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# Carriage Meadows Townhomes
# Traffic Impact Analysis
# PUDSP-19-005
## (LSC #184720)
## January 13, 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.

_____ 1/10/20
Date

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January 13, 2020*

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

RE: Carriage Meadows Townhomes
El Paso County, Colorado
Traffic Impact Analysis
*(Rev. 2/11/2020)
LSC #184720

Dear Mr. Mark:

LSC Transportation Consultants, Inc. has prepared this traffic impact analysis for the multifamily residential development to be located south of Fontaine Boulevard and east of Carriage Meadows Drive within the Lorson Ranch development in El Paso County, Colorado. The site location is shown in Figure 1.

**REPORT CONTENTS**

The report contains the following:

- Recent/current street and traffic conditions adjacent to and in the vicinity of the site including the street widths, lane geometries, traffic controls, posted speed limits, street classification, etc.;
- Existing traffic volumes at the intersection of Marksheffel/Fontaine and estimates of short-term and 2040 background traffic volumes at the key intersections in the vicinity of the site;
- The projected average weekday and peak-hour vehicle-trips to be generated by the site;
- The assignment of the projected trips to the adjacent street system;
- The resulting short-term and 2040 total traffic volumes on the street system;
- The resulting traffic impacts. The traffic impacts have been quantified by determining the future levels of service at the intersections of Marksheffel Road/Fontaine Boulevard, Marksheffel Road/Lorson Boulevard, and Carriage Meadows Drive/Fontaine Boulevard and the proposed site access to Carriage Meadows Drive;
- Recommendations for street functional classification, traffic control, and auxiliary turn lanes.

## SITE DEVELOPMENT AND LAND USE

### Land Use

The parcel south of Fontaine Boulevard and east of Carriage Meadows Drive is planned to be developed with 49 townhomes. Access is proposed to Carriage Meadows Drive about 575 feet south of Fontaine Boulevard. An additional access is proposed via an extension of Rubicon Drive on the south end of the site. The site plan is shown in Figure 2.

The parcel located just west of the site is planned to be developed for commercial uses in the future. The commercial development has not been planned or designed. Therefore, this report assumes that access for that future commercial parcel would be to Carriage Meadows Drive aligning with the currently proposed townhome access.

### Sight Distance

Figure 3 shows the sight distance analysis at the proposed access to Carriage Meadows Drive. The figure shows the required entering sight distance for driveways based the criteria for passenger cars contained in Table 2-35 of the ECM. The required sight distance to the north is based on an anticipated southbound posted speed limit of 35 mph between Fontaine & Fire Steel (consistent with the standard posted speed limit of an Urban Collector street). The required sight distance to the south is based on an anticipated northbound speed limit of 25 mph between Mandan & Fire Steel. The 200-foot horizontal curve centerline radius south of Fire Steel is consistent with the ECM-prescribed maximum centerline radius of an urban local street (which has a corresponding 25-mph posted/design speed). As shown on Figure 3 the sight distance criteria can be met at the proposed access point in both directions.

## ROADWAY AND TRAFFIC CONDITIONS

### Area Roadways

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

- **Marksheffel Road** extends north from the Link Road/C&S Road intersection in Fountain, Colorado to north of Woodmen Road. Adjacent to the site Marksheffel Road is shown as a future four-lane Expressway on the County *Major Transportation Corridors Plan (MTCP)*. The posted speed limit on Marksheffel Road at Fontaine Boulevard is 55 miles per hour (mph). The PPRTA has recently completed Marksheffel Road upgrades between Mesa Ridge Parkway and Bradley Road. This included intersection improvements at the Fontaine Boulevard intersection.

- **Fontaine Boulevard** is designated as a four-lane Urban Principal Arterial from Marksheffel Road east to Stingray Lane and has been constructed as such. 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.

**Existing Traffic Conditions**

Figure 4 shows the recent traffic volumes at the intersection of Marksheffel Road/Fontaine Boulevard. The traffic volumes were based on traffic counts conducted by LSC in March 2018. 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: Level of Service Delay Ranges**

| Level of Service | Signalized Intersections | Unsignalized Intersections |
|---|---|---|
| | Average Control Delay (Seconds per Vehicle) | Average Control Delay (Seconds per Vehicle) [1] |
| A | ≤ 10.0 | ≤ 10.0 |
| B | 10.1 - 20.0 | 10.1 - 15.0 |
| C | 20.1 - 35.0 | 15.1 - 25.0 |
| D | 35.1 - 55.0 | 25.1 - 35.0 |
| E | 55.1 - 80.0 | 35.1 - 50.0 |
| F | ≥ 80.1 | ≥ 50.1 |

[1] For unsignalized intersections, if v/c is > 1.00, then LOS is LOS F, regardless of the projected average control delay per vehicle

The intersection of Marksheffel/Fontaine was analyzed to determine the existing levels of service using Synchro. Figure 4 shows the level of service analysis results. As shown in the figure, all movements at this intersection are currently operating at a level of service C or better during the peak hours. The level of service (LOS) reports are attached.

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

Background traffic is the traffic estimated to be on the roadways without the proposed multifamily development. The short-term background traffic volumes are shown in Figure 5. The background traffic volumes are based on the existing traffic volumes shown in Figure 4 with a portion of the volumes assumed to be rerouted with the construction of Lorson Boulevard from Marksheffel Road to Lamprey Drive including crossing both the Jimmy Camp Creek main channel and east tributary.

The short-term background traffic also includes additional traffic generated by buildout of the residential portion of Lorson Ranch subdivisions north of Lorson Boulevard between Jimmy Camp Creek and the east tributary, the Carriage Meadows North and Carriage Meadows South subdivisions located west of Jimmy Camp Creek, Lorson Ranch East Filings 1 and 2, Creekside at Lorson Ranch Filing 1, and the school located northeast of Fontaine Boulevard and Lamprey Drive. The background traffic assumes zero traffic generated by this townhome project.

**2040 BACKGROUND TRAFFIC**

Figure 6 shows the projected 2040 background traffic volumes. 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 currently proposed multifamily development) and traffic volumes shown in the *Marksheffel Road South Corridor Preservation Plan* dated July 2014. Appendix Table 1 shows 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.

**TRIP GENERATION**

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

As shown in Table 2, the site is projected to generate about 359 new vehicle-trips on the average weekday, with about one-half of the vehicles entering and one-half of the vehicles exiting in a 24-hour period. During the morning peak hour, which generally occurs for one hour between 6:30 a.m. and 8:30 a.m., about 5 vehicles would enter and 17 vehicles would exit the site. During the afternoon peak hour, which generally occurs for one hour between 4:30 p.m. and 6:30 p.m., about 17 vehicles would enter and 10 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. Figure 7 shows the external trip distribution estimates (external to Lorson Ranch). 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 intersection of Marksheffel/Fontaine. The number of external vehicle-trips were based on the internal trip estimates shown in Appendix Table 2.

Figures 8 and 9 show the short-term and long-term site-generated traffic volume estimates, respectively. These volumes were determined by first assigning the internal vehicle-trips to the street network based on the location of the planned school site located northeast of the intersection of Fontaine Boulevard and Lamprey Drive and the future retail sites located near the intersection of Fontaine Boulevard and Carriage Meadows Drive. The short-term internal trip assignment included only trips to and from the school site. For the short-term scenario, the retail internal trips were included in the external trip assignment. The long-term internal trip assignment included both trips to and from the school and the retail sites.

The external vehicle-trips were then assigned to the street network by applying the trip distribution percentages (from Figure 7) to the external trip generation estimates. The internal and external site-generated traffic volumes were then summed to determine the total site-generated traffic volumes.

**PROJECTED TOTAL TRAFFIC**

Figure 10a shows the short-term (year 2020) total traffic volumes. These short-term volumes are the sum of the short-term background traffic volumes (from Figure 5) plus the short-term site-generated traffic volumes (from Figure 8).

Figure 10b shows the lane geometry, traffic control, and level of service at the key area intersections based on the short-term total volumes.

Figure 11a shows the 2040 total traffic volumes. These 2040 total traffic volumes are the sum of the 2040 background traffic volumes (from Figure 6) plus the long-term site-generated traffic volumes (from Figure 9).

Figure 11b shows the lane geometry, traffic control, and level of service at the key area intersections based on the 2040 total volumes.

**PROJECTED LEVELS OF SERVICE**

The intersections of Marksheffel Road/Fontaine Boulevard, Marksheffel Road/Lorson Boulevard, and Fontaine Boulevard/Carriage Meadows and the proposed site access to Carriage Meadows Drive have been analyzed to determine the projected levels of service for the short-term and 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 5, 6, 10b, and 11b.

**Marksheffel/Fontaine**

The signal-controlled Marksheffel Road/Fontaine Boulevard intersection is projected to continue to operate at level of service D or better for all movements based on the short-term total traffic volumes. By 2040, this intersection is projected to operate at an overall LOS D or better during the peak hours; however, the southbound left-turn and westbound left-turn movements are projected to operate at LOS E during the afternoon peak hour based on both the background and total traffic volumes.

**Marksheffel/Lorson**

Unsignalized (Stop Sign-Controlled) and Signalized Intersection Traffic Control

The westbound left-turn movement at the intersection of Marksheffel/Lorson is projected to operate at LOS F during the morning and afternoon peak hours if this intersection remains a conventional, stop sign-controlled, full-movement intersection. Assuming a conventional, signal-controlled intersection, all movements are projected to operate at LOS B or better during the peak hours based on the 2040 total traffic volumes.

Alternative Intersection Configuration/Traffic Control

The following are two potential alternatives to a conventional full-movement intersection (stop sign-controlled or signal-controlled, for which analysis results are presented in the preceding paragraph). These include modern roundabout and channelized-T type intersections.

Modern Roundabout Intersection

A modern roundabout intersection at Lorson/Marksheffel (hypothetically) would initially be a single-lane roundabout, but would need to be designed to be expandable to a two-lane roundabout.

By 2040 it was assumed that the intersection would be expanded to a two-lane roundabout. Based on the 2040 total traffic volumes the westbound approach is projected to operate at LOS D (25.5 seconds control delay) during the peak hour.

Advantages:

- Generally, modern roundabouts have safety advantages over conventional four-leg signal-controlled intersections. This is because crashes tend to be lower speed, there are fewer conflict points, and the types (angles) of crashes tend to be those that generally result in less severe accidents. Granted, as a conventional T intersection (which would be the case until (and if) a fourth leg is added) this intersection would have significantly fewer conflict points than a four-leg conventional intersection.
- A roundabout may be more aesthetically appealing than a traditional signal-controlled intersection and generally lower traffic noise levels.
- Long-term operation and maintenance cost is likely to be lower with a roundabout than a traffic signal.

Disadvantages:

- The travel speed through the intersection compared with a signalized intersection during the signal green phase would be slower for through traffic on Marksheffel Road. This may affect travel times along the corridor if, in the future, other Marksheffel intersections to the north and south are controlled by a series of coordinated traffic signals. However, the average intersection delay should be factored into the overall corridor travel time. This analysis may show no overall disadvantage.

<u>Channelized-T Intersection</u>

The channelized-T type intersection allows for an intersection with generally lower overall and side-street delay than with a conventional T intersection and with fewer stops for the through traffic on the major roadway when compared to a conventional signalized T intersection. An example of a channelized-T type intersection is at the intersection of US Highway 24 and Garrett Road near Falcon (El Paso County). That particular intersection is signalized with a “directional signal,” but a channelized-T can also operate as an unsignalized intersection with stop sign control on the minor street. Whether signalized or unsignalized, the raised median configuration would allow for “free” (no stopping) movement for the southbound through movement through the intersection. The westbound left turn would cross the northbound lanes and into a channelized southbound left-turn acceleration lane for merging into southbound through traffic.

By 2040 the delay for the westbound left-turn movement is projected to be LOS F during the morning peak hour even with the channelized-T. If the channelized-T intersection were signalized with a “directional signal,” the delay for the westbound left-turn movement is projected to be 21.3 seconds (LOS C).

Advantages:

- The intersection of Marksheffel/Lorson could likely operate at a satisfactory level of service as a stop sign-controlled intersection for longer as an unsignalized, channelized-T intersection than if it were to remain a conventional-T intersection.
- Once signal control was required to maintain an acceptable level of service, the channelized-T configuration would result in lower delay for through traffic especially for the southbound traffic, which would operate freely. The overall intersection delay is projected to be lower with a channelized-T intersection. Based on the 2040 total morning peak-hour volumes, the projected overall intersection delay is 7.9 seconds per vehicle (LOS A) with a signal-controlled channelized-T intersection and 10.8 seconds per vehicle (LOS B) with a conventional signal-controlled intersection. Based on the 2040 total afternoon peak-hour volumes the projected overall intersection delay is 6.1 seconds per vehicle (LOS A) with a signal-controlled channelized-T intersection and 9.8 seconds per vehicle (LOS A) with a conventional signal-controlled intersection.
- There is the potential, depending on the time of day and traffic volumes, to allow for a longer side-street signal phase due to one-way signal progression and no red phase for southbound traffic.

Disadvantages:

- The channelized-T configuration would only work on an interim basis prior to the addition of a potential fourth leg of this intersection. It is anticipated that development of the Singer property on the west side of Marksheffel Road would result in a request for a full-movement-capable, fourth/west leg of this intersection. If/when that occurs, many of the channelized-T improvements would need to be removed or modified.
- The channelized-T configuration may be confusing for some drivers and the merging movement into southbound traffic requires a more complex movement than with a signal. However, most motorists entering the intersection from the east would be regular users and would quickly learn to navigate the intersection.
- A channelized-T intersection would require the construction of raised channelizing medians on Marksheffel Road and the ongoing maintenance of those medians.
- The section of Marksheffel Road between Lorson Boulevard and Poa Annua would need to be designed to accommodate a southbound left-turn acceleration lane from Lorson Boulevard, a taper, and a southbound left-turn lane approaching Poa Annua. Based on a posted speed limit of 55 mph, the El Paso County Engineering Criteria Manual (ECM) requires a 960-foot-long acceleration lane plus a 222-foot taper. Based on a design speed of 60 mph the ECM requires a 290-foot-long left-turn lane approach Poa Annua plus 50 to 75 feet of storage length. The total length of the acceleration lane, taper, and left-turn lane would be between 1,522 and 1,547 feet. The total distance between Lorson Boulevard and Poa Annua street is about 1,025 feet centerline to centerline. The construction of a channelized-T intersection would therefore require a deviation(s) to the ECM.

- A channelized-T can be more difficult for pedestrians than a conventional signalized intersection. However, there may be ways to better accommodate pedestrians – such as adding a pedestrian-only phase for southbound traffic. More research would be needed regarding pedestrian accommodation.

**Fontaine/Carriage Meadows**

Based on the projected short-term background and total traffic volumes and assuming two-way stop sign control, the intersection Fontaine/Carriage Meadows is projected to operate at LOS F for the northbound left-turn movement and southbound through movement during the afternoon peak hour. If this intersection is signalized, all movements are projected to operate at LOS D or better during the peak hours based on the projected 2040 background and total traffic volumes.

**Site Access Point**

The proposed site access point to Carriage Meadows Drive is projected to operate at level of service B or better for all movements as a stop sign-controlled intersection based on the projected short-term and 2040 total traffic volumes.

**QUEUEING ANALYSIS**

A queuing analysis was performed using Synchro/SimTraffic to determine if the intersection spacing on Carriage Meadows Drive between Fontaine Boulevard and the site access will be sufficient to accommodate the projected queues based on the projected short-term and 2040 total traffic volumes. The 2040 analysis assumes a full-movement access point, for the future retail parcel west of the site, will align with the currently proposed access for the multifamily development. The short-term total and 2040 total morning and afternoon peak-hour traffic volumes were entered into the Synchro model. The simulation was run five times. The queuing reports are attached.

Based on the projected short-term total morning peak-hour traffic volumes, the projected maximum northbound left-turn queue on Carriage Meadows Drive approaching Fontaine Boulevard is about 82 feet.

Based on the projected 2040 total afternoon peak-hour traffic volumes the projected maximum northbound left-turn queue on Carriage Meadows Drive approaching Fontaine Boulevard is about 204 feet. The projected average maximum southbound left-turn queue approaching the site access is projected to be less than one vehicle long.

## 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

intersection of Fontaine Boulevard/Carriage Meadows Drive. Assuming a total signal cost of $300,000, a fair share contribution towards a future signal at this intersection would be $10,909. The timing of a future traffic signal at Fontaine/Carriage Meadows and the escrow amounts toward that signal should be reevaluated with the development of any of the retail parcels.

**Marksheffel/Lorson**

As shown in Figure 12, the intersection of Marksheffel/Lorson is likely to meet a traffic signal warrant based on the short-term total traffic volumes. Table 4 shows the projected number of westbound left-turning vehicles at the intersection of Lorson/Marksheffel estimated to be generated by future developments within Lorson Ranch. Estimates of westbound left-turning vehicles due to existing or approved developments were not included as they will not participate in funding of this signal. The specific developments included in the calculation are listed in the table. These volumes were used to calculate a fair share contribution toward a future signal at this intersection. Assuming a total signal cost of $300,000, a fair share contribution toward a future signal at this intersection would be $10,453.

**RECOMMENDED INTERNAL STREET CLASSIFICATIONS**

Firesteel Drive and Rubicon Drive (south of Firesteel Drive) are proposed to be public streets and classified as Urban Local. Paluxy Trail, Rubicon Trail and Tolt Trail are proposed as private streets.

**DEVIATIONS TO ECM CRITERIA**

Per staff direction, modifications from the Engineering Criteria Manual (ECM) (2019) which do not qualify as a PUD modification as identified in Section 4.2.6.F.2 of the Land Development Code are required to be requested as deviations of the ECM. The applicant is requesting the following deviations(s) from the ECM:

- The applicant requests a deviation from Section 2.2.5.E of the ECM to allow for shortened intersection spacing of private roads along the proposed public road, Rubicon Drive. The proposed spacing of Paluxy Trail (private) between Firesteel Drive (public) and Tolt Trail (private) is approximately 75 feet from centerline to centerline of each road.
- Section 2.2.5.E of the ECM states:
  *"Roads shall not intersect Urban Local roadways closer than 175 feet from each other (centerline to centerline) …"*

Address sight distance at these roads. (see Figure 3)

**ROADWAY IMPROVEMENT FEE PROGRAM**

This project will be required to participate in the El Paso County Road Improvement Fee Program. The Carriage Meadow Townhomes will join the ten-mil PID. The ten-mil PID building permit fee portion associated with this option is $1,458 per multifamily dwelling unit. Based on 49 multifamily dwelling units, the total building permit fee would be $71,442.

## CONCLUSIONS AND RECOMMENDATIONS

### Trip Generation

- The site is expected to generate about 359 new vehicle-trips on the average weekday, with about one-half of the vehicles entering and one-half of the vehicles exiting in a 24-hour period. During the morning peak hour, which generally occurs for one hour between 6:30 a.m. and 8:30 a.m., about 5 vehicles would enter and 17 vehicles would exit the site. During the afternoon peak hour, which generally occurs for one hour between 4:30 p.m. and 6:30 p.m., about 17 vehicles would enter and 10 vehicles would exit the site.

### Projected Levels of Service

- The signal-controlled Marksheffel Road/Fontaine Boulevard intersection is projected to continue to operate at level of service D or better for all movements based on the short-term total traffic volumes. By 2040 this intersection is projected to operate at an overall LOS D or better during the peak hours; however, the southbound left-turn and westbound left-turn movements are projected to operate at LOS E during the afternoon peak hour based on both the background and total traffic volumes.

- Based on the projected short-term total traffic volumes, the westbound left-turn movement at the intersection of Marksheffel/Lorson is projected to operate at LOS F during the morning peak hour and LOS E during the afternoon peak hour if this intersection is two-way stop sign-controlled. If this intersection were to be signal-controlled, all movements are projected to operate at LOS B or better during the peak hours based on both short-term and 2040 total traffic volumes. As requested by staff, this report includes discussion and general analysis of intersection traffic control/intersection type alternatives for Lorson Boulevard/Marksheffel Road.

- Based on the projected short-term background and total traffic volumes and assuming two-way stop sign control, the intersection of Fontaine/Carriage Meadows is projected to operate at LOS F for the northbound left-turn movement and southbound through movement during the afternoon peak hour. A Vehicular Volume Traffic Signal Warrant is not projected to be met at this intersection until one or more of the commercial parcels are developed. It is not uncommon for the minor approaches at an unsignalized intersection to operate at LOS E or F during the peak hours as the volumes approach the thresholds for a signal warrant to be met. If this intersection is signalized, all movements are projected to operate at LOS D or better during the peak hours, based on the projected 2040 background and total traffic volumes.

- The proposed site access point to Carriage Meadows Drive is projected to operate at level of service B or better for all movements as a stop sign-controlled intersection, based on the projected short-term and 2040 total traffic volumes.

**Recommended Improvements**

- Table 5 shows a summary of the off-site improvements needed in the vicinity of the site. Table 5 also identifies the time frame that will likely be needed for each improvement and the party responsible for that improvement.

**Auxiliary Turn Lanes**

- There is an existing 400-foot-long eastbound left-turn lane on Fontaine Boulevard approaching Carriage Meadows Drive. This turn lane will meet the criteria contained in the El Paso County *Engineering Criteria Manual* (ECM) based on a design speed of 50 mph for Fontaine Boulevard and the projected 2040 total westbound left-turn volume at this intersection.

- Figures 13 and 14 show the recommended lane geometry for Carriage Meadows Drive adjacent to the site for the short term and long term (following development of the adjacent commercial site), respectively. The recommended auxiliary turn lane lengths were based on the queuing analysis results discussed above.

**Traffic Signal Escrow Percentages/Amounts**

- Assuming a total signal cost of $300,000, a fair share contribution towards a future signal at the intersection of Carriage Meadows Drive/Fontaine Boulevard would be $10,909. Please refer to the section in the report entitled Traffic Signal Escrow Percentages/ Amounts.

- Assuming a total signal cost of $300,000, a fair share contribution towards a future signal at the intersection of Marksheffel Road/Lorson Boulevard would be $10,453. Please refer to the section in the report entitled Traffic Signal Escrow Percentages/Amounts.

* * * * *

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Please contact me if you have any questions or need further assistance.

Sincerely,

LSC TRANSPORTATION CONSULTANTS, INC.

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

JCH:KDF:jas

Enclosures: Tables 2 – 5
Appendix Tables 1-2
Figures 1-14
Traffic Count Reports
Level of Service Reports
Queuing Reports

# Tables 2-5

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**Table 2**
**Trip Generation Estimate**
**Carriage Meadows Townhomes**

| Land Use Code | Land Use Description | Trip Generation Units | Trip Generation Rates [1] | | | | | Total Trips Generated | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Average Weekday Traffic | Morning Peak Hour | | Afternoon Peak Hour | | Average Weekday Traffic | Morning Peak Hour | | Afternoon Peak Hour | |
| | | | | In | Out | In | Out | | In | Out | In | Out |
| 210 | Multifamily Housing | 49 DU[2] | 7.32 | 0.11 | 0.35 | 0.35 | 0.21 | 359 | 5 | 17 | 17 | 10 |

Notes:
(1) Source: "*Trip Generation, 10th Edition, 2017*" by the Institute of Transportation Engineers (ITE)
(2) DU = dwelling unit

*Source: LSC Transportation Consultants, Inc.*

**Table 3**
**Carriage Meadows/Fontaine Future Traffic Signal Contributions**
**Carriage Meadows South Multifamily**

| | Development | NB LT | NB TH | NB RT | SB LT | SB TH | SB RT | TOTAL[(1)] veh/hr | Signal Contribution % | Signal Contribution $ |
|---|---|---|---|---|---|---|---|---|---|---|
| AM | Carriage Meadows North at Lorson Ranch Filing No. 1 | 0 | 1 | 0 | 7 | 0 | 53 | 13 | 10.5% | |
| | Carriage Meadows South at Lorson Ranch Filing No. 1 | 37 | 2 | 6 | 0 | 1 | 0 | 43 | 34.7% | |
| | Carriage Meadows South Multifamily | 9 | 1 | 2 | 0 | 0 | 0 | 10 | 8.1% | |
| | North Retail (Tracts D and E) | 0 | 0 | 0 | 11 | 0 | 34 | 14 | 11.3% | |
| | South Retail (Tract N) | 39 | 0 | 9 | 0 | 0 | 0 | 44 | 35.5% | |
| | | **85** | **4** | **17** | **18** | **1** | **87** | **124** | | |
| PM | Carriage Meadows North at Lorson Ranch Filing No. 1 | 0 | 4 | 0 | 1 | 2 | 36 | 11 | 3.0% | |
| | Carriage Meadows South at Lorson Ranch Filing No. 1 | 26 | 4 | 1 | 0 | 7 | 0 | 38 | 10.2% | |
| | Carriage Meadows South Multifamily | 6 | 1 | 0 | 0 | 1 | 0 | 8 | 2.2% | |
| | North Retail (Tracts D and E) | 0 | 0 | 0 | 125 | 0 | 117 | 137 | 36.9% | |
| | South Retail (Tract N) | 127 | 0 | 99 | 0 | 0 | 0 | 177 | 47.7% | |
| | | **159** | **9** | **100** | **126** | **10** | **153** | **371** | | |
| AM + PM | Carriage Meadows North at Lorson Ranch Filing No. 1 | 0 | 5 | 0 | 8 | 2 | 89 | 24 | 4.8% | $14,545 |
| | Carriage Meadows South at Lorson Ranch Filing No. 1 | 63 | 6 | 7 | 0 | 8 | 0 | 81 | 16.4% | $49,091 |
| | Carriage Meadows South Multifamily | 15 | 2 | 2 | 0 | 1 | 0 | 18 | 3.6% | $10,909 |
| | North Retail (Tracts D and E) | 0 | 0 | 0 | 136 | 0 | 151 | 151 | 30.5% | $91,515 |
| | South Retail (Tract N) | 166 | 0 | 108 | 0 | 0 | 0 | 221 | 44.6% | $133,939 |
| | | **244** | **13** | **117** | **144** | **11** | **240** | **495** | | **$300,000** |

**Notes:**

(1) The total includes all left-turn and through volumes plus 50% of the northbound right-turn volume and 10% of the southbound right-turn volume.

*Source: LSC Transportation Consultants, Inc.*

**Table 4**
**Lorson/Marksheffel Future Traffic Signal Contributions**
**Carriage Meadows South Multifamily**

| Development | Westbound Left-Turn Volume | | | Signal Contribution | |
|---|---|---|---|---|---|
| | AM | PM | AM+PM | % | $ |
| Carriage Meadows South at Lorson Ranch Filing No. 1 | 73 | 48 | 121 | 42.2% | $126,481 |
| Lorson Ranch East Filing No. 1 | 57 | 38 | 95 | 33.1% | $99,303 |
| Lorson Ranch East Filing No. 2 | 0 | 0 | 0 | 0.0% | $0 |
| Creekside at Lorson Ranch Filing No. 1 | 41 | 30 | 71 | 24.7% | $74,216 |
| Carriage Meadows South Multifamily | 6 | 4 | 10 | 3.5% | $10,453 |
| | **171** | **116** | **287** | | **$300,000** |

*Source: LSC Transportation Consultants, Inc.*

**Table 5**
**Carriage Meadows South Multi-Family**
**Roadway Improvements**

| Item # | Improvement | Timing | Responsibility |
|---|---|---|---|
| | **Roadway Segment Improvements** | | |
| 1 | Upgrade Carriage Meadows Drive from Fontaine Blvd to Mandan Drive to County Urban Collector standards with laneage depicted in Figure 13. | With the future commercial development | Future applicant for the commercial development |
| | **Marksheffel/Fontaine** | | |
| 2 | Construct 2nd northbound and southbound through lanes | With growth in through traffic volumes and/or with additional traffic generated by future developments adjacent to or within the "travel-shed" of the Marksheffel corridor south of Bradley Road. | TBD - Master Planned |
| 3 | Cosntruct 2nd westbound and southbound left-turn lanes | With future development | Lorson Ranch |
| | **Marksheffel/Lorson** | | |
| 4 | Select and install alternate traffic control to the existing two-way, stop-sign control:<br>- Construct Channelized "T"<br>- Reconstruct as modern one-lane roundabout<br>- Install traffic signal | **Short-Term** | Lorson Ranch<br>(required escrow for this development $10,453) |
| 5 | Construct 2nd Northbound and southbound through lanes. Other improvements may be required based on the alternate traffic control scenario selected for this intersection. | With growth in through traffic volumes and/or with additional traffic generated by future developments adjacent to or within the "travel-shed" of the Marksheffel corridor south of Bradley Road. | TBD - Master Planned |
| | **Carriage Meadows/Fontaine** | | |
| 6 | Install traffic signal control | Once traffic signal warrants are met | Lorson Ranch<br>(required escrow for this development $10,909) |
| 7 | Provide northbound left-turn and right-turn bays as shown in Figure 13 | **Short-Term** | Lorson Ranch |
| | **Fontaine/Firesteel Trail** | | |
| 8 | Construct southbound left-turn lane on Carriage Meadows Drive approaching Firesteel Trail | With development of the adjacent commercial parcel | Lorson Ranch |

*Source: LSC Transportation Consultants, Inc. Rev. 1-10-20*

# Figures 1-13

TRANSPORTATION
CONSULTANTS, INC.


Figure 1

# Vicinity Map

Carriage Meadows South Multi-Family (LSC #184720)

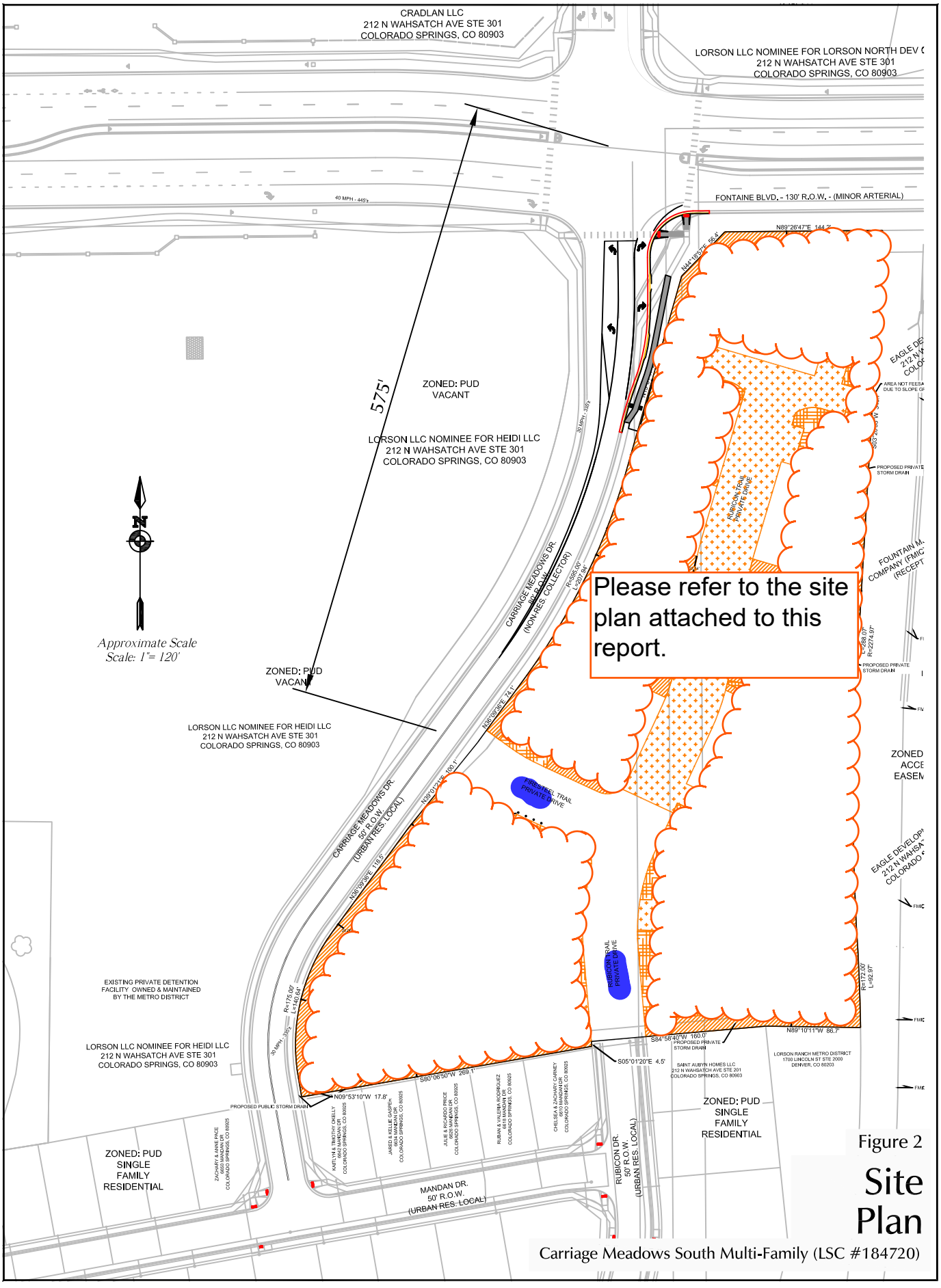
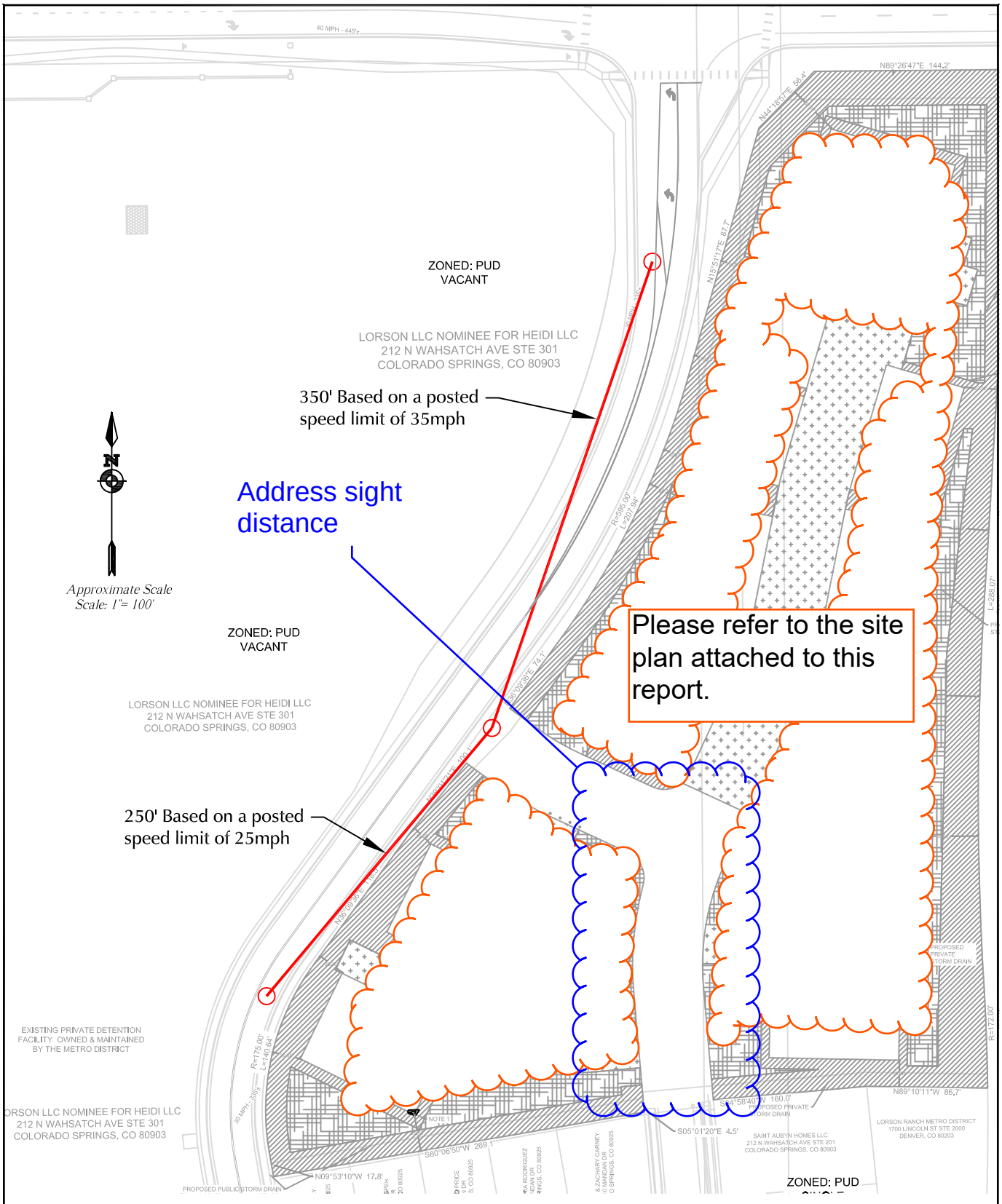



Figure 2

# Site Plan

Carriage Meadows South Multi-Family (LSC #184720)



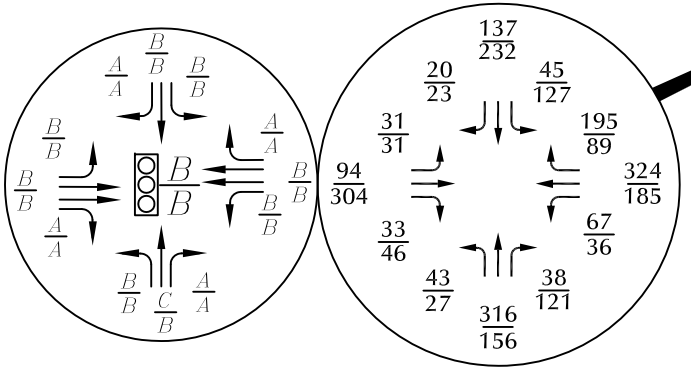

LEGEND:

ECM Required Entering Sight Distance for Driveways (for Passenger Cars from Table 2–35)

Figure 3

# Sight Distance Analysis

Carriage Meadows South Multi-Family (LSC #184720)






*Approximate Scale*
*Scale: 1"= 1,500'*

LEGEND:

= Stop Sign

= Traffic Signal

XX/XX = AM Weekday Peak-Hour Traffic (vehicles per hour) / PM Weekday Peak-Hour Traffic (vehicles per hour) Based on counts by LSC March 2018

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

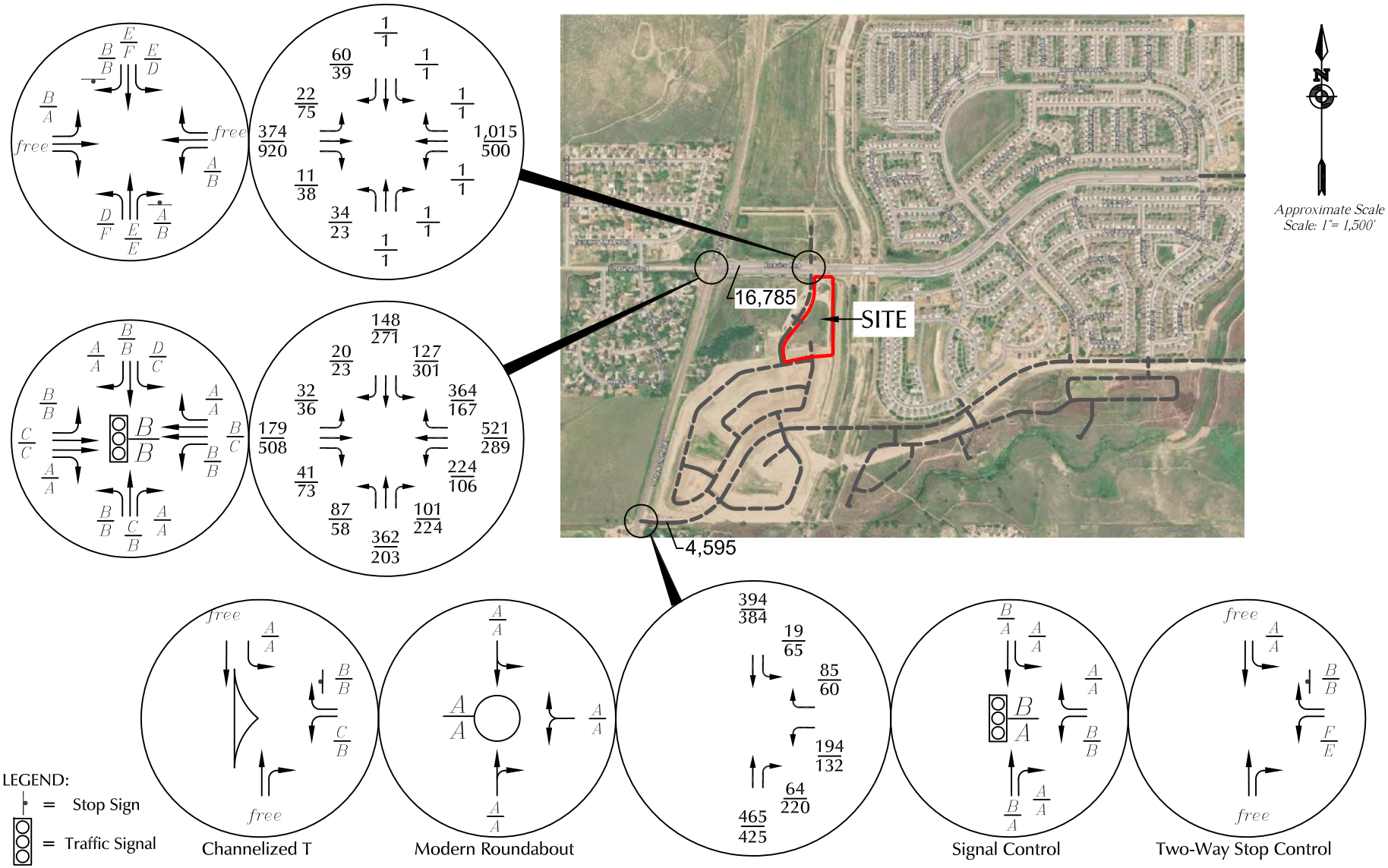
C/C = AM Entire Intersection Peak-Hour Level of Service / PM Entire Intersection Peak-Hour Level of Service

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

Figure 4

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

Carriage Meadows South Multi-Family (LSC #184720)




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

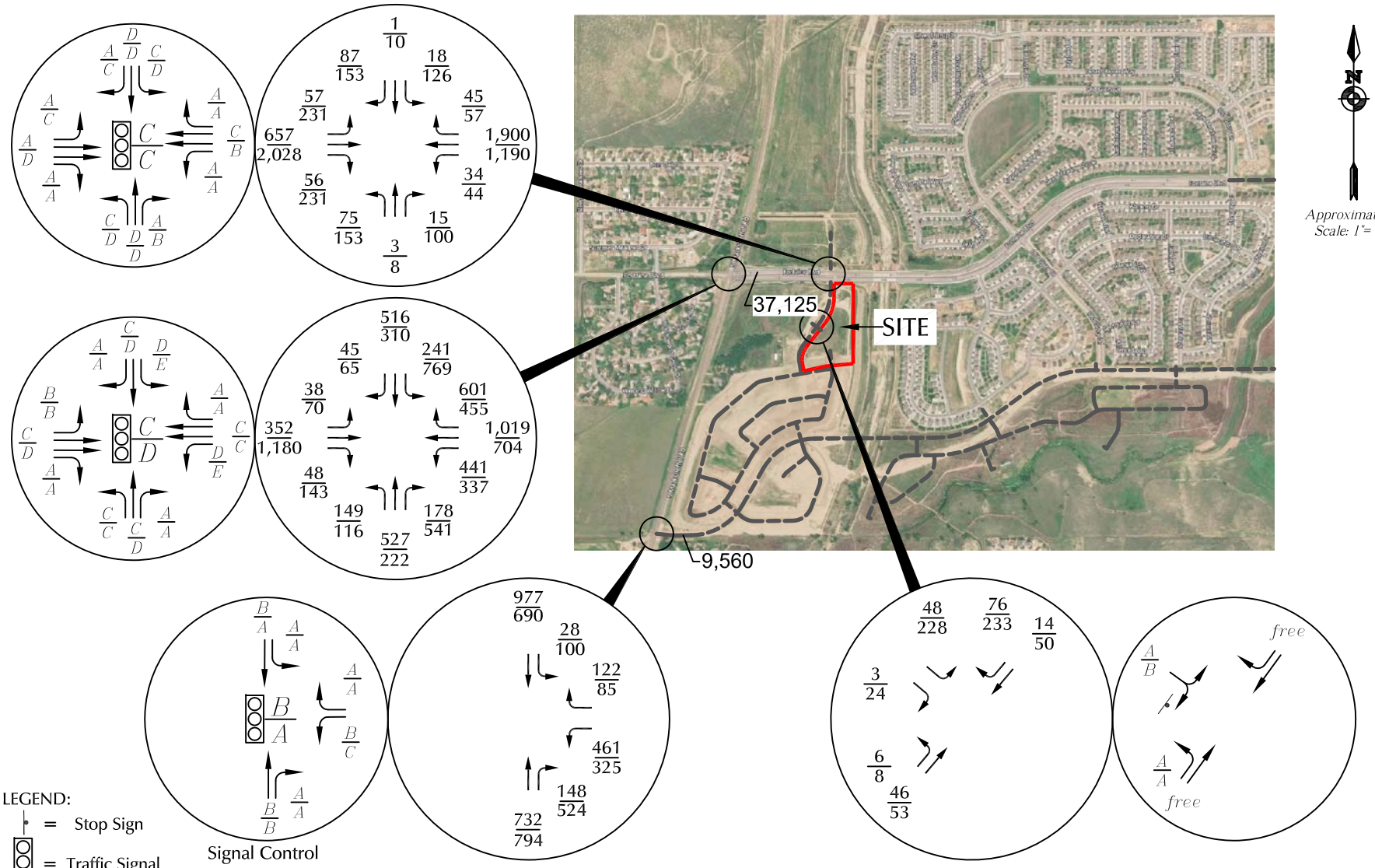
C/C = AM Entire Intersection Peak-Hour Level of Service / PM Entire Intersection Peak-Hour Level of Service

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

Figure 5

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

Carriage Meadows South Multi-Family (LSC #184720)




Approximate Scale
Scale: 1"= 1,500'

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

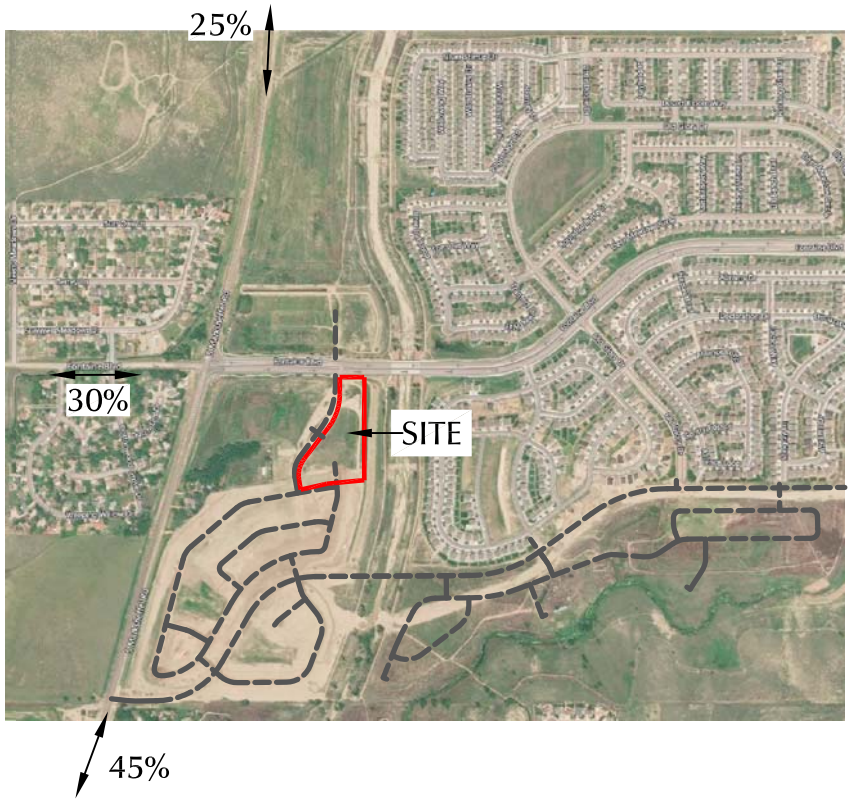
C/C = AM Entire Intersection Peak-Hour Level of Service / PM Entire Intersection Peak-Hour Level of Service

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

Figure 6

# Year 2040 Background Traffic, Lane Geometry, Traffic Control and Level of Service

Carriage Meadows South Multi-Family (LSC #184720)




*Approximate Scale*
*Scale: 1"= 1,500'*

LEGEND:

XX% = (Residential) Percent Directional Distribution

Figure 7

# Directional Distribution of Site-Generated Traffic

Carriage Meadows South Multi-Family (LSC #184720)

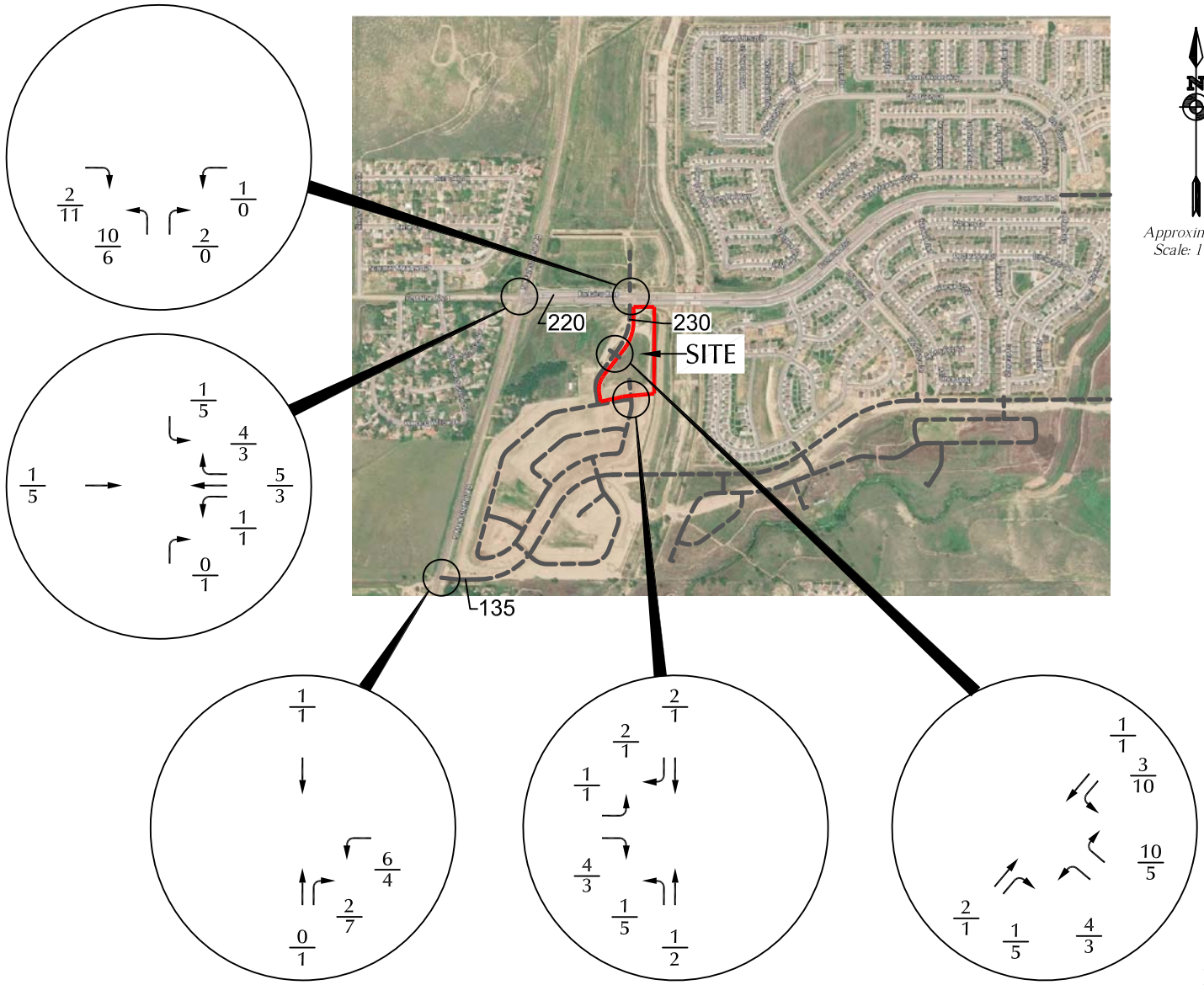



Figure 8

# Assignment of Short-Term Site-Generated Traffic

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)

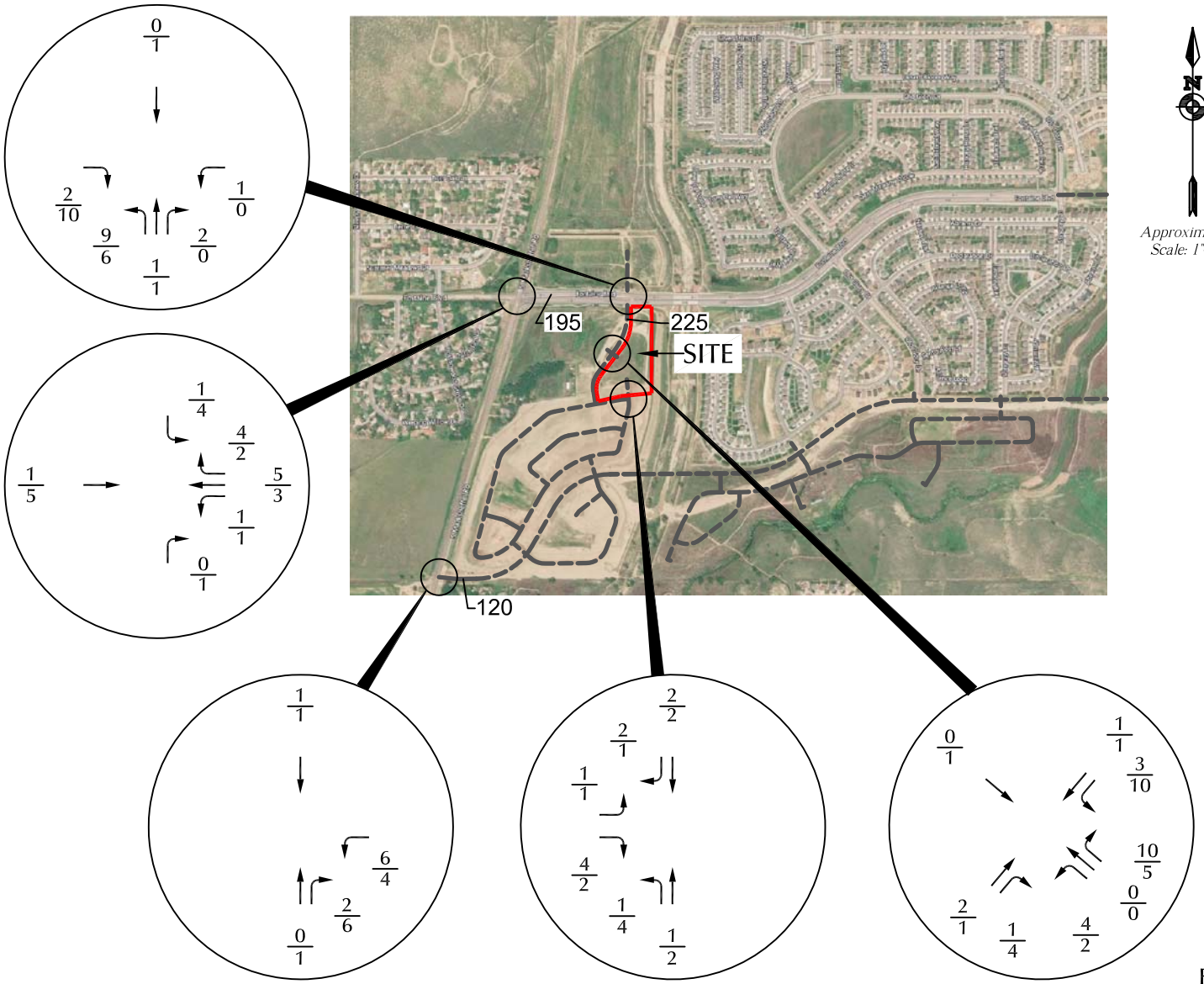



Figure 9

# Assignment of Long-Term Site-Generated Traffic

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)

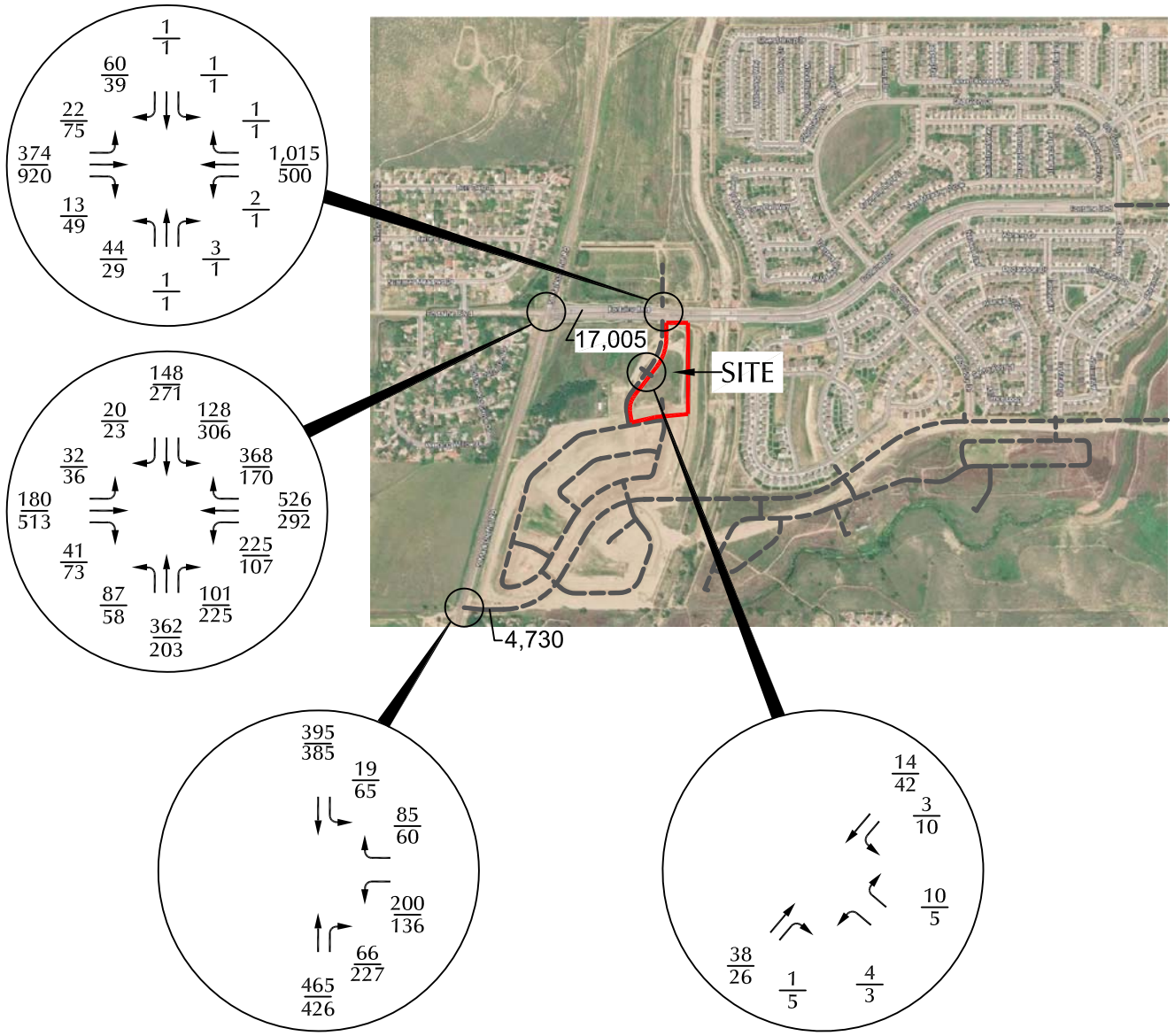



Figure 10a

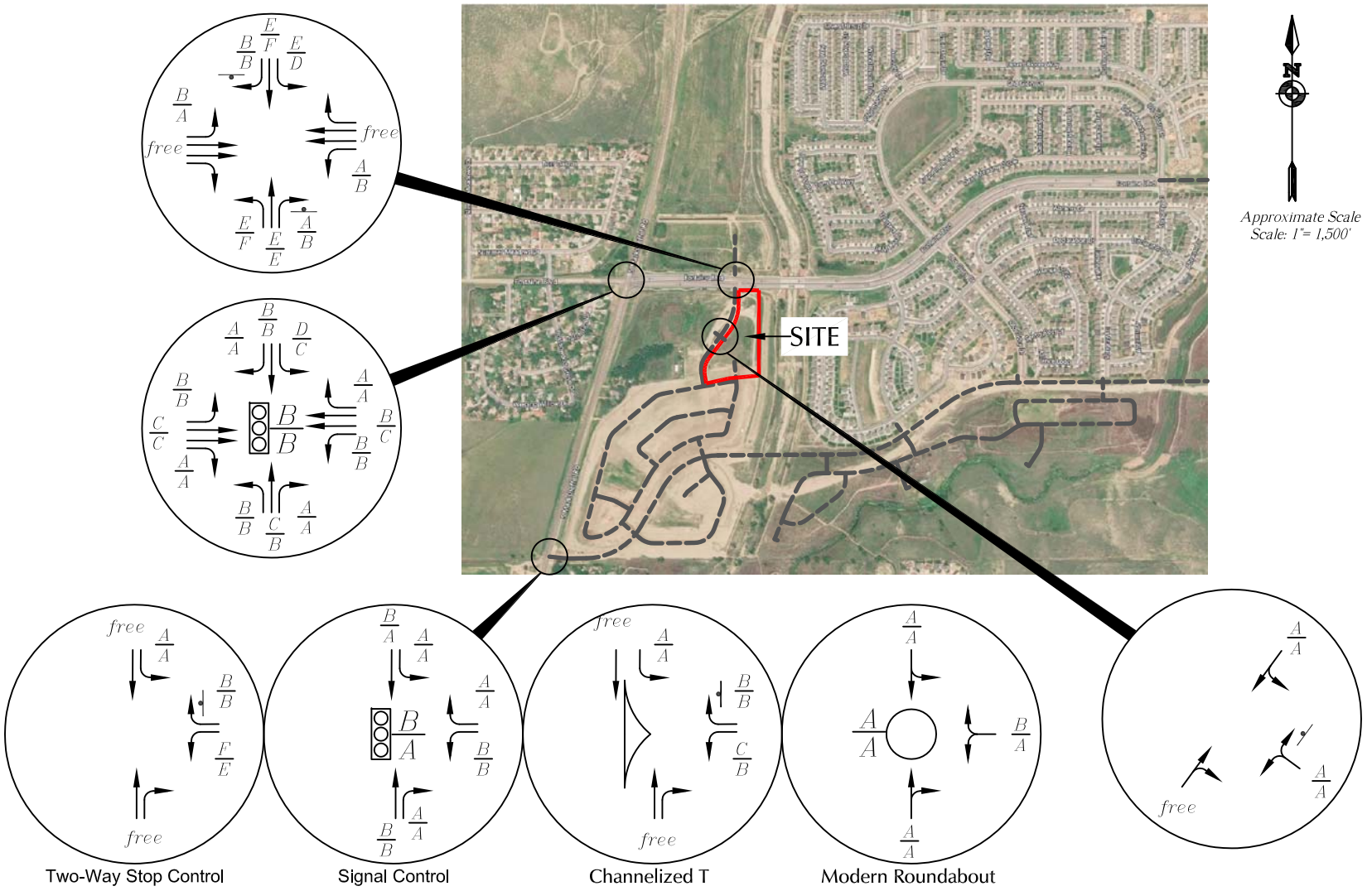
# Short-Term Total Traffic

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)




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)

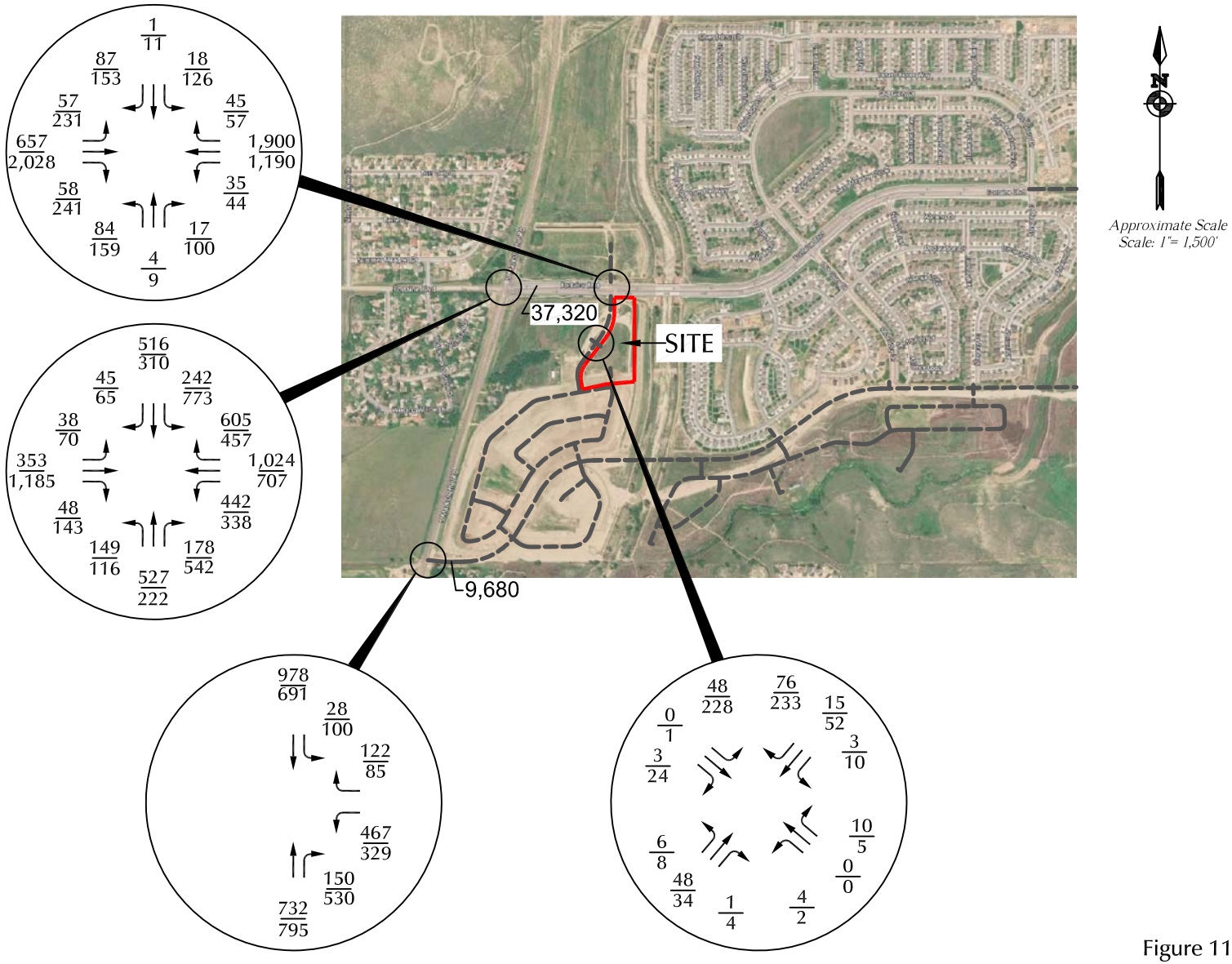



Figure 11a

# Year 2040 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)

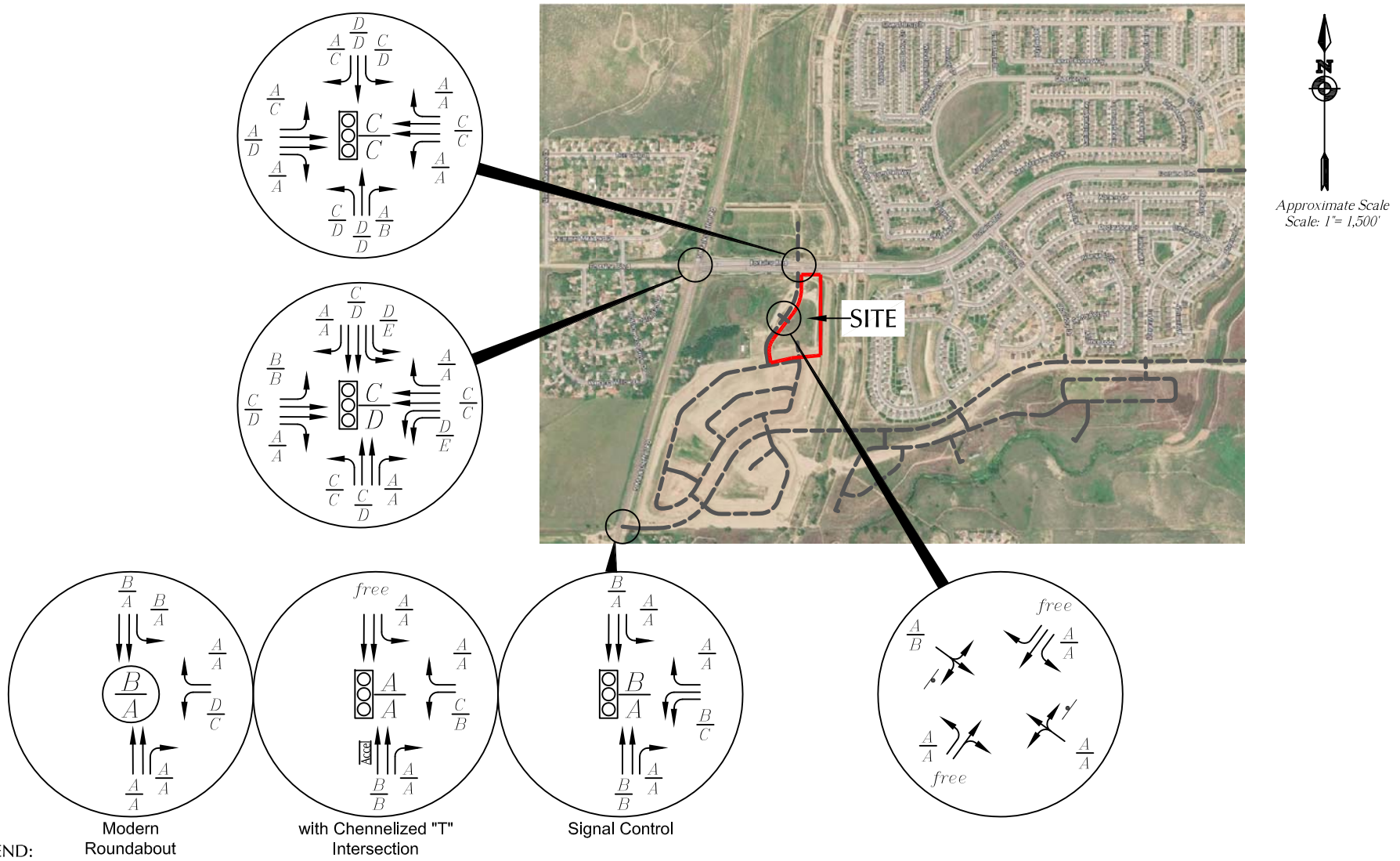


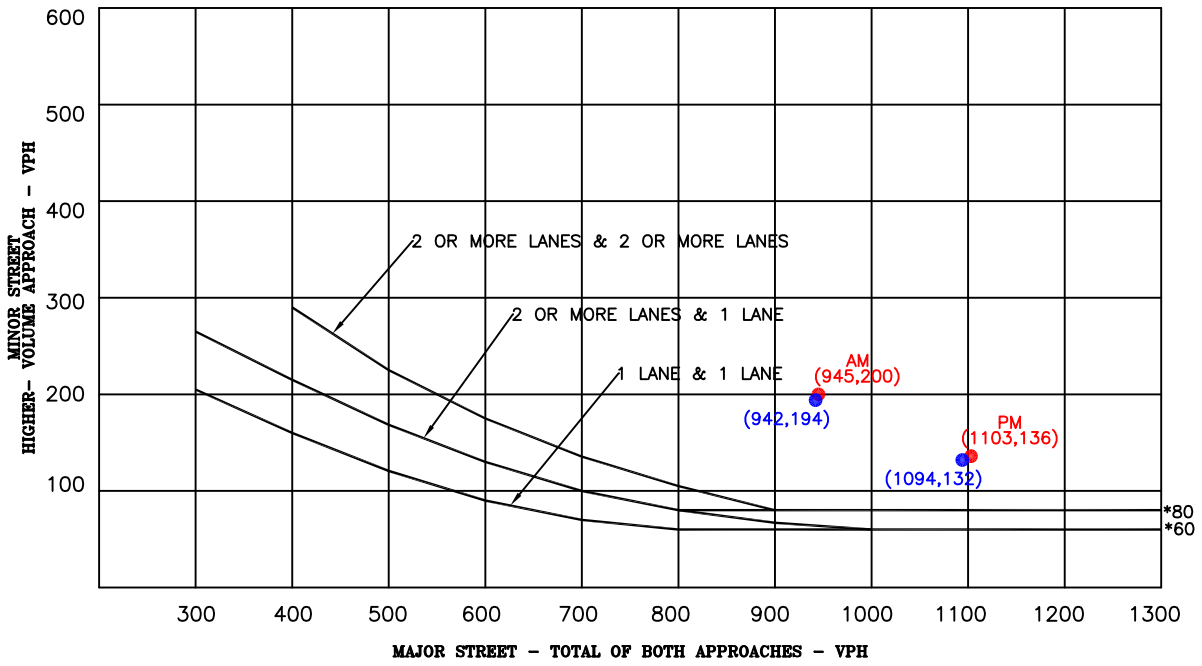

Figure 11b

# Year 2040 Total Lane Geometry, Traffic Control and Level of Service

Carriage Meadows South Multi-Family (LSC #184720)

## Figure 4C-2. Warrant 2 Four-Hour Vehicular Volume (70% Factor)

**(Community Less than 10,000 population or above 40 mph on Major Street)**




* Note: 80 vph applies as the lower threshold volumes for a minor–street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor–street approach with one lane.

Short-Term Background Traffic
Short-Term Total Traffic

Figure 12

# Signal Warrant Analysis
# Marksheffel/Lorson

Carriage Meadows South Multi-Family (LSC #184720)

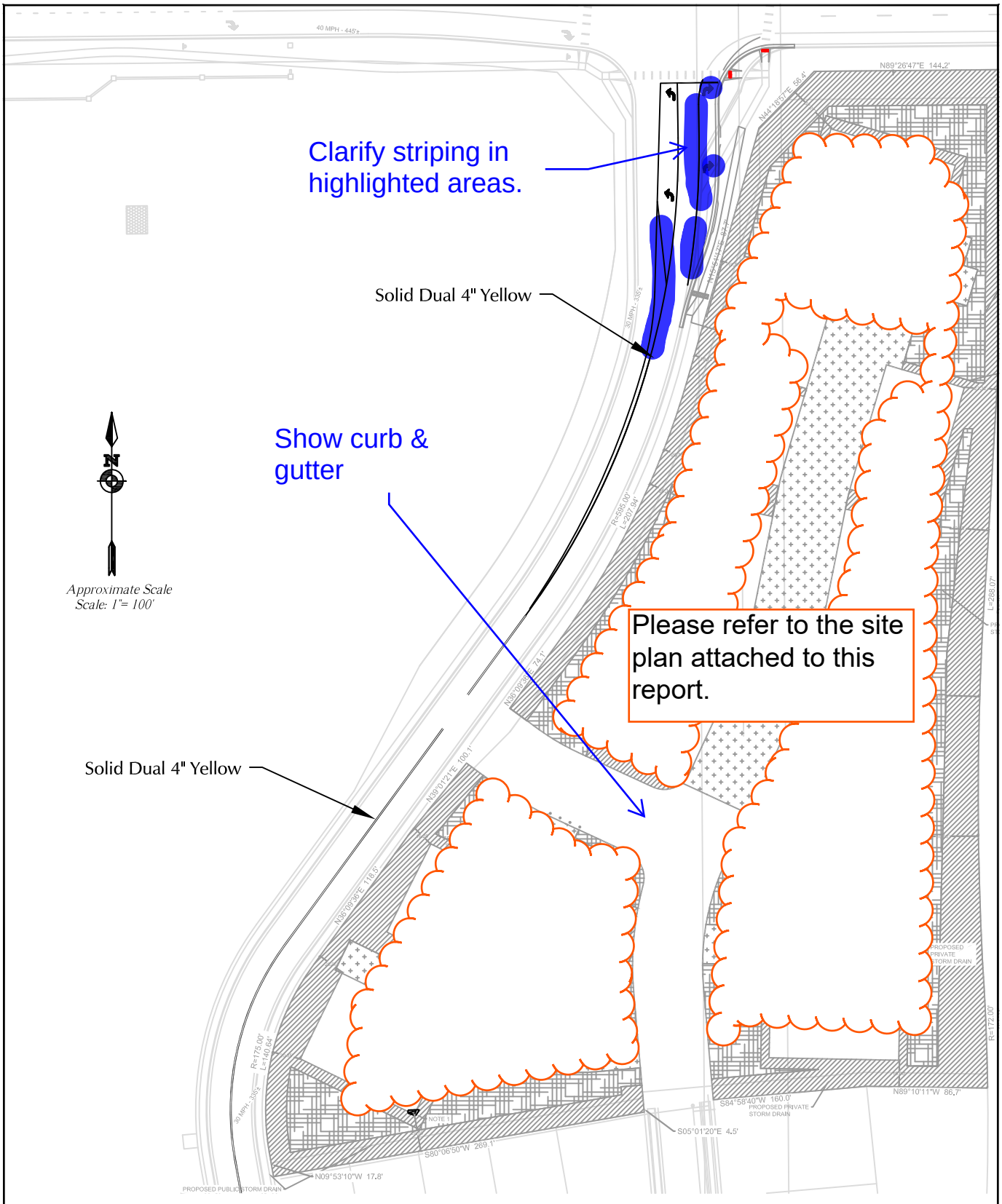
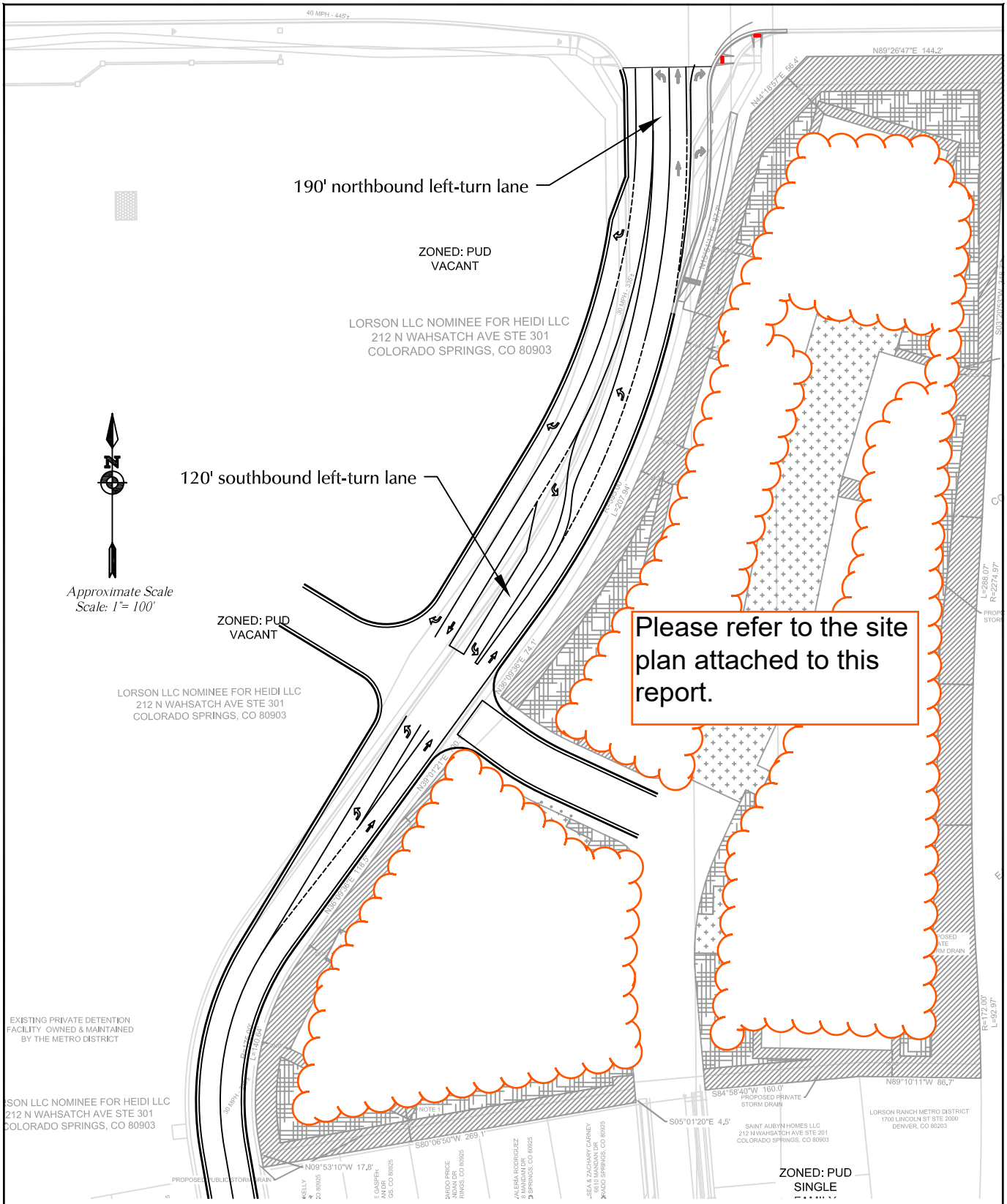



Figure 13

# Carriage Meadows Drive
# Short-Term Recommended Lane Geometry

Carriage Meadows South Multi-Family (LSC #184720)




* Following development of the adjacent commercial site (preliminary, subject to change depending on actual future plans for the commercial site).

Figure 14

# Carriage Meadows Drive Buildout* Recommended Lane Geometry

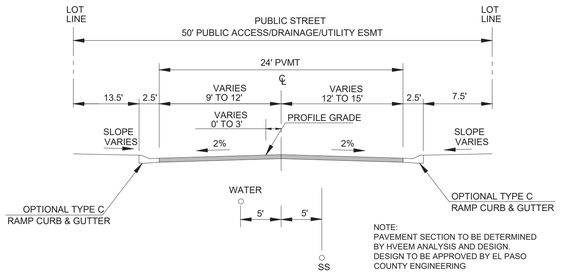
Carriage Meadows South Multi-Family (LSC #184720)

# CARRIAGE MEADOWS SOUTH FILING NO.2 (PUBLIC & PRIVATE STREET DIAGRAM)

## A PLANNED UNIT DEVELOPMENT & PRELIMINARY PLAN FOR CARRIAGE MEADOWS SOUTH AT LORSON RANCH FILING 2

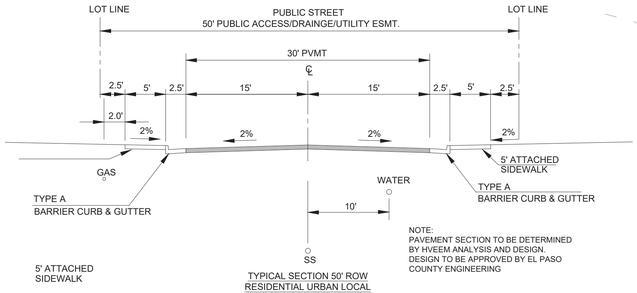
A TRACT OF LAND LOCATED IN A PORTION OF THE NORTHEAST ONE-QUARTER (NE1/4) OF SECTION 22 AND A PORTION OF THE NORTHWEST ONE-QUARTER (NW1/4) OF SECTION 23, ALL IN TOWNSHIP 15 SOUTH, RANGE 65 WEST OF THE 6TH P.M., EL PASO COUNTY, COLORADO

## TYPICAL STREET CROSS-SECTIONS




NOTE:
PAVEMENT SECTION TO BE DETERMINED BY HVEEM ANALYSIS AND DESIGN. DESIGN TO BE APPROVED BY EL PASO COUNTY ENGINEERING

TYPICAL SECTION 50' ESMT
RESIDENTIAL URBAN LOCAL LOW VOLUME
NOT TO SCALE
RUBICON TRAIL
PRIVATE STREET SECTION

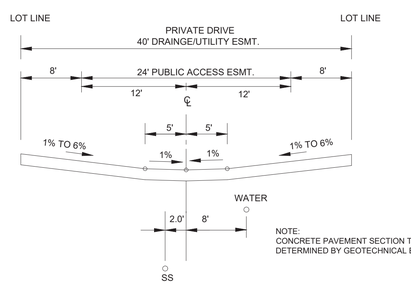



NOTE:
PAVEMENT SECTION TO BE DETERMINED BY HVEEM ANALYSIS AND DESIGN. DESIGN TO BE APPROVED BY EL PASO COUNTY ENGINEERING

TYPICAL SECTION 50' ROW
RESIDENTIAL URBAN LOCAL
NOT TO SCALE

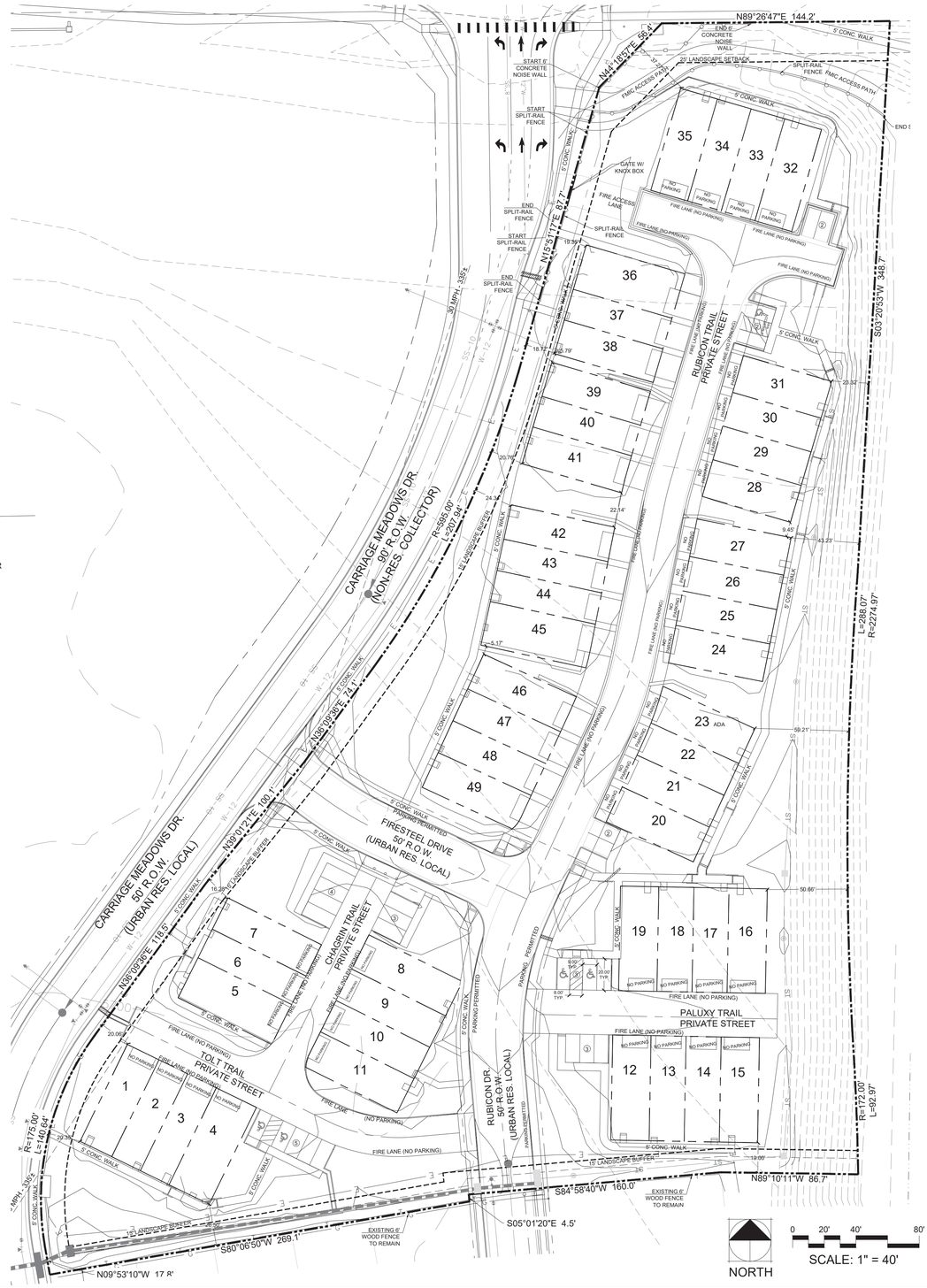
RUBICON DRIVE (PUBLIC STREET)
FIRESTEEL DRIVE (PUBLIC STREET)

PUD DESIGN MODIFICATION:
The private road cross section is presented as a PUD design modification to introduce a new cross section for use within the development subject recommendation by ECM & LDC administrators and BOCC approval. (SEE MODIFICATION JUSTIFICATION AND DISCUSSION IN LETTER OF INTENT AND PUD DEVELOPMENT PLAN COVER NOTES)




NOTE:
CONCRETE PAVEMENT SECTION TO BE DETERMINED BY GEOTECHNICAL ENGINEER

CHAGRIN TRAIL (PRIVATE STREET)
PALUXY TRAIL (PRIVATE STREET)
TOLT TRAIL (PRIVATE STREET)




## STREETS DETAILS

PLANNED PUBLIC & PRIVATE ROAD IMPROVEMENTS, ROW DEDICATIONS AND ADJUSTMENTS:

- Expansion of adjacent segment of Carriage Meadows Drive from Eighty-foot (80') ROW to Ninety-feet (90')
- Proposed cross section to include required travel lanes, turn lanes, accel/decel lanes, stormwater, and pedestrian facilities to include sidewalks, ramps per standard & associated trail corridor connections
- ROW vacation/reconfiguration to be completed in association with and/or concurrently with final plat review and approval. ROW vacation will require approval by the BOCC
- Striping for travel and turn lanes for Carriage Meadows Dr. depict future build-out conditions that will be constructed with the development of the adjacent commercial land use.

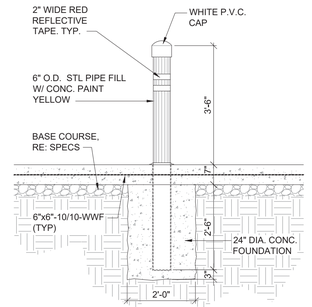
PLANNED PUBLIC ROADS INCLUDE:

- Firesteel Drive (planned public): 50' urban low volume residential local
- Rubicon Drive (planned public): 50' urban low volume residential local (extended northward from southern plan boundary to intersection with Firesteel Drive; private street north of intersection)

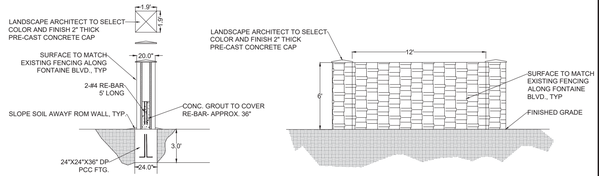
PRIVATE STREETS:

- PUD authorization for use of private roads included in request
- PUD Modifications for private road cross sections. No alley cross section is provided in the ECM; therefore, a modification is required to propose a new cross section for use an alley. (See PUD modification details for proposed alley cross section.)
- Private roads include:
  a. Tolt Trail
  b. Chagrin Trail
  c. Paluxy Trail
  d. Northern ±452 feet of Rubicon Trail (from Firesteel intersection northward)


### 1 FIRE LANE/NO PARKING SIGN DETAIL
NTS

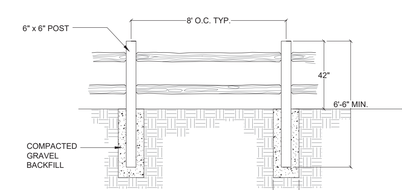



### 2 TYPICAL REMOVABLE BOLLARD DETAIL
NTS




NOTE:
1. FENCING, COLUMNS, CAP, ETC. TO MATCH EXISTING FOUND WITHIN LORSON RANCH, TYP.
2. FENCE AND COLUMN COLOR, TEXTURE, PATTERN, ETC. TO MATCH EXISTING FOUND WITHIN LORSON RANCH, TYP.
3. COLUMNS, WALL, STEEL FENCING PER MANUFACTURES SPECIFICATIONS.
4. SOUND WALL SHALL BE SETBACK ONE-FOOT (1') FROM PROPERTY/ROW LINE, AS DEPICTED HEREBY.

### 3 CONCRETE NOISE WALL DETAIL
NTS




### 4 SPLIT-RAIL FENCE DETAIL
NTS

PCD FILE NO.: PUDSP-18-5


Thomas+Thomas
planning, urban design + landscape architecture, inc.
702 North Tejon
Colorado Springs, Colorado 80903
(719) 330-0777


CARRIAGE MEADOWS SOUTH AT LORSON RANCH FIL NO. 2 PUD & PRELIMINARY PLAN
El Paso County, Colorado

STAMP:

| REV # | REVISIONS | DATE |
|---|---|---|
| 1 | 1ST COMMENT REVIEW REVISIONS | 04.08.19 |
| 2 | 2ND COMMENT REVIEW REVISIONS | 08.16.19 |
| 3 | 3RD COMMENT REVIEW REVISIONS | 10.21.19 |
| 4 | 4TH COMMENT REVIEW REVISIONS | 01.02.20 |
| 5 | | |
| 6 | | |

| | | |
|---|---|---|
| DESIGNED | STB | 04.11.19 |
| DRAWN | STB | 04.11.19 |
| CHECKED | JH | 04.11.19 |
| PROJECT NUMBER: | | 2816.16 |
| SCALE: | | AS NOTED |

STREET DETAILS

P5 OF 11

# Appendix Tables 1-2

TRANSPORTATION
CONSULTANTS, INC.

**Appendix Table 1**
**Carriage Meadows Townhomes**
**Trip Generation Estimate**

| Land Use Data | | | | | | Trip Generation Rates[1] | | | | | Raw ITE Trip Generation (Individual Driveway Trips) | | | | | School Internal Trips[2] | | | | | Retail Internal Trips[2] | | | | | Pass-by[3] | Pass-by Trips | | | | | Total New External Trips | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Traffix Zone | Name | ITE Land Use | ITE Code | Quantity | Unit | Daily | AM Peak Hour In | AM Peak Hour Out | PM Peak Hour In | PM Peak Hour Out | Daily | AM Peak Hour In | AM Peak Hour Out | PM Peak Hour In | PM Peak Hour Out | Daily | AM Peak Hour In | AM Peak Hour Out | PM Peak Hour In | PM Peak Hour Out | Daily | AM Peak Hour In | AM Peak Hour Out | PM Peak Hour In | PM Peak Hour Out | (%) | Daily | AM Peak Hour In | AM Peak Hour Out | PM Peak Hour In | PM Peak Hour Out | 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 | 27 | 2 | 5 | 1 | 1 | 103 | 0 | 2 | 5 | 2 | 0% | 0 | 0 | 0 | 0 | 0 | 833 | 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 | 27 | 2 | 5 | 1 | 1 | 103 | 0 | 2 | 5 | 2 | 0% | 0 | 0 | 0 | 0 | 0 | 833 | 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 | 26 | 2 | 5 | 1 | 1 | 98 | 0 | 2 | 5 | 2 | 0% | 0 | 0 | 0 | 0 | 0 | 792 | 16 | 47 | 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 | 14 | 1 | 2 | 1 | 0 | 51 | 0 | 1 | 3 | 1 | 0% | 0 | 0 | 0 | 0 | 0 | 416 | 8 | 25 | 28 | 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 | 23 | 2 | 4 | 1 | 0 | 87 | 0 | 1 | 4 | 2 | 0% | 0 | 0 | 0 | 0 | 0 | 711 | 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 | 29 | 2 | 5 | 1 | 1 | 110 | 1 | 2 | 5 | 2 | 0% | 0 | 0 | 0 | 0 | 0 | 890 | 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 | 26 | 2 | 5 | 1 | 1 | 98 | 0 | 2 | 5 | 2 | 0% | 0 | 0 | 0 | 0 | 0 | 792 | 16 | 47 | 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 | 54 | 5 | 10 | 2 | 1 | 205 | 1 | 3 | 10 | 5 | 0% | 0 | 0 | 0 | 0 | 0 | 1,667 | 32 | 100 | 115 | 69 |
| | Townhomes at Lorson Ranch | Multifamily Housing | 210 | 46 | DU | 7.32 | 0.11 | 0.35 | 0.35 | 0.21 | 337 | 5 | 16 | 16 | 10 | 10 | 1 | 2 | 0 | 0 | 36 | 0 | 1 | 2 | 1 | 0% | 0 | 0 | 0 | 0 | 0 | 291 | 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 | 16 | 1 | 3 | 1 | 0 | 59 | 0 | 1 | 3 | 1 | 0% | 0 | 0 | 0 | 0 | 0 | 482 | 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 | 16 | 1 | 3 | 1 | 0 | 59 | 0 | 1 | 3 | 1 | 0% | 0 | 0 | 0 | 0 | 0 | 482 | 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 | 29 | 3 | 5 | 1 | 1 | 111 | 1 | 2 | 5 | 3 | 0% | 0 | 0 | 0 | 0 | 0 | 898 | 16 | 54 | 63 | 36 |
| 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 | 34 | 3 | 6 | 1 | 1 | 127 | 1 | 2 | 6 | 3 | 0% | 0 | 0 | 0 | 0 | 0 | 1,028 | 19 | 62 | 72 | 42 |
| 18 | Ponderosa Future Fil | Multifamily Housing | 210 | 149 | DU | 7.32 | 0.11 | 0.35 | 0.35 | 0.21 | 1,091 | 16 | 53 | 53 | 31 | 31 | 3 | 5 | 1 | 1 | 116 | 1 | 2 | 6 | 3 | 0% | 0 | 0 | 0 | 0 | 0 | 944 | 12 | 46 | 46 | 27 |
| 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 | 45 | 4 | 8 | 2 | 1 | 171 | 1 | 3 | 8 | 4 | 0% | 0 | 0 | 0 | 0 | 0 | 1,389 | 26 | 83 | 96 | 57 |
| | **Total All Residential "Between the Creeks"** | | | **1,568** | **DU** | | | | | | **14,389** | **274** | **831** | **926** | **545** | **407** | **34** | **73** | **16** | **10** | **1,534** | **6** | **27** | **75** | **34** | | | | | | | **12,448** | **234** | **731** | **835** | **501** |
| **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 | 41 | 4 | 7 | 2 | 1 | 156 | 1 | 2 | 8 | 4 | 0% | 0 | 0 | 0 | 0 | 0 | 1,266 | 24 | 77 | 87 | 52 |
| 147 | Future Multi-Family | Multifamily Housing | 210 | 49 | DU | 7.32 | 0.11 | 0.35 | 0.35 | 0.21 | 359 | 5 | 17 | 17 | 10 | 10 | 1 | 2 | 0 | 0 | 38 | 0 | 1 | 2 | 1 | 0% | 0 | 0 | 0 | 0 | 0 | 311 | 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 | 23 | 2 | 4 | 1 | 0 | 86 | 0 | 1 | 4 | 2 | 0% | 0 | 0 | 0 | 0 | 0 | 703 | 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 | 14 | 1 | 2 | 1 | 0 | 51 | 0 | 1 | 3 | 1 | 0% | 0 | 0 | 0 | 0 | 0 | 416 | 8 | 25 | 28 | 18 |
| 347 | | Single-Family Detached Housing | 210 | 97 | DU | 9.44 | 0.19 | 0.56 | 0.62 | 0.37 | 916 | 18 | 54 | 60 | 36 | 26 | 2 | 5 | 1 | 1 | 98 | 0 | 2 | 5 | 2 | 0% | 0 | 0 | 0 | 0 | 0 | 792 | 16 | 47 | 54 | 33 |
| | **Total All Residential Adjacent to Marksheffel** | | | **438** | **DU** | | | | | | **4,031** | **77** | **233** | **260** | **154** | **114** | **10** | **20** | **5** | **2** | **429** | **1** | **7** | **22** | **10** | | | | | | | **3,488** | **66** | **206** | **233** | **142** |
| | **Total All Residential "Between the Creeks" and Adjacent to Marksheffel** | | | **2,006** | **DU** | | | | | | **18,420** | **351** | **1,064** | **1,186** | **699** | **521** | **44** | **93** | **21** | **12** | **1,963** | **7** | **34** | **97** | **44** | | | | | | | **15,936** | **300** | **937** | **1,068** | **643** |
| **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 | 74 | 6 | 13 | 3 | 2 | 279 | 1 | 4 | 14 | 6 | 0% | 0 | 0 | 0 | 0 | 0 | 2,262 | 44 | 137 | 156 | 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 | 33 | 3 | 6 | 1 | 1 | 123 | 1 | 2 | 6 | 3 | 0% | 0 | 0 | 0 | 0 | 0 | 996 | 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 | 81 | 7 | 14 | 3 | 2 | 305 | 1 | 5 | 15 | 7 | 0% | 0 | 0 | 0 | 0 | 0 | 2,474 | 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 | 4 | 1 | 0 | 76 | 0 | 1 | 4 | 2 | 0% | 0 | 0 | 0 | 0 | 0 | 621 | 12 | 37 | 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 | 13 | 1 | 2 | 0 | 0 | 48 | 0 | 1 | 2 | 1 | 0% | 0 | 0 | 0 | 0 | 0 | 392 | 8 | 24 | 28 | 17 |
| | **Total Lorson Ranch East** | | | **826** | **DU** | | | | | | **7,797** | **153** | **459** | **515** | **303** | **221** | **19** | **39** | **8** | **5** | **831** | **3** | **13** | **41** | **19** | | | | | | | **6,745** | **131** | **407** | **466** | **279** |
| | **Total All Residential "Between the Creeks", Adjacent to Marksheffel & Lorson Ranch East** | | | **2,832** | **DU** | | | | | | **26,217** | **504** | **1,523** | **1,701** | **1,002** | **742** | **63** | **132** | **29** | **17** | **2,794** | **10** | **47** | **138** | **63** | | | | | | | **22,681** | **365** | **1,138** | **1,301** | **780** |
| **Creekside at Lorson Ranch Filing No. 1** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 26 | Creekside East | Single-Family Detached Housing | 210 | 97 | DU | 9.44 | 0.19 | 0.56 | 0.62 | 0.37 | 916 | 18 | 54 | 60 | 36 | 26 | 2 | 5 | 1 | 1 | 98 | 0 | 2 | 5 | 2 | 0% | 0 | 0 | 0 | 0 | 0 | 792 | 16 | 47 | 54 | 33 |
| 126 | Creekside West | Single-Family Detached Housing | 210 | 138 | DU | 9.44 | 0.19 | 0.56 | 0.62 | 0.37 | 1,303 | 26 | 77 | 86 | 51 | 37 | 3 | 7 | 1 | 1 | 139 | 1 | 2 | 7 | 3 | 0% | 0 | 0 | 0 | 0 | 0 | 1,127 | 22 | 68 | 78 | 47 |
| | **Creekside at Lorson Ranch Filing No. 1** | | | **235** | **DU** | | | | | | **2,219** | **44** | **131** | **146** | **87** | **63** | **5** | **12** | **2** | **2** | **237** | **1** | **4** | **12** | **5** | | | | | | | **1,919** | **38** | **115** | **132** | **80** |
| | **Short-Term Total** | | | **3,067** | **DU** | | | | | | **28,436** | **548** | **1,654** | **1,847** | **1,089** | **805** | **68** | **144** | **31** | **19** | **3,031** | **11** | **51** | **150** | **68** | | | | | | | **24,600** | **469** | **1,459** | **1,666** | **1,002** |
| **All Other Future Residential West of the Power Line** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 43 | North of Fontaine and South of Lamprey | Multifamily Housing | 210 | 176 | DU | 7.32 | 0.11 | 0.35 | 0.35 | 0.21 | 1,288 | 19 | 62 | 62 | 36 | 36 | 3 | 6 | 1 | 1 | 137 | 1 | 2 | 7 | 3 | 0% | 0 | 0 | 0 | 0 | 0 | 1,115 | 15 | 54 | 54 | 32 |
| 45 | North of Fontaine and NE Lamprey/Lorson | Multifamily Housing | 210 | 123 | DU | 7.32 | 0.11 | 0.35 | 0.35 | 0.21 | 900 | 13 | 44 | 43 | 25 | 25 | 2 | 5 | 1 | 1 | 96 | 0 | 2 | 5 | 2 | 0% | 0 | 0 | 0 | 0 | 0 | 779 | 11 | 37 | 37 | 22 |
| 327 | South of Lorson and west of Trappe | Multifamily Housing | 210 | 97 | DU | 7.32 | 0.11 | 0.35 | 0.35 | 0.21 | 710 | 10 | 34 | 34 | 20 | 20 | 2 | 4 | 1 | 0 | 76 | 0 | 1 | 4 | 2 | 0% | 0 | 0 | 0 | 0 | 0 | 614 | 8 | 29 | 29 | 18 |
| | | Single-Family Detached Housing | 210 | 227 | DU | 9.44 | 0.19 | 0.56 | 0.62 | 0.37 | 2,143 | 42 | 126 | 142 | 83 | 61 | 5 | 11 | 2 | 1 | 228 | 1 | 4 | 11 | 5 | 0% | 0 | 0 | 0 | 0 | 0 | 1,854 | 36 | 111 | 129 | 77 |
| | **Other Future Residential Between the Power Line** | | | **623** | **DU** | | | | | | **5,041** | **84** | **266** | **281** | **164** | **142** | **12** | **26** | **5** | **3** | **537** | **2** | **9** | **27** | **12** | | | | | | | **4,362** | **70** | **231** | **249** | **149** |
| | **Total from Marksheffel to The Power Line** | | | **3,455** | **DU** | | | | | | **33,477** | **632** | **1,920** | **2,128** | **1,253** | **947** | **80** | **170** | **36** | **22** | **3,568** | **13** | **60** | **177** | **80** | | | | | | | **28,962** | **539** | **1,690** | **1,915** | **1,151** |
| **Future Residential Uses East of the Power Line** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 30 | South of Trappe Dr | Single-Family Detached Housing | 210 | 281 | DU | 9.44 | 0.19 | 0.56 | 0.62 | 0.37 | 2,653 | 52 | 156 | 175 | 103 | 75 | 6 | 13 | 3 | 2 | 283 | 1 | 4 | 14 | 6 | 0% | 0 | 0 | 0 | 0 | 0 | 2,295 | 45 | 139 | 158 | 95 |
| 35 | Southeast of Lorson/Fontaine | Single-Family Detached Housing | 210 | 279 | DU | 9.44 | 0.19 | 0.56 | 0.62 | 0.37 | 2,634 | 52 | 155 | 174 | 102 | 74 | 6 | 13 | 3 | 2 | 281 | 1 | 4 | 14 | 6 | 0% | 0 | 0 | 0 | 0 | 0 | 2,279 | 45 | 138 | 157 | 94 |
| 36 | Southwest of Lorson/Fontaine | Single-Family Detached Housing | 210 | 203 | DU | 9.44 | 0.19 | 0.56 | 0.62 | 0.37 | 1,916 | 38 | 113 | 127 | 74 | 54 | 5 | 10 | 2 | 1 | 204 | 1 | 3 | 10 | 5 | 0% | 0 | 0 | 0 | 0 | 0 | 1,658 | 32 | 100 | 115 | 68 |
| 44 | Northwest Lorson/Fontaine | Multifamily Housing | 210 | 247 | DU | 7.32 | 0.11 | 0.35 | 0.35 | 0.21 | 1,808 | 26 | 87 | 87 | 51 | 51 | 4 | 9 | 2 | 1 | 193 | 1 | 3 | 9 | 4 | 0% | 0 | 0 | 0 | 0 | 0 | 1,564 | 21 | 75 | 76 | 46 |
| 46 | Northeast Lorson/Fontaine | Single-Family Detached Housing | 210 | 368 | DU | 9.44 | 0.19 | 0.56 | 0.62 | 0.37 | 3,474 | 68 | 204 | 230 | 135 | 98 | 8 | 17 | 4 | 2 | 370 | 2 | 6 | 18 | 8 | 0% | 0 | 0 | 0 | 0 | 0 | 3,006 | 58 | 181 | 208 | 125 |
| 136 | Between Trappe and Lorson | Single-Family Detached Housing | 210 | 234 | DU | 9.44 | 0.19 | 0.56 | 0.62 | 0.37 | 2,209 | 43 | 130 | 146 | 86 | 62 | 5 | 11 | 2 | 1 | 235 | 1 | 4 | 12 | 5 | 0% | 0 | 0 | 0 | 0 | 0 | 1,912 | 37 | 115 | 132 | 80 |
| | **Total East of the Power Line** | | | **1,612** | **DU** | | | | | | **14,694** | **279** | **845** | **939** | **551** | **414** | **34** | **73** | **16** | **9** | **1,566** | **7** | **24** | **77** | **34** | | | | | | | **12,714** | **238** | **748** | **846** | **508** |
| | **Total Residential** | | | **5,302** | **DU** | | | | | | **48,171** | **911** | **2,765** | **3,067** | **1,804** | **1,361** | **114** | **243** | **52** | **31** | **5,134** | **20** | **84** | **254** | **114** | | | | | | | **41,676** | **777** | **2,438** | **2,761** | **1,659** |
| **NON-RESIDENTIAL** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 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 | 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 | 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** | | | | | | | | | | **60,375** | **1,418** | **3,158** | **3,607** | **2,386** | | | | | | | | | | | | | | | | | **46,107** | **942** | **2,669** | **3,079** | **1,859** |
| **Trip Generation Estimate From *Lorson Ranch Sketch Plan Traffic Technical Memorandum* 4/15/2016** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Single-Family Detached Housing | | 210 | 5,183 | DU | 9.52 | 0.19 | 0.56 | 0.63 | 0.37 | 49,342 | 972 | 2,915 | 3,265 | 1,918 | 1,092 | 112 | 205 | 60 | 39 | 5,660 | 24 | 78 | 264 | 122 | 0% | 0 | 0 | 0 | 0 | 0 | 0 | 43,276 | 845 | 2,675 | 2,982 | 1,777 |
| | Multifamily Housing (Low-Rise) | | 210 | 118 | DU | 5.81 | 0.07 | 0.37 | 0.35 | 0.17 | 686 | 9 | 43 | 41 | 20 | | | | | | | | | | | 0% | 0 | 0 | 0 | 0 | 0 | 0 | | | | | |
| | Elementary School | | 520 | 500 | Students | 1.29 | 0.25 | 0.20 | 0.07 | 0.08 | 645 | 124 | 101 | 37 | 38 | 484 | 93 | 51 | 19 | 29 | 0 | 0 | 0 | 0 | 0 | 0% | 0 | 0 | 0 | 0 | 0 | 0 | 161 | 31 | 50 | 18 | 9 |
| | Middle School/Junior High School | | 522 | 500 | Students | 1.62 | 0.30 | 0.24 | 0.08 | 0.08 | 810 | 149 | 122 | 39 | 41 | 608 | 112 | 61 | 20 | 31 | 0 | 0 | 0 | 0 | 0 | 0% | 0 | 0 | 0 | 0 | 0 | 0 | 202 | 37 | 61 | 19 | 10 |
| | Shopping Center | | 820 | 219 | KSF | 51.58 | 0.71 | 0.44 | 2.22 | 2.40 | 11,320 | 156 | 96 | 487 | 528 | 0 | 0 | 0 | 0 | 0 | 5,660 | 78 | 24 | 122 | 264 | 25% | 1,415 | 19 | 19 | 79 | 79 | 4,245 | 59 | 53 | 286 | 185 |
| | | | | | | | | | | | **62,803** | **1,410** | **3,277** | **3,869** | **2,545** | | | | | | | | | | | | **1,415** | **19** | **19** | **79** | **79** | **47,884** | **972** | **2,839** | **3,305** | **1,981** |
| | **Change (Increase) From 2016** | | | | | | | | | | **-2,428** | **8** | **-119** | **-262** | **-159** | | | | | | | | | | | | | | | | | **-1,777** | **-30** | **-170** | **-226** | **-122** |

Notes:
(1) Source: "Trip Generation, 10th Edition, 2017" by the Institute of Transportation Engineers (ITE)
(2) See Appendix Table 2 for Internal Trip Percentages
(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 2**
**Carriage Meadows Townhomes**
**Internal Trip Estimate**

| ITE Land Use | ITE Code | Quantity | Unit | Trip Generation Rates[1] | | | | | Raw ITE Trip Generation (Individual Driveway Trips) | | | | | | Percent Internal Trips | | | | | Total Internal Trips | | | | | Total External Trips | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Daily | AM Peak Hour | | PM Peak Hour | | Daily | AM Peak Hour | | PM Peak Hour | | | Daily | AM Peak Hour | | PM Peak Hour | | | Daily | AM Peak Hour | | PM Peak Hour | | | Daily | AM Peak Hour | | PM Peak Hour | |
| | | | | | In | Out | In | Out | | In | Out | In | Out | | | In | Out | In | Out | | | In | Out | In | Out | | | In | Out | In | Out |
| Single-Family Detached Housing | 210 | 4,415 | DU[2] | 9.44 | 0.19 | 0.56 | 0.62 | 0.37 | 41,678 | 817 | 2,450 | 2,754 | 1,617 | | | | | | | | | | | | | | | | | |
| Residential Condominium/Townhouse | 210 | 887 | DU | 7.32 | 0.11 | 0.35 | 0.35 | 0.21 | 6,493 | 94 | 314 | 313 | 184 | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | School | 3% | 13% | 9% | 2% | 2% | 1,360 | 117 | 241 | 53 | 29 | | | | | |
| | | | | | | | | | | | | | | Retail | 11% | 3% | 3% | 8% | 6% | 5,131 | 25 | 81 | 253 | 117 | | | | | |
| | | | | | | | | | **48,171** | **911** | **2,764** | **3,067** | **1,801** | **Total** | 13% | 16% | 12% | 10% | 8% | **6,491** | **142** | **322** | **306** | **146** | **41,680** | **769** | **2,442** | **2,761** | **1,655** |
| Elementary School | 520 | 690 | Students | 1.89 | 0.36 | 0.31 | 0.07 | 0.08 | 1,304 | 250 | 213 | 51 | 53 | | 70% | 70% | 40% | 40% | 70% | 913 | 175 | 85 | 20 | 37 | 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 | | 70% | 70% | 40% | 40% | 70% | 447 | 66 | 32 | 9 | 16 | 192 | 28 | 48 | 13 | 7 |
| | | | | | | | | **Total School** | **1,943** | **344** | **293** | **73** | **76** | | | | | | | **1,360** | **241** | **117** | **29** | **53** | **583** | **103** | **176** | **44** | **23** |
| Shopping Center | 820 | 219 | KSF[3] | 46.75 | 0.74 | 0.45 | 2.13 | 2.30 | 10,261 | 162 | 99 | 467 | 506 | | 50% | 50% | 25% | 25% | 50% | 5,131 | 81 | 25 | 117 | 253 | 5,129 | 80 | 74 | 350 | 252 |
| | | | | | | | | **Total School and Retail** | **12,204** | **506** | **392** | **540** | **582** | | | | | | | **6,491** | **322** | **142** | **146** | **306** | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | **47,392** | **952** | **2,692** | **3,155** | **1,930** |

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

*LSC Transportation Consultants, Inc.*

# Figures 1-13

TRANSPORTATION
CONSULTANTS, INC.

# Traffic Counts

TRANSPORTATION
CONSULTANTS, INC.

**COUNTER MEASURES INC.**

1889 YORK STREET
DENVER.COLORADO
303-333-7409

N/S STREET:
E/W STREET:
CITY:
COUNTY:

File Name : Marksheffel Rd - Fontaine Blvd AM
Site Code : 00174850
Start Date : 3/1/2018
Page No : 1

Groups Printed- VEHICLES

| | Marksheffel Rd Southbound | | | | Fontaine Blvd Westbound | | | | Marksheffel Rd Northbound | | | | Fontaine Blvd Eastbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Int. Total |
| Factor | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | |
| 06:30 AM | 5 | 30 | 4 | 0 | 21 | 74 | 38 | 0 | 10 | 80 | 7 | 0 | 8 | 18 | 6 | 0 | 301 |
| 06:45 AM | 7 | 37 | 2 | 0 | 15 | 104 | 45 | 0 | 8 | 72 | 8 | 0 | 4 | 22 | 6 | 0 | 330 |
| Total | 12 | 67 | 6 | 0 | 36 | 178 | 83 | 0 | 18 | 152 | 15 | 0 | 12 | 40 | 12 | 0 | 631 |
| 07:00 AM | 9 | 28 | 4 | 0 | 20 | 86 | 65 | 0 | 12 | 96 | 11 | 0 | 15 | 18 | 8 | 0 | 372 |
| 07:15 AM | 14 | 32 | 7 | 0 | 12 | 84 | 45 | 0 | 9 | 74 | 11 | 0 | 5 | 29 | 12 | 0 | 334 |
| 07:30 AM | 15 | 40 | 7 | 0 | 20 | 50 | 40 | 0 | 14 | 74 | 8 | 0 | 7 | 25 | 7 | 0 | 307 |
| 07:45 AM | 14 | 20 | 2 | 0 | 13 | 59 | 25 | 0 | 5 | 42 | 12 | 0 | 7 | 38 | 5 | 0 | 242 |
| Total | 52 | 120 | 20 | 0 | 65 | 279 | 175 | 0 | 40 | 286 | 42 | 0 | 34 | 110 | 32 | 0 | 1255 |
| 08:00 AM | 13 | 37 | 2 | 0 | 20 | 93 | 38 | 0 | 8 | 53 | 10 | 0 | 6 | 32 | 3 | 0 | 315 |
| 08:15 AM | 6 | 34 | 4 | 0 | 18 | 96 | 23 | 0 | 12 | 39 | 6 | 0 | 5 | 22 | 9 | 0 | 274 |
| Grand Total | 83 | 258 | 32 | 0 | 139 | 646 | 319 | 0 | 78 | 530 | 73 | 0 | 57 | 204 | 56 | 0 | 2475 |
| Apprch % | 22.3 | 69.2 | 8.6 | 0.0 | 12.6 | 58.5 | 28.9 | 0.0 | 11.5 | 77.8 | 10.7 | 0.0 | 18.0 | 64.4 | 17.7 | 0.0 | |
| Total % | 3.4 | 10.4 | 1.3 | 0.0 | 5.6 | 26.1 | 12.9 | 0.0 | 3.2 | 21.4 | 2.9 | 0.0 | 2.3 | 8.2 | 2.3 | 0.0 | |

**COUNTER MEASURES INC.**

1889 YORK STREET
DENVER.COLORADO
303-333-7409

N/S STREET:
E/W STREET:
CITY:
COUNTY:

File Name : Marksheffel Rd - Fontaine Blvd PM
Site Code : 00174850
Start Date : 3/1/2018
Page No : 1

Groups Printed- VEHICLES

| | Marksheffel Rd Southbound | | | | Fontaine Blvd Westbound | | | | Marksheffel Rd Northbound | | | | Marksheffel Blvd Eastbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Int. Total |
| Factor | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | |
| 04:00 PM | 31 | 70 | 8 | 0 | 5 | 35 | 16 | 0 | 4 | 46 | 19 | 0 | 11 | 68 | 12 | 0 | 325 |
| 04:15 PM | 42 | 74 | 11 | 0 | 4 | 40 | 19 | 0 | 4 | 51 | 21 | 0 | 10 | 77 | 10 | 0 | 363 |
| 04:30 PM | 35 | 59 | 12 | 0 | 8 | 45 | 20 | 0 | 11 | 46 | 23 | 0 | 10 | 70 | 14 | 0 | 353 |
| 04:45 PM | 30 | 67 | 15 | 0 | 6 | 34 | 14 | 0 | 4 | 35 | 34 | 0 | 13 | 72 | 8 | 0 | 332 |
| Total | 138 | 270 | 46 | 0 | 23 | 154 | 69 | 0 | 23 | 178 | 97 | 0 | 44 | 287 | 44 | 0 | 1373 |
| 05:00 PM | 27 | 54 | 8 | 0 | 6 | 40 | 22 | 0 | 4 | 37 | 35 | 0 | 6 | 54 | 18 | 0 | 311 |
| 05:15 PM | 30 | 60 | 4 | 0 | 8 | 44 | 22 | 0 | 7 | 42 | 26 | 0 | 12 | 76 | 12 | 0 | 343 |
| 05:30 PM | 33 | 65 | 6 | 0 | 9 | 42 | 25 | 0 | 9 | 41 | 23 | 0 | 4 | 103 | 10 | 0 | 370 |
| 05:45 PM | 37 | 53 | 5 | 0 | 13 | 59 | 20 | 0 | 7 | 36 | 37 | 0 | 9 | 71 | 6 | 0 | 353 |
| Total | 127 | 232 | 23 | 0 | 36 | 185 | 89 | 0 | 27 | 156 | 121 | 0 | 31 | 304 | 46 | 0 | 1377 |
| Grand Total | 265 | 502 | 69 | 0 | 59 | 339 | 158 | 0 | 50 | 334 | 218 | 0 | 75 | 591 | 90 | 0 | 2750 |
| Apprch % | 31.7 | 60.0 | 8.3 | 0.0 | 10.6 | 61.0 | 28.4 | 0.0 | 8.3 | 55.5 | 36.2 | 0.0 | 9.9 | 78.2 | 11.9 | 0.0 | |
| Total % | 9.6 | 18.3 | 2.5 | 0.0 | 2.1 | 12.3 | 5.7 | 0.0 | 1.8 | 12.1 | 7.9 | 0.0 | 2.7 | 21.5 | 3.3 | 0.0 | |

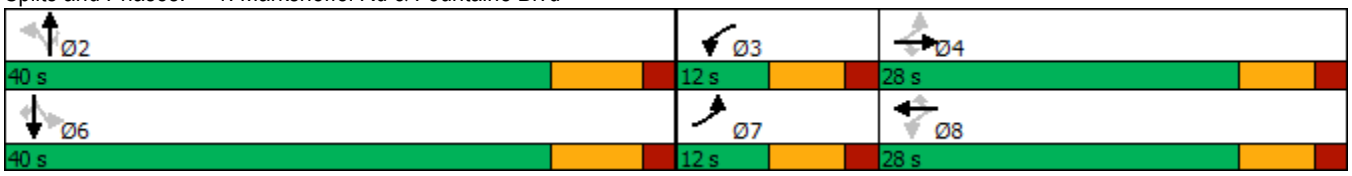
# Levels of Service

TRANSPORTATION
CONSULTANTS, INC.

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 32 | 179 | 41 | 224 | 521 | 364 | 87 | 362 | 101 | 127 | 148 | 20 |
| Future Volume (vph) | 32 | 179 | 41 | 224 | 521 | 364 | 87 | 362 | 101 | 127 | 148 | 20 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | Perm | Perm | NA | Perm | Perm | NA | Perm |
| Protected Phases | 7 | 4 | | 3 | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | 2 | | 2 | 6 | | 6 |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 2 | 2 | 2 | 6 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 20.0 | 20.0 | 5.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 |
| Minimum Split (s) | 11.5 | 26.5 | 26.5 | 11.5 | 26.5 | 26.5 | 27.5 | 27.5 | 27.5 | 27.5 | 27.5 | 27.5 |
| Total Split (s) | 12.0 | 28.0 | 28.0 | 12.0 | 28.0 | 28.0 | 40.0 | 40.0 | 40.0 | 40.0 | 40.0 | 40.0 |
| Total Split (%) | 15.0% | 35.0% | 35.0% | 15.0% | 35.0% | 35.0% | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% |
| Yellow Time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 5.5 | 5.5 | 5.5 | 5.5 | 5.5 | 5.5 |
| 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) | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | | | | | | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | | | | | | |
| Recall Mode | None | None | None | None | None | None | None | None | None | None | None | None |
| Act Effct Green (s) | 26.2 | 20.7 | 20.7 | 30.4 | 28.3 | 28.3 | 23.9 | 23.9 | 23.9 | 23.9 | 23.9 | 23.9 |
| Actuated g/C Ratio | 0.37 | 0.29 | 0.29 | 0.43 | 0.40 | 0.40 | 0.34 | 0.34 | 0.34 | 0.34 | 0.34 | 0.34 |
| v/c Ratio | 0.09 | 0.19 | 0.08 | 0.52 | 0.43 | 0.50 | 0.26 | 0.69 | 0.20 | 0.68 | 0.26 | 0.04 |
| Control Delay | 13.0 | 20.3 | 0.3 | 19.7 | 19.1 | 7.0 | 18.5 | 26.6 | 3.4 | 38.4 | 17.9 | 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 | 13.0 | 20.3 | 0.3 | 19.7 | 19.1 | 7.0 | 18.5 | 26.6 | 3.4 | 38.4 | 17.9 | 0.1 |
| LOS | B | C | A | B | B | A | B | C | A | D | B | A |
| Approach Delay | | 16.1 | | | 15.2 | | | 21.1 | | | 25.5 | |
| Approach LOS | | B | | | B | | | C | | | C | |

| Intersection Summary | |
|---|---|
| Cycle Length: 80 | |
| Actuated Cycle Length: 70.7 | |
| Natural Cycle: 70 | |
| Control Type: Actuated-Uncoordinated | |
| Maximum v/c Ratio: 0.69 | |
| Intersection Signal Delay: 18.1 | Intersection LOS: B |
| Intersection Capacity Utilization 88.1% | ICU Level of Service E |
| Analysis Period (min) 15 | |

Splits and Phases: 1: Marksheffel Rd & Fountaine Blvd



| Intersection | |
|---|---|
| Int Delay, s/veh | 10.8 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 194 | 85 | 465 | 64 | 19 | 394 |
| Future Vol, veh/h | 194 | 85 | 465 | 64 | 19 | 394 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | 0 | - | 250 | 250 | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 15 |
| Peak Hour Factor | 92 | 92 | 83 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 211 | 92 | 560 | 70 | 21 | 428 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1030 | 560 | 0 | 0 | 630 | 0 |
| Stage 1 | 560 | - | - | - | - | - |
| Stage 2 | 470 | - | - | - | - | - |
| 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 | 528 | - | - | 952 | - |
| Stage 1 | 572 | - | - | - | - | - |
| Stage 2 | 629 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 253 | 528 | - | - | 952 | - |
| Mov Cap-2 Maneuver | 253 | - | - | - | - | - |
| Stage 1 | 559 | - | - | - | - | - |
| Stage 2 | 629 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 48.5 | 0 | 0.4 |
| HCM LOS | E | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | WBLn2 | SBL | SBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 253 | 528 | 952 | - |
| HCM Lane V/C Ratio | - | - | 0.833 | 0.175 | 0.022 | - |
| HCM Control Delay (s) | - | - | 63.9 | 13.3 | 8.9 | - |
| HCM Lane LOS | - | - | F | B | A | - |
| HCM 95th %tile Q(veh) | - | - | 6.6 | 0.6 | 0.1 | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.5 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 22 | 374 | 11 | 1 | 1015 | 1 | 34 | 1 | 1 | 1 | 1 | 60 |
| Future Vol, veh/h | 22 | 374 | 11 | 1 | 1015 | 1 | 34 | 1 | 1 | 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 | 0 | - | 0 | 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 | 12 | 1 | 1103 | 1 | 37 | 1 | 1 | 1 | 1 | 65 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1104 | 0 | 0 | 419 | 0 | 0 | 1009 | 1561 | 204 | 1357 | 1572 | 552 |
| Stage 1 | - | - | - | - | - | - | 455 | 455 | - | 1105 | 1105 | - |
| Stage 2 | - | - | - | - | - | - | 554 | 1106 | - | 252 | 467 | - |
| 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 | - | - | 1137 | - | - | 194 | 111 | 803 | 108 | 109 | 477 |
| Stage 1 | - | - | - | - | - | - | 554 | 567 | - | 225 | 285 | - |
| Stage 2 | - | - | - | - | - | - | 484 | 284 | - | 730 | 560 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 628 | - | - | 1137 | - | - | 161 | 107 | 803 | 104 | 105 | 477 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 161 | 107 | - | 104 | 105 | - |
| Stage 1 | - | - | - | - | - | - | 533 | 545 | - | 216 | 285 | - |
| Stage 2 | - | - | - | - | - | - | 416 | 284 | - | 700 | 539 | - |

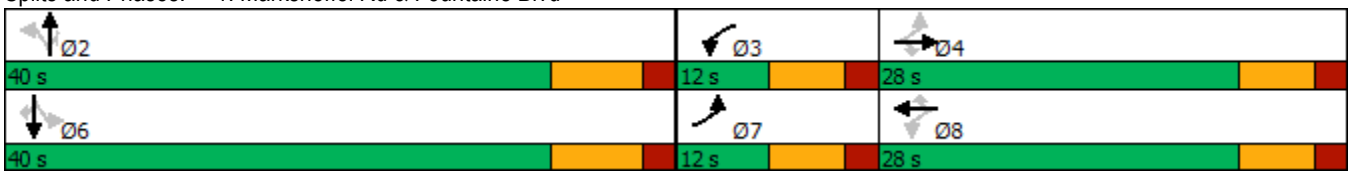
| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 0.6 | 0 | 33.4 | 14.5 |
| HCM LOS | | | D | B |

| Minor Lane/Major Mvmt | NBLn1 | NBLn2 | NBLn3 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 | SBLn2 | SBLn3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 161 | 107 | 803 | 628 | - | - | 1137 | - | - | 104 | 105 | 477 |
| HCM Lane V/C Ratio | 0.23 | 0.01 | 0.001 | 0.038 | - | - | 0.001 | - | - | 0.01 | 0.01 | 0.137 |
| HCM Control Delay (s) | 33.9 | 39 | 9.5 | 11 | - | - | 8.2 | - | - | 40 | 39.6 | 13.7 |
| HCM Lane LOS | D | E | A | B | - | - | A | - | - | E | E | B |
| HCM 95th %tile Q(veh) | 0.8 | 0 | 0 | 0.1 | - | - | 0 | - | - | 0 | 0 | 0.5 |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 36 | 508 | 73 | 106 | 289 | 167 | 58 | 203 | 224 | 301 | 271 | 23 |
| Future Volume (vph) | 36 | 508 | 73 | 106 | 289 | 167 | 58 | 203 | 224 | 301 | 271 | 23 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | Perm | Perm | NA | Perm | Perm | NA | Perm |
| Protected Phases | 7 | 4 | | 3 | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | 2 | | 2 | 6 | | 6 |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 2 | 2 | 2 | 6 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 20.0 | 20.0 | 5.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 |
| Minimum Split (s) | 11.5 | 26.5 | 26.5 | 11.5 | 26.5 | 26.5 | 27.5 | 27.5 | 27.5 | 27.5 | 27.5 | 27.5 |
| Total Split (s) | 12.0 | 28.0 | 28.0 | 12.0 | 28.0 | 28.0 | 40.0 | 40.0 | 40.0 | 40.0 | 40.0 | 40.0 |
| Total Split (%) | 15.0% | 35.0% | 35.0% | 15.0% | 35.0% | 35.0% | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% |
| Yellow Time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 5.5 | 5.5 | 5.5 | 5.5 | 5.5 | 5.5 |
| 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) | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | | | | | | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | | | | | | |
| Recall Mode | None | None | None | None | None | None | None | None | None | None | None | None |
| Act Effct Green (s) | 25.2 | 21.0 | 21.0 | 26.5 | 23.5 | 23.5 | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 |
| Actuated g/C Ratio | 0.36 | 0.30 | 0.30 | 0.38 | 0.33 | 0.33 | 0.37 | 0.37 | 0.37 | 0.37 | 0.37 | 0.37 |
| v/c Ratio | 0.10 | 0.60 | 0.16 | 0.37 | 0.27 | 0.28 | 0.17 | 0.32 | 0.33 | 0.77 | 0.43 | 0.04 |
| Control Delay | 14.0 | 25.6 | 1.7 | 17.5 | 20.6 | 5.3 | 16.9 | 17.9 | 3.7 | 33.7 | 19.4 | 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 | 14.0 | 25.6 | 1.7 | 17.5 | 20.6 | 5.3 | 16.9 | 17.9 | 3.7 | 33.7 | 19.4 | 0.1 |
| LOS | B | C | A | B | C | A | B | B | A | C | B | A |
| Approach Delay | | 22.1 | | | 15.5 | | | 11.2 | | | 25.9 | |
| Approach LOS | | C | | | B | | | B | | | C | |

| Intersection Summary | |
|---|---|
| Cycle Length: 80 | |
| Actuated Cycle Length: 70.4 | |
| Natural Cycle: 70 | |
| Control Type: Actuated-Uncoordinated | |
| Maximum v/c Ratio: 0.77 | |
| Intersection Signal Delay: 19.2 | Intersection LOS: B |
| Intersection Capacity Utilization 79.2% | ICU Level of Service D |
| Analysis Period (min) 15 | |

Splits and Phases: 1: Marksheffel Rd & Fountaine Blvd



| Intersection | |
|---|---|
| Int Delay, s/veh | 5.1 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 132 | 60 | 425 | 220 | 65 | 384 |
| Future Vol, veh/h | 132 | 60 | 425 | 220 | 65 | 384 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | 0 | - | 250 | 250 | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 15 |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 143 | 65 | 462 | 239 | 71 | 417 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1021 | 462 | 0 | 0 | 701 | 0 |
| Stage 1 | 462 | - | - | - | - | - |
| Stage 2 | 559 | - | - | - | - | - |
| 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 | 262 | 600 | - | - | 896 | - |
| Stage 1 | 634 | - | - | - | - | - |
| Stage 2 | 572 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 241 | 600 | - | - | 896 | - |
| Mov Cap-2 Maneuver | 241 | - | - | - | - | - |
| Stage 1 | 584 | - | - | - | - | - |
| Stage 2 | 572 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 31 | 0 | 1.4 |
| HCM LOS | D | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | WBLn2 | SBL | SBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 241 | 600 | 896 | - |
| HCM Lane V/C Ratio | - | - | 0.595 | 0.109 | 0.079 | - |
| HCM Control Delay (s) | - | - | 39.8 | 11.7 | 9.4 | - |
| HCM Lane LOS | - | - | E | B | A | - |
| HCM 95th %tile Q(veh) | - | - | 3.4 | 0.4 | 0.3 | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.7 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 75 | 920 | 38 | 1 | 500 | 1 | 23 | 1 | 1 | 1 | 1 | 39 |
| Future Vol, veh/h | 75 | 920 | 38 | 1 | 500 | 1 | 23 | 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 | 0 | - | 0 | 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 | 41 | 1 | 543 | 1 | 25 | 1 | 1 | 1 | 1 | 42 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 544 | 0 | 0 | 1041 | 0 | 0 | 1438 | 1710 | 500 | 1210 | 1750 | 272 |
| Stage 1 | - | - | - | - | - | - | 1164 | 1164 | - | 545 | 545 | - |
| Stage 2 | - | - | - | - | - | - | 274 | 546 | - | 665 | 1205 | - |
| 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 | - | - | 664 | - | - | 94 | 90 | 516 | 138 | 85 | 726 |
| Stage 1 | - | - | - | - | - | - | 207 | 267 | - | 490 | 517 | - |
| Stage 2 | - | - | - | - | - | - | 709 | 516 | - | 416 | 255 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 1021 | - | - | 664 | - | - | 82 | 83 | 516 | 128 | 78 | 726 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 82 | 83 | - | 128 | 78 | - |
| Stage 1 | - | - | - | - | - | - | 190 | 246 | - | 451 | 516 | - |
| Stage 2 | - | - | - | - | - | - | 665 | 515 | - | 380 | 235 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 0.6 | 0 | 64.2 | 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 | - | - | 664 | - | - | 128 | 78 | 726 |
| HCM Lane V/C Ratio | 0.305 | 0.013 | 0.002 | 0.08 | - | - | 0.002 | - | - | 0.008 | 0.014 | 0.058 |
| HCM Control Delay (s) | 67.1 | 48.9 | 12 | 8.8 | - | - | 10.4 | - | - | 33.4 | 51.8 | 10.3 |
| HCM Lane LOS | F | E | B | A | - | - | B | - | - | D | F | B |
| HCM 95th %tile Q(veh) | 1.1 | 0 | 0 | 0.3 | - | - | 0 | - | - | 0 | 0 | 0.2 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 5.3 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 194 | 85 | 465 | 64 | 19 | 0 |
| Future Vol, veh/h | 194 | 85 | 465 | 64 | 19 | 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 | 0 | - | 250 | 0 | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 16979 |
| Grade, % | 0 | - | 0 | - | - | 15 |
| Peak Hour Factor | 92 | 92 | 83 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 211 | 92 | 560 | 70 | 21 | 0 |

| Major/Minor | Minor1 | | Major1 | |
|---|---|---|---|---|
| Conflicting Flow All | 560 | 560 | 0 | 0 |
| Stage 1 | 560 | - | - | - |
| Stage 2 | 0 | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | - | - |
| Pot Cap-1 Maneuver | 489 | 528 | - | - |
| Stage 1 | 572 | - | - | - |
| Stage 2 | - | - | - | - |
| Platoon blocked, % | | | - | - |
| Mov Cap-1 Maneuver | 489 | 528 | - | - |
| Mov Cap-2 Maneuver | 489 | - | - | - |
| Stage 1 | 572 | - | - | - |
| Stage 2 | - | - | - | - |

| Approach | WB | NB |
|---|---|---|
| HCM Control Delay, s | 16.4 | 0 |
| HCM LOS | C | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | WBLn2 |
|---|---|---|---|---|
| Capacity (veh/h) | - | - | 489 | 528 |
| HCM Lane V/C Ratio | - | - | 0.431 | 0.175 |
| HCM Control Delay (s) | - | - | 17.8 | 13.3 |
| HCM Lane LOS | - | - | C | B |
| HCM 95th %tile Q(veh) | - | - | 2.1 | 0.6 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 3 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 132 | 60 | 425 | 220 | 65 | 0 |
| Future Vol, veh/h | 132 | 60 | 425 | 220 | 65 | 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 | 0 | - | 250 | 0 | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 16979 |
| Grade, % | 0 | - | 0 | - | - | 15 |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 143 | 65 | 462 | 239 | 71 | 0 |

| Major/Minor | Minor1 | | Major1 | |
|---|---|---|---|---|
| Conflicting Flow All | 462 | 462 | 0 | 0 |
| Stage 1 | 462 | - | - | - |
| Stage 2 | 0 | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | - | - |
| Pot Cap-1 Maneuver | 558 | 600 | - | - |
| Stage 1 | 634 | - | - | - |
| Stage 2 | - | - | - | - |
| Platoon blocked, % | | | - | - |
| Mov Cap-1 Maneuver | 558 | 600 | - | - |
| Mov Cap-2 Maneuver | 558 | - | - | - |
| Stage 1 | 634 | - | - | - |
| Stage 2 | - | - | - | - |

| Approach | WB | NB |
|---|---|---|
| HCM Control Delay, s | 13.1 | 0 |
| HCM LOS | B | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | WBLn2 |
|---|---|---|---|---|
| Capacity (veh/h) | - | - | 558 | 600 |
| HCM Lane V/C Ratio | - | - | 0.257 | 0.109 |
| HCM Control Delay (s) | - | - | 13.7 | 11.7 |
| HCM Lane LOS | - | - | B | B |
| HCM 95th %tile Q(veh) | - | - | 1 | 0.4 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 8.2 |
| Intersection LOS | A |

| Approach | WB | NB | SB |
|---|---|---|---|
| Entry Lanes | 1 | 1 | 1 |
| Conflicting Circle Lanes | 1 | 1 | 1 |
| Adj Approach Flow, veh/h | 303 | 630 | 21 |
| Demand Flow Rate, veh/h | 309 | 642 | 21 |
| Vehicles Circulating, veh/h | 571 | 21 | 215 |
| Vehicles Exiting, veh/h | 92 | 215 | 665 |
| Ped Vol Crossing Leg, #/h | 0 | 0 | 0 |
| Ped Cap Adj | 1.000 | 1.000 | 1.000 |
| Approach Delay, s/veh | 9.9 | 7.5 | 3.4 |
| Approach LOS | A | A | A |

| Lane | Left | Left | Left |
|---|---|---|---|
| Designated Moves | LR | TR | LT |
| Assumed Moves | LR | TR | LT |
| RT Channelized | | | |
| Lane Util | 1.000 | 1.000 | 1.000 |
| Follow-Up Headway, s | 2.609 | 2.609 | 2.609 |
| Critical Headway, s | 4.976 | 4.976 | 4.976 |
| Entry Flow, veh/h | 309 | 642 | 21 |
| Cap Entry Lane, veh/h | 771 | 1351 | 1108 |
| Entry HV Adj Factor | 0.981 | 0.981 | 1.000 |
| Flow Entry, veh/h | 303 | 630 | 21 |
| Cap Entry, veh/h | 756 | 1325 | 1108 |
| V/C Ratio | 0.401 | 0.475 | 0.019 |
| Control Delay, s/veh | 9.9 | 7.5 | 3.4 |
| LOS | A | A | A |
| 95th %tile Queue, veh | 2 | 3 | 0 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 8.3 |
| Intersection LOS | A |

| Approach | WB | NB | SB |
|---|---|---|---|
| Entry Lanes | 1 | 1 | 1 |
| Conflicting Circle Lanes | 1 | 1 | 1 |
| Adj Approach Flow, veh/h | 208 | 701 | 71 |
| Demand Flow Rate, veh/h | 212 | 715 | 72 |
| Vehicles Circulating, veh/h | 471 | 72 | 146 |
| Vehicles Exiting, veh/h | 316 | 146 | 537 |
| Ped Vol Crossing Leg, #/h | 0 | 0 | 0 |
| Ped Cap Adj | 1.000 | 1.000 | 1.000 |
| Approach Delay, s/veh | 7.0 | 9.2 | 3.6 |
| Approach LOS | A | A | A |

| Lane | Left | Left | Left |
|---|---|---|---|
| Designated Moves | LR | TR | LT |
| Assumed Moves | LR | TR | LT |
| RT Channelized | | | |
| Lane Util | 1.000 | 1.000 | 1.000 |
| Follow-Up Headway, s | 2.609 | 2.609 | 2.609 |
| Critical Headway, s | 4.976 | 4.976 | 4.976 |
| Entry Flow, veh/h | 212 | 715 | 72 |
| Cap Entry Lane, veh/h | 854 | 1282 | 1189 |
| Entry HV Adj Factor | 0.981 | 0.980 | 0.986 |
| Flow Entry, veh/h | 208 | 701 | 71 |
| Cap Entry, veh/h | 837 | 1257 | 1172 |
| V/C Ratio | 0.248 | 0.558 | 0.061 |
| Control Delay, s/veh | 7.0 | 9.2 | 3.6 |
| LOS | A | A | A |
| 95th %tile Queue, veh | 1 | 4 | 0 |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 194 | 85 | 465 | 64 | 19 | 394 |
| Future Volume (vph) | 194 | 85 | 465 | 64 | 19 | 394 |
| 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) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Minimum Split (s) | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 |
| Total Split (s) | 15.0 | 15.0 | 75.0 | 75.0 | 75.0 | 75.0 |
| Total Split (%) | 16.7% | 16.7% | 83.3% | 83.3% | 83.3% | 83.3% |
| 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 | None | None | None | None |
| Act Effct Green (s) | 10.1 | 10.1 | 16.0 | 16.0 | 16.0 | 16.0 |
| Actuated g/C Ratio | 0.28 | 0.28 | 0.44 | 0.44 | 0.44 | 0.44 |
| v/c Ratio | 0.43 | 0.18 | 0.68 | 0.09 | 0.08 | 0.56 |
| Control Delay | 15.4 | 5.0 | 12.6 | 2.1 | 6.1 | 10.5 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 15.4 | 5.0 | 12.6 | 2.1 | 6.1 | 10.5 |
| LOS | B | A | B | A | A | B |
| Approach Delay | 12.2 | | 11.5 | | | 10.3 |
| Approach LOS | B | | B | | | B |

| Intersection Summary | |
|---|---|
| Cycle Length: 90 | |
| Actuated Cycle Length: 36.3 | |
| Natural Cycle: 45 | |
| Control Type: Actuated-Uncoordinated | |
| Maximum v/c Ratio: 0.68 | |
| Intersection Signal Delay: 11.3 | Intersection LOS: B |
| Intersection Capacity Utilization 43.6% | ICU Level of Service A |
| Analysis Period (min) 15 | |

Splits and Phases: 5: Marksheffel Rd & Lorson Blvd

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 132 | 60 | 425 | 220 | 65 | 384 |
| Future Volume (vph) | 132 | 60 | 425 | 220 | 65 | 384 |
| 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) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Minimum Split (s) | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 |
| Total Split (s) | 15.0 | 15.0 | 75.0 | 75.0 | 75.0 | 75.0 |
| Total Split (%) | 16.7% | 16.7% | 83.3% | 83.3% | 83.3% | 83.3% |
| 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 | None | None | None | None |
| Act Effct Green (s) | 9.1 | 9.1 | 16.9 | 16.9 | 16.9 | 16.9 |
| Actuated g/C Ratio | 0.30 | 0.30 | 0.56 | 0.56 | 0.56 | 0.56 |
| v/c Ratio | 0.27 | 0.13 | 0.45 | 0.24 | 0.16 | 0.43 |
| Control Delay | 12.7 | 4.9 | 8.2 | 1.9 | 6.8 | 8.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 12.7 | 4.9 | 8.2 | 1.9 | 6.8 | 8.2 |
| LOS | B | A | A | A | A | A |
| Approach Delay | 10.2 | | 6.0 | | | 8.0 |
| Approach LOS | B | | A | | | A |

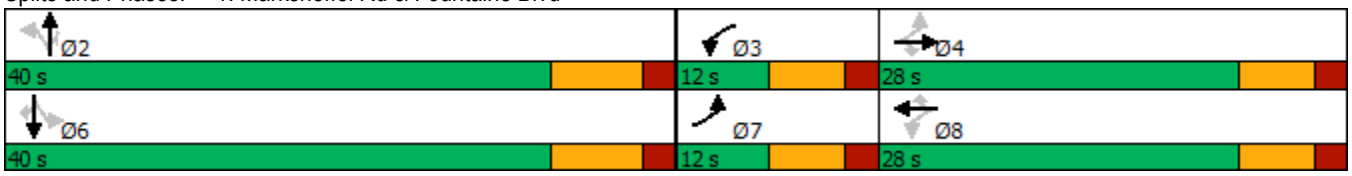
| Intersection Summary | |
|---|---|
| Cycle Length: 90 | |
| Actuated Cycle Length: 30.3 | |
| Natural Cycle: 40 | |
| Control Type: Actuated-Uncoordinated | |
| Maximum v/c Ratio: 0.45 | |
| Intersection Signal Delay: 7.4 | Intersection LOS: A |
| Intersection Capacity Utilization 45.8% | ICU Level of Service A |
| Analysis Period (min) 15 | |

Splits and Phases: 5: Marksheffel Rd & Lorson Blvd

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 32 | 180 | 41 | 225 | 526 | 368 | 87 | 362 | 101 | 128 | 148 | 20 |
| Future Volume (vph) | 32 | 180 | 41 | 225 | 526 | 368 | 87 | 362 | 101 | 128 | 148 | 20 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | Perm | Perm | NA | Perm | Perm | NA | Perm |
| Protected Phases | 7 | 4 | | 3 | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | 2 | | 2 | 6 | | 6 |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 2 | 2 | 2 | 6 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 20.0 | 20.0 | 5.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 |
| Minimum Split (s) | 11.5 | 26.5 | 26.5 | 11.5 | 26.5 | 26.5 | 27.5 | 27.5 | 27.5 | 27.5 | 27.5 | 27.5 |
| Total Split (s) | 12.0 | 28.0 | 28.0 | 12.0 | 28.0 | 28.0 | 40.0 | 40.0 | 40.0 | 40.0 | 40.0 | 40.0 |
| Total Split (%) | 15.0% | 35.0% | 35.0% | 15.0% | 35.0% | 35.0% | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% |
| Yellow Time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 5.5 | 5.5 | 5.5 | 5.5 | 5.5 | 5.5 |
| 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) | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | | | | | | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | | | | | | |
| Recall Mode | None | None | None | None | None | None | None | None | None | None | None | None |
| Act Effct Green (s) | 26.2 | 20.7 | 20.7 | 30.4 | 28.3 | 28.3 | 23.9 | 23.9 | 23.9 | 23.9 | 23.9 | 23.9 |
| Actuated g/C Ratio | 0.37 | 0.29 | 0.29 | 0.43 | 0.40 | 0.40 | 0.34 | 0.34 | 0.34 | 0.34 | 0.34 | 0.34 |
| v/c Ratio | 0.10 | 0.19 | 0.08 | 0.53 | 0.43 | 0.51 | 0.26 | 0.69 | 0.20 | 0.68 | 0.26 | 0.04 |
| Control Delay | 13.0 | 20.3 | 0.3 | 19.8 | 19.1 | 7.2 | 18.5 | 26.6 | 3.4 | 38.8 | 17.9 | 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 | 13.0 | 20.3 | 0.3 | 19.8 | 19.1 | 7.2 | 18.5 | 26.6 | 3.4 | 38.8 | 17.9 | 0.1 |
| LOS | B | C | A | B | B | A | B | C | A | D | B | A |
| Approach Delay | | 16.1 | | | 15.3 | | | 21.1 | | | 25.7 | |
| Approach LOS | | B | | | B | | | C | | | C | |

| Intersection Summary | |
|---|---|
| Cycle Length: 80 | |
| Actuated Cycle Length: 70.7 | |
| Natural Cycle: 70 | |
| Control Type: Actuated-Uncoordinated | |
| Maximum v/c Ratio: 0.69 | |
| Intersection Signal Delay: 18.2 | Intersection LOS: B |
| Intersection Capacity Utilization 88.2% | ICU Level of Service E |
| Analysis Period (min) 15 | |

Splits and Phases: 1: Marksheffel Rd & Fountaine Blvd



| Intersection | |
|---|---|
| Int Delay, s/veh | 11.8 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 200 | 85 | 465 | 66 | 19 | 395 |
| Future Vol, veh/h | 200 | 85 | 465 | 66 | 19 | 395 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | 0 | - | 250 | 250 | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 15 |
| Peak Hour Factor | 92 | 92 | 83 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 217 | 92 | 560 | 72 | 21 | 429 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1031 | 560 | 0 | 0 | 632 | 0 |
| Stage 1 | 560 | - | - | - | - | - |
| Stage 2 | 471 | - | - | - | - | - |
| 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 | 258 | 528 | - | - | 951 | - |
| Stage 1 | 572 | - | - | - | - | - |
| Stage 2 | 628 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 252 | 528 | - | - | 951 | - |
| Mov Cap-2 Maneuver | 252 | - | - | - | - | - |
| Stage 1 | 559 | - | - | - | - | - |
| Stage 2 | 628 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 52.4 | 0 | 0.4 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | WBLn2 | SBL | SBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 252 | 528 | 951 | - |
| HCM Lane V/C Ratio | - | - | 0.863 | 0.175 | 0.022 | - |
| HCM Control Delay (s) | - | - | 69 | 13.3 | 8.9 | - |
| HCM Lane LOS | - | - | F | B | A | - |
| HCM 95th %tile Q(veh) | - | - | 7.1 | 0.6 | 0.1 | - |

| 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 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 4 | 10 | 38 | 1 | 3 | 14 |
| Future Vol, veh/h | 4 | 10 | 38 | 1 | 3 | 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 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 4 | 11 | 41 | 1 | 3 | 15 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 63 | 42 | 0 | 0 | 42 | 0 |
| Stage 1 | 42 | - | - | - | - | - |
| Stage 2 | 21 | - | - | - | - | - |
| 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 | 943 | 1029 | - | - | 1567 | - |
| Stage 1 | 980 | - | - | - | - | - |
| Stage 2 | 1002 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 941 | 1029 | - | - | 1567 | - |
| Mov Cap-2 Maneuver | 941 | - | - | - | - | - |
| Stage 1 | 978 | - | - | - | - | - |
| Stage 2 | 1002 | - | - | - | - | - |

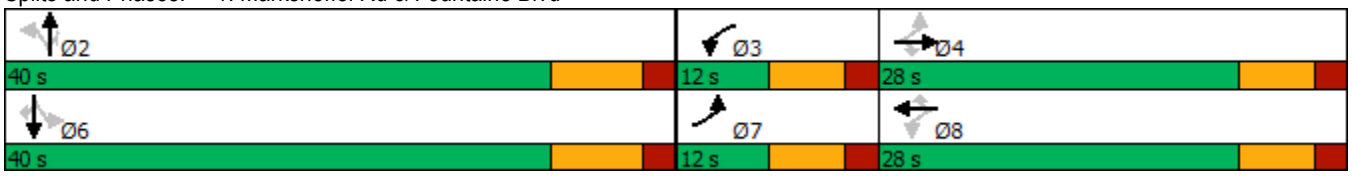
| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 8.6 | 0 | 1.3 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 1002 | 1567 | - |
| HCM Lane V/C Ratio | - | - | 0.015 | 0.002 | - |
| HCM Control Delay (s) | - | - | 8.6 | 7.3 | 0 |
| HCM Lane LOS | - | - | A | A | A |
| HCM 95th %tile Q(veh) | - | - | 0 | 0 | - |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 36 | 513 | 73 | 107 | 292 | 170 | 58 | 203 | 225 | 306 | 271 | 23 |
| Future Volume (vph) | 36 | 513 | 73 | 107 | 292 | 170 | 58 | 203 | 225 | 306 | 271 | 23 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | Perm | Perm | NA | Perm | Perm | NA | Perm |
| Protected Phases | 7 | 4 | | 3 | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | 2 | | 2 | 6 | | 6 |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 2 | 2 | 2 | 6 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 20.0 | 20.0 | 5.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 |
| Minimum Split (s) | 11.5 | 26.5 | 26.5 | 11.5 | 26.5 | 26.5 | 27.5 | 27.5 | 27.5 | 27.5 | 27.5 | 27.5 |
| Total Split (s) | 12.0 | 28.0 | 28.0 | 12.0 | 28.0 | 28.0 | 40.0 | 40.0 | 40.0 | 40.0 | 40.0 | 40.0 |
| Total Split (%) | 15.0% | 35.0% | 35.0% | 15.0% | 35.0% | 35.0% | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% |
| Yellow Time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 5.5 | 5.5 | 5.5 | 5.5 | 5.5 | 5.5 |
| 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) | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | | | | | | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | | | | | | |
| Recall Mode | None | None | None | None | None | None | None | None | None | None | None | None |
| Act Effct Green (s) | 25.1 | 20.9 | 20.9 | 26.5 | 23.5 | 23.5 | 26.2 | 26.2 | 26.2 | 26.2 | 26.2 | 26.2 |
| Actuated g/C Ratio | 0.36 | 0.30 | 0.30 | 0.38 | 0.33 | 0.33 | 0.37 | 0.37 | 0.37 | 0.37 | 0.37 | 0.37 |
| v/c Ratio | 0.10 | 0.60 | 0.16 | 0.38 | 0.27 | 0.28 | 0.17 | 0.32 | 0.33 | 0.78 | 0.43 | 0.04 |
| Control Delay | 14.1 | 25.9 | 1.7 | 17.9 | 20.7 | 5.3 | 16.8 | 17.8 | 3.6 | 34.3 | 19.3 | 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 | 14.1 | 25.9 | 1.7 | 17.9 | 20.7 | 5.3 | 16.8 | 17.8 | 3.6 | 34.3 | 19.3 | 0.1 |
| LOS | B | C | A | B | C | A | B | B | A | C | B | A |
| Approach Delay | | 22.4 | | | 15.6 | | | 11.1 | | | 26.2 | |
| Approach LOS | | C | | | B | | | B | | | C | |

| Intersection Summary | |
|---|---|
| Cycle Length: 80 | |
| Actuated Cycle Length: 70.6 | |
| Natural Cycle: 70 | |
| Control Type: Actuated-Uncoordinated | |
| Maximum v/c Ratio: 0.78 | |
| Intersection Signal Delay: 19.4 | Intersection LOS: B |
| Intersection Capacity Utilization 79.5% | ICU Level of Service D |
| Analysis Period (min) 15 | |

Splits and Phases: 1: Marksheffel Rd & Fountaine Blvd



| Intersection | |
|---|---|
| Int Delay, s/veh | 5.4 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 136 | 60 | 426 | 227 | 65 | 385 |
| Future Vol, veh/h | 136 | 60 | 426 | 227 | 65 | 385 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | 0 | - | 250 | 250 | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 15 |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 148 | 65 | 463 | 247 | 71 | 418 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1023 | 463 | 0 | 0 | 710 | 0 |
| Stage 1 | 463 | - | - | - | - | - |
| Stage 2 | 560 | - | - | - | - | - |
| 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 | 599 | - | - | 889 | - |
| Stage 1 | 634 | - | - | - | - | - |
| Stage 2 | 572 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 240 | 599 | - | - | 889 | - |
| Mov Cap-2 Maneuver | 240 | - | - | - | - | - |
| Stage 1 | 583 | - | - | - | - | - |
| Stage 2 | 572 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 32.3 | 0 | 1.4 |
| HCM LOS | D | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | WBLn2 | SBL | SBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 240 | 599 | 889 | - |
| HCM Lane V/C Ratio | - | - | 0.616 | 0.109 | 0.079 | - |
| HCM Control Delay (s) | - | - | 41.4 | 11.7 | 9.4 | - |
| HCM Lane LOS | - | - | E | B | A | - |
| HCM 95th %tile Q(veh) | - | - | 3.7 | 0.4 | 0.3 | - |

| 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 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.6 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 3 | 5 | 26 | 5 | 10 | 42 |
| Future Vol, veh/h | 3 | 5 | 26 | 5 | 10 | 42 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 3 | 5 | 28 | 5 | 11 | 46 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 99 | 31 | 0 | 0 | 33 | 0 |
| Stage 1 | 31 | - | - | - | - | - |
| Stage 2 | 68 | - | - | - | - | - |
| 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 | 1043 | - | - | 1579 | - |
| Stage 1 | 992 | - | - | - | - | - |
| Stage 2 | 955 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 894 | 1043 | - | - | 1579 | - |
| Mov Cap-2 Maneuver | 894 | - | - | - | - | - |
| Stage 1 | 985 | - | - | - | - | - |
| Stage 2 | 955 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 8.7 | 0 | 1.4 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 982 | 1579 | - |
| HCM Lane V/C Ratio | - | - | 0.009 | 0.007 | - |
| HCM Control Delay (s) | - | - | 8.7 | 7.3 | 0 |
| HCM Lane LOS | - | - | A | A | A |
| HCM 95th %tile Q(veh) | - | - | 0 | 0 | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 5.5 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 201 | 85 | 465 | 66 | 19 | 0 |
| Future Vol, veh/h | 201 | 85 | 465 | 66 | 19 | 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 | 0 | - | 250 | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 16979 |
| Grade, % | 0 | - | 0 | - | - | 15 |
| Peak Hour Factor | 92 | 92 | 83 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 218 | 92 | 560 | 72 | 21 | 0 |

| Major/Minor | Minor1 | | Major1 | |
|---|---|---|---|---|
| Conflicting Flow All | 560 | 560 | 0 | 0 |
| Stage 1 | 560 | - | - | - |
| Stage 2 | 0 | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | - | - |
| Pot Cap-1 Maneuver | 489 | 528 | - | - |
| Stage 1 | 572 | - | - | - |
| Stage 2 | - | - | - | - |
| Platoon blocked, % | | | - | - |
| Mov Cap-1 Maneuver | 489 | 528 | - | - |
| Mov Cap-2 Maneuver | 489 | - | - | - |
| Stage 1 | 572 | - | - | - |
| Stage 2 | - | - | - | - |

| Approach | WB | NB |
|---|---|---|
| HCM Control Delay, s | 16.7 | 0 |
| HCM LOS | C | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | WBLn2 |
|---|---|---|---|---|
| Capacity (veh/h) | - | - | 489 | 528 |
| HCM Lane V/C Ratio | - | - | 0.447 | 0.175 |
| HCM Control Delay (s) | - | - | 18.2 | 13.3 |
| HCM Lane LOS | - | - | C | B |
| HCM 95th %tile Q(veh) | - | - | 2.3 | 0.6 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 3.1 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 137 | 60 | 426 | 228 | 65 | 0 |
| Future Vol, veh/h | 137 | 60 | 426 | 228 | 65 | 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 | 0 | - | 250 | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 16979 |
| Grade, % | 0 | - | 0 | - | - | 15 |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 149 | 65 | 463 | 248 | 71 | 0 |

| Major/Minor | Minor1 | | Major1 | |
|---|---|---|---|---|
| Conflicting Flow All | 463 | 463 | 0 | 0 |
| Stage 1 | 463 | - | - | - |
| Stage 2 | 0 | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | - | - |
| Pot Cap-1 Maneuver | 557 | 599 | - | - |
| Stage 1 | 634 | - | - | - |
| Stage 2 | - | - | - | - |
| Platoon blocked, % | | | - | - |
| Mov Cap-1 Maneuver | 557 | 599 | - | - |
| Mov Cap-2 Maneuver | 557 | - | - | - |
| Stage 1 | 634 | - | - | - |
| Stage 2 | - | - | - | - |

| Approach | WB | NB |
|---|---|---|
| HCM Control Delay, s | 13.2 | 0 |
| HCM LOS | B | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | WBLn2 |
|---|---|---|---|---|
| Capacity (veh/h) | - | - | 557 | 599 |
| HCM Lane V/C Ratio | - | - | 0.267 | 0.109 |
| HCM Control Delay (s) | - | - | 13.8 | 11.7 |
| HCM Lane LOS | - | - | B | B |
| HCM 95th %tile Q(veh) | - | - | 1.1 | 0.4 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 8.3 |
| Intersection LOS | A |

| Approach | WB | NB | SB |
|---|---|---|---|
| Entry Lanes | 1 | 1 | 1 |
| Conflicting Circle Lanes | 1 | 1 | 1 |
| Adj Approach Flow, veh/h | 310 | 632 | 21 |
| Demand Flow Rate, veh/h | 316 | 644 | 21 |
| Vehicles Circulating, veh/h | 571 | 21 | 222 |
| Vehicles Exiting, veh/h | 94 | 222 | 665 |
| Ped Vol Crossing Leg, #/h | 0 | 0 | 0 |
| Ped Cap Adj | 1.000 | 1.000 | 1.000 |
| Approach Delay, s/veh | 10.1 | 7.6 | 3.4 |
| Approach LOS | B | A | A |

| Lane | Left | Left | Left |
|---|---|---|---|
| Designated Moves | LR | TR | LT |
| Assumed Moves | LR | TR | LT |
| RT Channelized | | | |
| Lane Util | 1.000 | 1.000 | 1.000 |
| Follow-Up Headway, s | 2.609 | 2.609 | 2.609 |
| Critical Headway, s | 4.976 | 4.976 | 4.976 |
| Entry Flow, veh/h | 316 | 644 | 21 |
| Cap Entry Lane, veh/h | 771 | 1351 | 1100 |
| Entry HV Adj Factor | 0.981 | 0.981 | 1.000 |
| Flow Entry, veh/h | 310 | 632 | 21 |
| Cap Entry, veh/h | 756 | 1325 | 1100 |
| V/C Ratio | 0.410 | 0.477 | 0.019 |
| Control Delay, s/veh | 10.1 | 7.6 | 3.4 |
| LOS | B | A | A |
| 95th %tile Queue, veh | 2 | 3 | 0 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 8.4 |
| Intersection LOS | A |

| Approach | WB | NB | SB |
|---|---|---|---|
| Entry Lanes | 1 | 1 | 1 |
| Conflicting Circle Lanes | 1 | 1 | 1 |
| Adj Approach Flow, veh/h | 214 | 711 | 71 |
| Demand Flow Rate, veh/h | 218 | 725 | 72 |
| Vehicles Circulating, veh/h | 472 | 72 | 152 |
| Vehicles Exiting, veh/h | 325 | 152 | 538 |
| Ped Vol Crossing Leg, #/h | 0 | 0 | 0 |
| Ped Cap Adj | 1.000 | 1.000 | 1.000 |
| Approach Delay, s/veh | 7.1 | 9.3 | 3.6 |
| Approach LOS | A | A | A |

| Lane | Left | Left | Left |
|---|---|---|---|
| Designated Moves | LR | TR | LT |
| Assumed Moves | LR | TR | LT |
| RT Channelized | | | |
| Lane Util | 1.000 | 1.000 | 1.000 |
| Follow-Up Headway, s | 2.609 | 2.609 | 2.609 |
| Critical Headway, s | 4.976 | 4.976 | 4.976 |
| Entry Flow, veh/h | 218 | 725 | 72 |
| Cap Entry Lane, veh/h | 853 | 1282 | 1182 |
| Entry HV Adj Factor | 0.982 | 0.980 | 0.986 |
| Flow Entry, veh/h | 214 | 711 | 71 |
| Cap Entry, veh/h | 837 | 1257 | 1165 |
| V/C Ratio | 0.256 | 0.565 | 0.061 |
| Control Delay, s/veh | 7.1 | 9.3 | 3.6 |
| LOS | A | A | A |
| 95th %tile Queue, veh | 1 | 4 | 0 |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 201 | 85 | 465 | 66 | 19 | 395 |
| Future Volume (vph) | 201 | 85 | 465 | 66 | 19 | 395 |
| 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) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Minimum Split (s) | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 |
| Total Split (s) | 15.0 | 15.0 | 75.0 | 75.0 | 75.0 | 75.0 |
| Total Split (%) | 16.7% | 16.7% | 83.3% | 83.3% | 83.3% | 83.3% |
| 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 | None | None | None | None |
| Act Effct Green (s) | 10.1 | 10.1 | 16.0 | 16.0 | 16.0 | 16.0 |
| Actuated g/C Ratio | 0.28 | 0.28 | 0.44 | 0.44 | 0.44 | 0.44 |
| v/c Ratio | 0.44 | 0.18 | 0.68 | 0.10 | 0.08 | 0.56 |
| Control Delay | 15.6 | 5.0 | 12.6 | 2.1 | 6.1 | 10.5 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 15.6 | 5.0 | 12.6 | 2.1 | 6.1 | 10.5 |
| LOS | B | A | B | A | A | B |
| Approach Delay | 12.5 | | 11.4 | | | 10.3 |
| Approach LOS | B | | B | | | B |

| Intersection Summary | |
|---|---|
| Cycle Length: 90 | |
| Actuated Cycle Length: 36.3 | |
| Natural Cycle: 45 | |
| Control Type: Actuated-Uncoordinated | |
| Maximum v/c Ratio: 0.68 | |
| Intersection Signal Delay: 11.3 | Intersection LOS: B |
| Intersection Capacity Utilization 43.9% | ICU Level of Service A |
| Analysis Period (min) 15 | |

Splits and Phases: 5: Marksheffel Rd & Lorson Blvd

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 137 | 60 | 426 | 228 | 65 | 385 |
| Future Volume (vph) | 137 | 60 | 426 | 228 | 65 | 385 |
| 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) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Minimum Split (s) | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 |
| Total Split (s) | 15.0 | 15.0 | 75.0 | 75.0 | 75.0 | 75.0 |
| Total Split (%) | 16.7% | 16.7% | 83.3% | 83.3% | 83.3% | 83.3% |
| 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 | None | None | None | None |
| Act Effct Green (s) | 9.4 | 9.4 | 16.9 | 16.9 | 16.9 | 16.9 |
| Actuated g/C Ratio | 0.31 | 0.31 | 0.55 | 0.55 | 0.55 | 0.55 |
| v/c Ratio | 0.27 | 0.12 | 0.45 | 0.25 | 0.16 | 0.44 |
| Control Delay | 12.6 | 4.9 | 8.3 | 1.9 | 6.9 | 8.4 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 12.6 | 4.9 | 8.3 | 1.9 | 6.9 | 8.4 |
| LOS | B | A | A | A | A | A |
| Approach Delay | 10.3 | | 6.1 | | | 8.2 |
| Approach LOS | B | | A | | | A |

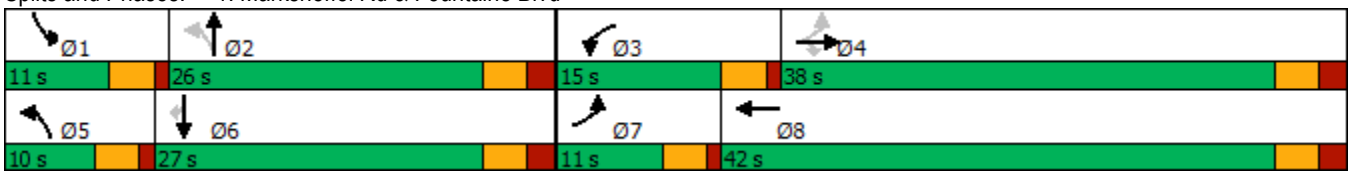
| Intersection Summary | |
|---|---|
| Cycle Length: 90 | |
| Actuated Cycle Length: 30.5 | |
| Natural Cycle: 40 | |
| Control Type: Actuated-Uncoordinated | |
| Maximum v/c Ratio: 0.45 | |
| Intersection Signal Delay: 7.4 | Intersection LOS: A |
| Intersection Capacity Utilization 46.1% | ICU Level of Service A |
| Analysis Period (min) 15 | |

Splits and Phases: 5: Marksheffel Rd & Lorson Blvd

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 38 | 352 | 48 | 441 | 1019 | 601 | 149 | 527 | 178 | 241 | 516 | 45 |
| Future Volume (vph) | 38 | 352 | 48 | 441 | 1019 | 601 | 149 | 527 | 178 | 241 | 516 | 45 |
| Turn Type | pm+pt | NA | Perm | Prot | NA | Free | pm+pt | NA | Free | Prot | NA | Perm |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | | | Free | 2 | | Free | | | 6 |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | | 5 | 2 | | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 |
| Minimum Split (s) | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | | 9.0 | 9.0 | | 9.0 | 9.0 | 9.0 |
| Total Split (s) | 11.0 | 38.0 | 38.0 | 15.0 | 42.0 | | 10.0 | 26.0 | | 11.0 | 27.0 | 27.0 |
| Total Split (%) | 12.2% | 42.2% | 42.2% | 16.7% | 46.7% | | 11.1% | 28.9% | | 12.2% | 30.0% | 30.0% |
| 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) | 1.0 | 2.0 | 2.0 | 1.0 | 2.0 | | 1.0 | 2.0 | | 1.0 | 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) | 4.0 | 5.0 | 5.0 | 4.0 | 5.0 | | 4.0 | 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 | None | | None | None | None |
| Act Effct Green (s) | 28.9 | 21.3 | 21.3 | 11.5 | 31.2 | 75.6 | 24.1 | 16.8 | 75.6 | 7.3 | 17.8 | 17.8 |
| Actuated g/C Ratio | 0.38 | 0.28 | 0.28 | 0.15 | 0.41 | 1.00 | 0.32 | 0.22 | 1.00 | 0.10 | 0.24 | 0.24 |
| v/c Ratio | 0.16 | 0.36 | 0.10 | 0.86 | 0.73 | 0.40 | 0.55 | 0.71 | 0.12 | 0.74 | 0.65 | 0.10 |
| Control Delay | 11.5 | 21.8 | 0.4 | 53.7 | 23.4 | 0.8 | 27.8 | 33.9 | 0.2 | 52.6 | 31.5 | 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 | 11.5 | 21.8 | 0.4 | 53.7 | 23.4 | 0.8 | 27.8 | 33.9 | 0.2 | 52.6 | 31.5 | 0.4 |
| LOS | B | C | A | D | C | A | C | C | A | D | C | A |
| Approach Delay | | 18.5 | | | 23.1 | | | 25.8 | | | 36.0 | |
| Approach LOS | | B | | | C | | | C | | | D | |

| Intersection Summary | |
|---|---|
| Cycle Length: 90 | |
| Actuated Cycle Length: 75.6 | |
| Natural Cycle: 60 | |
| Control Type: Semi Act-Uncoord | |
| Maximum v/c Ratio: 0.86 | |
| Intersection Signal Delay: 25.6 | Intersection LOS: C |
| Intersection Capacity Utilization 69.0% | ICU Level of Service C |
| Analysis Period (min) 15 | |

Splits and Phases: 1: Marksheffel Rd & Fountaine Blvd



| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 461 | 122 | 732 | 148 | 28 | 977 |
| Future Volume (vph) | 461 | 122 | 732 | 148 | 28 | 977 |
| Turn Type | Prot | Perm | NA | Free | pm+pt | NA |
| Protected Phases | 8 | | 2 | | 1 | 6 |
| Permitted Phases | | 8 | | Free | 6 | |
| Detector Phase | 8 | 8 | 2 | | 1 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 |
| Minimum Split (s) | 20.0 | 20.0 | 20.0 | | 9.0 | 20.0 |
| Total Split (s) | 20.0 | 20.0 | 60.0 | | 10.0 | 70.0 |
| Total Split (%) | 22.2% | 22.2% | 66.7% | | 11.1% | 77.8% |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 |
| Lead/Lag | | | Lag | | Lead | |
| Lead-Lag Optimize? | | | Yes | | Yes | |
| Recall Mode | None | None | None | | None | None |
| Act Effct Green (s) | 12.1 | 12.1 | 20.1 | 44.0 | 21.6 | 21.6 |
| Actuated g/C Ratio | 0.28 | 0.28 | 0.46 | 1.00 | 0.49 | 0.49 |
| v/c Ratio | 0.52 | 0.24 | 0.48 | 0.10 | 0.08 | 0.64 |
| Control Delay | 16.8 | 5.3 | 10.4 | 0.1 | 6.4 | 10.4 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 16.8 | 5.3 | 10.4 | 0.1 | 6.4 | 10.4 |
| LOS | B | A | B | A | A | B |
| Approach Delay | 14.4 | | 8.7 | | | 10.3 |
| Approach LOS | B | | A | | | B |

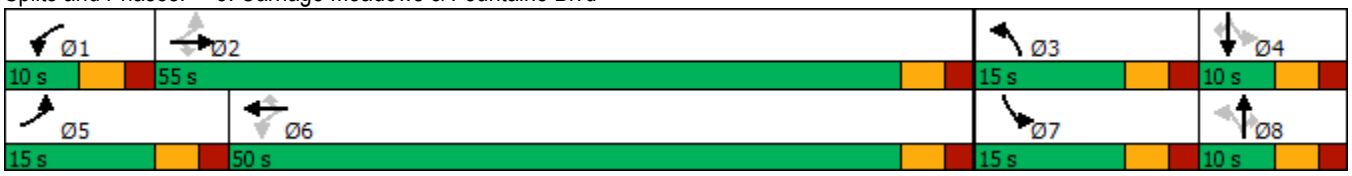
| Intersection Summary | |
|---|---|
| Cycle Length: 90 | |
| Actuated Cycle Length: 44 | |
| Natural Cycle: 50 | |
| Control Type: Actuated-Uncoordinated | |
| Maximum v/c Ratio: 0.64 | |
| Intersection Signal Delay: 10.7 | Intersection LOS: B |
| Intersection Capacity Utilization 48.5% | ICU Level of Service A |
| Analysis Period (min) 15 | |

Splits and Phases: 5: Marksheffel Rd & Lorson Blvd

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 57 | 657 | 56 | 34 | 1900 | 45 | 75 | 3 | 15 | 18 | 1 | 87 |
| Future Volume (vph) | 57 | 657 | 56 | 34 | 1900 | 45 | 75 | 3 | 15 | 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 | 55.7 | 53.1 | 53.1 | 15.1 | 11.2 | 11.2 | 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 | 0.05 | 0.07 | 0.90 | 0.04 | 0.33 | 0.01 | 0.05 | 0.10 | 0.01 | 0.40 |
| Control Delay | 8.4 | 9.1 | 0.1 | 5.6 | 26.6 | 0.1 | 32.7 | 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 | 9.1 | 0.1 | 5.6 | 26.6 | 0.1 | 32.7 | 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 | | | 25.6 | | | 27.5 | | | 11.4 | |
| Approach LOS | | A | | | C | | | C | | | B | |

| Intersection Summary | | |
|---|---|---|
| Cycle Length: 90 | | |
| Actuated Cycle Length: 84.4 | | |
| Natural Cycle: 80 | | |
| Control Type: Semi Act-Uncoord | | |
| Maximum v/c Ratio: 0.90 | | |
| Intersection Signal Delay: 20.7 | Intersection LOS: C | |
| Intersection Capacity Utilization 74.6% | ICU Level of Service D | |
| Analysis Period (min) 15 | | |

Splits and Phases: 8: Carriage Meadows & Fountaine Blvd



| Intersection | |
|---|---|
| Int Delay, s/veh | 2.6 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 48 | 3 | 6 | 46 | 14 | 76 |
| Future Vol, veh/h | 48 | 3 | 6 | 46 | 14 | 76 |
| 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 | - | 180 | - | - | 155 |
| 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 | 51 | 3 | 6 | 48 | 15 | 80 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 75 | 15 | 95 | 0 | - | 0 |
| Stage 1 | 15 | - | - | - | - | - |
| Stage 2 | 60 | - | - | - | - | - |
| 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 | 1065 | 1499 | - | - | - |
| Stage 1 | 1008 | - | - | - | - | - |
| Stage 2 | 963 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 924 | 1065 | 1499 | - | - | - |
| Mov Cap-2 Maneuver | 924 | - | - | - | - | - |
| Stage 1 | 1004 | - | - | - | - | - |
| Stage 2 | 963 | - | - | - | - | - |

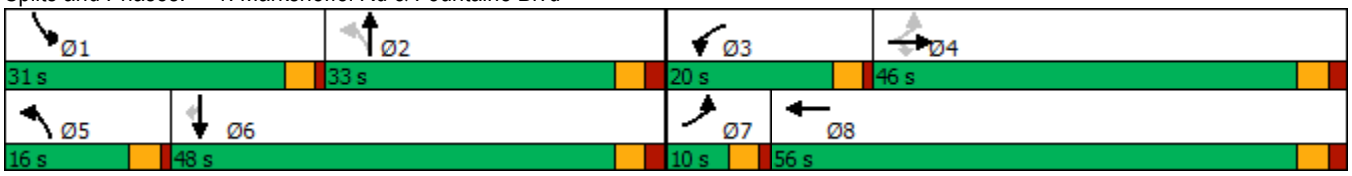
| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 9.1 | 0.9 | 0 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1499 | - | 931 | - | - |
| HCM Lane V/C Ratio | 0.004 | - | 0.058 | - | - |
| HCM Control Delay (s) | 7.4 | - | 9.1 | - | - |
| 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) | 70 | 1186 | 143 | 338 | 707 | 458 | 116 | 222 | 542 | 774 | 310 | 65 |
| Future Volume (vph) | 70 | 1186 | 143 | 338 | 707 | 458 | 116 | 222 | 542 | 774 | 310 | 65 |
| Turn Type | pm+pt | NA | Perm | Prot | NA | Free | pm+pt | NA | Free | Prot | NA | Perm |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | | | Free | 2 | | Free | | | 6 |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | | 5 | 2 | | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 |
| Minimum Split (s) | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | | 9.0 | 9.0 | | 9.0 | 9.0 | 9.0 |
| Total Split (s) | 10.0 | 46.0 | 46.0 | 20.0 | 56.0 | | 16.0 | 33.0 | | 31.0 | 48.0 | 48.0 |
| Total Split (%) | 7.7% | 35.4% | 35.4% | 15.4% | 43.1% | | 12.3% | 25.4% | | 23.8% | 36.9% | 36.9% |
| 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) | 1.0 | 2.0 | 2.0 | 1.0 | 2.0 | | 1.0 | 2.0 | | 1.0 | 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) | 4.0 | 5.0 | 5.0 | 4.0 | 5.0 | | 4.0 | 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 | None | | None | None | None |
| Act Effct Green (s) | 48.0 | 41.0 | 41.0 | 15.2 | 52.3 | 113.8 | 23.7 | 12.6 | 113.8 | 27.0 | 29.5 | 29.5 |
| Actuated g/C Ratio | 0.42 | 0.36 | 0.36 | 0.13 | 0.46 | 1.00 | 0.21 | 0.11 | 1.00 | 0.24 | 0.26 | 0.26 |
| v/c Ratio | 0.21 | 0.95 | 0.22 | 0.75 | 0.44 | 0.30 | 0.42 | 0.58 | 0.35 | 0.97 | 0.34 | 0.13 |
| Control Delay | 15.6 | 51.8 | 4.7 | 59.2 | 22.8 | 0.5 | 29.5 | 54.4 | 0.6 | 68.7 | 35.9 | 1.1 |
| 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 | 15.6 | 51.8 | 4.7 | 59.2 | 22.8 | 0.5 | 29.5 | 54.4 | 0.6 | 68.7 | 35.9 | 1.1 |
| LOS | B | D | A | E | C | A | C | D | A | E | D | A |
| Approach Delay | | 45.2 | | | 24.2 | | | 18.0 | | | 56.1 | |
| Approach LOS | | D | | | C | | | B | | | E | |

| Intersection Summary | |
|---|---|
| Cycle Length: 130 | |
| Actuated Cycle Length: 113.8 | |
| Natural Cycle: 90 | |
| Control Type: Semi Act-Uncoord | |
| Maximum v/c Ratio: 0.97 | |
| Intersection Signal Delay: 36.5 | Intersection LOS: D |
| Intersection Capacity Utilization 85.6% | ICU Level of Service E |
| Analysis Period (min) 15 | |

Splits and Phases: 1: Marksheffel Rd & Fountaine Blvd



| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 329 | 85 | 795 | 532 | 100 | 691 |
| Future Volume (vph) | 329 | 85 | 795 | 532 | 100 | 691 |
| Turn Type | Prot | Perm | NA | Perm | pm+pt | NA |
| Protected Phases | 8 | | 2 | | 1 | 6 |
| Permitted Phases | | 8 | | 2 | 6 | |
| Detector Phase | 8 | 8 | 2 | 2 | 1 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Minimum Split (s) | 20.0 | 20.0 | 20.0 | 20.0 | 9.0 | 20.0 |
| Total Split (s) | 20.0 | 20.0 | 60.0 | 60.0 | 10.0 | 70.0 |
| Total Split (%) | 22.2% | 22.2% | 66.7% | 66.7% | 11.1% | 77.8% |
| 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 | | | Lag | Lag | Lead | |
| Lead-Lag Optimize? | | | Yes | Yes | Yes | |
| Recall Mode | None | None | None | None | None | None |
| Act Effct Green (s) | 10.8 | 10.8 | 21.8 | 21.8 | 29.1 | 29.1 |
| Actuated g/C Ratio | 0.21 | 0.21 | 0.43 | 0.43 | 0.57 | 0.57 |
| v/c Ratio | 0.48 | 0.22 | 0.55 | 0.56 | 0.30 | 0.39 |
| Control Delay | 22.0 | 7.2 | 12.8 | 3.6 | 6.9 | 6.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 22.0 | 7.2 | 12.8 | 3.6 | 6.9 | 6.2 |
| LOS | C | A | B | A | A | A |
| Approach Delay | 19.0 | | 9.1 | | | 6.3 |
| Approach LOS | B | | A | | | A |

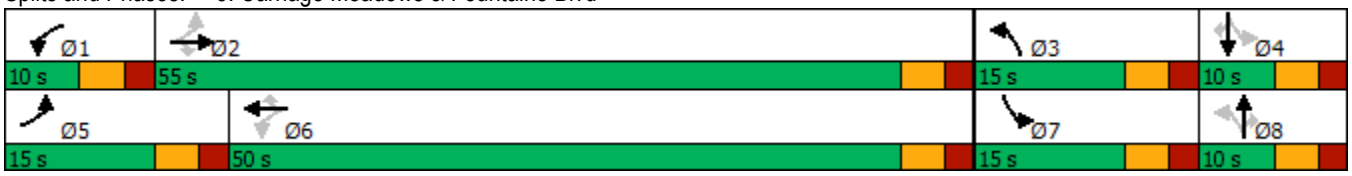
| Intersection Summary | |
|---|---|
| Cycle Length: 90 | |
| Actuated Cycle Length: 50.7 | |
| Natural Cycle: 50 | |
| Control Type: Actuated-Uncoordinated | |
| Maximum v/c Ratio: 0.56 | |
| Intersection Signal Delay: 9.8 | Intersection LOS: A |
| Intersection Capacity Utilization 49.4% | ICU Level of Service A |
| Analysis Period (min) 15 | |

Splits and Phases: 5: Marksheffel Rd & Lorson 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



| 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 | 228 | 1 | 24 | 3 | 0 | 6 | 8 | 34 | 5 | 11 | 52 | 233 |
| Future Vol, veh/h | 228 | 1 | 24 | 3 | 0 | 6 | 8 | 34 | 5 | 11 | 52 | 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 | - | - | - | - | - | - | 180 | - | - | 180 | - | 155 |
| 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 | 240 | 1 | 25 | 3 | 0 | 6 | 8 | 36 | 5 | 12 | 55 | 245 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 137 | 136 | 55 | 270 | 379 | 39 | 300 | 0 | 0 | 41 | 0 | 0 |
| Stage 1 | 79 | 79 | - | 55 | 55 | - | - | - | - | - | - | - |
| Stage 2 | 58 | 57 | - | 215 | 324 | - | - | - | - | - | - | - |
| 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 | 834 | 755 | 1012 | 683 | 553 | 1033 | 1261 | - | - | 1568 | - | - |
| Stage 1 | 930 | 829 | - | 957 | 849 | - | - | - | - | - | - | - |
| Stage 2 | 954 | 847 | - | 787 | 650 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 820 | 744 | 1012 | 658 | 545 | 1033 | 1261 | - | - | 1568 | - | - |
| Mov Cap-2 Maneuver | 820 | 744 | - | 658 | 545 | - | - | - | - | - | - | - |
| Stage 1 | 924 | 822 | - | 951 | 844 | - | - | - | - | - | - | - |
| Stage 2 | 942 | 842 | - | 761 | 645 | - | - | - | - | - | - | - |

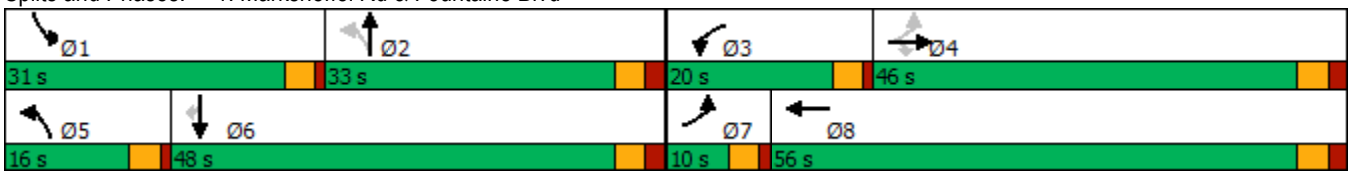
| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 11.3 | 9.2 | 1.3 | 0.3 |
| HCM LOS | B | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1261 | - | - | 835 | 868 | 1568 | - | - |
| HCM Lane V/C Ratio | 0.007 | - | - | 0.319 | 0.011 | 0.007 | - | - |
| HCM Control Delay (s) | 7.9 | - | - | 11.3 | 9.2 | 7.3 | - | - |
| HCM Lane LOS | A | - | - | B | A | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 1.4 | 0 | 0 | - | - |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 70 | 1180 | 143 | 337 | 704 | 455 | 116 | 222 | 541 | 769 | 310 | 65 |
| Future Volume (vph) | 70 | 1180 | 143 | 337 | 704 | 455 | 116 | 222 | 541 | 769 | 310 | 65 |
| Turn Type | pm+pt | NA | Perm | Prot | NA | Free | pm+pt | NA | Free | Prot | NA | Perm |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | | | Free | 2 | | Free | | | 6 |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | | 5 | 2 | | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 |
| Minimum Split (s) | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | | 9.0 | 9.0 | | 9.0 | 9.0 | 9.0 |
| Total Split (s) | 10.0 | 46.0 | 46.0 | 20.0 | 56.0 | | 16.0 | 33.0 | | 31.0 | 48.0 | 48.0 |
| Total Split (%) | 7.7% | 35.4% | 35.4% | 15.4% | 43.1% | | 12.3% | 25.4% | | 23.8% | 36.9% | 36.9% |
| 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) | 1.0 | 2.0 | 2.0 | 1.0 | 2.0 | | 1.0 | 2.0 | | 1.0 | 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) | 4.0 | 5.0 | 5.0 | 4.0 | 5.0 | | 4.0 | 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 | None | | None | None | None |
| Act Effct Green (s) | 48.0 | 41.0 | 41.0 | 15.1 | 52.3 | 113.8 | 23.7 | 12.6 | 113.8 | 27.0 | 29.5 | 29.5 |
| Actuated g/C Ratio | 0.42 | 0.36 | 0.36 | 0.13 | 0.46 | 1.00 | 0.21 | 0.11 | 1.00 | 0.24 | 0.26 | 0.26 |
| v/c Ratio | 0.21 | 0.94 | 0.22 | 0.75 | 0.44 | 0.29 | 0.42 | 0.58 | 0.35 | 0.96 | 0.34 | 0.13 |
| Control Delay | 15.6 | 51.0 | 4.7 | 59.1 | 22.8 | 0.5 | 29.5 | 54.4 | 0.6 | 67.5 | 35.9 | 1.1 |
| 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 | 15.6 | 51.0 | 4.7 | 59.1 | 22.8 | 0.5 | 29.5 | 54.4 | 0.6 | 67.5 | 35.9 | 1.1 |
| LOS | B | D | A | E | C | A | C | D | A | E | D | A |
| Approach Delay | | 44.5 | | | 24.2 | | | 18.0 | | | 55.2 | |
| Approach LOS | | D | | | C | | | B | | | E | |

| Intersection Summary | |
|---|---|
| Cycle Length: 130 | |
| Actuated Cycle Length: 113.8 | |
| Natural Cycle: 90 | |
| Control Type: Semi Act-Uncoord | |
| Maximum v/c Ratio: 0.96 | |
| Intersection Signal Delay: 36.1 | Intersection LOS: D |
| Intersection Capacity Utilization 85.3% | ICU Level of Service E |
| Analysis Period (min) 15 | |

Splits and Phases: 1: Marksheffel Rd & Fountaine Blvd



| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 325 | 85 | 794 | 524 | 100 | 690 |
| Future Volume (vph) | 325 | 85 | 794 | 524 | 100 | 690 |
| Turn Type | Prot | Perm | NA | Perm | pm+pt | NA |
| Protected Phases | 8 | | 2 | | 1 | 6 |
| Permitted Phases | | 8 | | 2 | 6 | |
| Detector Phase | 8 | 8 | 2 | 2 | 1 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Minimum Split (s) | 20.0 | 20.0 | 20.0 | 20.0 | 9.0 | 20.0 |
| Total Split (s) | 20.0 | 20.0 | 60.0 | 60.0 | 10.0 | 70.0 |
| Total Split (%) | 22.2% | 22.2% | 66.7% | 66.7% | 11.1% | 77.8% |
| 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 | | | Lag | Lag | Lead | |
| Lead-Lag Optimize? | | | Yes | Yes | Yes | |
| Recall Mode | None | None | None | None | None | None |
| Act Effct Green (s) | 10.7 | 10.7 | 21.7 | 21.7 | 29.1 | 29.1 |
| Actuated g/C Ratio | 0.21 | 0.21 | 0.43 | 0.43 | 0.58 | 0.58 |
| v/c Ratio | 0.47 | 0.22 | 0.55 | 0.56 | 0.30 | 0.39 |
| Control Delay | 21.9 | 7.2 | 12.8 | 3.5 | 6.8 | 6.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 21.9 | 7.2 | 12.8 | 3.5 | 6.8 | 6.2 |
| LOS | C | A | B | A | A | A |
| Approach Delay | 18.9 | | 9.1 | | | 6.3 |
| Approach LOS | B | | A | | | A |

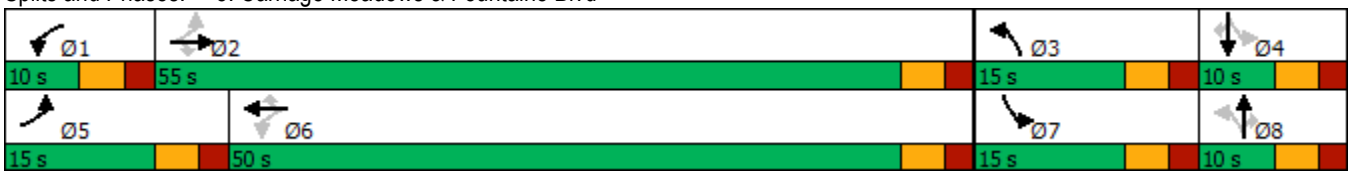
| Intersection Summary | |
|---|---|
| Cycle Length: 90 | |
| Actuated Cycle Length: 50.6 | |
| Natural Cycle: 50 | |
| Control Type: Actuated-Uncoordinated | |
| Maximum v/c Ratio: 0.56 | |
| Intersection Signal Delay: 9.8 | Intersection LOS: A |
| Intersection Capacity Utilization 49.3% | ICU Level of Service A |
| Analysis Period (min) 15 | |

Splits and Phases: 5: Marksheffel Rd & Lorson Blvd

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 231 | 2028 | 231 | 44 | 1190 | 57 | 153 | 8 | 100 | 126 | 10 | 153 |
| Future Volume (vph) | 231 | 2028 | 231 | 44 | 1190 | 57 | 153 | 8 | 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) | 59.8 | 53.8 | 53.8 | 50.0 | 45.0 | 45.0 | 13.7 | 5.1 | 5.1 | 15.5 | 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 | 0.79 | 1.00 | 0.23 | 0.26 | 0.70 | 0.07 | 0.59 | 0.08 | 0.46 | 0.47 | 0.11 | 0.67 |
| Control Delay | 33.5 | 40.5 | 2.7 | 9.8 | 19.9 | 0.2 | 40.6 | 42.0 | 10.1 | 35.8 | 42.8 | 22.0 |
| 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 | 33.5 | 40.5 | 2.7 | 9.8 | 19.9 | 0.2 | 40.6 | 42.0 | 10.1 | 35.8 | 42.8 | 22.0 |
| LOS | C | D | A | A | B | A | D | D | B | D | D | C |
| Approach Delay | | 36.3 | | | 18.7 | | | 28.9 | | | 28.8 | |
| Approach LOS | | D | | | B | | | C | | | C | |

| Intersection Summary | |
|---|---|
| Cycle Length: 90 | |
| Actuated Cycle Length: 89.4 | |
| 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 87.0% | ICU Level of Service E |
| Analysis Period (min) 15 | |

Splits and Phases: 8: Carriage Meadows & Fountaine Blvd



| Intersection | |
|---|---|
| Int Delay, s/veh | 4.8 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 228 | 24 | 8 | 33 | 50 | 233 |
| Future Vol, veh/h | 228 | 24 | 8 | 33 | 50 | 233 |
| 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 | - | 180 | - | - | 155 |
| 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 | 240 | 25 | 8 | 35 | 53 | 245 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 104 | 53 | 298 | 0 | - | 0 |
| Stage 1 | 53 | - | - | - | - | - |
| Stage 2 | 51 | - | - | - | - | - |
| 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 | 894 | 1014 | 1263 | - | - | - |
| Stage 1 | 970 | - | - | - | - | - |
| Stage 2 | 971 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 889 | 1014 | 1263 | - | - | - |
| Mov Cap-2 Maneuver | 889 | - | - | - | - | - |
| Stage 1 | 964 | - | - | - | - | - |
| Stage 2 | 971 | - | - | - | - | - |

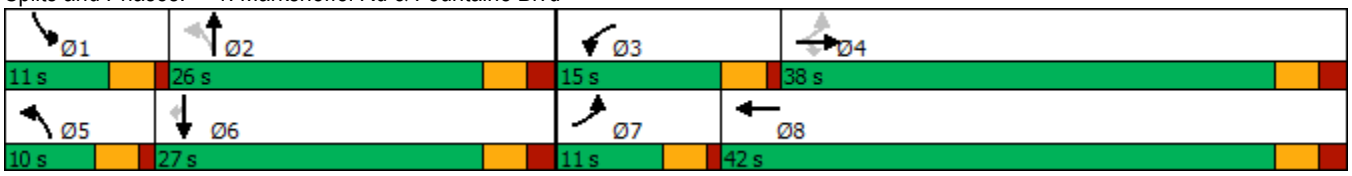
| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 10.7 | 1.5 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1263 | - | 900 | - | - |
| HCM Lane V/C Ratio | 0.007 | - | 0.295 | - | - |
| HCM Control Delay (s) | 7.9 | - | 10.7 | - | - |
| HCM Lane LOS | A | - | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 1.2 | - | - |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 38 | 354 | 48 | 442 | 1024 | 606 | 149 | 527 | 178 | 242 | 516 | 45 |
| Future Volume (vph) | 38 | 354 | 48 | 442 | 1024 | 606 | 149 | 527 | 178 | 242 | 516 | 45 |
| Turn Type | pm+pt | NA | Perm | Prot | NA | Free | pm+pt | NA | Free | Prot | NA | Perm |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | | | Free | 2 | | Free | | | 6 |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | | 5 | 2 | | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 |
| Minimum Split (s) | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | | 9.0 | 9.0 | | 9.0 | 9.0 | 9.0 |
| Total Split (s) | 11.0 | 38.0 | 38.0 | 15.0 | 42.0 | | 10.0 | 26.0 | | 11.0 | 27.0 | 27.0 |
| Total Split (%) | 12.2% | 42.2% | 42.2% | 16.7% | 46.7% | | 11.1% | 28.9% | | 12.2% | 30.0% | 30.0% |
| 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) | 1.0 | 2.0 | 2.0 | 1.0 | 2.0 | | 1.0 | 2.0 | | 1.0 | 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) | 4.0 | 5.0 | 5.0 | 4.0 | 5.0 | | 4.0 | 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 | None | | None | None | None |
| Act Effct Green (s) | 28.9 | 21.3 | 21.3 | 11.5 | 31.2 | 75.6 | 24.1 | 16.8 | 75.6 | 7.3 | 17.8 | 17.8 |
| Actuated g/C Ratio | 0.38 | 0.28 | 0.28 | 0.15 | 0.41 | 1.00 | 0.32 | 0.22 | 1.00 | 0.10 | 0.24 | 0.24 |
| v/c Ratio | 0.16 | 0.36 | 0.10 | 0.87 | 0.74 | 0.40 | 0.55 | 0.71 | 0.12 | 0.75 | 0.65 | 0.10 |
| Control Delay | 11.5 | 21.9 | 0.4 | 53.9 | 23.5 | 0.8 | 27.8 | 34.0 | 0.2 | 52.9 | 31.5 | 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 | 11.5 | 21.9 | 0.4 | 53.9 | 23.5 | 0.8 | 27.8 | 34.0 | 0.2 | 52.9 | 31.5 | 0.4 |
| LOS | B | C | A | D | C | A | C | C | A | D | C | A |
| Approach Delay | | 18.5 | | | 23.1 | | | 25.9 | | | 36.1 | |
| Approach LOS | | B | | | C | | | C | | | D | |

| Intersection Summary | |
|---|---|
| Cycle Length: 90 | |
| Actuated Cycle Length: 75.6 | |
| Natural Cycle: 60 | |
| Control Type: Semi Act-Uncoord | |
| Maximum v/c Ratio: 0.87 | |
| Intersection Signal Delay: 25.7 | Intersection LOS: C |
| Intersection Capacity Utilization 69.2% | ICU Level of Service C |
| Analysis Period (min) 15 | |

Splits and Phases: 1: Marksheffel Rd & Fountaine Blvd



| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 468 | 122 | 732 | 150 | 28 | 978 |
| Future Volume (vph) | 468 | 122 | 732 | 150 | 28 | 978 |
| Turn Type | Prot | Perm | NA | Free | pm+pt | NA |
| Protected Phases | 8 | | 2 | | 1 | 6 |
| Permitted Phases | | 8 | | Free | 6 | |
| Detector Phase | 8 | 8 | 2 | | 1 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 |
| Minimum Split (s) | 20.0 | 20.0 | 20.0 | | 9.0 | 20.0 |
| Total Split (s) | 20.0 | 20.0 | 60.0 | | 10.0 | 70.0 |
| Total Split (%) | 22.2% | 22.2% | 66.7% | | 11.1% | 77.8% |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 |
| Lead/Lag | | | Lag | | Lead | |
| Lead-Lag Optimize? | | | Yes | | Yes | |
| Recall Mode | None | None | None | | None | None |
| Act Effct Green (s) | 12.4 | 12.4 | 20.1 | 44.4 | 21.7 | 21.7 |
| Actuated g/C Ratio | 0.28 | 0.28 | 0.45 | 1.00 | 0.49 | 0.49 |
| v/c Ratio | 0.51 | 0.24 | 0.48 | 0.10 | 0.08 | 0.64 |
| Control Delay | 16.8 | 5.2 | 10.5 | 0.1 | 6.5 | 10.6 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 16.8 | 5.2 | 10.5 | 0.1 | 6.5 | 10.6 |
| LOS | B | A | B | A | A | B |
| Approach Delay | 14.4 | | 8.8 | | | 10.5 |
| Approach LOS | B | | A | | | B |

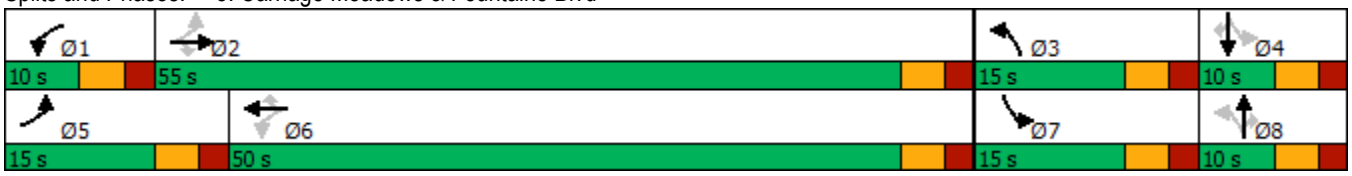
| Intersection Summary | |
|---|---|
| Cycle Length: 90 | |
| Actuated Cycle Length: 44.4 | |
| Natural Cycle: 50 | |
| Control Type: Actuated-Uncoordinated | |
| Maximum v/c Ratio: 0.64 | |
| Intersection Signal Delay: 10.8 | Intersection LOS: B |
| Intersection Capacity Utilization 48.7% | ICU Level of Service A |
| Analysis Period (min) 15 | |

Splits and Phases: 5: Marksheffel Rd & Lorson Blvd

| 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



| Intersection | |
|---|---|
| Int Delay, s/veh | 3.1 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 48 | 0 | 3 | 5 | 0 | 11 | 6 | 48 | 1 | 3 | 15 | 76 |
| Future Vol, veh/h | 48 | 0 | 3 | 5 | 0 | 11 | 6 | 48 | 1 | 3 | 15 | 76 |
| 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 | - | - | - | - | - | - | 180 | - | - | 180 | - | 155 |
| 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 | 51 | 0 | 3 | 5 | 0 | 12 | 6 | 51 | 1 | 3 | 16 | 80 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 92 | 86 | 16 | 128 | 166 | 52 | 96 | 0 | 0 | 52 | 0 | 0 |
| Stage 1 | 22 | 22 | - | 64 | 64 | - | - | - | - | - | - | - |
| Stage 2 | 70 | 64 | - | 64 | 102 | - | - | - | - | - | - | - |
| 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 | 892 | 804 | 1063 | 845 | 727 | 1016 | 1498 | - | - | 1554 | - | - |
| Stage 1 | 996 | 877 | - | 947 | 842 | - | - | - | - | - | - | - |
| Stage 2 | 940 | 842 | - | 947 | 811 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 878 | 799 | 1063 | 839 | 723 | 1016 | 1498 | - | - | 1554 | - | - |
| Mov Cap-2 Maneuver | 878 | 799 | - | 839 | 723 | - | - | - | - | - | - | - |
| Stage 1 | 992 | 875 | - | 943 | 839 | - | - | - | - | - | - | - |
| Stage 2 | 926 | 839 | - | 942 | 809 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 9.3 | 8.8 | 0.8 | 0.2 |
| HCM LOS | A | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1498 | - | - | 887 | 953 | 1554 | - | - |
| HCM Lane V/C Ratio | 0.004 | - | - | 0.061 | 0.018 | 0.002 | - | - |
| HCM Control Delay (s) | 7.4 | - | - | 9.3 | 8.8 | 7.3 | - | - |
| HCM Lane LOS | A | - | - | A | A | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 0.2 | 0.1 | 0 | - | - |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 12.7 |
| Intersection LOS | B |

| Approach | WB | NB | SB |
|---|---|---|---|
| Entry Lanes | 2 | 2 | 2 |
| Conflicting Circle Lanes | 2 | 2 | 2 |
| Adj Approach Flow, veh/h | 621 | 929 | 1058 |
| Demand Flow Rate, veh/h | 634 | 947 | 1080 |
| Vehicles Circulating, veh/h | 786 | 30 | 503 |
| Vehicles Exiting, veh/h | 191 | 1553 | 917 |
| Ped Vol Crossing Leg, #/h | 0 | 0 | 0 |
| Ped Cap Adj | 1.000 | 1.000 | 1.000 |
| Approach Delay, s/veh | 21.7 | 5.9 | 13.4 |
| Approach LOS | C | A | B |

| Lane | Left | Right | Left | Right | Left | Right |
|---|---|---|---|---|---|---|
| Designated Moves | L | TR | LT | TR | LT | TR |
| Assumed Moves | L | TR | LT | TR | LT | TR |
| RT Channelized | | | | | | |
| Lane Util | 0.793 | 0.207 | 0.470 | 0.530 | 0.470 | 0.530 |
| Follow-Up Headway, s | 2.667 | 2.535 | 2.667 | 2.535 | 2.667 | 2.535 |
| Critical Headway, s | 4.645 | 4.328 | 4.645 | 4.328 | 4.645 | 4.328 |
| Entry Flow, veh/h | 503 | 131 | 445 | 502 | 508 | 572 |
| Cap Entry Lane, veh/h | 655 | 728 | 1313 | 1384 | 850 | 926 |
| Entry HV Adj Factor | 0.980 | 0.977 | 0.981 | 0.980 | 0.979 | 0.981 |
| Flow Entry, veh/h | 493 | 128 | 436 | 492 | 497 | 561 |
| Cap Entry, veh/h | 642 | 711 | 1288 | 1357 | 832 | 908 |
| V/C Ratio | 0.768 | 0.180 | 0.339 | 0.363 | 0.598 | 0.618 |
| Control Delay, s/veh | 25.5 | 7.1 | 5.9 | 6.0 | 13.5 | 13.2 |
| LOS | D | A | A | A | B | B |
| 95th %tile Queue, veh | 7 | 1 | 2 | 2 | 4 | 4 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 9.9 |
| Intersection LOS | A |

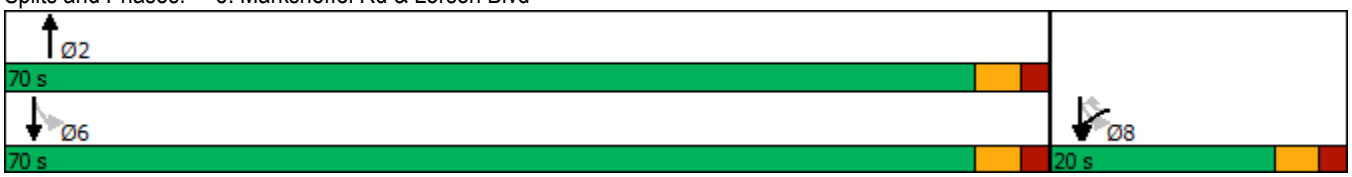
| Approach | WB | NB | SB |
|---|---|---|---|
| Entry Lanes | 2 | 2 | 2 |
| Conflicting Circle Lanes | 2 | 2 | 2 |
| Adj Approach Flow, veh/h | 435 | 1397 | 832 |
| Demand Flow Rate, veh/h | 444 | 1425 | 849 |
| Vehicles Circulating, veh/h | 854 | 107 | 353 |
| Vehicles Exiting, veh/h | 678 | 1095 | 945 |
| Ped Vol Crossing Leg, #/h | 0 | 0 | 0 |
| Ped Cap Adj | 1.000 | 1.000 | 1.000 |
| Approach Delay, s/veh | 14.6 | 9.5 | 8.3 |
| Approach LOS | B | A | A |

| Lane | Left | Right | Left | Right | Left | Right |
|---|---|---|---|---|---|---|
| Designated Moves | L | TR | LT | TR | LT | TR |
| Assumed Moves | L | TR | LT | TR | LT | TR |
| RT Channelized | | | | | | |
| Lane Util | 0.795 | 0.205 | 0.470 | 0.530 | 0.470 | 0.530 |
| Follow-Up Headway, s | 2.667 | 2.535 | 2.667 | 2.535 | 2.667 | 2.535 |
| Critical Headway, s | 4.645 | 4.328 | 4.645 | 4.328 | 4.645 | 4.328 |
| Entry Flow, veh/h | 353 | 91 | 670 | 755 | 399 | 450 |
| Cap Entry Lane, veh/h | 615 | 687 | 1223 | 1297 | 976 | 1052 |
| Entry HV Adj Factor | 0.980 | 0.978 | 0.980 | 0.981 | 0.981 | 0.980 |
| Flow Entry, veh/h | 346 | 89 | 657 | 741 | 391 | 441 |
| Cap Entry, veh/h | 603 | 672 | 1199 | 1272 | 957 | 1031 |
| V/C Ratio | 0.574 | 0.132 | 0.548 | 0.582 | 0.409 | 0.428 |
| Control Delay, s/veh | 16.6 | 6.8 | 9.3 | 9.6 | 8.4 | 8.2 |
| LOS | C | A | A | A | A | A |
| 95th %tile Queue, veh | 4 | 0 | 3 | 4 | 2 | 2 |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT | Ø6 |
|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | |
| Traffic Volume (vph) | 468 | 122 | 732 | 150 | 28 | 978 | |
| Future Volume (vph) | 468 | 122 | 732 | 150 | 28 | 978 | |
| Turn Type | Prot | Perm | NA | Free | Perm | NA | |
| Protected Phases | 8! | | 2 | | | 8 6! | 6 |
| Permitted Phases | | 8 | | Free | 8 6! | | |
| Detector Phase | 8 | 8 | 2 | | 8 6 | 8 6 | |
| Switch Phase | | | | | | | |
| Minimum Initial (s) | 4.0 | 4.0 | 4.0 | | | | 4.0 |
| Minimum Split (s) | 20.0 | 20.0 | 20.0 | | | | 20.0 |
| Total Split (s) | 20.0 | 20.0 | 70.0 | | | | 70.0 |
| Total Split (%) | 22.2% | 22.2% | 77.8% | | | | 78% |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | | | | 3.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | | | | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | | | | |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | | | | |
| Lead/Lag | | | | | | | |
| Lead-Lag Optimize? | | | | | | | |
| Recall Mode | None | None | None | | | | None |
| Act Effct Green (s) | 15.1 | 15.1 | 14.5 | 39.6 | 39.6 | 39.6 | |
| Actuated g/C Ratio | 0.38 | 0.38 | 0.37 | 1.00 | 1.00 | 1.00 | |
| v/c Ratio | 0.73 | 0.19 | 0.60 | 0.10 | 0.05 | 0.31 | |
| Control Delay | 21.3 | 3.5 | 12.2 | 0.1 | 0.2 | 0.3 | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Total Delay | 21.3 | 3.5 | 12.2 | 0.1 | 0.2 | 0.3 | |
| LOS | C | A | B | A | A | A | |
| Approach Delay | 17.7 | | 10.1 | | | 0.2 | |
| Approach LOS | B | | B | | | A | |

| Intersection Summary | |
|---|---|
| Cycle Length: 90 | |
| Actuated Cycle Length: 39.6 | |
| Natural Cycle: 45 | |
| Control Type: Actuated-Uncoordinated | |
| Maximum v/c Ratio: 0.73 | |
| Intersection Signal Delay: 7.9 | Intersection LOS: A |
| Intersection Capacity Utilization 61.3% | ICU Level of Service B |
| Analysis Period (min) 15 | |
| ! Phase conflict between lane groups. | |

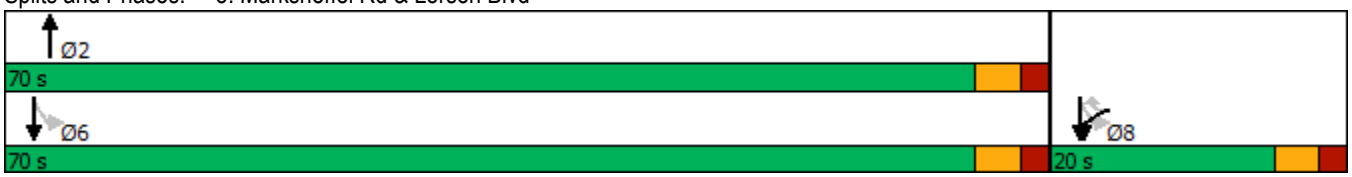
Splits and Phases: 5: Marksheffel Rd & Lorson Blvd



| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT | Ø6 |
|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | |
| Traffic Volume (vph) | 329 | 85 | 795 | 532 | 100 | 691 | |
| Future Volume (vph) | 329 | 85 | 795 | 532 | 100 | 691 | |
| Turn Type | Prot | Perm | NA | Free | Perm | NA | |
| Protected Phases | 8! | | 2 | | | 8 6! | 6 |
| Permitted Phases | | 8 | | Free | 8 6! | | |
| Detector Phase | 8 | 8 | 2 | | 8 6 | 8 6 | |
| Switch Phase | | | | | | | |
| Minimum Initial (s) | 4.0 | 4.0 | 4.0 | | | | 4.0 |
| Minimum Split (s) | 20.0 | 20.0 | 20.0 | | | | 20.0 |
| Total Split (s) | 20.0 | 20.0 | 70.0 | | | | 70.0 |
| Total Split (%) | 22.2% | 22.2% | 77.8% | | | | 78% |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | | | | 3.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | | | | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | | | | |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | | | | |
| Lead/Lag | | | | | | | |
| Lead-Lag Optimize? | | | | | | | |
| Recall Mode | None | None | None | | | | None |
| Act Effct Green (s) | 15.1 | 15.1 | 15.8 | 40.9 | 40.9 | 40.9 | |
| Actuated g/C Ratio | 0.37 | 0.37 | 0.39 | 1.00 | 1.00 | 1.00 | |
| v/c Ratio | 0.53 | 0.14 | 0.61 | 0.35 | 0.21 | 0.22 | |
| Control Delay | 14.7 | 3.9 | 12.1 | 0.6 | 0.9 | 0.2 | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Total Delay | 14.7 | 3.9 | 12.1 | 0.6 | 0.9 | 0.2 | |
| LOS | B | A | B | A | A | A | |
| Approach Delay | 12.5 | | 7.5 | | | 0.3 | |
| Approach LOS | B | | A | | | A | |

| Intersection Summary | |
|---|---|
| Cycle Length: 90 | |
| Actuated Cycle Length: 40.9 | |
| Natural Cycle: 40 | |
| Control Type: Actuated-Uncoordinated | |
| Maximum v/c Ratio: 0.61 | |
| Intersection Signal Delay: 6.1 | Intersection LOS: A |
| Intersection Capacity Utilization 58.2% | ICU Level of Service B |
| Analysis Period (min) 15 | |
| ! Phase conflict between lane groups. | |

Splits and Phases: 5: Marksheffel Rd & Lorson Blvd



# Queuing Reports

TRANSPORTATION
CONSULTANTS, INC.

# Queuing and Blocking Report

## Intersection: 8: Carriage Meadows & Fountaine Blvd

| Movement | EB | WB | NB | NB | NB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|
| Directions Served | L | L | L | T | R | L | T | R |
| Maximum Queue (ft) | 52 | 6 | 82 | 37 | 21 | 10 | 10 | 79 |
| Average Queue (ft) | 9 | 0 | 29 | 3 | 3 | 0 | 0 | 31 |
| 95th Queue (ft) | 27 | 3 | 66 | 19 | 14 | 6 | 6 | 58 |
| Link Distance (ft) | | | | 540 | | 218 | 218 | 218 |
| Upstream Blk Time (%) | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | |
| Storage Bay Dist (ft) | 400 | 375 | 85 | | 50 | | | |
| Storage Blk Time (%) | | | 1 | 0 | | | | |
| Queuing Penalty (veh) | | | 0 | 0 | | | | |

# Queuing and Blocking Report

## Intersection: 8: Carriage Meadows & Fountaine Blvd

| Movement | EB | WB | NB | NB | NB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|
| Directions Served | L | L | L | T | R | L | T | R |
| Maximum Queue (ft) | 53 | 7 | 77 | 26 | 12 | 17 | 30 | 60 |
| Average Queue (ft) | 17 | 0 | 20 | 1 | 1 | 1 | 2 | 26 |
| 95th Queue (ft) | 37 | 4 | 53 | 14 | 7 | 7 | 15 | 50 |
| Link Distance (ft) | | | | 540 | | 218 | 218 | 218 |
| Upstream Blk Time (%) | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | |
| Storage Bay Dist (ft) | 400 | 375 | 85 | | 50 | | | |
| Storage Blk Time (%) | | | 0 | 0 | | | | |
| Queuing Penalty (veh) | | | 0 | 0 | | | | |

# Queuing and Blocking Report

## Intersection: 8: Carriage Meadows & Fountaine Blvd

| Movement | EB | EB | EB | EB | WB | WB | WB | WB | NB | NB | NB | SB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | T | T | R | L | T | T | R | L | T | R | L |
| Maximum Queue (ft) | 241 | 940 | 970 | 260 | 69 | 292 | 292 | 35 | 204 | 37 | 106 | 146 |
| Average Queue (ft) | 93 | 322 | 422 | 32 | 23 | 166 | 145 | 8 | 103 | 8 | 46 | 75 |
| 95th Queue (ft) | 180 | 746 | 959 | 169 | 53 | 273 | 250 | 24 | 173 | 28 | 90 | 132 |
| Link Distance (ft) | | 909 | 909 | 909 | | 541 | 541 | | | 478 | | 218 |
| Upstream Blk Time (%) | | 0 | 1 | 0 | | | | | | | | |
| Queuing Penalty (veh) | | 1 | 10 | 0 | | | | | | | | |
| Storage Bay Dist (ft) | 400 | | | | 375 | | | 250 | 250 | | 155 | |
| Storage Blk Time (%) | | 0 | | | | | 0 | | 0 | | | |
| Queuing Penalty (veh) | | 1 | | | | | 0 | | 0 | | | |

## Intersection: 8: Carriage Meadows & Fountaine Blvd

| Movement | SB | SB |
|---|---|---|
| Directions Served | T | R |
| Maximum Queue (ft) | 47 | 141 |
| Average Queue (ft) | 12 | 63 |
| 95th Queue (ft) | 39 | 116 |
| Link Distance (ft) | 218 | 218 |
| Upstream Blk Time (%) | | 0 |
| Queuing Penalty (veh) | | 0 |
| Storage Bay Dist (ft) | | |
| Storage Blk Time (%) | | |
| Queuing Penalty (veh) | | |

## Intersection: 22: Carriage Meadows & Future Retail Access/CMS Multifamily Access

| Movement | EB | WB | NB | SB |
|---|---|---|---|---|
| Directions Served | LTR | LTR | L | R |
| Maximum Queue (ft) | 109 | 31 | 12 | 4 |
| Average Queue (ft) | 45 | 8 | 1 | 0 |
| 95th Queue (ft) | 81 | 31 | 9 | 4 |
| Link Distance (ft) | 245 | 372 | | |
| Upstream Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |
| Storage Bay Dist (ft) | | | 180 | 155 |
| Storage Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |

## Zone Summary

Zone wide Queuing Penalty: 13