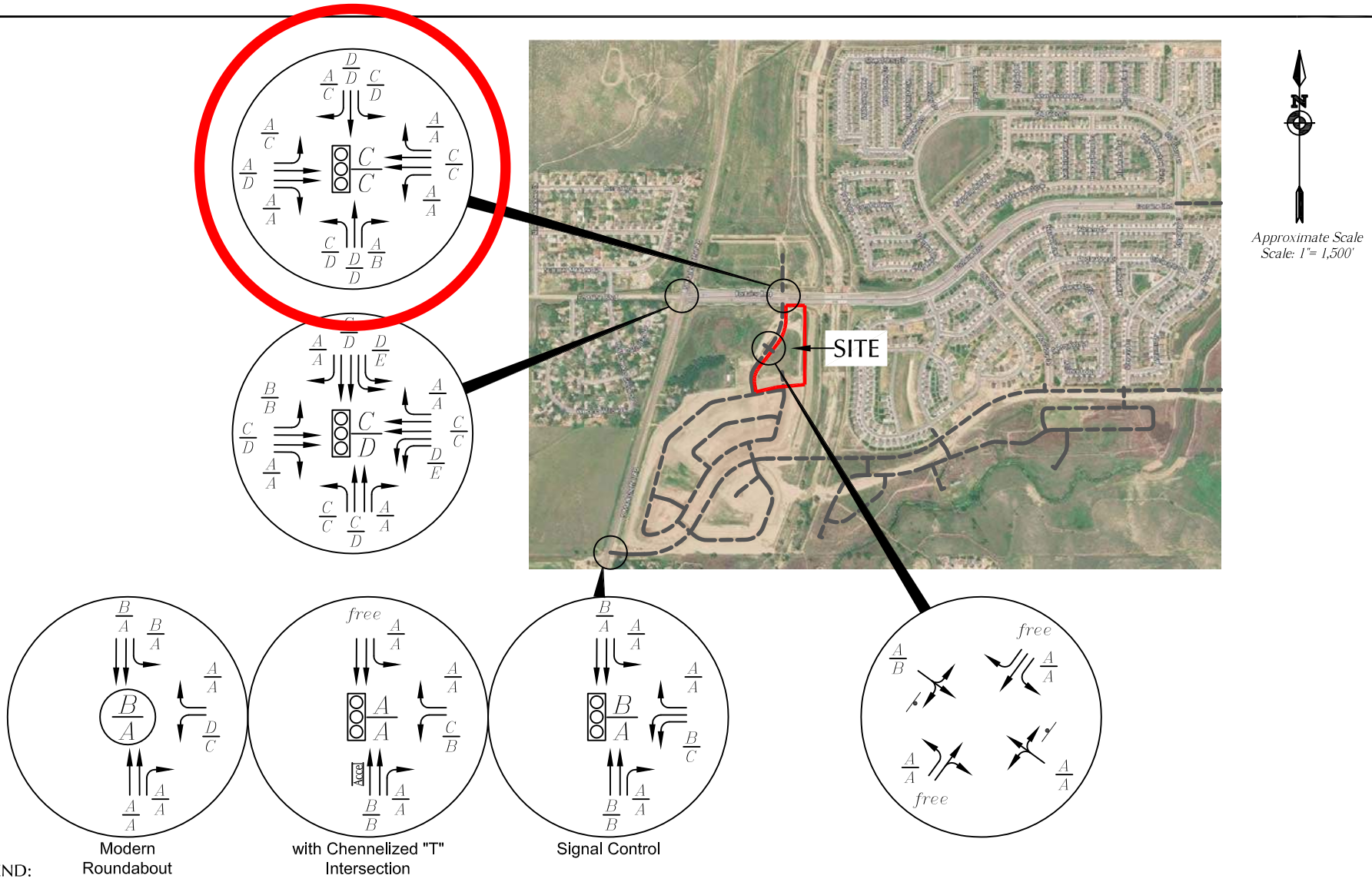


Figure 11b

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

Carriage Meadows South Multi-Family (LSC #184720)

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	22	374	13	2	1015	1	44	1	3	1	1	60
Future Vol, veh/h	22	374	13	2	1015	1	44	1	3	1	1	60
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	400	-	0	375	-	250	100	-	100	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	24	407	14	2	1103	1	48	1	3	1	1	65

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1104	0	0	421	0	0	1011	1563	204	1359	1576	552
Stage 1	-	-	-	-	-	-	455	455	-	1107	1107	-
Stage 2	-	-	-	-	-	-	556	1108	-	252	469	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	628	-	-	1135	-	-	194	111	803	107	109	477
Stage 1	-	-	-	-	-	-	554	567	-	224	284	-
Stage 2	-	-	-	-	-	-	483	284	-	730	559	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	628	-	-	1135	-	-	161	107	803	103	105	477
Mov Cap-2 Maneuver	-	-	-	-	-	-	161	107	-	103	105	-
Stage 1	-	-	-	-	-	-	533	545	-	215	283	-
Stage 2	-	-	-	-	-	-	415	283	-	698	538	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0	34.9	14.5
HCM LOS			D	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	161	107	803	628	-	-	1135	-	-	103	105	477
HCM Lane V/C Ratio	0.297	0.01	0.004	0.038	-	-	0.002	-	-	0.011	0.01	0.137
HCM Control Delay (s)	36.5	39	9.5	11	-	-	8.2	-	-	40.3	39.6	13.7
HCM Lane LOS	E	E	A	B	-	-	A	-	-	E	E	B
HCM 95th %tile Q(veh)	1.2	0	0	0.1	-	-	0	-	-	0	0	0.5

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	75	920	49	1	500	1	29	1	1	1	1	39
Future Vol, veh/h	75	920	49	1	500	1	29	1	1	1	1	39
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	400	-	0	375	-	250	100	-	100	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	82	1000	53	1	543	1	32	1	1	1	1	42

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	544	0	0	1053	0	0	1438	1710	500	1210	1762	272
Stage 1	-	-	-	-	-	-	1164	1164	-	545	545	-
Stage 2	-	-	-	-	-	-	274	546	-	665	1217	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1021	-	-	657	-	-	94	90	516	138	83	726
Stage 1	-	-	-	-	-	-	207	267	-	490	517	-
Stage 2	-	-	-	-	-	-	709	516	-	416	252	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1021	-	-	657	-	-	82	83	516	128	76	726
Mov Cap-2 Maneuver	-	-	-	-	-	-	82	83	-	128	76	-
Stage 1	-	-	-	-	-	-	190	246	-	451	516	-
Stage 2	-	-	-	-	-	-	665	515	-	380	232	-

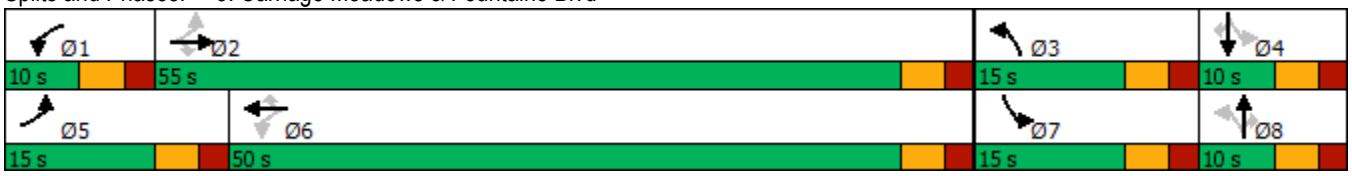
Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0	71.2	11.9
HCM LOS			F	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	82	83	516	1021	-	-	657	-	-	128	76	726
HCM Lane V/C Ratio	0.384	0.013	0.002	0.08	-	-	0.002	-	-	0.008	0.014	0.058
HCM Control Delay (s)	74	48.9	12	8.8	-	-	10.5	-	-	33.4	53.1	10.3
HCM Lane LOS	F	E	B	A	-	-	B	-	-	D	F	B
HCM 95th %tile Q(veh)	1.5	0	0	0.3	-	-	0	-	-	0	0	0.2

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	657	59	35	1900	45	86	4	17	18	1	87
Future Volume (vph)	57	657	59	35	1900	45	86	4	17	18	1	87
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	15.0	55.0	55.0	10.0	50.0	50.0	15.0	10.0	10.0	15.0	10.0	10.0
Total Split (%)	16.7%	61.1%	61.1%	11.1%	55.6%	55.6%	16.7%	11.1%	11.1%	16.7%	11.1%	11.1%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	59.3	56.5	56.5	55.8	53.1	53.1	15.3	11.3	11.3	10.2	5.0	5.0
Actuated g/C Ratio	0.70	0.67	0.67	0.66	0.63	0.63	0.18	0.13	0.13	0.12	0.06	0.06
v/c Ratio	0.27	0.29	0.06	0.07	0.90	0.04	0.37	0.02	0.05	0.10	0.01	0.40
Control Delay	8.4	9.2	0.1	5.7	26.8	0.1	33.6	37.0	0.3	29.2	40.0	7.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.4	9.2	0.1	5.7	26.8	0.1	33.6	37.0	0.3	29.2	40.0	7.4
LOS	A	A	A	A	C	A	C	D	A	C	D	A
Approach Delay		8.4			25.8			28.4			11.4	
Approach LOS		A			C			C			B	

Intersection Summary		
Cycle Length: 90		
Actuated Cycle Length: 84.6		
Natural Cycle: 80		
Control Type: Semi Act-Uncoord		
Maximum v/c Ratio: 0.90		
Intersection Signal Delay: 20.9	Intersection LOS: C	
Intersection Capacity Utilization 75.2%	ICU Level of Service D	
Analysis Period (min) 15		

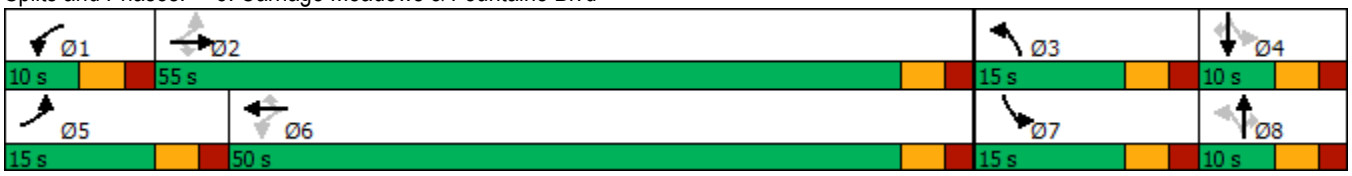
Splits and Phases: 8: Carriage Meadows & Fountaine Blvd



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	231	2028	243	44	1190	57	160	9	100	126	10	153
Future Volume (vph)	231	2028	243	44	1190	57	160	9	100	126	10	153
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	15.0	55.0	55.0	10.0	50.0	50.0	15.0	10.0	10.0	15.0	10.0	10.0
Total Split (%)	16.7%	61.1%	61.1%	11.1%	55.6%	55.6%	16.7%	11.1%	11.1%	16.7%	11.1%	11.1%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	60.0	54.0	54.0	50.0	45.0	45.0	13.8	5.1	5.1	15.6	5.0	5.0
Actuated g/C Ratio	0.67	0.60	0.60	0.56	0.50	0.50	0.15	0.06	0.06	0.17	0.06	0.06
v/c Ratio	0.78	1.00	0.25	0.26	0.71	0.07	0.61	0.08	0.46	0.47	0.11	0.67
Control Delay	33.1	40.3	2.7	9.9	20.0	0.2	41.7	42.2	10.1	35.7	42.8	22.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.1	40.3	2.7	9.9	20.0	0.2	41.7	42.2	10.1	35.7	42.8	22.1
LOS	C	D	A	A	C	A	D	D	B	D	D	C
Approach Delay		36.0			18.8			29.9			28.8	
Approach LOS		D			B			C			C	

Intersection Summary		
Cycle Length: 90		
Actuated Cycle Length: 89.7		
Natural Cycle: 90		
Control Type: Semi Act-Uncoord		
Maximum v/c Ratio: 1.00		
Intersection Signal Delay: 30.1	Intersection LOS: C	
Intersection Capacity Utilization 87.4%	ICU Level of Service E	
Analysis Period (min) 15		

Splits and Phases: 8: Carriage Meadows & Fountaine Blvd



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Website: http://www.lsctrans.com

Lorson Ranch East
Updated Traffic Impact and Access Analysis
(LSC #164360)
November 9, 2017

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.

Jeffrey C. Hodsdon, P.E., #31684

Date

Developer's Statement

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

11/9/17
Date

one-lane roundabout would need to be converted to a multi-lane roundabout (or replaced with a signal). LSC has prepared a multi-lane roundabout design to accommodate future traffic demand as needed and future right-of-way will be dedicated based on this design.

- The intersections of Fontaine/Edisto, Fontaine/Tillamook, Lorson/Trappe, Lorson/Willapa, Lorson/Skuna, and Lorson/Lamprey are projected to operate at satisfactory levels of service as Stop-sign-controlled intersections based on the projected 2040 total traffic volumes.

- The northbound approach at the westernmost access to Fontaine Boulevard (Lamine Drive) is projected to operate at LOS F during the afternoon peak hour based on the projected 2040 total traffic volumes. Northbound left-turning traffic at the Lamine Drive intersection would have the option to turn right and execute a U-turn using the planned roundabout to travel west. Once Fontaine is upgraded to a four-lane Principal Arterial at some future time by the County (likely beyond 2040), the raised center median would restrict this intersection to a right-in/right-out.

Recommended Improvements

- Table 5 provides a summary of the recommended improvements in the vicinity of the site. The table includes estimated timing and responsibility for those improvements.

Traffic Signal Escrow Percentages/Amounts

- Assuming a total signal cost of $300,000, a fair share contribution towards a future signal at this intersection would be $93,950 for Lorson Ranch East Phase 1 and $60,854 for the future Lorson Ranch East phases. Please refer to the section in the report entitled Traffic Signal Escrow Percentages/Amounts.

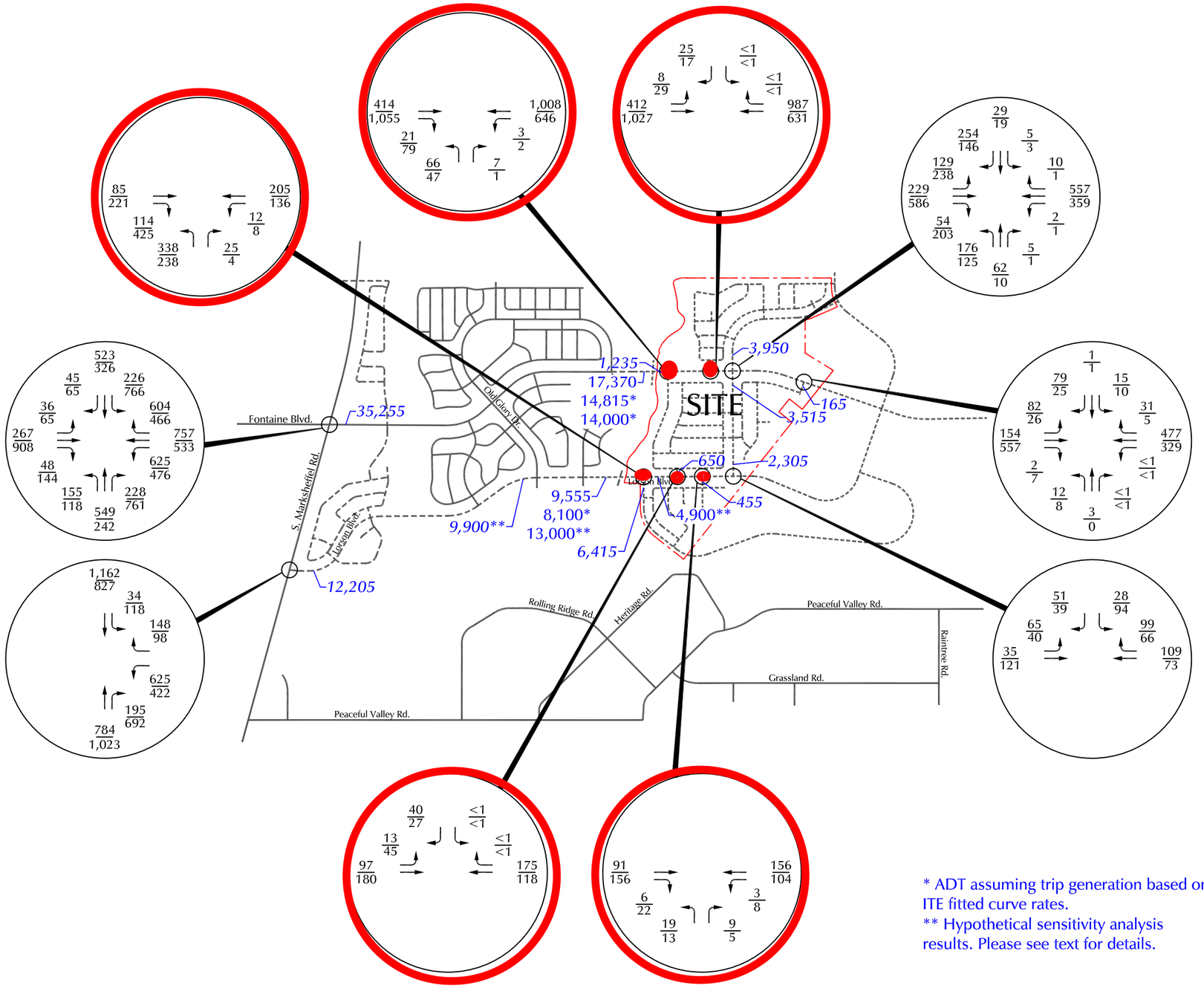
Recommended Auxiliary Turn Lanes on Fontaine Boulevard

- Based on the projected long-term traffic volumes, an eastbound right-turn deceleration lane would be required on Fontaine Boulevard approaching Lamine Drive. No westbound right-turn deceleration lanes would be required.

- Based on the projected long-term traffic volumes, an eastbound left-turn lane would be required on Fontaine Boulevard approaching Edisto Drive. The Non-Residential Collector would provide one through lane in each direction plus a center two-way left-turn lane. This center painted median would accommodate left turns at this intersection.

Recommended Auxiliary Turn Lanes on Lorson Boulevard

- Based on the projected long-term traffic volumes, an eastbound right-turn deceleration lane would be required on Lorson Boulevard approaching Trappe Drive. This lane should be 155 feet long plus a 160-foot taper.



Approximate Scale
Scale: 1"= 2,000'

* ADT assuming trip generation based on ITE fitted curve rates.
** Hypothetical sensitivity analysis results. Please see text for details.

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

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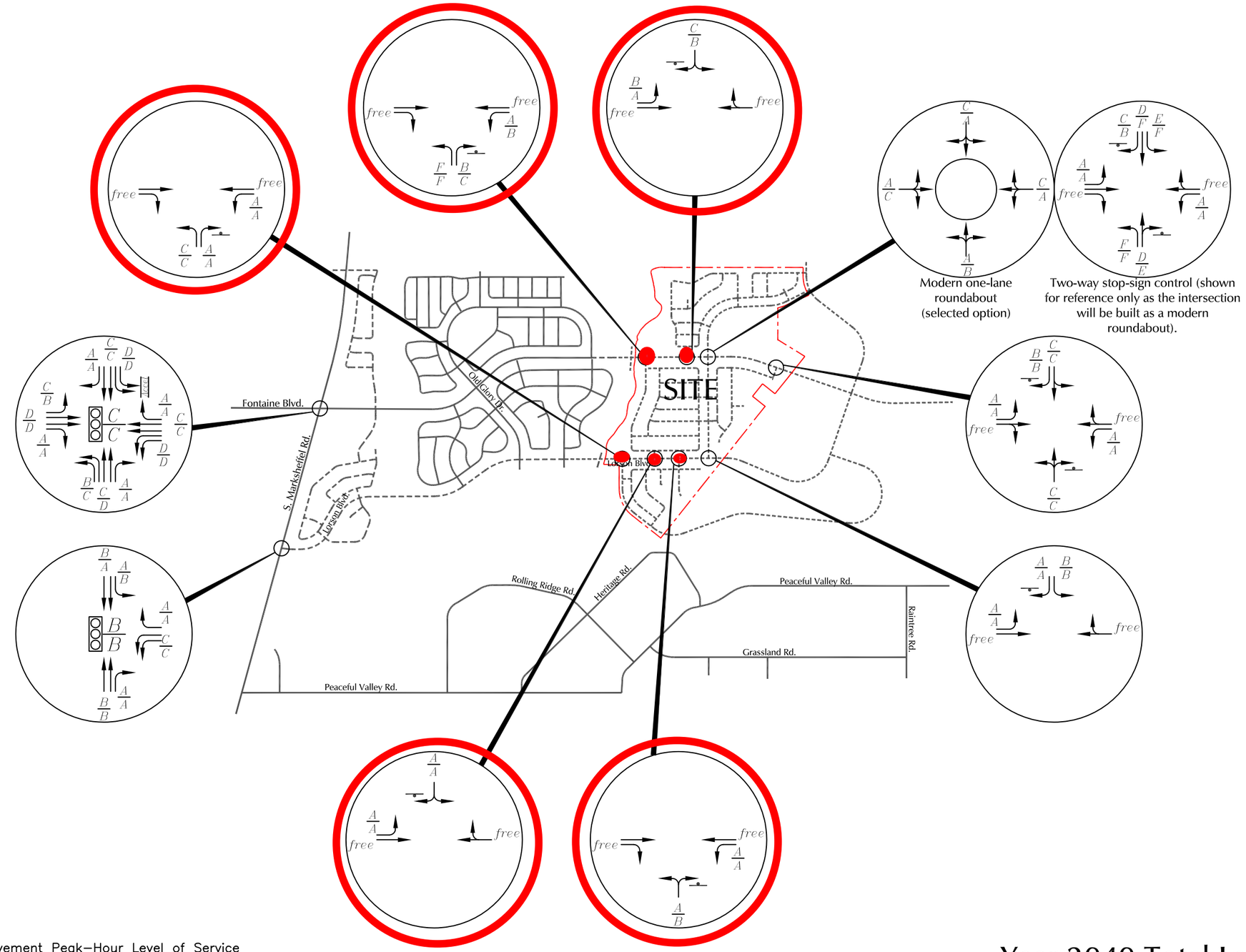
Figure 12a

Year 2040 Total Traffic

Lorson Ranch East (LSC #164360)



LEGEND:

= Stop Sign

= Traffic Signal

= Roundabout

$\frac{A}{B}$ = 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

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Figure 12b

Year 2040 Total Lane Geometry, Traffic Control & Level of Service

Lorson Ranch East (LSC #164360)

Intersection	
Int Delay, s/veh	2.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	414	21	3	1008	66	7
Future Vol, veh/h	414	21	3	1008	66	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	225	275	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	436	22	3	1061	69	7

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	436	0	1503	436
Stage 1	-	-	-	-	436	-
Stage 2	-	-	-	-	1067	-
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	-	-	1124	-	134	620
Stage 1	-	-	-	-	652	-
Stage 2	-	-	-	-	331	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1124	-	134	620
Mov Cap-2 Maneuver	-	-	-	-	134	-
Stage 1	-	-	-	-	652	-
Stage 2	-	-	-	-	330	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	53.2
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	134	620	-	-	1124	-
HCM Lane V/C Ratio	0.518	0.012	-	-	0.003	-
HCM Control Delay (s)	57.7	10.9	-	-	8.2	-
HCM Lane LOS	F	B	-	-	A	-
HCM 95th %tile Q(veh)	2.5	0	-	-	0	-

Intersection	
Int Delay, s/veh	7.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↱	↰	↑	↰	↱
Traffic Vol, veh/h	85	114	12	205	338	25
Future Vol, veh/h	85	114	12	205	338	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	225	100	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	89	120	13	216	356	26

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	89	0	330	89
Stage 1	-	-	-	-	89	-
Stage 2	-	-	-	-	241	-
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	-	-	1506	-	665	969
Stage 1	-	-	-	-	934	-
Stage 2	-	-	-	-	799	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1506	-	659	969
Mov Cap-2 Maneuver	-	-	-	-	659	-
Stage 1	-	-	-	-	934	-
Stage 2	-	-	-	-	792	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	16.2
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	659	969	-	-	1506	-
HCM Lane V/C Ratio	0.54	0.027	-	-	0.008	-
HCM Control Delay (s)	16.7	8.8	-	-	7.4	-
HCM Lane LOS	C	A	-	-	A	-
HCM 95th %tile Q(veh)	3.2	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	13	97	176	0	0	40
Future Vol, veh/h	13	97	176	0	0	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	14	102	185	0	0	42

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	185	0	-	0	314	185
Stage 1	-	-	-	-	185	-
Stage 2	-	-	-	-	129	-
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	1390	-	-	-	679	857
Stage 1	-	-	-	-	847	-
Stage 2	-	-	-	-	897	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1390	-	-	-	672	857
Mov Cap-2 Maneuver	-	-	-	-	672	-
Stage 1	-	-	-	-	847	-
Stage 2	-	-	-	-	888	-

Approach	EB	WB	SB
HCM Control Delay, s	0.9	0	9.4
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1390	-	-	-	857
HCM Lane V/C Ratio	0.01	-	-	-	0.049
HCM Control Delay (s)	7.6	-	-	-	9.4
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Intersection	
Int Delay, s/veh	1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	91	6	3	156	19	9
Future Vol, veh/h	91	6	3	156	19	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	275	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	96	6	3	164	20	9

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	102	0	270	99
Stage 1	-	-	-	-	99	-
Stage 2	-	-	-	-	171	-
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	-	-	1490	-	719	957
Stage 1	-	-	-	-	925	-
Stage 2	-	-	-	-	859	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1490	-	718	957
Mov Cap-2 Maneuver	-	-	-	-	718	-
Stage 1	-	-	-	-	925	-
Stage 2	-	-	-	-	857	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	9.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	781	-	-	1490	-
HCM Lane V/C Ratio	0.038	-	-	0.002	-
HCM Control Delay (s)	9.8	-	-	7.4	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	8	412	987	0	0	25
Future Vol, veh/h	8	412	987	0	0	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	275	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	434	1039	0	0	26

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1039	0	-	0	1490	1039
Stage 1	-	-	-	-	1039	-
Stage 2	-	-	-	-	451	-
Critical Hdwy	4.12	-	-	-	7.12	6.22
Critical Hdwy Stg 1	-	-	-	-	6.12	-
Critical Hdwy Stg 2	-	-	-	-	6.12	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	669	-	-	-	102	280
Stage 1	-	-	-	-	279	-
Stage 2	-	-	-	-	588	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	669	-	-	-	101	280
Mov Cap-2 Maneuver	-	-	-	-	101	-
Stage 1	-	-	-	-	276	-
Stage 2	-	-	-	-	581	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	19.2
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	669	-	-	-	280
HCM Lane V/C Ratio	0.013	-	-	-	0.094
HCM Control Delay (s)	10.4	-	-	-	19.2
HCM Lane LOS	B	-	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.3

Intersection	
Int Delay, s/veh	2.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↱	↰	↑	↰	↱
Traffic Vol, veh/h	1055	79	2	646	47	1
Future Vol, veh/h	1055	79	2	646	47	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	225	275	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1111	83	2	680	49	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1111	0	1795	1111
Stage 1	-	-	-	-	1111	-
Stage 2	-	-	-	-	684	-
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	-	-	629	-	88	254
Stage 1	-	-	-	-	315	-
Stage 2	-	-	-	-	501	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	629	-	88	254
Mov Cap-2 Maneuver	-	-	-	-	88	-
Stage 1	-	-	-	-	315	-
Stage 2	-	-	-	-	499	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	87.5
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	88	254	-	-	629	-
HCM Lane V/C Ratio	0.562	0.004	-	-	0.003	-
HCM Control Delay (s)	89	19.2	-	-	10.7	-
HCM Lane LOS	F	C	-	-	B	-
HCM 95th %tile Q(veh)	2.5	0	-	-	0	-

Intersection	
Int Delay, s/veh	3.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	221	425	8	136	238	4
Future Vol, veh/h	221	425	8	136	238	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	225	100	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	233	447	8	143	251	4

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	233	0	393	233
Stage 1	-	-	-	-	233	-
Stage 2	-	-	-	-	160	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1335	-	611	806
Stage 1	-	-	-	-	806	-
Stage 2	-	-	-	-	869	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1335	-	607	806
Mov Cap-2 Maneuver	-	-	-	-	607	-
Stage 1	-	-	-	-	806	-
Stage 2	-	-	-	-	864	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	14.9
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	607	806	-	-	1335	-
HCM Lane V/C Ratio	0.413	0.005	-	-	0.006	-
HCM Control Delay (s)	15	9.5	-	-	7.7	-
HCM Lane LOS	C	A	-	-	A	-
HCM 95th %tile Q(veh)	2	0	-	-	0	-

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	45	180	118	0	0	27
Future Vol, veh/h	45	180	118	0	0	27
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	47	189	124	0	0	28

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	124	0	-	0	408	124
Stage 1	-	-	-	-	124	-
Stage 2	-	-	-	-	284	-
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	1463	-	-	-	599	927
Stage 1	-	-	-	-	902	-
Stage 2	-	-	-	-	764	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1463	-	-	-	580	927
Mov Cap-2 Maneuver	-	-	-	-	580	-
Stage 1	-	-	-	-	902	-
Stage 2	-	-	-	-	739	-

Approach	EB	WB	SB
HCM Control Delay, s	1.5	0	9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1463	-	-	-	927
HCM Lane V/C Ratio	0.032	-	-	-	0.031
HCM Control Delay (s)	7.5	-	-	-	9
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	29	1027	631	0	0	17
Future Vol, veh/h	29	1027	631	0	0	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	275	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	31	1081	664	0	0	18

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	664	0	-	0	1806	664
Stage 1	-	-	-	-	664	-
Stage 2	-	-	-	-	1142	-
Critical Hdwy	4.12	-	-	-	7.12	6.22
Critical Hdwy Stg 1	-	-	-	-	6.12	-
Critical Hdwy Stg 2	-	-	-	-	6.12	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	925	-	-	-	61	461
Stage 1	-	-	-	-	450	-
Stage 2	-	-	-	-	244	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	925	-	-	-	59	461
Mov Cap-2 Maneuver	-	-	-	-	59	-
Stage 1	-	-	-	-	435	-
Stage 2	-	-	-	-	236	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	13.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	925	-	-	-	461
HCM Lane V/C Ratio	0.033	-	-	-	0.039
HCM Control Delay (s)	9	-	-	-	13.1
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1

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The Hills at Lorson Ranch
Full Traffic Impact Analysis
PUDSP203
(LSC #204050)
October 26, 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.

Developer's Statement

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

10/27/20
Date

Table 3
Level of Service Analysis
The Hills at Lorson Ranch

Intersection	Traffic Control	Movement	2019/Early 2020 Traffic AM	2019/Early 2020 Traffic PM	July 2020 Traffic AM	July 2020 Traffic PM	Short-Term Background Traffic AM	Short-Term Background Traffic PM	Short-Term Total Traffic AM	Short-Term Total Traffic PM	2040 Background Traffic AM	2040 Background Traffic PM	2040 Total Traffic AM	2040 Total Traffic PM	2040 Total Traffic With Old Glory (east)/ Stingray Restricted to 3/4 Movement AM	2040 Total Traffic With Old Glory (east)/ Stingray Restricted to 3/4 Movement PM
1 Old Glory (West)/Fontaine	TWSC	Northbound Left	F	F	C	E	F	F	F	F	---	---	---	---		
		Northbound Through	D	E	A	D	D	F	E	F	---	---	---	---		
		Northbound Right	A	A	A	A	A	B	B	B	---	---	---	---		
		Eastbound Left	B	A	A	A	B	A	B	B	---	---	---	---		
		Westbound Left	A	A	A	A	A	A	A	B	---	---	---	---		
		Southbound Left	E	E	A	D	E	F	F	F	---	---	---	---		
		Southbound Through	D	E	B	D	F	F	F	F	---	---	---	---		
		Southbound Right	B	A	B	A	B	B	B	B	---	---	---	---		
	AWSC	Eastbound Left	---	---	---	---	---	---	A	B	A	D	A	B		
		Eastbound Through	---	---	---	---	---	---	A	A	B	D	B	F		
		Eastbound Right	---	---	---	---	---	---	A	A	A	A	A	A		
		Westbound Left	---	---	---	---	---	---	A	A	A	A	A	A		
		Westbound Through	---	---	---	---	---	---	B	A	F	B	F	A		
		Westbound Right	---	---	---	---	---	---	A	A	A	A	A	A		
		Northbound Left	---	---	---	---	---	---	B	A	C	B	E	B		
		Northbound Through	---	---	---	---	---	---	A	A	A	A	F	A		
		Northbound Right	---	---	---	---	---	---	A	A	A	A	A	A		
		Southbound Left	---	---	---	---	---	---	A	A	A	A	A	B		
		Southbound Through	---	---	---	---	---	---	A	A	A	A	B	A		
		Southbound Right	---	---	---	---	---	---	A	A	A	A	A	A		
		Overall	---	---	---	---	---	---	**A**	**A**	**F**	**C**	**F**	**F**		
	Roundabout	Eastbound Left/Through	---	---	---	---	---	---	---	---	---	---	A	B	A	B
		Eastbound Through/Right	---	---	---	---	---	---	---	---	---	---	A	C	A	C
		Westbound Left/Through	---	---	---	---	---	---	---	---	---	---	B	B	B	B
		Westbound Through/Right	---	---	---	---	---	---	---	---	---	---	B	B	B	B
		Northbound Left/Through/Right	---	---	---	---	---	---	---	---	---	---	A	D	B	D
		Southbound Left/Through	---	---	---	---	---	---	---	---	---	---	C	A	D	A
		Southbound Right	---	---	---	---	---	---	---	---	---	---	A	A	B	A
		Overall	---	---	---	---	---	---	---	---	---	---	**B**	**B**	**B**	**B**
	Signal	Eastbound Left	---	---	---	---	---	---	---	---	---	---	B	C	B	B
		Eastbound Through	---	---	---	---	---	---	---	---	---	---	B	B	B	B
		Eastbound Right	---	---	---	---	---	---	---	---	---	---	A	A	A	A
		Westbound Left	---	---	---	---	---	---	---	---	---	---	B	A	B	A
		Westbound Through	---	---	---	---	---	---	---	---	---	---	C	C	C	C
		Westbound Right	---	---	---	---	---	---	---	---	---	---	A	A	A	A
		Northbound Left	---	---	---	---	---	---	---	---	---	---	D	D	D	D
		Northbound Through	---	---	---	---	---	---	---	---	---	---	D	D	D	D
		Northbound Right	---	---	---	---	---	---	---	---	---	---	A	A	A	A
		Southbound Left	---	---	---	---	---	---	---	---	---	---	C	D	C	D
		Southbound Through	---	---	---	---	---	---	---	---	---	---	D	D	D	D
		Southbound Right	---	---	---	---	---	---	---	---	---	---	B	B	B	B
		Overall	---	---	---	---	---	---	---	---	---	---	**C**	**B**	**C**	**B**
2 Old Glory (East)/Stingray/ Fontaine	TWSC	Northbound Left	C	B	B	B	C	C	D	E	E	F	F	F	---	---
		Northbound Through/Right	B	A	A	B	B	C	B	D	B	F	C	F	B	D
		Eastbound Left	A	A	A	A	A	A	A	A	B	A	B	A	B	A
		Westbound Left	A	A	A	A	A	A	A	B	A	B	A	B	A	B
		Southbound Left	C	B	B	B	E	D	F	F	F	F	F	F	---	---
		Southbound Through	C	B	A	B	C	C	D	E	E	F	F	F	---	---
		Southbound Right	A	A	A	A	B	A	B	B	B	B	B	B	B	B
	AWSC	Eastbound Left	---	---	---	---	---	---	A	A	---	---	A	A		
		Eastbound Through	---	---	---	---	---	---	A	D	---	---	A	F		
		Eastbound Right	---	---	---	---	---	---	A	A	---	---	A	A		
		Westbound Left	---	---	---	---	---	---	A	A	---	---	A	A		
		Westbound Through	---	---	---	---	---	---	A	A	---	---	A	A		
		Westbound Right	---	---	---	---	---	---	A	A	---	---	A	A		
		Northbound Left	---	---	---	---	---	---	A	A	---	---	A	A		
		Northbound Through/Right	---	---	---	---	---	---	A	A	---	---	A	A		
		Southbound Left	---	---	---	---	---	---	A	A	---	---	A	A		
		Southbound Through	---	---	---	---	---	---	A	A	---	---	A	A		
		Southbound Right	---	---	---	---	---	---	A	A	---	---	A	A		
		Overall	---	---	---	---	---	---	**A**	**C**	---	---	**A**	F		
	Roundabout	Eastbound Left/Through	---	---	---	---	---	---	---	---	---	---	A	A		
		Eastbound Through/Right	---	---	---	---	---	---	---	---	---	---	A	A		
		Westbound Left/Through	---	---	---	---	---	---	---	---	---	---	A	A		
		Westbound Through/Right	---	---	---	---	---	---	---	---	---	---	A	A		
		Northbound Left/Through/Right	---	---	---	---	---	---	---	---	---	---	A	B		
		Southbound Left/Through/Right	---	---	---	---	---	---	---	---	---	---	B	A		
		Overall	---	---	---	---	---	---	---	---	---	---	**A**	**A**		
	Signal	Eastbound Left	---	---	---	---	---	---	---	---	---	---	A	A		
		Eastbound Through	---	---	---	---	---	---	---	---	---	---	A	D		
		Eastbound Right	---	---	---	---	---	---	---	---	---	---	A	A		
		Westbound Left	---	---	---	---	---	---	---	---	---	---	A	A		
		Westbound Through	---	---	---	---	---	---	---	---	---	---	A	A		
		Westbound Right	---	---	---	---	---	---	---	---	---	---	A	A		
		Northbound Left	---	---	---	---	---	---	---	---	---	---	D	D		
		Northbound Through/Right	---	---	---	---	---	---	---	---	---	---	B	C		
		Southbound Left	---	---	---	---	---	---	---	---	---	---	D	D		
		Southbound Through	---	---	---	---	---	---	---	---	---	---	D	D		
		Southbound Right	---	---	---	---	---	---	---	---	---	---	B	B		
		Overall	---	---	---	---	---	---	---	---	---	---	**A**	**C**		
3 Lamprey/Fontaine	Roundabout	Eastbound	---	---	---	---	A	A	A	A	A	B	A	C		
		Westbound	---	---	---	---	A	A	A	A	B	A	C	B		
		Northbound	---	---	---	---	A	A	A	A	A	A	B	B		
		Southbound	---	---	---	---	A	A	A	A	B	A	C	A		
		Overall	---	---	---	---	**A**	**A**	**A**	**A**	**A**	**B**	**B**	**C**		
4 Lamprey/Murrelet	TWSC	Northbound	---	---	---	---	---	---	A	A	---	---	A	A		
		Westbound	---	---	---	---	---	---	A	A	---	---	A	A		
5 Lamprey/Grayling	TWSC	Northbound	---	---	---	---	---	---	---	---	A	A	A	A		
		Eastbound	---	---	---	---	---	---	---	---	A	A	A	A		
		Westbound	---	---	---	---	---	---	---	---	A	A	A	A		
		Southbound	---	---	---	---	---	---	---	---	A	A	A	A		
6 Yellowthroat/Grayling	TWSC	Northbound	---	---	---	---	---	---	A	A	---	---	A	A		
		Westbound	---	---	---	---	---	---	A	A	---	---	A	A		
7 Scrub Jay/Grayling	TWSC	Northbound	---	---	---	---	---	---	A	A	---	---	A	A		
		Eastbound	---	---	---	---	---	---	---	---	A	A	A	A		
		Westbound	---	---	---	---	---	---	A	A	---	---	A	A		
		Southbound	---	---	---	---	---	---	---	---	A	A	A	A		
8 Grayling/Walleye	TWSC	Northbound	---	---	---	---	---	---	---	---	A	A	A	A		
		Eastbound	---	---	---	---	---	---	---	---	A	A	A	A		
9 Sanderling/Walleye	TWSC	Northbound Left	---	---	---	---	---	---	A	A	---	---	A	A		
		Eastbound	---	---	---	---	---	---	A	A	---	---	A	A		
		Westbound	---	---	---	---	---	---	---	---	B	B	B	B		
		Southbound Left	---	---	---	---	---	---	---	---	A	A	A	A		
10 Fontaine/Walleye	TWSC	Northbound Left	---	---	---	---	---	---	A	B	C	D	E	F		
		Northbound Through	---	---	---	---	---	---	A	B	B	C	B	C		
		Northbound Right	---	---	---	---	---	---	---	---	A	A	A	A		
		Eastbound Left	---	---	---	---	---	---	A	A	A	A	A	A		
		Westbound Left	---	---	---	---	---	---	---	---	A	A	A	A		
		Southbound Left	---	---	---	---	---	---	---	---	B	C	B	C		
		Southbound Through	---	---	---	---	---	---	A	B	B	C	B	D		
		Southbound Right	---	---	---	---	---	---	A	A	A	A	B	A		
	AWSC	Northbound Left	---	---	---	---	---	---	---	---	---	---	B	B		
		Northbound Through	---	---	---	---	---	---	---	---	---	---	A	B		
		Northbound Right	---	---	---	---	---	---	---	---	---	---	A	A		
		Eastbound Left	---	---	---	---	---	---	---	---	---	---	B	C		
		Eastbound Through	---	---	---	---	---	---	---	---	---	---	A	B		
		Eastbound Right	---	---	---	---	---	---	---	---	---	---	A	B		
		Westbound Left	---	---	---	---	---	---	---	---	---	---	B	B		
		Westbound Through	---	---	---	---	---	---	---	---	---	---	B	B		
		Westbound Right	---	---	---	---	---	---	---	---	---	---	A	A		
		Southbound Left	---	---	---	---	---	---	---	---	---	---	A	B		
		Southbound Through	---	---	---	---	---	---	---	---	---	---	A	A		
		Southbound Right	---	---	---	---	---	---	---	---	---	---	B	B		
		Overall	---	---	---	---	---	---	---	---	---	---	**B**	**B**		
11 Lake Trout/Walleye	TWSC	Northbound Left	---	---	---	---	---	---	A	A	---	---	A	A		
		Eastbound	---	---	---	---	---	---	A	A	---	---	B	B		
		Westbound	---	---	---	---	---	---	---	---	A	A	B	B		
		Southbound Left	---	---	---	---	---	---	---	---	A	A	A	A		
12 Splake/Walleye	TWSC	Northbound Left	---	---	---	---	---	---	A	A	---	---	A	A		
		Eastbound	---	---	---	---	---	---	A	A	---	---	B	B		
		Westbound	---	---	---	---	---	---	---	---	A	A	B	B		
		Southbound Left	---	---	---	---	---	---	---	---	A	A	A	A		
13 Lorson/Marksheffel	TWSC	Westbound Left	---	---	B	C	C	D	E	F	---	---	F	F		
		Westbound Right	---	---	B	B	B	B	B	B	---	---	B	B		
		Southbound Left	---	---	A	A	A	A	A	B	---	---	A	B		
	Signal	Westbound Left	---	---	---	---	---	---	B	B	---	---	D	D		
		Westbound Right	---	---	---	---	---	---	A	A	---	---	A	A		
		Northbound Through	---	---	---	---	---	---	B	B	---	---	A	A		
		Northbound Right	---	---	---	---	---	---	A	A	---	---	A	A		
		Southbound Left	---	---	---	---	---	---	A	A	---	---	A	A		
		Southbound Through	---	---	---	---	---	---	B	B	---	---	A	A		
		Overall	---	---	---	---	---	---	**B**	**A**	---	---	**B**	**A**		
14 Lorson/Old Glory	TWSC	Eastbound Left	A	A	---	---	A	A	A	A	A	A	A	A		
		Southbound Left	A	A	---	---	B	B	B	B	B	C	B	D		
		Southbound Right	A	A	---	---	A	A	B	A	B	A	B	B		
15 Lorson/Lamprey	TWSC	Eastbound Left	---	---	---	---	A	A	A	A	A	A	A	A		
		Southbound Left	---	---	---	---	A	A	B	B	B	B	B	B		
		Southbound Right	---	---	---	---	A	A	A	A	A	A	B	A		
16 Brook Trout/Lorson	TWSC	Eastbound Left	---	---	---	---	---	---	A	A	---	---	A	A		
		Southbound	---	---	---	---	---	---	A	A	---	---	A	A		
17 Walleye/Lorson	TWSC	Eastbound Left	---	---	---	---	---	---	---	---	A	A	A	A		
		Southbound Left	---	---	---	---	---	---	---	---	A	B	B	B		
		Southbound Right	---	---	---	---	---	---	---	---	A	A	A	A		

Source: LSC Transportation Consultants, Inc.

Table 4
Traffic Control Warrant Analysis Intersection #1 - Fontaine Blvd/Old Glory (West)
The Hills at Lorson Ranch

	Traffic Volumes (vehicles per hour)								Pedestrian Volumes	All-Way, Stop-Sign Control Warrant Analysis[2]					Traffic Signal Warrant Analysis[3]														
	Major Approach Fontaine Blvd EB & WB	Minor Approaches Southbound: Old Glory Dr (west)			Northbound: Old Glory Dr (west)					Volume		Volume Thresholds (70%)		Warrant Threshold Met?	Traffic Volumes (vehicles per hour)			Warrant 1: Eight Hour Vehicular Volume Evaluation									Warrant 2: Four Hour Vehicular Volume	
																		Warrant Thresholds							Warrant Threshold Met? Southbound Approach		Warrant Threshold Met? Northbound Approach		70% Warrant Threshold	Warrant Threshold Met?	
																Minor			Condition A (70%)		Condition B (70%)							
Hour	Left/Thru/Right	Left	Thru	Right	Left	Thru	Right		Minor	Major	Minor	Major	Minor	A	Major	SB	NB	Major	Minor	Major	Minor	A	B	A	B	Minor Minimum	Southbound Approach	Northbound Approach
Existing Traffic[1]																												
7:00 - 8:00	424	0	2	168	56	0	2		7	424	235	210	140	Yes	424	2	56	420	140	630	70	No	No	No	No	285	No	No
8:00 - 9:00	403	1	0	148	41	0	2		10	403	202	210	140	Yes	403	1	41	420	140	630	70	No	No	No	No	285	No	No
11:30-12:30	464	1	1	94	44	3	1		0	464	144	210	140	Yes	464	2	47	420	140	630	70	No	No	No	No	285	No	No
12:30 - 13:30	427	1	4	89	35	2	1		0	427	132	210	140	No	427	5	37	420	140	630	70	No	No	No	No	285	No	No
13:45 - 14:45	425	0	1	80	29	0	1		1	425	112	210	140	No	425	1	29	420	140	630	70	No	No	No	No	285	No	No
14:45 - 15:45	536	1	3	100	40	4	1		1	536	150	210	140	Yes	536	4	44	420	140	630	70	No	No	No	No	230	No	No
16:00 - 17:00	721	4	2	98	52	2	2		4	721	164	210	140	Yes	721	6	54	420	140	630	70	No	No	No	No	140	No	No
17:00 - 18:00	704	5	6	102	36	4	1		6	704	160	210	140	Yes	704	11	40	420	140	630	70	No	No	No	No	140	No	No
										Total Hours That Meet the Threshold				**6**								**0**	**0**	**0**	**0**			**0**
Short-Term Background Traffic																												
7:00 - 8:00	747	3	4	195	139	1	2		7	747	351	210	140	Yes	747	7	140	420	140	630	70	No	No	No	Yes	140	No	Yes
8:00 - 9:00	571	4	2	171	111	1	2		10	571	301	210	140	Yes	571	6	112	420	140	630	70	No	No	No	No	230	No	No
11:30-12:30	649	1	2	106	85	4	1		0	649	199	210	140	Yes	649	3	89	420	140	630	70	No	No	No	Yes	175	No	No
12:30 - 13:30	619	1	5	102	81	3	1		0	619	193	210	140	Yes	619	6	84	420	140	630	70	No	No	No	No	175	No	No
13:45 - 14:45	660	0	2	95	79	1	1		1	660	179	210	140	Yes	660	2	80	420	140	630	70	No	No	No	Yes	175	No	No
14:45 - 15:45	810	1	4	114	89	6	1		1	810	216	210	140	Yes	810	5	95	420	140	630	70	No	No	No	Yes	110	No	No
16:00 - 17:00	1060	4	3	116	113	4	2		4	1060	246	210	140	Yes	1060	7	117	420	140	630	70	No	No	No	Yes	80	No	Yes
17:00 - 18:00	1036	5	7	120	96	6	1		6	1036	241	210	140	Yes	1036	12	102	420	140	630	70	No	No	No	Yes	80	No	Yes
										Total Hours That Meet the Threshold				**8**								**0**	**0**	**0**	**6**			**3**
Short-Term Total Traffic																												
7:00 - 8:00	990	3	4	195	147	1	2		7	990	359	210	140	Yes	990	7	148	420	140	630	70	No	No	No	Yes	80	No	Yes
8:00 - 9:00	645	4	2	171	118	1	2		10	645	308	210	140	Yes	645	6	119	420	140	630	70	No	No	No	Yes	175	No	No
11:30-12:30	768	1	2	106	88	4	1		0	768	202	210	140	Yes	768	3	92	420	140	630	70	No	No	No	Yes	140	No	No
12:30 - 13:30	769	1	5	102	85	4	1		0	769	198	210	140	Yes	769	6	89	420	140	630	70	No	No	No	Yes	140	No	No
13:45 - 14:45	849	0	2	95	83	2	1		1	849	184	210	140	Yes	849	2	85	420	140	630	70	No	No	No	Yes	110	No	No
14:45 - 15:45	1039	1	4	114	93	8	1		1	1039	222	210	140	Yes	1039	5	101	420	140	630	70	No	No	No	Yes	80	No	Yes
16:00 - 17:00	1291	4	3	116	118	4	2		4	1291	251	210	140	Yes	1291	7	122	420	140	630	70	No	No	No	Yes	80	No	Yes
17:00 - 18:00	1313	5	7	120	101	8	1		6	1313	248	210	140	Yes	1313	12	109	420	140	630	70	No	No	No	Yes	80	No	Yes
										Total Hours That Meet the Threshold				**8**								**0**	**0**	**0**	**8**			**4**
2040 Background Traffic																												
7:00 - 8:00	1378	3	4	195	207	1	2		7	1378	419	210	140	Yes	1378	7	208	420	140	630	70	No	No	No	Yes	80	No	Yes
8:00 - 9:00	798	4	2	171	168	1	2		10	798	358	210	140	Yes	798	6	169	420	140	630	70	No	No	No	Yes	140	No	Yes
11:30-12:30	975	1	2	106	119	4	1		0	975	233	210	140	Yes	975	3	123	420	140	630	70	No	No	No	Yes	80	No	Yes
12:30 - 13:30	952	1	5	102	117	3	1		0	952	229	210	140	Yes	952	6	120	420	140	630	70	No	No	No	Yes	80	No	Yes
13:45 - 14:45	1080	0	2	95	120	1	1		1	1080	220	210	140	Yes	1080	2	121	420	140	630	70	No	No	No	Yes	80	No	Yes
14:45 - 15:45	1309	1	4	114	128	6	1		1	1309	255	210	140	Yes	1309	5	134	420	140	630	70	No	No	No	Yes	80	No	Yes
16:00 - 17:00	1677	4	3	116	162	4	2		4	1677	295	210	140	Yes	1677	7	166	420	140	630	70	No	No	No	Yes	80	No	Yes
17:00 - 18:00	1642	5	7	120	145	6	1		6	1642	290	210	140	Yes	1642	12	151	420	140	630	70	No	No	No	Yes	80	No	Yes
										Total Hours That Meet the Threshold				**8**								**0**	**0**	**0**	**8**			**8**
2040 Total Traffic																												
7:00 - 8:00	1621	3	4	195	215	1	2		7	1621	427	210	140	Yes	1621	7	216	420	140	630	70	No	No	No	Yes	80	No	Yes
8:00 - 9:00	872	4	2	171	175	1	2		10	872	365	210	140	Yes	872	6	176	420	140	630	70	No	No	No	Yes	110	No	Yes
11:30-12:30	1094	1	2	106	122	4	1		0	1094	236	210	140	Yes	1094	3	126	420	140	630	70	No	No	No	Yes	80	No	Yes
12:30 - 13:30	1102	1	5	102	121	4	1		0	1102	234	210	140	Yes	1102	6	125	420	140	630	70	No	No	No	Yes	80	No	Yes
13:45 - 14:45	1269	0	2	95	124	2	1		1	1269	225	210	140	Yes	1269	2	126	420	140	630	70	No	No	No	Yes	80	No	Yes
14:45 - 15:45	1538	1	4	114	132	8	1		1	1538	261	210	140	Yes	1538	5	140	420	140	630	70	No	No	No	Yes	80	No	Yes
16:00 - 17:00	1908	4	3	116	167	4	2		4	1908	300	210	140	Yes	1908	7	171	420	140	630	70	No	No	No	Yes	80	No	Yes
17:00 - 18:00	1919	5	7	120	150	8	1		6	1919	297	210	140	Yes	1919	12	158	420	140	630	70	No	No	No	Yes	80	No	Yes
										Total Hours That Meet the Threshold				**8**								**0**	**0**	**0**	**8**			**8**

Notes:

(1) Based on traffic counts conducted by LSC in March, July and August 2020

(2) The all-way, stop-stop control warrant analysis is based on the criteria found in the *Manual of Uniform Traffic Control Devices* (MUTCD) Section 2B.07.04.C
Per Section 2B.07.04.C.1 the major street approach volumes includes all northbound and southbound traffic movements (left, through, and right) on Fontaine Blvc
Per Section 2B.07.04.C.2 the minor street approach volumes includes all northbound and southbound traffic movements**and** all northbound and southbound pedestrian volumes on Old Glory Dr (east) and Stingray Ln
Per Section 2B.07.04.C.3 the minimum volumes are 70 percent of the values provided in Sections C.1 and C.2 as the posted speed limit on Fontaine Blvd is above 40 mpl

(3) The traffic signal warrant analysis is based on the criteria found in Section 4C.01 of the MUTCD
The traffic signal warrant analysis thresholds are based on 2 or more lanes on the major approach and 2 or more lanes on the minor approach with the 70% factor applied for a posted speed limit above 40 mph
The major street traffic includes all movements (left, through, and right) on Marksheffel Rd
The southbound minor street traffic includes only the left turn and through volumes on Old Glory Dr (west) as there is an existing exclusive right-turn lane
The northbound minor street traffic includes only the left turn and through volumes on Old Glory Dr (west) as there is an existing exclusive right-turn lane

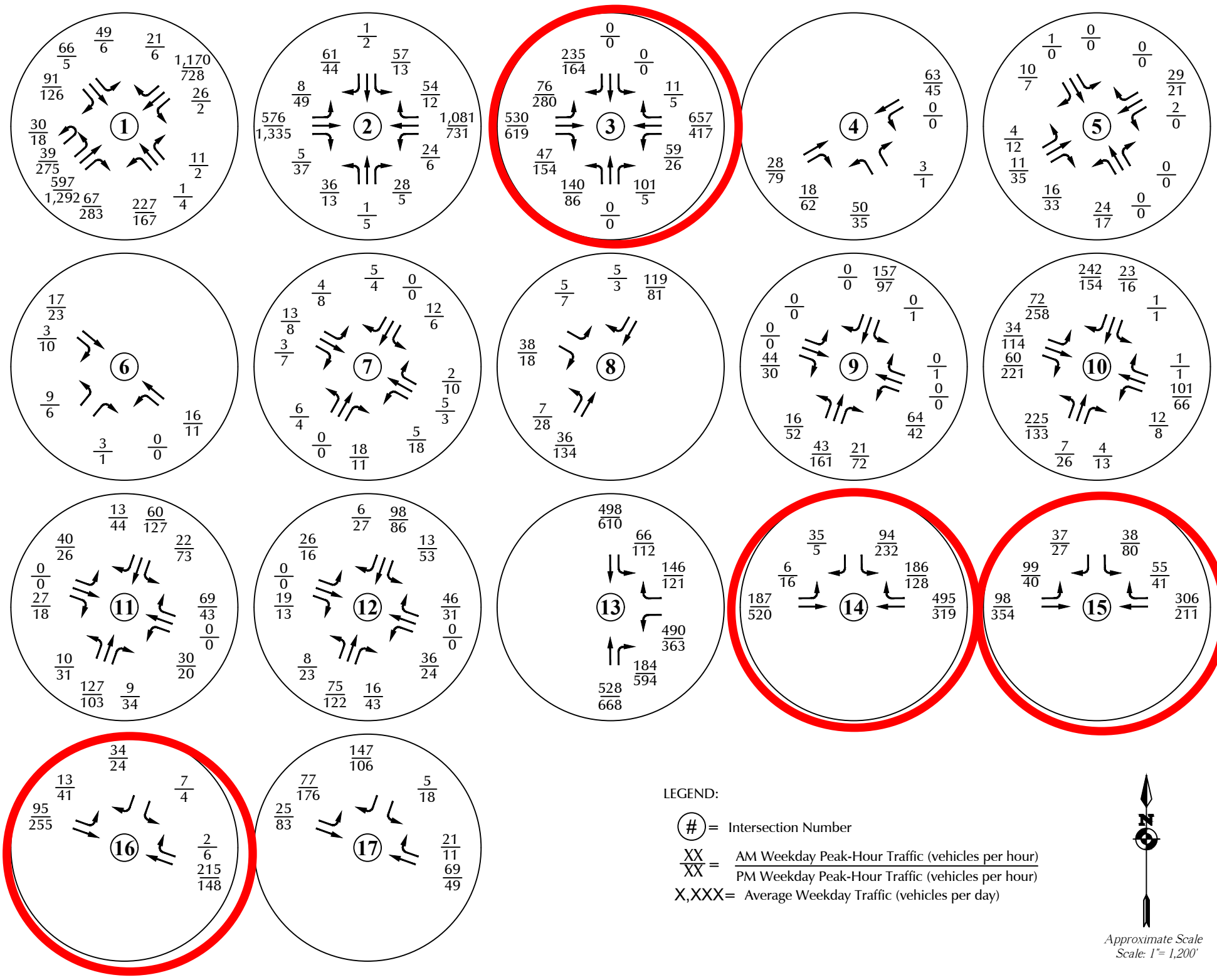
Source: LSC Transportation Consultants, Inc.

Table 7
Intersection #13 - Marksheffel Rd/Lorson Blvd
The Hills at Lorson Ranch

			Warrant Analysis[1]							
			Warrant 1: Eight Hour Vehicular Volume Evaluation						Warrant 2: Four Hour Vehicular Volume	
			Warrant Thresholds				Warrant Threshold Met?		70% Warrant Threshold Minor Minimum	Warrant Threshold Met?
	Traffic Volumes		Condition A (70%)		Condition B (70%)					
Hour	Major[2]	Minor[3]	Major	Minor	Major	Minor	A	B		
Existing Traffic[4]										
7:00 - 8:00	628	74	350	105	525	53	No	Yes	90	No
8:00 - 9:00	451	110	350	105	525	53	Yes	No	165	No
11:30-12:30	553	62	350	105	525	53	No	Yes	130	No
12:30 - 13:30	531	68	350	105	525	53	No	Yes	130	No
13:45 - 14:45	532	43	350	105	525	53	No	No	130	No
14:45 - 15:45	602	53	350	105	525	53	No	Yes	90	No
16:00 - 17:00	804	60	350	105	525	53	No	Yes	60	Yes
17:00 - 18:00	831	75	350	105	525	53	No	Yes	60	Yes
			Total Hours That Meet the Threshold				**1**	**6**		**2**
Short-Term Background Traffic										
7:00 - 8:00	776	183	350	105	525	53	Yes	Yes	65	Yes
8:00 - 9:00	600	202	350	105	525	53	Yes	Yes	90	Yes
11:30-12:30	725	112	350	105	525	53	Yes	Yes	65	Yes
12:30 - 13:30	708	123	350	105	525	53	Yes	Yes	65	Yes
13:45 - 14:45	752	104	350	105	525	53	No	Yes	65	Yes
14:45 - 15:45	859	112	350	105	525	53	Yes	Yes	60	Yes
16:00 - 17:00	1122	134	350	105	525	53	Yes	Yes	60	Yes
17:00 - 18:00	1143	148	350	105	525	53	Yes	Yes	60	Yes
			Total Hours That Meet the Threshold				**7**	**8**		**8**
Short-Term Total Traffic										
7:00 - 8:00	826	253	350	105	525	53	Yes	Yes	60	Yes
8:00 - 9:00	652	261	350	105	525	53	Yes	Yes	90	Yes
11:30-12:30	788	145	350	105	525	53	Yes	Yes	65	Yes
12:30 - 13:30	773	159	350	105	525	53	Yes	Yes	65	Yes
13:45 - 14:45	833	144	350	105	525	53	Yes	Yes	60	Yes
14:45 - 15:45	954	150	350	105	525	53	Yes	Yes	60	Yes
16:00 - 17:00	1240	182	350	105	525	53	Yes	Yes	60	Yes
17:00 - 18:00	1259	195	350	105	525	53	Yes	Yes	60	Yes
			Total Hours That Meet the Threshold				**8**	**8**		**8**

Notes:
(1) Thresholds are based on 1 lane on the major approach and 1 lane on the minor approach with the 70% factor applied for a posted speed limit above 40 mph
(2) The major street traffic includes all movements (left, through, and right) on Marksheffel Rd
(3) The minor street traffic includes only the left turn volume on Lorson Blvd
(4) Based on traffic counts conducted by LSC July 2020

Source: LSC Transportation Consultants, Inc.



LEGEND:

(#) = Intersection Number

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

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

N

Approximate Scale
Scale: 1"= 1,200'

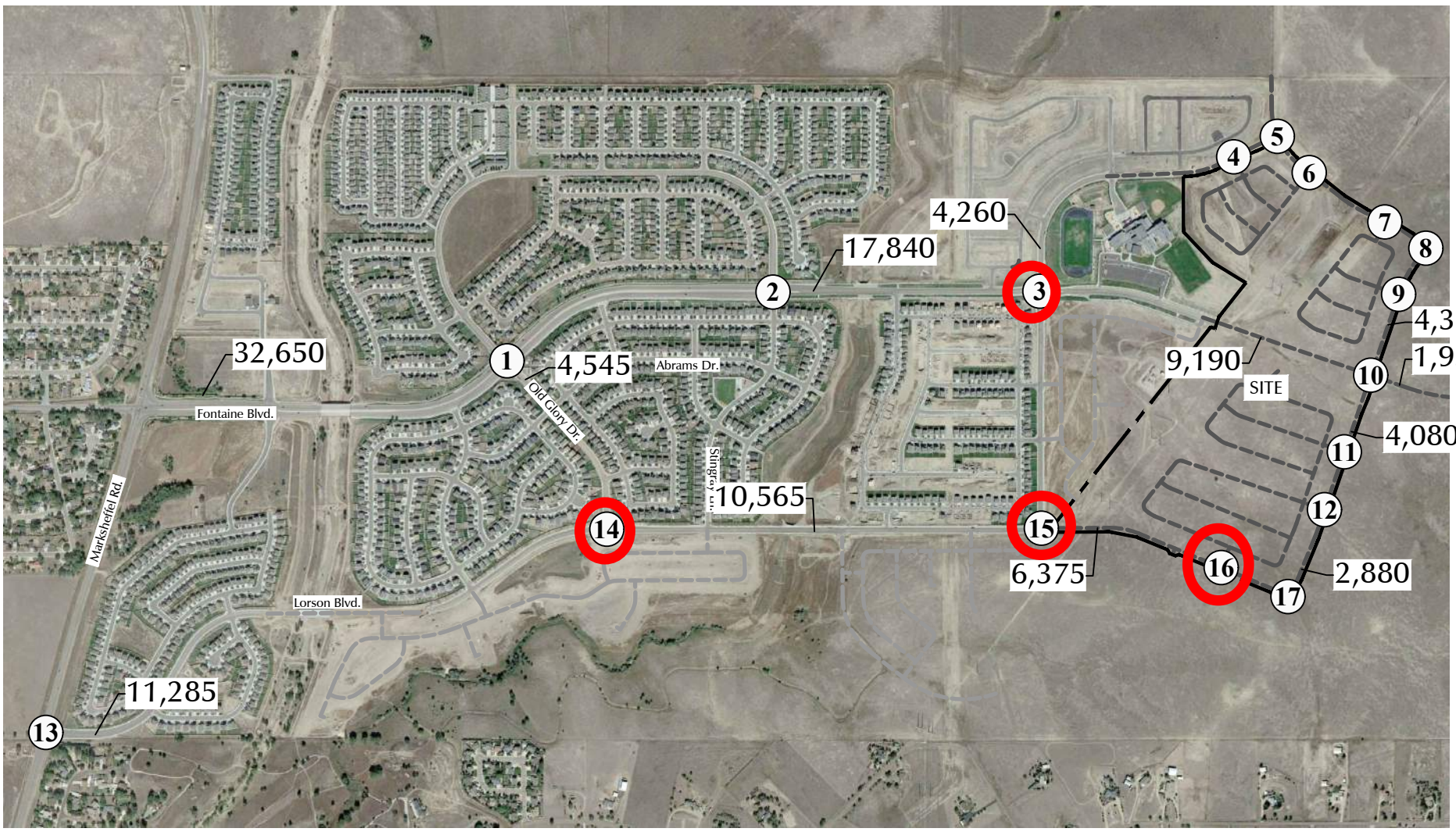
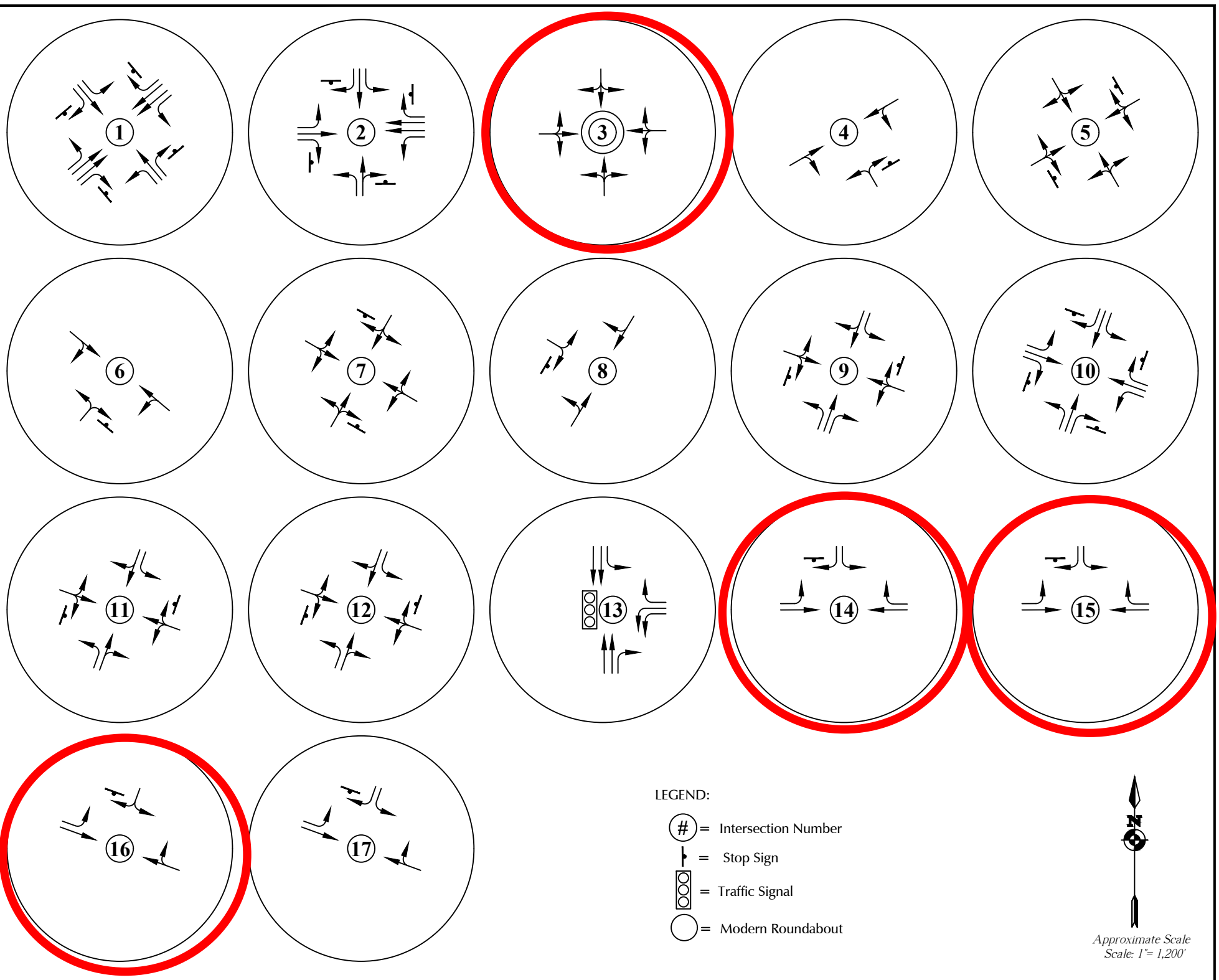


Figure 10a

Year 2040 Total Traffic

The Hills at Lorson Ranch (LSC #204050)

TRANSPORTATION CONSULTANTS, INC.



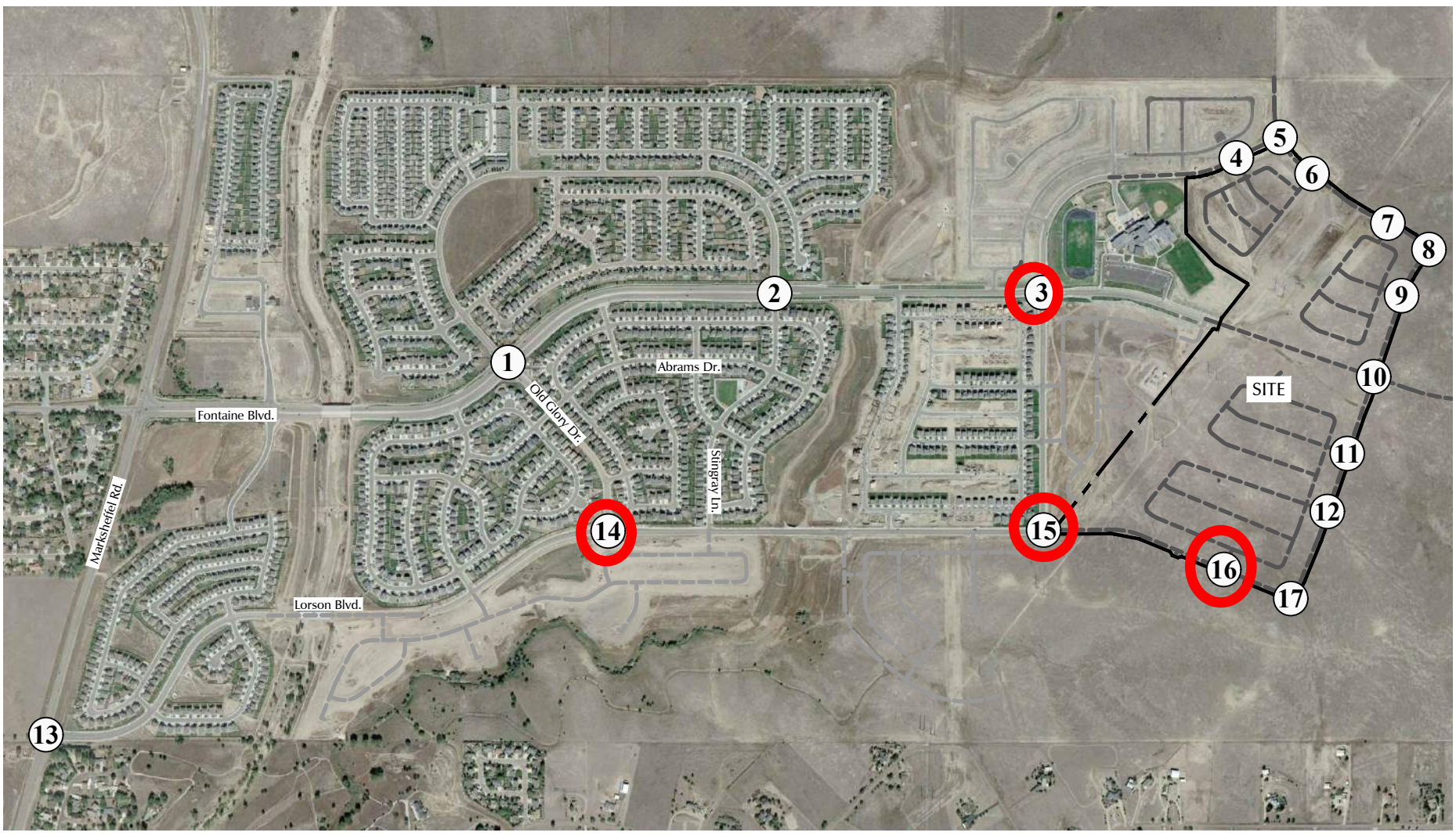


Figure 10c

Year 2040 Total Lane Geometry and Traffic Control

The Hills at Lorson Ranch (LSC #204050)

TRANSPORTATION CONSULTANTS, INC.

Intersection	
Intersection Delay, s/veh	13.0
Intersection LOS	B

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	710	790	262	255
Demand Flow Rate, veh/h	725	805	267	260
Vehicles Circulating, veh/h	65	240	673	948
Vehicles Exiting, veh/h	1143	700	117	97
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	9.2	16.3	10.5	16.1
Approach LOS	A	C	B	C

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	725	805	267	260
Cap Entry Lane, veh/h	1291	1080	695	525
Entry HV Adj Factor	0.980	0.981	0.981	0.981
Flow Entry, veh/h	710	790	262	255
Cap Entry, veh/h	1265	1060	682	515
V/C Ratio	0.561	0.745	0.384	0.495
Control Delay, s/veh	9.2	16.3	10.5	16.1
LOS	A	C	B	C
95th %tile Queue, veh	4	7	2	3

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	6	187	495	186	94	35
Future Vol, veh/h	6	187	495	186	94	35
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	205	-	-	155	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	203	538	202	102	38

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	740	0	-	0	755	538
Stage 1	-	-	-	-	538	-
Stage 2	-	-	-	-	217	-
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	867	-	-	-	376	543
Stage 1	-	-	-	-	585	-
Stage 2	-	-	-	-	819	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	867	-	-	-	373	543
Mov Cap-2 Maneuver	-	-	-	-	470	-
Stage 1	-	-	-	-	580	-
Stage 2	-	-	-	-	819	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	14.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	867	-	-	-	470	543
HCM Lane V/C Ratio	0.008	-	-	-	0.217	0.07
HCM Control Delay (s)	9.2	-	-	-	14.8	12.1
HCM Lane LOS	A	-	-	-	B	B
HCM 95th %tile Q(veh)	0	-	-	-	0.8	0.2

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	99	98	306	55	38	37
Future Vol, veh/h	99	98	306	55	38	37
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	205	-	-	155	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	108	107	333	60	41	40

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	393	0	-	0	656	333
Stage 1	-	-	-	-	333	-
Stage 2	-	-	-	-	323	-
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	1166	-	-	-	430	709
Stage 1	-	-	-	-	726	-
Stage 2	-	-	-	-	734	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1166	-	-	-	390	709
Mov Cap-2 Maneuver	-	-	-	-	493	-
Stage 1	-	-	-	-	658	-
Stage 2	-	-	-	-	734	-

Approach	EB	WB	SB
HCM Control Delay, s	4.2	0	11.7
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1166	-	-	-	493	709
HCM Lane V/C Ratio	0.092	-	-	-	0.084	0.057
HCM Control Delay (s)	8.4	-	-	-	13	10.4
HCM Lane LOS	A	-	-	-	B	B
HCM 95th %tile Q(veh)	0.3	-	-	-	0.3	0.2

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	13	95	215	2	7	34
Future Vol, veh/h	13	95	215	2	7	34
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	105	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	14	103	234	2	8	37

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	236	0	-	0	366	235
Stage 1	-	-	-	-	235	-
Stage 2	-	-	-	-	131	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1331	-	-	-	634	804
Stage 1	-	-	-	-	804	-
Stage 2	-	-	-	-	895	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1331	-	-	-	627	804
Mov Cap-2 Maneuver	-	-	-	-	667	-
Stage 1	-	-	-	-	795	-
Stage 2	-	-	-	-	895	-

Approach	EB	WB	SB
HCM Control Delay, s	0.9	0	9.9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1331	-	-	-	777
HCM Lane V/C Ratio	0.011	-	-	-	0.057
HCM Control Delay (s)	7.7	-	-	-	9.9
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Intersection	
Intersection Delay, s/veh	17.2
Intersection LOS	C

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	1144	486	98	178
Demand Flow Rate, veh/h	1166	496	100	182
Vehicles Circulating, veh/h	29	405	996	586
Vehicles Exiting, veh/h	739	691	199	315
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	21.8	11.4	10.2	7.6
Approach LOS	C	B	B	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	1166	496	100	182
Cap Entry Lane, veh/h	1340	913	500	759
Entry HV Adj Factor	0.981	0.980	0.980	0.978
Flow Entry, veh/h	1144	486	98	178
Cap Entry, veh/h	1314	894	490	742
V/C Ratio	0.870	0.543	0.200	0.240
Control Delay, s/veh	21.8	11.4	10.2	7.6
LOS	C	B	B	A
95th %tile Queue, veh	13	3	1	1

Intersection	
Int Delay, s/veh	5.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	16	520	319	128	232	5
Future Vol, veh/h	16	520	319	128	232	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	205	-	-	155	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	17	565	347	139	252	5

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	486	0	-	0	946	347
Stage 1	-	-	-	-	347	-
Stage 2	-	-	-	-	599	-
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	1077	-	-	-	290	696
Stage 1	-	-	-	-	716	-
Stage 2	-	-	-	-	549	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1077	-	-	-	285	696
Mov Cap-2 Maneuver	-	-	-	-	408	-
Stage 1	-	-	-	-	705	-
Stage 2	-	-	-	-	549	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	26.7
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1077	-	-	-	408	696
HCM Lane V/C Ratio	0.016	-	-	-	0.618	0.008
HCM Control Delay (s)	8.4	-	-	-	27.1	10.2
HCM Lane LOS	A	-	-	-	D	B
HCM 95th %tile Q(veh)	0	-	-	-	4	0

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	40	354	211	41	80	27
Future Vol, veh/h	40	354	211	41	80	27
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	205	-	-	155	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	43	385	229	45	87	29

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	274	0	-	0	700	229
Stage 1	-	-	-	-	229	-
Stage 2	-	-	-	-	471	-
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	1289	-	-	-	405	810
Stage 1	-	-	-	-	809	-
Stage 2	-	-	-	-	628	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1289	-	-	-	392	810
Mov Cap-2 Maneuver	-	-	-	-	492	-
Stage 1	-	-	-	-	782	-
Stage 2	-	-	-	-	628	-

Approach	EB	WB	SB
HCM Control Delay, s	0.8	0	12.8
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1289	-	-	-	492	810
HCM Lane V/C Ratio	0.034	-	-	-	0.177	0.036
HCM Control Delay (s)	7.9	-	-	-	13.9	9.6
HCM Lane LOS	A	-	-	-	B	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.6	0.1

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	41	255	148	6	4	24
Future Vol, veh/h	41	255	148	6	4	24
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	105	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	45	277	161	7	4	26

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	168	0	-	0	532	165
Stage 1	-	-	-	-	165	-
Stage 2	-	-	-	-	367	-
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	1410	-	-	-	508	879
Stage 1	-	-	-	-	864	-
Stage 2	-	-	-	-	701	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1410	-	-	-	492	879
Mov Cap-2 Maneuver	-	-	-	-	568	-
Stage 1	-	-	-	-	836	-
Stage 2	-	-	-	-	701	-

Approach	EB	WB	SB
HCM Control Delay, s	1.1	0	9.6
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1410	-	-	-	815
HCM Lane V/C Ratio	0.032	-	-	-	0.037
HCM Control Delay (s)	7.6	-	-	-	9.6
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1

LSC TRANSPORTATION CONSULTANTS, INC.
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FAX (719) 633-5430
E-mail: lsc@lsctrans.com
Website: http://www.lsctrans.com

Carriage Meadows South at Lorson Ranch Filing No 1
Updated Traffic Impact and Access Analysis
(LSC #164240)
August 14, 2017

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.

Jeffrey C. Hodsdon, P.E., #31684

COLORADO LICENSED
JEFFREY C. HODSDON
31684
PROFESSIONAL ENGINEER

Date 8/14/17

Developer's Statement

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

Date 8/14/17

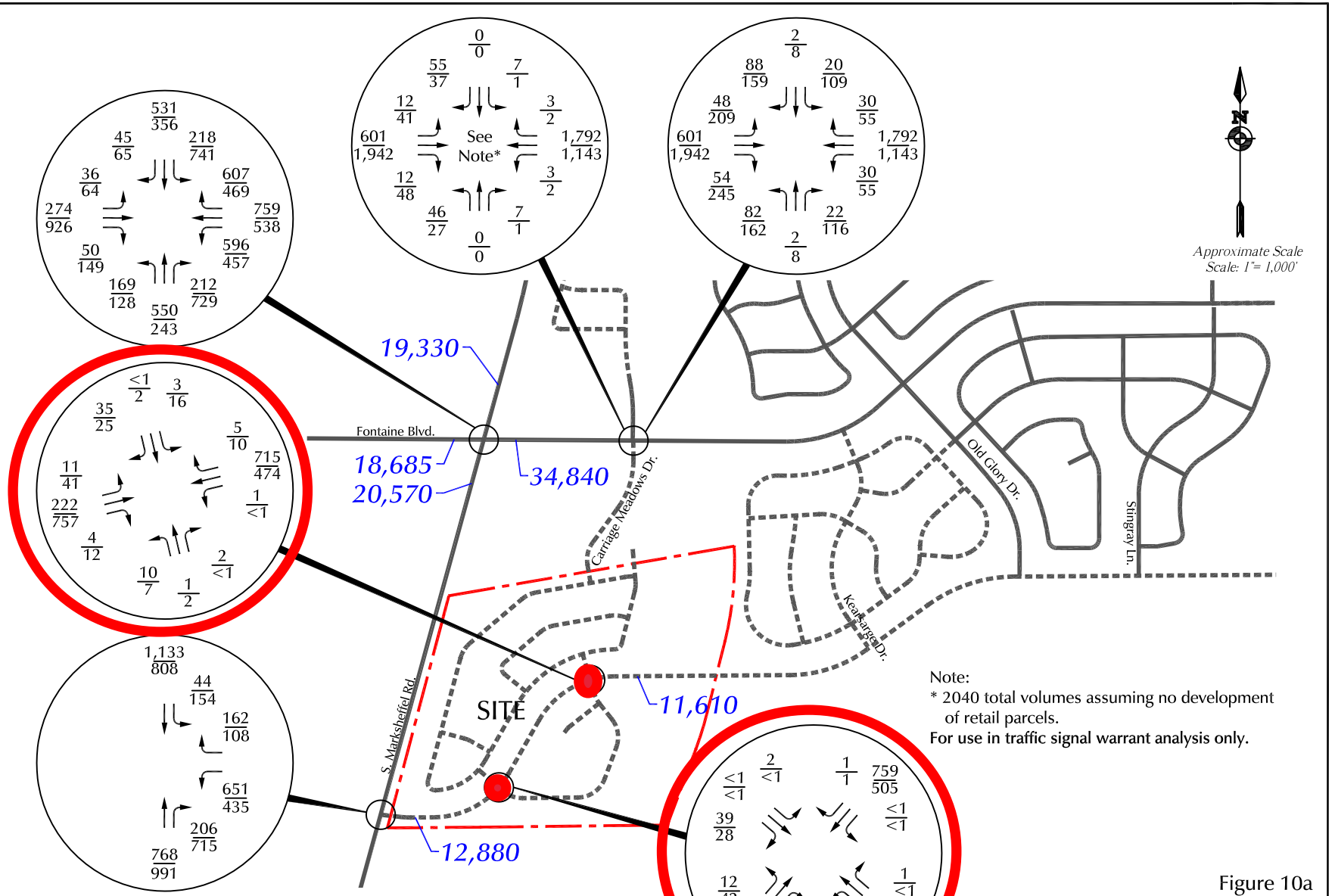

Figure 10a

Year 2040 Total Traffic

Carriage Meadows South at Lorson Ranch Filing No. 1 (LSC #164240)

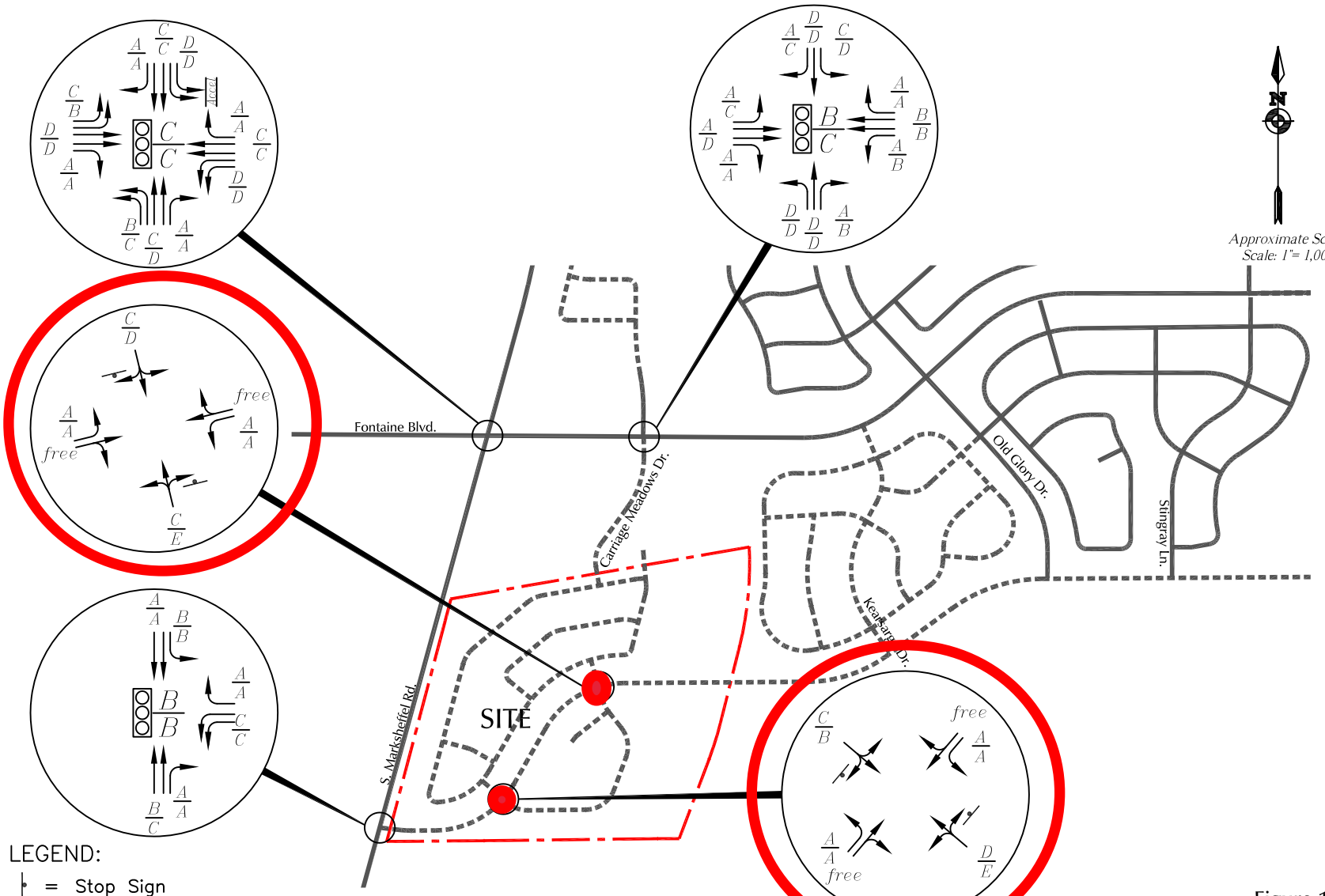

Figure 10b

Year 2040 Total Lane Geometry, Traffic Control & Level of Service

Carriage Meadows South at Lorson Ranch Filing No. 1 (LSC #164240)

TRANSPORTATION CONSULTANTS, INC.

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	11	222	4	1	715	5	10	1	2	3	0	35
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	-	200	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	234	4	1	753	5	11	1	2	3	0	37

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	758	0	0	238	0	0	1035	1019	236	1018	1018	755
Stage 1	-	-	-	-	-	-	259	259	-	757	757	-
Stage 2	-	-	-	-	-	-	776	760	-	261	261	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	853	-	-	1329	-	-	210	237	803	216	237	409
Stage 1	-	-	-	-	-	-	746	694	-	400	416	-
Stage 2	-	-	-	-	-	-	390	414	-	744	692	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	853	-	-	1329	-	-	189	233	803	212	233	409
Mov Cap-2 Maneuver	-	-	-	-	-	-	189	233	-	212	233	-
Stage 1	-	-	-	-	-	-	736	684	-	394	416	-
Stage 2	-	-	-	-	-	-	355	414	-	730	682	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0	22.6	15.6
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	218	853	-	-	1329	-	-	381
HCM Lane V/C Ratio	0.063	0.014	-	-	0.001	-	-	0.105
HCM Control Delay (s)	22.6	9.3	-	-	7.7	-	-	15.6
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.3

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	12	233	5	0	759	1	16	0	1	2	0	39
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	-	200	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	245	5	0	799	1	17	0	1	2	0	41

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	800	0	0	251	0	0	1093	1073	248	1073	1075	799
Stage 1	-	-	-	-	-	-	273	273	-	799	799	-
Stage 2	-	-	-	-	-	-	820	800	-	274	276	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	823	-	-	1314	-	-	192	220	791	198	220	386
Stage 1	-	-	-	-	-	-	733	684	-	379	398	-
Stage 2	-	-	-	-	-	-	369	397	-	732	682	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	823	-	-	1314	-	-	170	217	791	195	217	386
Mov Cap-2 Maneuver	-	-	-	-	-	-	170	217	-	195	217	-
Stage 1	-	-	-	-	-	-	721	673	-	373	398	-
Stage 2	-	-	-	-	-	-	330	397	-	719	671	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0	27.5	16.1
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	178	823	-	-	1314	-	-	368
HCM Lane V/C Ratio	0.101	0.015	-	-	-	-	-	0.117
HCM Control Delay (s)	27.5	9.4	-	-	0	-	-	16.1
HCM Lane LOS	D	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	0.4

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	41	757	12	0	474	10	7	2	0	16	2	25
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	-	200	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	43	797	13	0	499	11	7	2	0	17	2	26

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	509	0	0	809	0	0	1407	1398	803	1395	1400	504
Stage 1	-	-	-	-	-	-	889	889	-	504	504	-
Stage 2	-	-	-	-	-	-	518	509	-	891	896	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1056	-	-	817	-	-	117	141	383	119	140	568
Stage 1	-	-	-	-	-	-	338	361	-	550	541	-
Stage 2	-	-	-	-	-	-	541	538	-	337	359	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1056	-	-	817	-	-	107	135	383	114	134	568
Mov Cap-2 Maneuver	-	-	-	-	-	-	107	135	-	114	134	-
Stage 1	-	-	-	-	-	-	324	346	-	528	541	-
Stage 2	-	-	-	-	-	-	514	538	-	321	344	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0	40.1	26
HCM LOS			E	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	112	1056	-	-	817	-	-	216
HCM Lane V/C Ratio	0.085	0.041	-	-	-	-	-	0.21
HCM Control Delay (s)	40.1	8.6	-	-	0	-	-	26
HCM Lane LOS	E	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	0.3	0.1	-	-	0	-	-	0.8

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	42	809	17	0	505	1	10	0	0	0	0	28
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	-	200	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	44	852	18	0	532	1	11	0	0	0	0	29

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	533	0	0	869	0	0	1496	1482	861	1481	1490	532
Stage 1	-	-	-	-	-	-	949	949	-	532	532	-
Stage 2	-	-	-	-	-	-	547	533	-	949	958	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1035	-	-	775	-	-	101	125	355	103	124	547
Stage 1	-	-	-	-	-	-	313	339	-	531	526	-
Stage 2	-	-	-	-	-	-	521	525	-	313	336	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1035	-	-	775	-	-	92	120	355	100	119	547
Mov Cap-2 Maneuver	-	-	-	-	-	-	92	120	-	100	119	-
Stage 1	-	-	-	-	-	-	300	325	-	508	526	-
Stage 2	-	-	-	-	-	-	493	525	-	300	322	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0	49.1	12
HCM LOS			E	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	92	1035	-	-	775	-	-	547
HCM Lane V/C Ratio	0.114	0.043	-	-	-	-	-	0.054
HCM Control Delay (s)	49.1	8.6	-	-	0	-	-	12
HCM Lane LOS	E	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.4	0.1	-	-	0	-	-	0.2

TRANSPORTATION
CONSULTANTS, INC.

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Creekside at Lorson Ranch Filing No. 1
Traffic Impact and Access Analysis
(LSC #184520)
PUDSP-18-005
October 25, 2018

Traffic Engineer's Statement

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

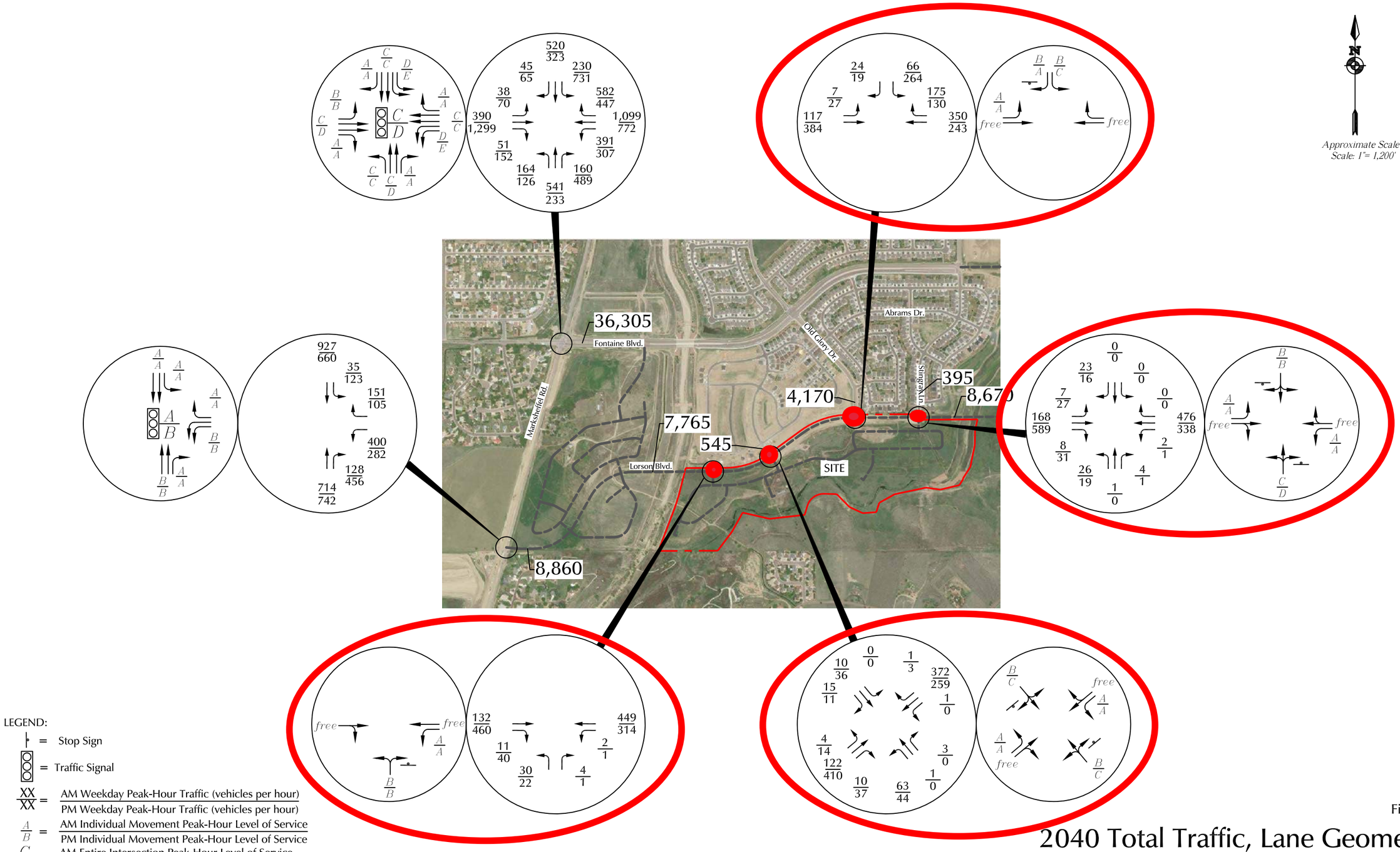
COLORADO LICENSED
JEFFREY C. HODSDON
31684
10-31-18
PROFESSIONAL ENGINEER

Developer's Statement

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

_____

10/26/18
Date



Approximate Scale
Scale: 1"= 1,200'

LEGEND:

= Stop Sign

= Traffic Signal

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

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

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

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

Figure 10

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

Creekside at Lorson Ranch Filing No. 1 (LSC #184520)

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	4	122	10	1	372	1	63	1	3	0	10	15
Future Vol, veh/h	4	122	10	1	372	1	63	1	3	0	10	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	128	11	1	392	1	66	1	3	0	11	16

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	393	0	0	139	0	0	550	537	134	539	542	393
Stage 1	-	-	-	-	-	-	142	142	-	395	395	-
Stage 2	-	-	-	-	-	-	408	395	-	144	147	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1166	-	-	1445	-	-	446	450	915	453	447	656
Stage 1	-	-	-	-	-	-	861	779	-	630	605	-
Stage 2	-	-	-	-	-	-	620	605	-	859	775	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1166	-	-	1445	-	-	426	448	915	449	445	656
Mov Cap-2 Maneuver	-	-	-	-	-	-	426	448	-	449	445	-
Stage 1	-	-	-	-	-	-	858	777	-	628	604	-
Stage 2	-	-	-	-	-	-	594	604	-	852	773	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0	14.8	11.9
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	437	1166	-	-	1445	-	-	551
HCM Lane V/C Ratio	0.161	0.004	-	-	0.001	-	-	0.048
HCM Control Delay (s)	14.8	8.1	-	-	7.5	-	-	11.9
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.6	0	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	7	117	350	175	66	24
Future Vol, veh/h	7	117	350	175	66	24
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	150	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	123	368	184	69	25

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	552	0	-	0	505	368
Stage 1	-	-	-	-	368	-
Stage 2	-	-	-	-	137	-
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	1018	-	-	-	527	677
Stage 1	-	-	-	-	700	-
Stage 2	-	-	-	-	890	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1018	-	-	-	523	677
Mov Cap-2 Maneuver	-	-	-	-	584	-
Stage 1	-	-	-	-	695	-
Stage 2	-	-	-	-	890	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	11.6
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1018	-	-	-	584	677
HCM Lane V/C Ratio	0.007	-	-	-	0.119	0.037
HCM Control Delay (s)	8.6	-	-	-	12	10.5
HCM Lane LOS	A	-	-	-	B	B
HCM 95th %tile Q(veh)	0	-	-	-	0.4	0.1

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	168	8	2	476	0	26	1	4	0	0	23
Future Vol, veh/h	7	168	8	2	476	0	26	1	4	0	0	23
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	177	8	2	501	0	27	1	4	0	0	24

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	501	0	0	185	0	0	712	700	181	703	704	501
Stage 1	-	-	-	-	-	-	195	195	-	505	505	-
Stage 2	-	-	-	-	-	-	517	505	-	198	199	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1063	-	-	1390	-	-	347	363	862	352	361	570
Stage 1	-	-	-	-	-	-	807	739	-	549	540	-
Stage 2	-	-	-	-	-	-	541	540	-	804	736	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1063	-	-	1390	-	-	330	360	862	347	358	570
Mov Cap-2 Maneuver	-	-	-	-	-	-	330	360	-	347	358	-
Stage 1	-	-	-	-	-	-	801	734	-	545	539	-
Stage 2	-	-	-	-	-	-	517	539	-	794	731	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0	16	11.6
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	360	1063	-	-	1390	-	-	570
HCM Lane V/C Ratio	0.091	0.007	-	-	0.002	-	-	0.042
HCM Control Delay (s)	16	8.4	-	-	7.6	-	-	11.6
HCM Lane LOS	C	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	132	11	2	449	30	4
Future Vol, veh/h	132	11	2	449	30	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	139	12	2	473	32	4

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	151	0	622	145
Stage 1	-	-	-	-	145	-
Stage 2	-	-	-	-	477	-
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	-	-	1430	-	450	902
Stage 1	-	-	-	-	882	-
Stage 2	-	-	-	-	624	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1430	-	450	902
Mov Cap-2 Maneuver	-	-	-	-	523	-
Stage 1	-	-	-	-	881	-
Stage 2	-	-	-	-	624	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	12
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	550	-	-	1430	-
HCM Lane V/C Ratio	0.065	-	-	0.001	-
HCM Control Delay (s)	12	-	-	7.5	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	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	14	410	37	0	259	3	44	0	0	0	36	11
Future Vol, veh/h	14	410	37	0	259	3	44	0	0	0	36	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	15	432	39	0	273	3	46	0	0	0	38	12

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	276	0	0	471	0	0	782	758	452	757	776	275
Stage 1	-	-	-	-	-	-	482	482	-	275	275	-
Stage 2	-	-	-	-	-	-	300	276	-	482	501	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1287	-	-	1091	-	-	312	336	608	324	328	764
Stage 1	-	-	-	-	-	-	565	553	-	731	683	-
Stage 2	-	-	-	-	-	-	709	682	-	565	543	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1287	-	-	1091	-	-	277	332	608	321	324	764
Mov Cap-2 Maneuver	-	-	-	-	-	-	277	332	-	321	324	-
Stage 1	-	-	-	-	-	-	558	546	-	722	683	-
Stage 2	-	-	-	-	-	-	660	682	-	558	536	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0	20.6	16.1
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	277	1287	-	-	1091	-	-	374
HCM Lane V/C Ratio	0.167	0.011	-	-	-	-	-	0.132
HCM Control Delay (s)	20.6	7.8	-	-	0	-	-	16.1
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.6	0	-	-	0	-	-	0.5

Intersection	
Int Delay, s/veh	5.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	27	384	243	130	264	19
Future Vol, veh/h	27	384	243	130	264	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	150	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	28	404	256	137	278	20

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	393	0	-	0	716	256
Stage 1	-	-	-	-	256	-
Stage 2	-	-	-	-	460	-
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	1166	-	-	-	397	783
Stage 1	-	-	-	-	787	-
Stage 2	-	-	-	-	636	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1166	-	-	-	387	783
Mov Cap-2 Maneuver	-	-	-	-	481	-
Stage 1	-	-	-	-	768	-
Stage 2	-	-	-	-	636	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	21.4
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1166	-	-	-	481	783
HCM Lane V/C Ratio	0.024	-	-	-	0.578	0.026
HCM Control Delay (s)	8.2	-	-	-	22.2	9.7
HCM Lane LOS	A	-	-	-	C	A
HCM 95th %tile Q(veh)	0.1	-	-	-	3.6	0.1

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	27	589	31	1	338	0	19	0	1	0	0	16
Future Vol, veh/h	27	589	31	1	338	0	19	0	1	0	0	16
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	28	620	33	1	356	0	20	0	1	0	0	17

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	356	0	0	653	0	0	1060	1051	637	1051	1067	356
Stage 1	-	-	-	-	-	-	693	693	-	358	358	-
Stage 2	-	-	-	-	-	-	367	358	-	693	709	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1203	-	-	934	-	-	202	227	477	205	222	688
Stage 1	-	-	-	-	-	-	434	445	-	660	628	-
Stage 2	-	-	-	-	-	-	653	628	-	434	437	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1203	-	-	934	-	-	193	222	477	201	217	688
Mov Cap-2 Maneuver	-	-	-	-	-	-	193	222	-	201	217	-
Stage 1	-	-	-	-	-	-	424	435	-	645	627	-
Stage 2	-	-	-	-	-	-	636	627	-	423	427	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0	25.2	10.4
HCM LOS			D	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	199	1203	-	-	934	-	-	688
HCM Lane V/C Ratio	0.106	0.024	-	-	0.001	-	-	0.024
HCM Control Delay (s)	25.2	8.1	-	-	8.9	-	-	10.4
HCM Lane LOS	D	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.3	0.1	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	460	40	1	314	22	1
Future Vol, veh/h	460	40	1	314	22	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	484	42	1	331	23	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	526	0	838	505
Stage 1	-	-	-	-	505	-
Stage 2	-	-	-	-	333	-
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	-	-	1041	-	336	567
Stage 1	-	-	-	-	606	-
Stage 2	-	-	-	-	726	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1041	-	336	567
Mov Cap-2 Maneuver	-	-	-	-	452	-
Stage 1	-	-	-	-	605	-
Stage 2	-	-	-	-	726	-

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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	456	-	-	1041	-
HCM Lane V/C Ratio	0.053	-	-	0.001	-
HCM Control Delay (s)	13.3	-	-	8.5	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0	-