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Sterling Ranch East Filing No. 6
Traffic Impact Study
PCD File No. SF2610
(LSC #S244252)
August 14, 2026

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.

A handwritten signature in blue ink, followed by the initials 'J.P.' and a horizontal line.

A handwritten date '8/17/2026' in blue ink, followed by a horizontal line and the word 'Date'.

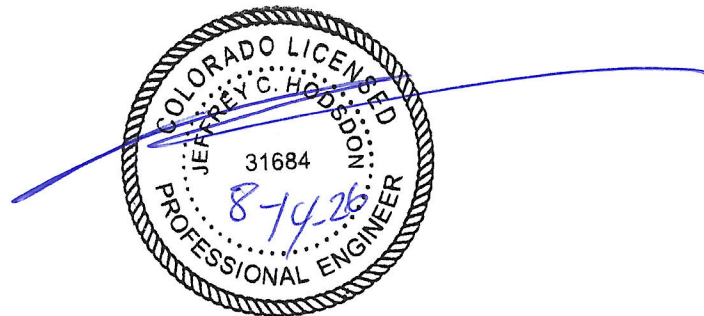


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Date

Sterling Ranch East Filing No. 6

Traffic Impact Study

Prepared for:
Loren J. Moreland
Vice President/ Project Manager
Classic SRJ
2138 Flying Horse Club Drive
Colorado Springs, CO 80921

AUGUST 13, 2026

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

LSC #S244252
PCD File No.: SF2610

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August 13, 2026

Loren J. Moreland
Vice President/ Project Manager
Classic SRJ
2138 Flying Horse Club Drive
Colorado Springs, CO 80921

RE: Sterling Ranch East Filing No. 6
Traffic Impact Study
El Paso County, Colorado
PCD File No.: [P2414](#) and [SP244](#)
LSC #S244251

Dear Mr. Moreland:

LSC Transportation Consultants, Inc. has prepared this updated Traffic Impact Study for the proposed Sterling Ranch Filing No. 6 rezone and preliminary plat. As shown in Figure 1, the site is located east of the future Sterling Ranch Road and north of the future Briargate Parkway in El Paso County, Colorado.

REPORT CONTENTS

The preparation of this report included the following:

- A list of previous Sterling Ranch traffic reports and the context of this project;
- The existing roadway and traffic conditions in the site's vicinity including the roadway widths, surface conditions, lane geometries, traffic controls, and posted speed limits;
- A summary of the proposed land use and access plan;
- Existing traffic-volume data;
- Estimates of projected short-term and long-term baseline traffic volumes;
- The projected average weekday and peak-hour vehicle trips to be generated by the proposed future development within the preliminary plan area;
- The assignment of the projected preliminary-plan site-generated traffic volumes to the area roadways;
- The projected short-term and long-term total traffic volumes on the area roadways;
- The projected levels of service at the key intersections within the study area;
- Signal-warrant analysis;
- The recommended street classifications;
- Findings and recommendations for study-area roadways and intersections, including number of lanes, auxiliary turn lanes, intersection traffic control, etc.; and
- The project's obligation to the County roadway improvement fee program.

RECENT TRAFFIC REPORTS

Most recently, LSC prepared a TIS for Sterling Ranch East Filing No. 4 dated June 25, 2026. Several elements of this report, including existing and total traffic volumes, level of service, and traffic signal warrant analysis have been taken directly from that report.

The master traffic impact study (MTIS) by LSC for the entire Sterling Ranch development is dated March 17, 2023 ([SKP224](#)). LSC also prepared a technical memorandum for the Sterling Ranch Amendment #3 dated January 17, 2024 ([SKP235](#), [P239](#), [P2310](#), and [P2311](#)) and for Sterling Ranch Amendment #4 dated November 18, 2024 ([SKP241](#)). Appendix Table 1, which includes a list of other traffic studies within Sterling Ranch and in the vicinity of area of study completed within the past five years (that LSC is aware of), is attached for reference.

El Paso County recently studied the Briargate Stapleton Corridor as part of a Pikes Peak Rural Transportation Authority (PPRTA) study. The final version of the *Briargate-Stapleton Corridor Study* by Wilson & Company was published December 7, 2023.

STUDY AREA

Figure 1 shows the location of Sterling Ranch East Filing No. 6 relative to the overall Sterling Ranch Sketch Plan Area. As shown in Figure 1, the site is located generally in the middle of the Sketch Plan Area adjacent to the future extensions of Sterling Ranch Road and Briargate Parkway.

Land Use

Figure 2 shows the proposed Sterling Ranch Filing No. 6. The site is planned to be developed with 198 residential dwelling units.

Pedestrian Plan

Detached sidewalks will be provided along Briargate Parkway and Sterling Ranch Road. The multi-use paved shoulder on Sterling Ranch Road will accommodate bicycles. Attached 5-foot-wide concrete sidewalks are planned on all of the local streets within Sterling Ranch East Filing No. 6.

There are no existing schools within two miles of the site. However, there are multiple future school sites in the area, including a future K-8 school site southwest of the site (south of Briargate Parkway and west of Sterling Ranch Road) and an elementary school site further south of Briargate Parkway and east of Sterling Ranch Road. No information or plans are available for the school sites and separate site-specific traffic impact studies including pedestrian plans will be required to be approved prior to school-site development.

Proposed Access Points

Figure 3 shows the roadway connections that have been completed and are planned to be constructed in the short term.

Figure 2 shows the proposed access plan. Full-movement access points are proposed to Sterling Ranch Road and Oshkosh Road. The proposed spacing is greater than the 330-foot minimum intersection spacing for Urban Non-Residential Collectors when intersecting local roadways, per criteria contained in Table 2-7 of the *El Paso County Engineering Criteria Manual (ECM)*.

An additional right-in/right-out access is proposed to Briargate Parkway about 1,350 feet east of Sterling Ranch Road. A deviation request was approved for this access with the Preliminary Plan (PCD File No. [SF 2404](#)) The Master TIS showed a right-in/right-out only access point in this general location.

Sight Distance Analysis

Figure 4a shows the intersection sight-distance analysis at the intersections of Sterling Ranch Road (Urban Minor Collector)/Vancouver Street (Urban Local), Sterling Ranch Road (Urban Minor Collector)/Oshkosh Road (Urban Minor Collector), and Oshkosh Road (Urban Minor Collector)/Sioux Falls Way (Urban Local). Based on a design speed of 40 miles per hour (mph) and the criteria contained in Table 2-21 of the *ECM*, the required intersection sight distance at these intersections is 445 feet. As shown in Figure 4a, the intersection sight distance can be met at all three intersections.

Figure 4b shows the intersection sight-distance analysis at the proposed right-in/right-out only access (Sioux Falls Way) to Briargate Parkway (Principal Arterial). Based on a design speed of 50 miles per hour (mph) and the criteria contained in Table 2-21 of the *ECM*, the required intersection sight distance at the future intersections is 555 feet. As shown on Figure 4b the intersection sight distance can be met at these intersections.

REPORT SCENARIOS

Short-Term Scenario

The short-term scenario includes the roadway segments to be added in the short term only, as shown in Figure 3. This scenario includes the Sterling Ranch East Filing No. 6 area ("the site") as well as traffic to be generated in the short term by buildout of the planned Sterling Ranch East Filing Nos. 4 and 8 developments, the approved filings within Sterling Ranch East Preliminary Plan 1 (Sterling Ranch East Filings 1 and 2), Sterling Ranch East Filing 5 and the Villages at Sterling Ranch East. See Appendix Table 1 for the PCD file numbers associated with the above-mentioned projects. The short-term scenario also assumes some of the existing traffic from the Retreat at

TimberRidge Filing No. 1 north of the site will be shifted to use the new connection through the Sterling Ranch East Filing No. 4.

Note that the short-term scenario assumes no traffic due to the future school sites within the Sterling Ranch East Preliminary Plan 1. Trips projected from these other short-term developments outside of the Sterling Ranch East Filing No. 4 boundary are included as short-term “background traffic” in this report.

Long-Term Scenario

The long-term scenario is essentially the same as the 2045 long-term scenario contained in the approved *Sterling Ranch Sketch Plan Amendment #4 and Sterling Ranch East Filing No. 7 Site Rezone Traffic Impact Study* by LSC dated November 18, 2024 with additional detail added for this application.

The study area of this report is more focused than the Sketch Plan. Included is analysis of the Arterial/Arterial and Arterial/Collector intersections adjacent to the existing, approved, and currently proposed areas within the Sterling Ranch Sketch Plan Area (Briargate Parkway/Vollmer Road [#4], Briargate Parkway/Sterling Ranch Road [#5], Research Parkway/Marksheffel Road/Vollmer Road [#12], and Marksheffel Road/Sterling Ranch Road [#13]), and new analysis of Arterial/Local and Collector/Local intersections adjacent to the site Briargate Parkway/Sioux Falls Way (#104), Sterling Ranch Road/Vancouver Street [#309] and Sterling Ranch Road/Oshkosh Road (#310).

EXISTING ROAD AND TRAFFIC CONDITIONS

The adjacent streets are shown in Figure 1 and are described below. Excerpts from the 2024 *El Paso County Major Transportation Corridors Plan (MTCP) 2045 Roadway Functional Classifications (Figure 22) and 2065 Corridor Preservation Plan (Figure 39)* with the site location identified on them have been attached to this report. The 2045 and 2065 *Through Lane Requirements* (Figures 23 and 40, respectively) are also reflected in this report.

Vollmer Road is currently a five-lane urban street within the City of Colorado Springs limits between Black Forest Road and Cowpoke Road and a two-lane, rural, paved roadway north of Cowpoke Road extending to north of Hodgen Road. In the southbound direction, Vollmer Road has a posted speed limit of 45 mph. South of Cowpoke Road, Vollmer Road has a 40-mph posted speed limit. Note: the new *Connect COS* City of Colorado Springs transportation plan shows Vollmer as a Principal Arterial. The 2024 *MTCP* shows Vollmer Road as an Urban – Major Collector in the vicinity of the site. The South Vollmer Road improvements ([CDR2116](#)) which provided two through lanes in each direction on Vollmer Road in the vicinity of Marksheffel Road were recently completed.

The North Vollmer Road improvements ([CDR217](#)), which provided two through lanes in each direction on Vollmer Road in the vicinity of Briargate Parkway were recently completed.

Marksheffel Road is a Principal Arterial extending north from the City of Fountain to Woodmen Road. Marksheffel Road is planned to ultimately be widened to six lanes and extended north and west from Woodmen Road to connect to Research Parkway at Black Forest Road. Marksheffel Road is shown as a four-lane Principal Arterial through the site on the El Paso County *MTCP*. The City of Colorado Springs has taken ownership and maintenance of Marksheffel Road.

The section of Marksheffel Road adjacent to Sterling Ranch has been constructed on 107 feet of right-of-way to the City's required cross section(s) and criteria. The section of Marksheffel Road southeast of Sterling Ranch Road was completed in November 2024 and Marksheffel Road is now open between Woodmen Road and Vollmer Road.

Briargate Parkway is a Principal Arterial that extends east from I-25 to Grand Lawn Circle (about one-half mile east of Powers Boulevard). Briargate Parkway is planned ultimately to extend to Towner Drive. The segment of Briargate Parkway between Vollmer Road and Sterling Ranch Road was recently constructed to its full-lane cross section ([CDR 221](#)).

Sterling Ranch Road is an Urban Non-Residential Collector shown extending through the Sterling Ranch development between Marksheffel Road and the north end of the Sketch Plan area (Arroya Road). Sterling Ranch Road has been constructed between Marksheffel Road and Briargate Parkway. Sections north of Briargate Parkway are planned in the short-term Sterling Ranch East Filings No. 2, Sterling Ranch East Filing No. 6, and/or Sterling Ranch East Filing No. 8.

Existing Traffic Volumes

Figure 5a shows the existing peak-hour traffic volumes at the key study-area intersections. The peak-hour traffic volumes shown are based on manual turning-movement counts by LSC Transportation Consultants in March 2025. The traffic-count sheets 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 intersections. LOS F represents control delay of more than 50 seconds for unsignalized intersections. Table 1 shows the level of service delay ranges.

Table 1: Intersection Levels of Service Delay Ranges

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

The intersections of Marksheffel Road/Vollmer Road, Briargate/Vollmer, and Marksheffel/Sterling Ranch have been analyzed based on the unsignalized-intersection analysis procedures from the *Highway Capacity Manual, 6th Edition* by the Transportation Research Board. The results of the analysis are shown in Figure 5b.

All movements at the two-way, stop-sign-controlled intersections of Briargate/Vollmer, Marksheffel/Vollmer and Marksheffel/Sterling Ranch are currently operating at LOS C or better during the peak hours.

Safety and Accident Analysis

LSC obtained three-year crash history data from the Colorado Department of Transportation for Vollmer Road and Marksheffel Road adjacent to the Sterling Ranch Sketch Plan area. One single vehicle crash was reported at the intersection of Vollmer Road/Briargate Parkway (#4) in December 2024. The vehicle was making a right-turn and hit a sign and the curb. One non-intersection related crash was reported in the vicinity of Vollmer Road/Marksheffel Road (#12) in September 2025. The crash involved a fatigued driver that ran off the left side of the road. No crashes were reported at the intersection of Marksheffel Road/Sterling Ranch Road (#13).

BASELINE CONDITIONS

Baseline traffic is the traffic estimated to be on the adjacent roadways and at adjacent intersections without the proposed development's trip generation of site-generated traffic volumes. Baseline traffic (for a specified horizon year) includes the through traffic and the traffic generated by nearby developments (existing and planned, including traffic generated by existing and planned developments within the greater Sterling Ranch overall development) but assumes zero traffic generated by land uses within the site (the Sterling Ranch East Filing No. 6 boundary area).

Short-Term Scenario Baseline Conditions

Please refer to the description of the short-term scenario above. Projected volumes for the short-term baseline are included in the short-term total volumes. Figure 6a shows the short-term background traffic volumes on key street segments and at the key area intersections.

Note: the short-term baseline scenario assumes only the following approved subdivisions to be developed and generating trips (in the short term): Sterling Ranch East Preliminary Plan 1 (Filing Nos 1, 2, and 3), Villages at Sterling Ranch, Sterling Ranch East Filing No. 5, Sterling Ranch East Filing No. 4 and Sterling Ranch East Filing No. 8. No potential future traffic generation due to future school sites within Sterling Ranch East Preliminary Plan 1 are included in the short-term background volumes. The short-term scenario also assumes some of the existing traffic from the Retreat at TimberRidge Filing No. 1 north of the site will be shifted to use the new connection through the Sterling Ranch East Filing No. 4.

Long-Term Scenario Baseline Conditions

Figure 7a shows the projected 2045 baseline/background daily traffic volumes on key street segments and the projected 2045 peak-hour baseline turning movement traffic volumes at the key area intersections. These volumes assume buildout of the area street network, including the completion of Marksheffel Road between Vollmer Road and Black Forest Road, Briargate Parkway between Meridian Road and Black Forest Road, and Sterling Ranch Road between Marksheffel Road and Briargate Parkway.

The 2045 baseline traffic volumes are estimates by LSC, based on the traffic projections in the LSC September 13, 2024 Master TIS Addendum. The 2045 baseline daily traffic volumes assume buildout of the land uses within the Sterling Ranch Master Plan that are not included in the Sterling Ranch Filing No. 6 Preliminary Plan area, including the preliminary estimates of future traffic to be generated by the Sterling Ranch school sites. The estimates of future school trip generation and traffic volumes at intersections are only preliminary estimates because no school site plans/student enrollment numbers etc. are available. The long-term scenario also assumes some of the existing traffic from the Retreat at TimberRidge Filing No. 1 north of the site will be

shifted to use the new connection through the Sterling Ranch East Filing No. 4 (in conjunction with development of Filing No. 4).

TRIP GENERATION

The site-generated vehicle trips were estimated using the nationally-published trip-generation rates from *Trip Generation, 12th Edition, 2025*¹ by the Institute of Transportation Engineers (ITE). Table 2 shows the trip-generation estimates. Table 2 also shows the trip-generation estimate assumed for the same area in the Sterling Ranch MTIS for comparison. Note that the trip-generation estimate in the Sterling Ranch MTIS was based on the trip-generation rates from the 11th edition of Trip Generation.

Sterling Ranch East Filing No. 6 is projected to generate about 1,800 new external vehicle trips on the average weekday, with about half entering and half exiting the site during a 24-hour period. This is about 67 fewer vehicle trips per day than were assumed for the same area in the MTIS. During the morning peak hour, which generally occurs for one hour between 6:30 and 8:30 a.m., about 37 vehicles would enter and 101 vehicles would exit the site. During the afternoon peak hour, which generally occurs for one hour between 4:15 and 6:15 p.m., about 114 vehicles would enter and 70 vehicles would exit the site.

TRIP DISTRIBUTION AND ASSIGNMENT

The directional distribution of the site-generated traffic volumes on the street and roadway system serving the site is an important factor in determining the site's traffic impacts. The distribution estimates for short-term and long-term residential-related traffic are shown in Figure 8. The short-term directional-distribution estimate assumes the short-term roadway network shown in Figure 3 only and the long-term directional-distribution estimate assumes buildout of the roadway network. The directional-distribution estimates are based, in part, on the estimates contained in the sketch plan MTIS report. Factors include: the location of the site with respect to the Colorado Springs metropolitan area, the planned access system for the site, the street and roadway system serving the site, and the land uses proposed for the site.

When the distribution percentages (from Figure 8) are applied to the new, external trip-generation estimates (from Table 2), the resulting site-generated traffic volumes can be determined. Figure 9 shows the short-term site-generated traffic volumes. These volumes assume only the street network shown in Figure 3. Figure 10 shows the long-term residential site-generated traffic volumes, assuming buildout of the area roadway network.

TOTAL TRAFFIC

Short-Term Total Traffic

Figure 11a shows the projected short-term **total** daily traffic volumes on key street segments and the projected short-term-total peak-hour traffic volumes at the key study-area intersections. These volumes include short-term-baseline traffic volumes and short-term site-generated traffic volumes (from Figure 9).

Figure 11b shows the level of service analysis results for the key area intersections based on the projected short-term total volumes. The figure also shows the general intersection lane geometry and intersection traffic control used in the analysis.

2045 Total Traffic

Figure 12a shows the projected 2045 total daily traffic volumes on key street segments and the projected 2045 total peak-hour traffic volumes at the key study-area intersections. These volumes are the sum of the 2045 baseline traffic volumes and the long-term site-generated traffic volumes (from Figure 10).

Figure 12b shows the level of service analysis results for the key area intersections, based on the projected 2045 total volumes. The figure also shows the general intersection lane geometry and intersection traffic control used in the analysis.

SIGNAL-WARRANT-THRESHOLD ANALYSIS

The intersections of Marksheffel/Vollmer and Marksheffel/Sterling Ranch were analyzed to determine if the thresholds for Four-Hour and/or Eight-Hour Vehicular-Volume Traffic-Signal Warrant thresholds would be reached or exceeded, based on the projected short-term peak-hour traffic volumes and the criteria contained in the *Manual of Uniform Traffic Control Devices* 11th Edition, December 2023 (*MUTCD*). The *MUTCD* contains nine traffic signal warrants. However, for evaluation of the intersections listed above, only Warrant Nos. 1, 2 and 7 would likely apply. This report includes analysis of Warrant Nos. 12 and 7.

This warrant analysis is primarily a predictive analysis of the warrants based on the traffic data collected and projected conditions/estimates of short-term future traffic volumes. This has been completed for purposes of estimating the timing when an *MUTCD* warrant would potentially be satisfied.

Prior to installation of a traffic signal, the following from *MUTCD* Section 4C.01 would apply:

[..] before a traffic control signal is installed at a particular location, an engineering study of traffic conditions, pedestrian characteristics, and physical characteristics of the location

shall be performed to determine whether installation of a traffic control signal is justified at that location.

The following regarding projected/predictive warrants is per MUTCD Section 4C.01

At a location that is under development or construction or at a location where it is not possible to obtain a traffic count that would represent future traffic conditions, hourly volumes should be estimated as part of an engineering study for comparison with traffic signal warrants. Except for locations where the engineering study uses the satisfaction of Warrant 8 to justify a signal, a traffic control signal installed under projected conditions should have an engineering study done within 1 year of putting the signal into steady (stop-and-go) operation to determine if the signal is justified. If not justified, the signal should be taken out of steady (stop-and-go) operation or removed.

Marksheffel Road/Vollmer Road

Table 3 shows the results of the analysis for the intersection of Marksheffel/Vollmer. Based on the projected short-term total traffic volumes, none of the hours analyzed are projected to meet the criteria for a Four-Hour Vehicular Volume Warrant and only six hours of the day are projected to meet the criteria for an Eight-Hour Vehicular-Volume Traffic-Signal Warrant. This analysis indicates that traffic-signal warrant(s) will likely **not** be met in the short-term.

Based on the three-year crash history data discussed above this intersection does not currently meet the criteria for Warrant 7 Crash Experience.

Marksheffel Road/Sterling Ranch Road

Table 4 shows the results of the analysis for the intersection of Marksheffel Road/Sterling Ranch Road. Based on the projected short-term total traffic volumes, only seven hours of the day are projected to meet the criteria for an Eight-Hour Vehicular-Volume Warrant, however, six hours of the day are projected to meet the criteria for a Four-Hour Vehicular-Volume Traffic-Signal Warrant. This analysis indicates that traffic-signal Warrant 2 has the potential to be satisfied in the short-term.

Based on the three-year crash history data discussed above this intersection does not currently meet the criteria for Warrant 7 Crash Experience.

LEVEL OF SERVICE ANALYSIS

The key area future signalized intersections have been analyzed to determine the projected intersection levels of service for short-term and 2045 total traffic scenarios for the morning and afternoon peak-hour periods using Synchro. The key area future stop-sign-controlled and modern-roundabout-controlled intersections have been analyzed based on the unsignalized-intersection analysis procedures from the *Highway Capacity Manual 6th Edition*. Figures 11b and 12b_ show the level of service analysis results. The level of service reports are attached.

Intersection #4: Vollmer Road/Briargate Parkway

The intersection of Vollmer/Briargate could operate at a satisfactory level of service (LOS C or better) in the short term as a stop-sign-controlled intersection.

By 2045, it was assumed Briargate Parkway would be extended west to Black Forest Road and East to Towner Avenue and that the intersection of Vollmer/Briargate will be converted to traffic-signal control. The intersection of Vollmer/Briargate is projected to operate at an overall LOS C during the peak hours as a signalized intersection, based on the projected 2045 total traffic volumes shown in Figure 12a and the lane geometry shown in Figure 12b.

Intersection #5: Briargate Parkway/Sterling Ranch Road

The intersection of Briargate/Sterling Ranch is projected to operate at LOS C or better for all movements in the short term as a stop-sign-controlled intersection.

By 2045, it was assumed Briargate Parkway would be extended west to Black Forest Road and East to Towner Avenue and that the intersection of Briargate/Sterling Ranch will be converted to traffic-signal control. The intersection of Briargate/Sterling Ranch is projected to operate at an overall LOS C during the peak hours as a signalized intersection, based on the projected 2045 total traffic volumes shown in Figure 12a and the lane geometry shown in Figure 12b.

Intersection #12: Marksheffel Road/Vollmer Road

Based on the projected short-term total traffic volumes, the westbound left-turn movement at the intersection of Marksheffel/Vollmer is projected to operate at LOS F during the morning and afternoon peak hours. This intersection is planned as a future signalized intersection. However, as discussed in the Signal Warrant Analysis section above, traffic-signal warrant(s) may not be met in the short term. It is not uncommon for the minor movements at a stop-sign-controlled intersection to operate at LOS E or F as the traffic volumes approach the levels needed to meet vehicular-volume traffic-signal warrants.

By 2045, it was assumed that Marksheffel Road would be constructed west to Briargate Parkway and that the intersection of Marksheffel/Vollmer will be converted to traffic-signal control. The intersection of Marksheffel/Vollmer is projected to operate at an overall LOS C or better during the peak hours as a signalized intersection, based on the projected 2045 total traffic volumes shown in Figure 12a and the lane geometry shown in Figure 12b.

Intersection #13: Marksheffel Road/Sterling Ranch Road

The final section of Marksheffel Road between Vollmer Road and Woodmen Road was recently opened. Based on the projected short-term total traffic volumes, the southbound left-turn movement is projected to operate at LOS F during the morning and afternoon peak hours if it remains stop-sign controlled. As discussed in the Signal Warrant Analysis section above, this intersection is expected to meet a Four-Hour Vehicular-Volume Traffic-Signal Warrant following buildout of the Sterling Ranch parcels assumed in the short-term baseline scenario. If this intersection is converted to signal control, it is projected to operate at an overall LOS C or better during the peak hours, through 2045.

Intersection #104 Briargate Parkway/Sioux Falls Way

The intersection of Briargate/Sioux Falls is projected to operate at LOS B or better for all movements as a limited access stop-sign-controlled intersection, based on the projected short-term and 2045 total traffic volumes.

Intersection #309 Sterling Ranch Road/Vancouver Street

The intersection of Sterling Ranch/Vancouver Street is projected to operate at LOS C or better for all movements as a stop-sign-controlled intersection, based on the projected short-term and 2045 total traffic volumes.

Intersection #310 Sterling Ranch Road/Oshkosh Road

The intersection of Sterling Ranch/Oshkosh Road is projected to operate at LOS C or better for all movements as a stop-sign controlled intersection, based on the projected short-term and 2045 total traffic volumes.

ROADWAY FUNCTIONAL CLASSIFICATIONS AND LANEAGE

Figure 13 shows the recommended functional classifications for the Filing No. 6 subdivision streets, and adjacent collector/arterial roads. The figure also shows the number of through (travel) lanes for the streets in the study area.

RECOMMENDED IMPROVEMENTS

Intersection Improvements

Figures 11b and 12b show the intersection traffic control and lane schematic diagrams. The intersection diagrams indicate with arrows where exclusive auxiliary turn lanes should be provided.

Table 5 shows detailed **intersection** improvements summary. Improvements needed with Sterling Ranch Filing No. 6 have been noted as such. The recommended improvements are based on the short-term and 2045 total traffic volumes shown in Figures 11a and 12a and the criteria contained in the El Paso County *Engineering Criteria Manual (ECM)*. The following auxiliary lanes will be required with the currently-proposed Sterling Ranch East Filing No. 6:

- A westbound left-turn lane on Briargate Parkway approaching Sterling Ranch Road. This lane should be 285 feet long plus a 180-foot taper.
- A westbound right-turn deceleration lane on Briargate Parkway approaching Sterling Ranch Road. This lane should be 235 feet long plus a 180-foot taper.
- A westbound right-turn deceleration lane on Briargate Parkway approaching Sioux Falls Way. This lane should be 235 feet long plus a 180-foot taper.
- A southbound left-turn lane on Sterling Ranch Road approaching Vancouver Street. A center painted median is part of the standard Urban Minor Collector cross section.
- A northbound right-turn deceleration lane on Sterling Ranch Road approaching Vancouver Street. This lane should be 155 feet long plus a 160-foot taper.

The following auxiliary lane is shown because it is part of the plat. However, the SRE Filing No. 6 traffic for this turning movement would represent a relatively small percentage of the 2045 total traffic volumes shown in Figures 12a. The threshold turning volume would not be reached in the short term with development of this subdivision.

- A northbound right-turn deceleration lane on Sterling Ranch Road approaching Oshkosh Road. This lane should be 155 feet long plus a 160-foot taper.

The following auxiliary lane would be needed based on the 2045 background and total traffic volumes shown in Figures 7a and 12a. SRE Filing No. 6 would add negligible, if any, traffic to the turning movements triggering the requirement for these lanes. However, these have been included for completeness and per EPC staff request.

A northbound-to-eastbound right-turn acceleration lane on Briargate Parkway at Sterling Ranch Road. This lane should be 580 feet long plus a 180-foot taper.

Intersection Traffic Control Upgrades (Future Traffic Signals)

The figures show intersections as stop-sign controlled or as signalized intersections.

For intersections shown with future traffic signal control, please refer to the escrow section below for the site-generated estimate percent impact of Filing 6 contributing to the warrant threshold volumes. The nearest intersection – Briargate/Sterling Ranch Road is included, as are other offsite intersections along Vollmer Road and Marksheffel Road.

Roadway Segment Improvements

Table 6 is the **overall** list of Sterling Ranch/Sterling Ranch East area roadway-segment improvements. Please refer to Figure 14, which provides a graphic/map of the roadway-segments by identifier number and timing (short-, intermediate-, and long-term). These recommendations are consistent with the LSC MTIS for the Sterling Ranch Sketch Plan Amendment #4, dated February 18, 2024 ([SKP224](#)).

Notes specific to **SRE Filing No. 6** have been added to Table 6 and Figure 3.

DEVIATION REQUESTS

A deviation to the criteria contained in *Land Development Code (LDC)* and the *El Paso County Engineering Criteria Manual (ECM)* to allow for the proposed right-in/right-out access to Briargate Parkway east of Sterling Ranch Road was approved with the Preliminary Plan (PCD File No. [SF 2404](#)).

AREA MTCP 2050 ROADWAY IMPROVEMENT PROJECTS

The *El Paso County 2024 Major Transportation Corridors Plan Update* identified the following roadway improvement projects within the study area:

- 158: Vollmer Road from Marksheffel Road to Burgess Road as an Urban Major Collector I
- 166: Stapleton Drive from west of Vollmer Road to Towner Avenue as a 4-Lane Urban Principal Arterial
- 329: Stapleton Drive/Briargate Parkway: from Black Forest Road to west of Vollmer Road and a 4-Lane Urban Principal Arterial

ESCROW ANALYSIS

Table 7 shows the impact of Filing No. 6 site-generated traffic expressed as a percentage of 2045 total morning and afternoon peak-hour traffic volumes that contribute to the Four-Hour Vehicular-Volume Traffic-Signal-Warrant minor-approach volumes at the intersections of Briargate Parkway/Sterling Ranch Road (#5), Marksheffel Road/Research Parkway/Vollmer Road (#12), and Marksheffel Road/Sterling Ranch Road (#13). These percentages could be used as basis for a fair-share contribution towards the future signalization of these intersections.

TRANSPORTATION IMPROVEMENT FEE PROGRAM AND CREDIT AGREEMENTS

The applicant will be required to participate in the Countywide Transportation Improvement Fee Program. These projects will annex into the 5 mil PID, which has a per-lot upfront building permit fee of \$1,974 per single-family dwelling unit. The total building permit fee amount for the 198 residential dwelling units would be \$390,852. Note: This is based on the current rate, which is subject to change. El Paso County updates this rate periodically.

A road-fee credit agreement, development agreement, and Subdivision Improvements Agreement will be required to address developer's road-fee credits for construction of Vollmer Road. Additional credit agreements will be needed with each phase of construction to account for reimbursement of costs for the additional lanes and major intersection improvements.

CONCLUSIONS AND RECOMMENDATIONS

Trip Generation

- Sterling Ranch East Filing No. 6 is projected to generate about 1,800 new external vehicle trips on the average weekday, with about half entering and half exiting the site during a 24-hour period. During the morning peak hour, which generally occurs for one hour between 6:30 and 8:30 a.m., about 37 vehicles would enter and 101 vehicles would exit the site. During the afternoon peak hour, which generally occurs for one hour between 4:15 and 6:15 p.m., about 114 vehicles would enter and 70 vehicles would exit the site.

Level of Service

- The intersections of Vollmer/Briargate and Briargate/Sterling Ranch are projected to operate at a satisfactory level of service as stop-sign-controlled intersections in the short-term future. By 2045, these intersections will likely need to be converted to traffic-signal control. As signalized intersections, all movements are projected to operate at LOS D or better during the peak hours, based on the projected 2045 total traffic volumes.
- Some of the movements at the intersections of Marksheffel Road/Vollmer Road and Marksheffel Road/Sterling Ranch Road are projected to operate at LOS E or LOS F during the peak hours, if they remain stop-sign controlled in the short-term future. Once

signalized, all movements at these intersections are projected to operate at LOS D or better, based on the projected short-term and 2045 total traffic volumes.

- The intersections of Sterling Ranch/Vancouver and Sterling Ranch/Oshkosh are projected to operate at a satisfactory level of service as stop-sign-controlled intersections.

Recommended Improvements

- Table 5 shows detailed **intersection** improvements needed with Sterling Ranch Filing No. 6. The recommended improvements are based on the short-term and 2045 total traffic volumes shown in Figures 11a and 12a and the criteria contained in the El Paso County *Engineering Criteria Manual (ECM)*. The following auxiliary lanes will be required with the currently-proposed Sterling Ranch East Filing No. 6:
 - A northbound-to-eastbound right-turn acceleration lane on Briargate Parkway at Sterling Ranch Road. This lane should be 580 feet long plus a 180-foot taper.
 - A westbound left-turn lane on Briargate Parkway approaching Sterling Ranch Road. This lane should be 285 feet long plus a 180-foot taper.
 - A westbound right-turn deceleration lane on Briargate Parkway approaching Sterling Ranch Road. This lane should be 235 feet long plus a 180-foot taper.
 - A westbound right-turn deceleration lane on Briargate Parkway approaching Sterling Ranch Road. This lane should be 235 feet long plus a 180-foot taper.
 - A westbound right-turn deceleration lane on Briargate Parkway approaching Sioux Falls Way. This lane should be 235 feet long plus a 180-foot taper.
 - A southbound left-turn lane on Sterling Ranch Road approaching Vancouver Street. A center painted median is part of the standard Urban Minor Collector cross section.
 - A northbound right-turn deceleration lane on Sterling Ranch Road approaching Vancouver Street. This lane should be 155 feet long plus a 160-foot taper.
 - A northbound right-turn deceleration lane on Sterling Ranch Road approaching Oshkosh Drive. This lane should be 155 feet long plus a 160-foot taper.
- Roadway segment improvements specific to **SRE Filing No. 6** are detailed in Table 6 and Figure 3.

Escrow Analysis

Table 7 shows the impact of Sterling Ranch East Filing No. 6 (site-generated) traffic expressed as a percentage of 2045 total morning and afternoon peak-hour traffic volumes that contribute to the Four-Hour Vehicular Volume Traffic-Signal-Warrant minor-approach volumes at the intersections of Briargate Parkway/Vollmer Road (#4), Briargate Parkway/Sterling Ranch Road (#5), Marksheffel Road/Research Parkway/Vollmer Road (#12), and Marksheffel Road/Sterling Ranch Road (#13). These percentages could be used as basis for a fair-share contribution towards the future signalization of these intersections.

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

Sincerely,

LSC TRANSPORTATION CONSULTANTS, INC.

By Jeffrey C. Hodsdon, P.E.
Principal

JCH/KDF:jas

Enclosures: Tables 2-7
Figures 1-14
Traffic Count Reports
Level of Service Reports
Appendix Table 1
MTCP Maps
Crash History

Tables 2-7

Table 2: Trip Generation Estimate

ITE Code	ITE Land Use	Quantity	Unit	Daily	Trip Generation Rates ⁽¹⁾					Total Trips Generated			
					AM Peak Hour		PM Peak Hour		Daily	AM Peak Hour		PM Peak Hour	
					In	Out	In	Out			In	Out	In
Trip Generation Estimate Based on the Currently Proposed Land Use													
210	Single-Family Detached Housing	198	DU	9.09	0.19	0.51	0.58	0.35	1,800	37	101	114	70
FOR REFERENCE/ COMPARISON/CONFORMANCE CHECK													
Trip Generation Estimate For the Same Parcel (TAZ 30) From the <i>Sterling Ranch Sketch Plan Amendment #4 Master Traffic Impact Study (SKP 241) November 18, 2024</i>													
210	Single-Family Detached Housing	198	DU	9.43	0.18	0.53	0.59	0.35	1,867	35	104	117	69
	Change (Decrease)	0	DU						-67	2	-3	-3	1
Notes:													
(1) Source: "Trip Generation, 12th Edition, 2025" by the Institute of Transportation Engineers (ITE)													
(2) DU = Dwelling Unit													
Source: LSC Transportation Consultants, Inc.													
Aug-26													

Table 3: Traffic Signal Warrant Analysis
Scenario: Short-Term Total Traffic
Marksheffel Road/Vollmer Road

Warrant Analysis ⁽³⁾																			
Sterling Ranch East Fil 6							Warrant 1: Eight-Hour Vehicular-Volume Evaluation								Warrant 2: Four-Hour Vehicular-Volume Evaluation				
							Warrant Thresholds				Warrant Threshold Met?				Short-Term Background		Short-Term Total		
											Short-Term Background		Short-Term Total		Warrant Threshold Minor	Warrant Threshold Met? WB	Warrant Threshold Minor	Warrant Threshold Met? WB	
											Condition A	Condition B	Condition A	Condition B					
Hour	Major ⁽²⁾ Vollmer	Minor ⁽²⁾ Marksheffel	Major Vollmer	Minor Marksheffel	Major Vollmer	Minor Marksheffel	Major	Minor	Major	Minor	Condition A	Condition B	Condition A	Condition B	Warrant Threshold Minimum	Warrant Threshold Met? WB	Warrant Threshold Minimum	Warrant Threshold Met? WB	
Short-Term Total Traffic ⁽⁴⁾																			
12-1 AM	48	3	4	0	52	3	600	150	900	75	No	No	No	No	Low Volume	No	Low Volume	No	
1-2 AM	20	3	2	0	22	3	600	150	900	75	No	No	No	No	Low Volume	No	Low Volume	No	
2-3 AM	15	0	2	0	17	0	600	150	900	75	No	No	No	No	Low Volume	No	Low Volume	No	
3-4 AM	28	3	2	0	30	3	600	150	900	75	No	No	No	No	Low Volume	No	Low Volume	No	
4-5 AM	54	12	2	0	56	12	600	150	900	75	No	No	No	No	Low Volume	No	Low Volume	No	
5-6 AM	123	29	4	0	127	29	600	150	900	75	No	No	No	No	Low Volume	No	Low Volume	No	
6-7 AM	474	86	13	0	487	86	600	150	900	75	No	No	No	No	353	No	347	No	
7-8 AM	974	149	25	0	999	149	600	150	900	75	No	Yes	No	Yes	157	No	150	No	
8-9 AM	873	126	29	0	902	126	600	150	900	75	No	No	No	Yes	182	No	175	No	
9-10 AM	714	79	25	0	739	79	600	150	900	75	No	No	No	No	243	No	231	No	
10-11 AM	725	79	33	0	758	79	600	150	900	75	No	No	No	No	238	No	221	No	
11-12 PM	909	75	42	0	951	75	600	150	900	75	No	No	No	No	173	No	162	No	
12-1 PM	742	75	40	0	782	75	600	150	900	75	No	No	No	No	229	No	209	No	
1-2 PM	758	79	43	0	801	79	600	150	900	75	No	No	No	No	221	No	200	No	
2-3 PM	856	83	51	0	907	83	600	150	900	75	No	No	No	Yes	186	No	173	No	
3-4 PM	958	81	62	0	1020	81	600	150	900	75	No	Yes	No	Yes	161	No	144	No	
4-5 PM	1074	101	76	0	1150	101	600	150	900	75	No	Yes	No	Yes	128	No	110	No	
5-6 PM	1022	100	75	0	1097	100	600	150	900	75	No	Yes	No	Yes	143	No	121	No	
6-7 PM	610	79	62	0	672	79	600	150	900	75	No	No	No	No	286	No	261	No	
7-8 PM	537	58	45	0	582	58	600	150	900	75	No	No	No	No	322	No	299	No	
8-9 PM	417	42	46	0	463	42	600	150	900	75	No	No	No	No	Low Volume	No	359	No	
9-10 PM	269	32	33	0	302	32	600	150	900	75	No	No	No	No	Low Volume	No	Low Volume	No	
10-11 PM	143	15	16	0	159	15	600	150	900	75	No	No	No	No	Low Volume	No	Low Volume	No	
11-12 AM	60	9	9	0	69	9	600	150	900	75	No	No	No	No	Low Volume	No	Low Volume	No	
Numbers of Hours the Warrant Thresholds Are Met												0	4	0	6			0	0
Warrant Met?												No		No				No	No
Notes:																			
(1) Thresholds are based on 2 or more lanes on the major approach and 1 lane on the minor approach (Warrant evaluation assuming the westbound left turn only for the minor street)																			
(2) The major-street traffic includes all movements (left, through, and right)																			
(3) The minor-street traffic includes only the left turns from the minor street																			
(5) Off-peak-hour traffic volumes are based on the projected peak-hour traffic volumes, 72-hour machine counts conducted on Vollmer Road in April 2024 and vehicle time-of-day distribution data for single-family residential published by the Institute of Transportation Engineers																			
Source: LSC Transportation Consultants, Inc.																			
Aug-26																			

Table 4: Traffic Signal Warrant Analysis
Scenario: Short-Term Total Traffic
Marksheffel Road/Sterling Ranch Road

Warrant Analysis ⁽¹⁾																				
Warrant 1: Eight-Hour Vehicular-Volume Evaluation												Warrant 2: Four-Hour Vehicular-Volume Evaluation								
Sterling Ranch Filing No. 6						Warrant Threshold Met?								Short-Term Background		Short-Term Total				
Short-Term Background Traffic			Major		Minor		Warrant Thresholds				Short-Term Background		Short-Term Total		Warrant Threshold Minor Minimum	Warrant Threshold Met?	Warrant Threshold Minor Minimum	Warrant Threshold Met?		
Hour	Major ⁽²⁾ Marksheffel	Minor ⁽³⁾ Sterling Ranch	Major	Minor	Major	Minor	Condition A		Condition B		Condition A	Condition B	Condition A	Condition B						
							Major	Minor	Major	Minor	Condition A	Condition B	Condition A	Condition B						
Short-Term Total Traffic ⁽⁴⁾																				
12-1 AM	53	12	1	1	54	13	600	150	900	75	No	No	No	No	Low Volume	No	Low Volume	No		
1-2 AM	22	12	1	1	23	13	600	150	900	75	No	No	No	No	Low Volume	No	Low Volume	No		
2-3 AM	20	0	1	0	21	0	600	150	900	75	No	No	No	No	Low Volume	No	Low Volume	No		
3-4 AM	23	12	1	1	24	13	600	150	900	75	No	No	No	No	Low Volume	No	Low Volume	No		
4-5 AM	38	48	1	4	39	52	600	150	900	75	No	No	No	No	Low Volume	No	Low Volume	No		
5-6 AM	70	120	1	11	71	131	600	150	900	75	No	No	No	No	Low Volume	No	Low Volume	No		
6-7 AM	240	353	5	33	245	386	600	150	900	75	No	No	No	No	Low Volume	No	Low Volume	No		
7-8 AM	482	610	9	57	491	667	600	150	900	75	No	No	No	No	Low Volume	No	Low Volume	No		
8-9 AM	503	514	10	48	513	562	600	150	900	75	No	No	No	No	Low Volume	No	334	Yes		
9-10 AM	425	323	9	30	434	353	600	150	900	75	No	No	No	No	Low Volume	No	Low Volume	No		
10-11 AM	516	323	12	30	528	353	600	150	900	75	No	No	No	No	Low Volume	No	Low Volume	No		
11-12 PM	656	305	15	29	671	334	600	150	900	75	Yes	No	Yes	No	268	Yes	262	Yes		
12-1 PM	547	317	15	29	562	346	600	150	900	75	No	No	No	No	317	Yes	309	Yes		
1-2 PM	586	334	16	31	602	365	600	150	900	75	No	No	Yes	No	Low Volume	No	289	Yes		
2-3 PM	678	351	19	32	697	383	600	150	900	75	Yes	No	Yes	No	259	Yes	251	Yes		
3-4 PM	806	340	23	31	829	371	600	150	900	75	Yes	No	Yes	No	199	Yes	193	Yes		
4-5 PM	976	425	28	39	1004	464	600	150	900	75	Yes	Yes	Yes	Yes	156	Yes	149	Yes		
5-6 PM	952	419	27	38	979	457	600	150	900	75	Yes	Yes	Yes	Yes	162	Yes	155	Yes		
6-7 PM	748	334	23	31	771	365	600	150	900	75	Yes	No	Yes	No	Low Volume	No	215	Yes		
7-8 PM	558	244	17	22	575	266	600	150	900	75	No	No	No	No	Low Volume	No	Low Volume	No		
8-9 PM	541	176	17	16	558	192	600	150	900	75	No	No	No	No	Low Volume	No	Low Volume	No		
9-10 PM	382	136	12	12	394	148	600	150	900	75	No	No	No	No	Low Volume	No	Low Volume	No		
10-11 PM	188	62	6	6	194	68	600	150	900	75	No	No	No	No	Low Volume	No	Low Volume	No		
11-12 AM	107	40	3	4	110	44	600	150	900	75	No	No	No	No	Low Volume	No	Low Volume	No		
Numbers of Hours the Warrant Thresholds Are Met												6	2	7	2			6		
Warrant Met?												No		No				Yes	Yes	
Notes:																				
(1) Thresholds are based on 2 or more lanes on the major approach and 1 lane on the minor approach (Warrant evaluation assuming the southbound left turn only for the minor street)																				
(2) The major-street traffic includes all movements (left, through, and right)																				
(3) The minor-street traffic includes only the left turns from the minor street																				
(4) Off-peak-hour traffic volumes are based on the projected peak-hour traffic volumes, 72-hour machine counts conducted on Vollmer Road in April 2024 and vehicle time-of-day distribution data for single-family residential published by the Institute of Transportation Engineers																				
Source: LSC Transportation Consultants, Inc.																				
Aug-26																				

Table 5
Sterling Ranch East Filing No. 6
Intersection Improvements

Item #	Improvement	Trigger	Timing	Responsibility
5) Briargate Parkway/Sterling Ranch Road				
2	Construct an eastbound left-turn lane on Briargate Parkway approaching Sterling Ranch Road. The lane should be 435' long plus a 200' taper.	eastbound left-turn volume > 10 vph	complete	Sterling Ranch
3	Construct an eastbound right-turn deceleration lane on Briargate Parkway approaching Sterling Ranch Road. The lane should be 235' long plus a 200' taper.	eastbound right-turn volume > 25 vph	complete	Sterling Ranch
4	Construct a northbound to eastbound right-turn acceleration lane on Briargate Parkway at Sterling Ranch Road. The lane should be 580' long plus a 180' taper.	northbound right-turn volume > 50 vph	Long-Term	Sterling Ranch
5	Construct a westbound left-turn lane on Briargate Parkway approaching Sterling Ranch Road. The lane should be 285' long plus a 200' taper.	westbound left-turn volume > 10 vph	With Sterling Ranch East Filing No. 6	Sterling Ranch
6	Construct an westbound right-turn deceleration lane on Briargate Parkway approaching Sterling Ranch Road. The lane should be 235' long plus a 200' taper.	westbound right-turn volume > 25 vph	With Sterling Ranch East Filing No. 6	Sterling Ranch
7	Construct a southbound to westbound right-turn acceleration lane on Briargate Parkway at Sterling Ranch Road. The lane should be 580' long plus a 180' taper.	southbound right-turn volume > 50 vph	complete	Sterling Ranch
7	Provide interim stop-sign control with a stop sign on the eastbound approach	with construction of the intersection	complete	Sterling Ranch
8	Signalization of the intersection	If and when warrants are met. The decision on timing of traffic signal installation rests with El Paso County Public Works.	Long Term (note: to be analyzed at the time of development of the school at which point a determination would be made regarding the intersection traffic control beyond TWSC)	Sterling Ranch or potentially the school district
12) Marksheffel Road/Vollmer Road				
9	Signalization of the intersection	Once warrants are met. The decision on timing of traffic signal installation rests with El Paso County Public Works.	Not Anticipated With Sterling Ranch Filing No. 6	This intersection may be an eligible intersection under the fee impact program
13) Marksheffel Road/Sterling Ranch Road				
10	Signalization of the intersection	Once warrants are met. The decision on timing of traffic signal installation rests with The City of Colorado Springs.	A Four-Hour Vehicular Volume Traffic Signal Warrant is Anticipated to be met with Sterling Ranch East Filing No. 6	SRMD#3
104) Briargate Parkway/Sioux Falls Way				
11	Construct an westbound right-turn deceleration lane on Briargate Parkway approaching Sioux Falls Way. The lane should be 235' long plus a 200' taper.	westbound right-turn volume > 25 vph	With the construction of Briargate Parkway east of the access	Sterling Ranch
309) Sterling Ranch Road/Vancouver Street				
12	Construct a southbound left-turn lane on Sterling Ranch Road approaching Vancouver Street. The lane should be 205' long plus a 160' taper.	southbound left-turn volume > 25 vph	A center painter median is part of the standard Urban Minor Collector cross section	Sterling Ranch
13	Construct a northbound right-turn deceleration lane on Sterling Ranch Road approaching Vancouver Street. The lane should be 155' long plus a 160' taper.	northboundbound right-turn volume > 50 vph	With Sterling Ranch East Filing 6	Sterling Ranch
310) Sterling Ranch Road/Oshkosh Road				
14	Construct a southbound left-turn lane on Sterling Ranch Road approaching Appleton Drive. The lane should be 305' long plus a 160' taper.	southbound left-turn volume > 25 vph	With the construction of Sterling Ranch Parkway north of Banning Lewis Parkway	Sterling Ranch
15	Construct a northbound right-turn deceleration lane on Sterling Ranch Road approaching Appleton Drive. The lane should be 155' long plus a 160' taper.	northboundbound right-turn volume > 50 vph	Long-Term, but to be installed with the adjacent	Sterling Ranch
Source: LSC Transportation Consultants, Inc. (August 2026)				

Table 6
Roadway Segment Improvements
Sterling Ranch East Filing No. 6 Rezone and Preliminary Plat
(Page 1 of 2)

Segment ID ⁽¹⁾ (See Figure 14 for map)	Improvement Description	Timing	Design ADT (vpd)	Projected 2045 ADT (vpd)	Responsibility
V1 (Short-Term) Northbound	UPDATE (November 2023): It is our understanding that a meeting(s) with JR Engineering/the applicant, City staff and County staff were held, that a short-term/interim improvement to segment V1 will not be required. The original LSC recommendation for this segment was for restriping. However, City staff indicated that the striped bike lane in the southbound direction needs to remain.	Updated November 2023 - It is our understanding that following a meeting with the City of Colorado Springs and El Paso County, a V1 interim shoulder improvement will no longer be required.	5,500 (Directional northbound)	15,710	N/A
V1 (Short-Term) Southbound			10,000 (Directional southbound)		
V1	Improve Vollmer Road between Dry Needle Place and the Sterling Ranch south boundary to a standard 4-Lane Urban Minor Arterial Cross Section (Add a second northbound through lane and painted center median) ⁽²⁾ 8/22/2024 Note: the 2024 MTCP shows Vollmer Road as an Urban – Major Collector	Intermediate-Term Future	20,000		Updated November 2023 Adjacent parcel owner which could potentially include: “Pioneer Landscape Center Parcel” (5300000742) (redevelopment is unlikely in the foreseeable future) “Schmidt Parcel” west of Vollmer Rd (5200000571) - The triangular parcels southeast of Vollmer/Marksheffel (5232400001 and 5232400003)
V2	Improve Vollmer Road between the Sterling Ranch south boundary to Lochwinnoch Lane/Sterling property boundary to a standard 4-Lane Urban Minor Arterial Cross Section ⁽²⁾ 8/22/2024 Note: the 2024 MTCP shows Vollmer Road as an Urban – Major Collector	Updated September 2024: Complete	20,000 (Note: Existing Capacity 8,000 ⁽³⁾)	17,115	Sterling Ranch
V3	Short Term: Improve Vollmer Road from Lochwinnoch Lane to Sterling Ranch boundary (northeast of Glider Loop) to provide 36’ of pavement (existing pavement 1 approx. 23.38’) and stripe for one through lane and plus a 6’ paved, striped outside shoulder in each direction ⁽²⁾	Updated November 2023 – Future as required due to net increase traffic demand. The construction documents have been approved.	11,000 (Note: Existing Capacity 8,000)	16925	Sterling Ranch
	Long Term: Improve Vollmer Road from Lochwinnoch Lane to Sterling Ranch boundary (northeast of Glider Loop) to a standard 4-Lane Urban Minor Arterial Cross Section ⁽²⁾ 8/22/2024 Note: the 2024 MTCP shows Vollmer Road as an Urban – Major Collector	Long-Term Future	20,000		By others - pursuant to the recent development agreement between Sterling Ranch and EPC.
V4	Improve Vollmer Road from Sterling Ranch boundary (northeast of Glider Loop) to Briargate Parkway to a standard 4-Lane Urban Minor Arterial Cross Section ⁽²⁾ Update November 2023 - with transition section to the existing two-lane section to the south as shown on the Vollmer North CDs. Improvements consist of curb and gutter on west side (as most of the east side is already built) and repaving.	Updated September 2024: Complete	20,000	16,155	Sterling Ranch
V5	Improve Vollmer Road from Briargate Parkway to Jane Kirkham Drive to a standard 4-Lane Urban Minor Arterial Cross Section ⁽²⁾ 8/22/2024 Note: the 2024 MTCP shows Vollmer Road as an Urban – Major Collector	Updated September 2024: Complete	20,000	11,515	Sterling Ranch
V6	Improve Vollmer Road from Jane Kirkham Drive to Sam Bass Drive to a standard 4-Lane Urban Minor Arterial Cross Section ⁽²⁾ 8/22/2024 Note: the 2024 MTCP shows Vollmer Road as an Urban – Major Collector	Updated September 2024: Complete	20,000	11,245	Sterling Ranch
V7	Improve Vollmer Road between Sam Bass Drive and Poco Road to a 4-lane Urban Minor Arterial but with necessary lane transitions, redirect tapers, etc. south of Poco to adequately transition between the 4-Lane Urban Minor Arterial Cross Section and the 2-Lane Rural Arterial Cross Section north of Poco Road. 8/22/2024 Note: the 2024 MTCP shows Vollmer Road as an Urban – Major Collector	Updated September 2024: Complete	20,000	11,010	Sterling Ranch
V8	Improve Vollmer Road from Poco Road to Burgess Road to a 2-Lane Urban – Major Collector Cross Section ⁽²⁾	Long-Term Future	20,000	11,395	El Paso County
Part 1/2 of this table (see Part 2 on next page)					
Notes:					
(1) See Figure 14					
(2) Adequate transition/redirect tapers would be needed between the various cross sections on Vollmer Road. Based on the criteria contained in Table 2-29 of the <i>El Paso Engineering Criteria Manual</i> an appropriate taper ratio for a roadway with a design speed of 40 miles per hour is 20:1					
(3) Source: Table 20 <i>Road Impact Fee Study Updated</i> November 16, 2016					
Source: LSC Transportation Consultants, Inc. (August 2026)					

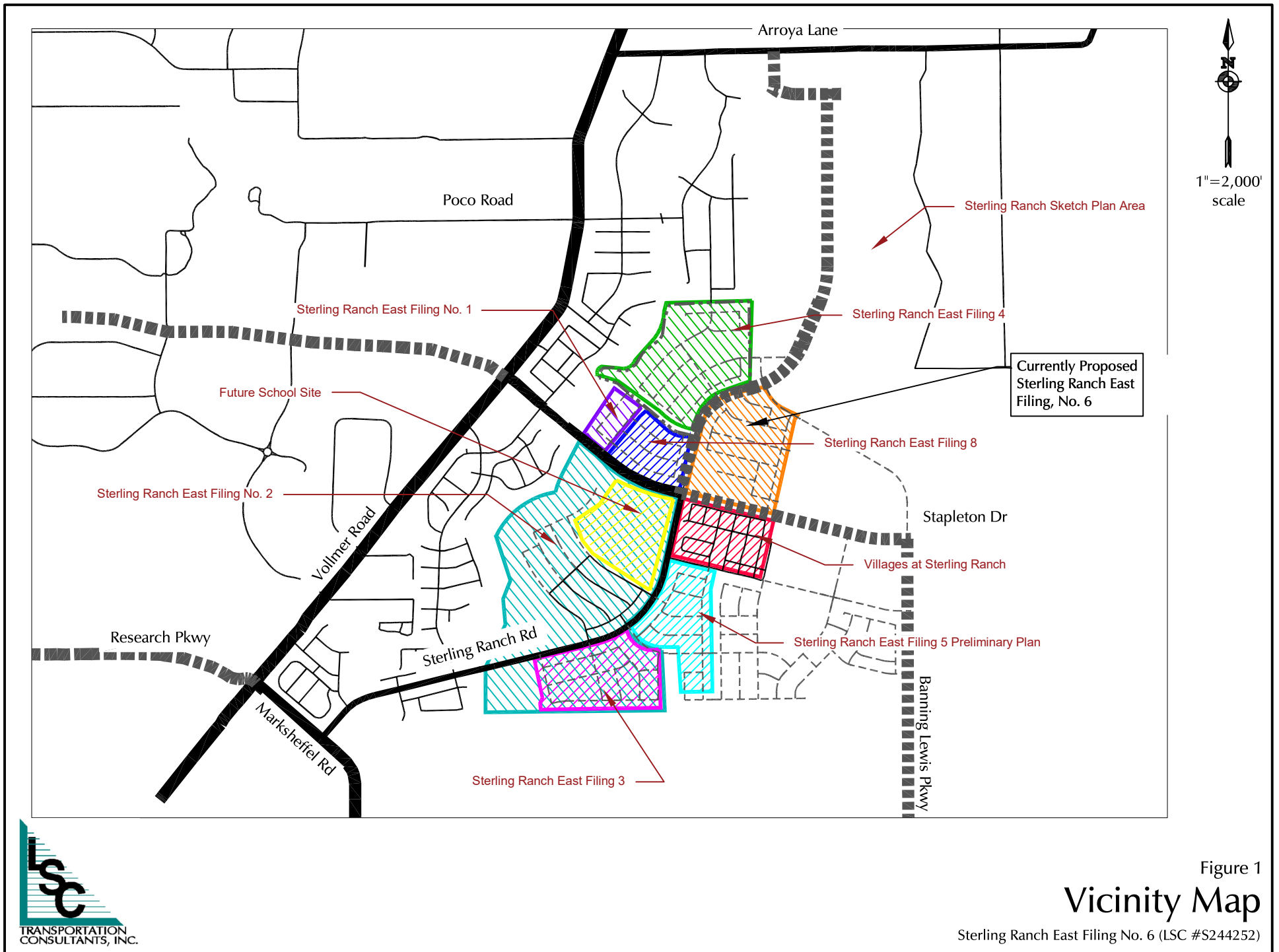
Table 6
Roadway Segment Improvements
Sterling Ranch East Filing No. 6 Rezone and Preliminary Plat
(Page 2 of 2)

Segment ID ⁽¹⁾ (See Figure 12 for map)	Improvement Description	Timing	Design ADT (vpd)	Projected 2045 ADT (vpd)	Responsibility
SR1	Construct Sterling Ranch Road as an Urban Major Collector from Marksheffel Road to Dines Boulevard	<u>Completed</u>	20,000	14,430	Sterling Ranch
SR2	Construct Sterling Ranch Road as an Urban Major Collector from Dines Boulevard to Briargate Parkway	Short-Term - with SRE Preliminary Plan 1	20,000	9,760	Sterling Ranch
SR3	Construct Sterling Ranch Road as an Urban Minor Collector from Briargate Parkway to Vancouver Street	Short-Term - with SRE Preliminary Plan 1	10,000	8,075	Sterling Ranch
SR4	Construct Sterling Ranch Road from Vancouver Street north to Oshkosh Road	Short-Term - with SRE Filing 6	10,000	6,910	Sterling Ranch
SR5	Construct Sterling Ranch Road from Oshkosh Road north to ultimate north terminus	Intermediate-Term Future	10,000	4,330	Sterling Ranch
M1	Construct Marksheffel Road as an Urban Principal Arterial to City of Colorado Springs standards in 107' of right-of-way between Vollmer Road and Sterling Ranch Road	<u>Completed</u>	40,000	23,000	Sterling Ranch
M2	Construct Marksheffel Road as an Urban Principal Arterial to City of Colorado Springs standards in 107' of right-of-way between Sterling Ranch Road and the south boundary of the Sterling Ranch Master Plan Area. NOTE: With the completion of this improvement, the connection between Vollmer Road and Woodmen Road will be completed	To be completed in 2024	40,000	28,180	Sterling Ranch
M3	Construct Marksheffel Road between the south boundary of the Sterling Ranch Master Plan Area and Woodmen Road (Note this segment is located within the City of Colorado Springs)	<u>Completed</u> (by Others)	40,000	24,525	Others (Completed)
M4	Construct Marksheffel Road between Black Forest Road and Vollmer Road	Long-Term Future	40,000	27,910	Others
B1	Construct the full section of Briargate Parkway (4-Lane Principal Arterial) between Vollmer Road and Wheatland Drive	<u>Completed</u>	40,000	24,190	Sterling Ranch
B2	Construct Briargate Parkway (full section) as a 4-Lane Principal Arterial between Wheatland Drive and Sterling Ranch Road	Updated September 2024: In Progress Anticipated Completion Fall 2024	40,000	25,220	Sterling Ranch
B3	Construct Briargate Parkway as a 4-Lane Principal Arterial between Sterling Ranch Road and Sioux Falls Way	Short-Term - with SRE Filing 6	40,000	21,930	Sterling Ranch
B4	Construct Briargate Parkway as a 4-Lane Principal Arterial between Sioux Falls Way and Banning Lewis Parkway	Intermediate Term	40,000	21,235	Sterling Ranch
B5	Construct Stapleton Road as a 4-Lane Principal Arterial between Banning Lewis Parkway and Meridian Road (including upgrade of existing rural two-lane segment between Towner and Meridian)	Long-Term Future	40,000	17,655	Others
B6	Construct Briargate Parkway as a 4-Lane Principal Arterial between its current terminus and Black Forest Road and between Black Forest Road and Vollmer Road	Long-Term Future	40,000	24,340	Others
BL1	Construct Banning Lewis Parkway as a 4-Lane Principal Arterial between the south Sterling Ranch boundary and Briargate Pkwy	Long-Term Future	40,000	20,320	Future - TBD with the future preliminary plan for that area - potentially, financial assurances for half-section, west-side half-section or full-section w/ cost recover may be required
BL2	Construct Banning Lewis Parkway as a 4-Lane Principal Arterial between Woodmen Road and the south Sterling Ranch boundary (Note this segment will be located within the City of Colorado Springs)	Long-Term Future	40,000	28,480	Others
W1	Widen Woodmen Road from 4-lane to 6-lane section from Powers Boulevard to US 24	Long-Term Future	72,000	66,690	Others
Part 2/2 of this table					
Notes:					
(1) See Figure 14					
(2) Adequate transition/redirect tapers would be needed between the various cross sections on Vollmer Road. Based on the criteria contained in Table 2-29 of the <i>El Paso Engineering Criteria Manual</i> , an appropriate taper ratio for a roadway with a design speed of 40 miles per hour is 20:1					
(3) Source: Table 20 <i>Road Impact Fee Study Updated</i> November 16, 2016					
Source: LSC Transportation Consultants, Inc. (August 2026)					

Table 7: Traffic Signal Escrow Calculations
SRE Filing No. 6

[illegible]

Figures 1-14



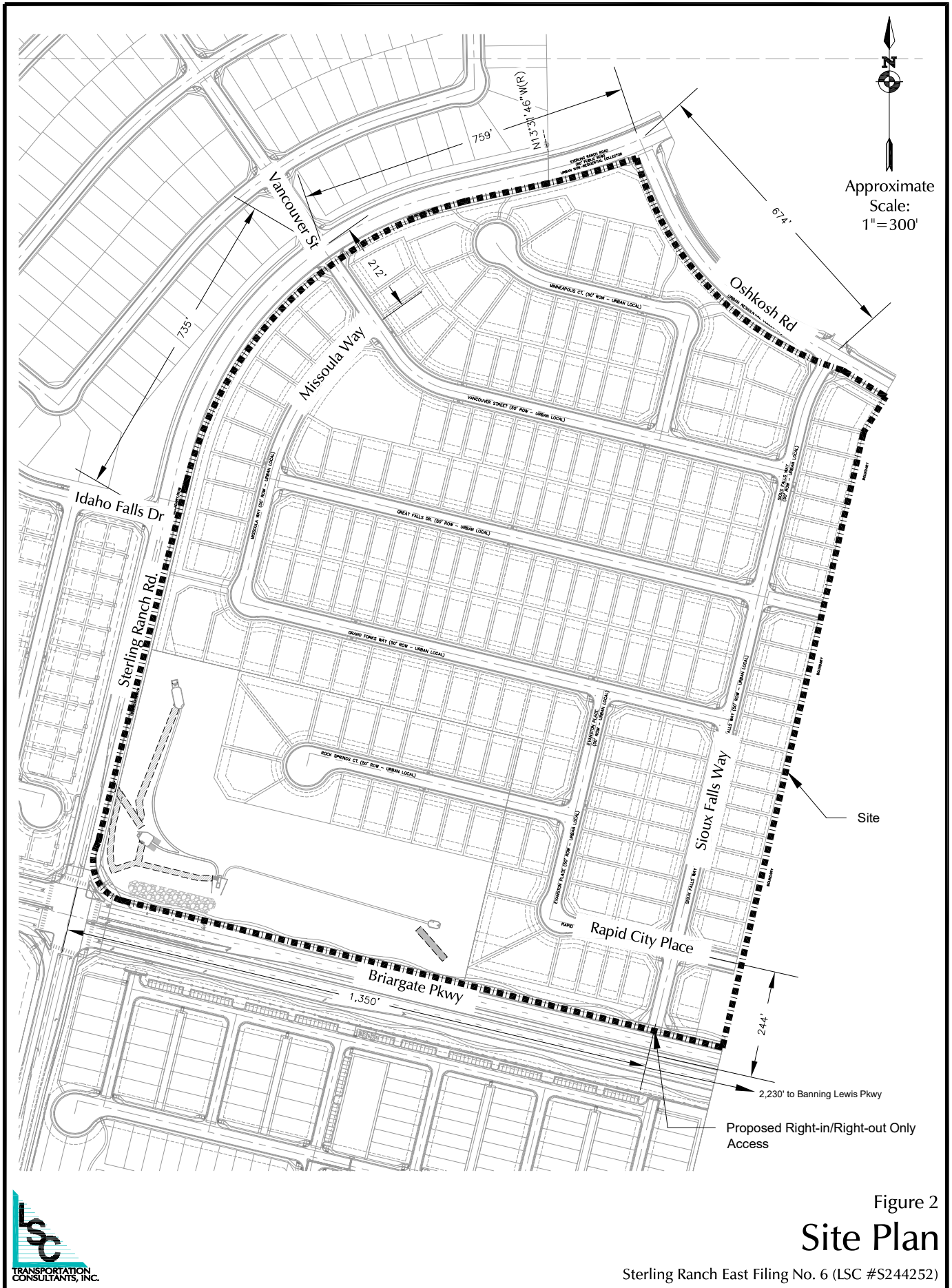
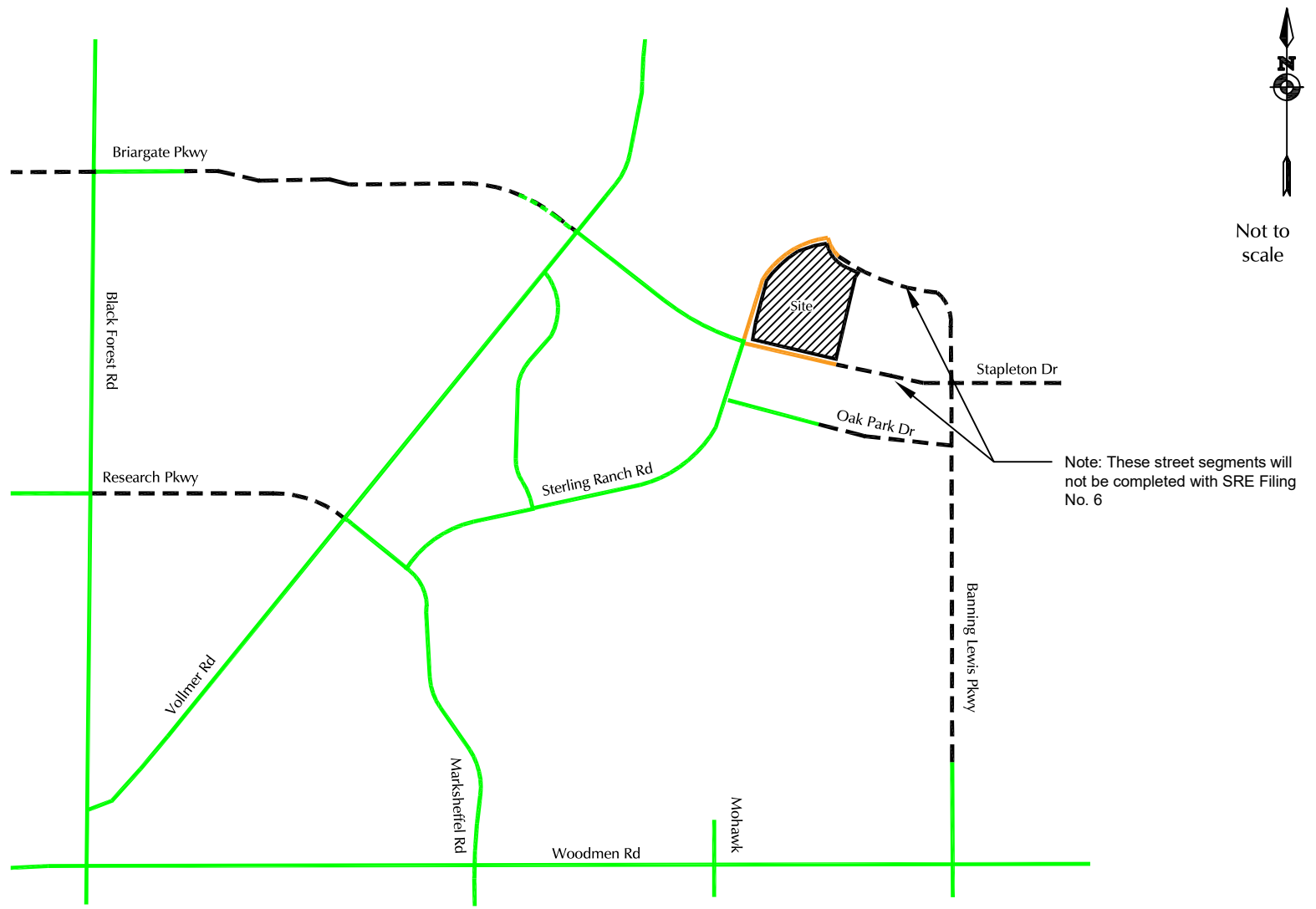


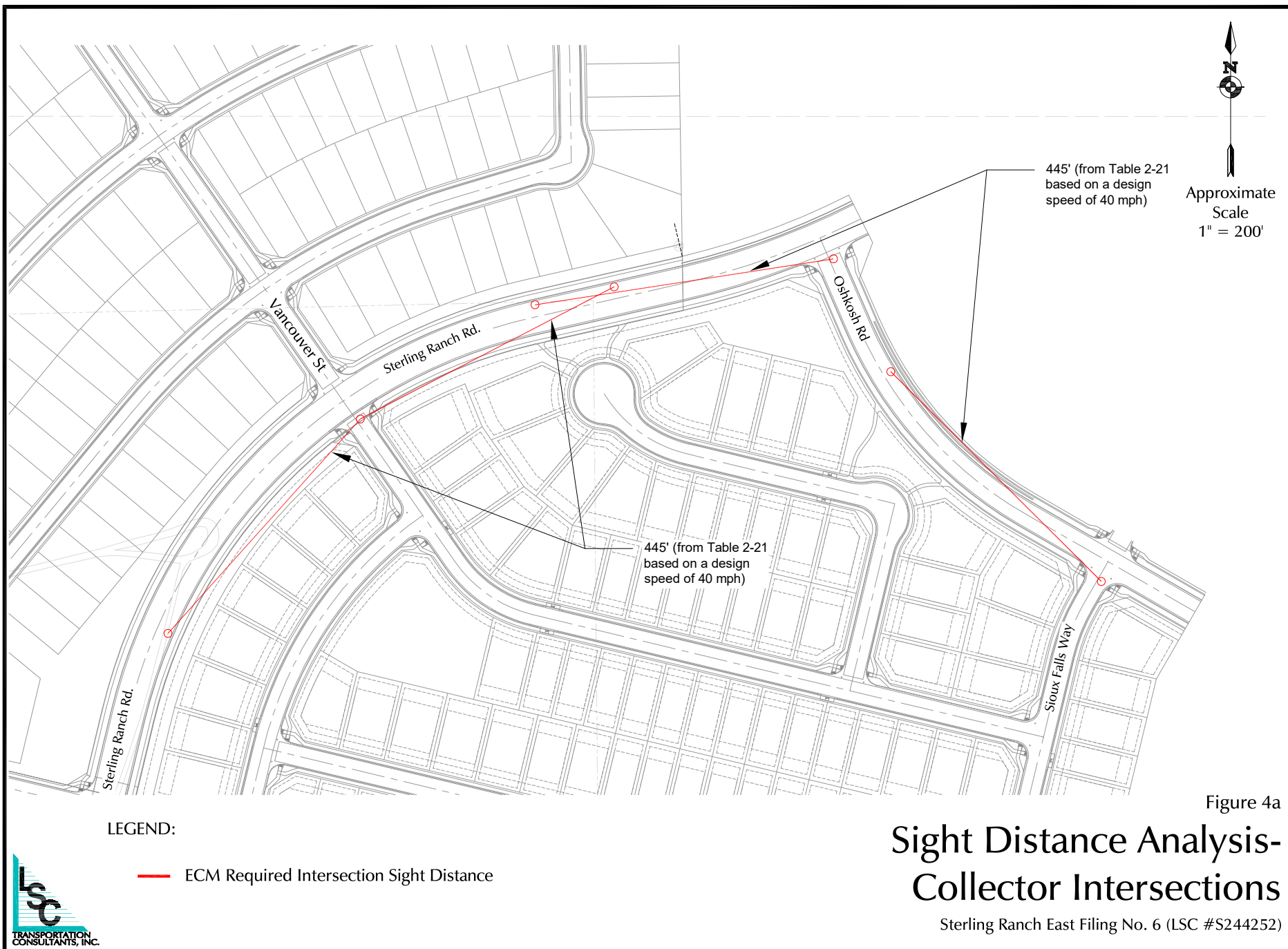
Figure 2
Site Plan

Sterling Ranch East Filing No. 6 (LSC #S244252)



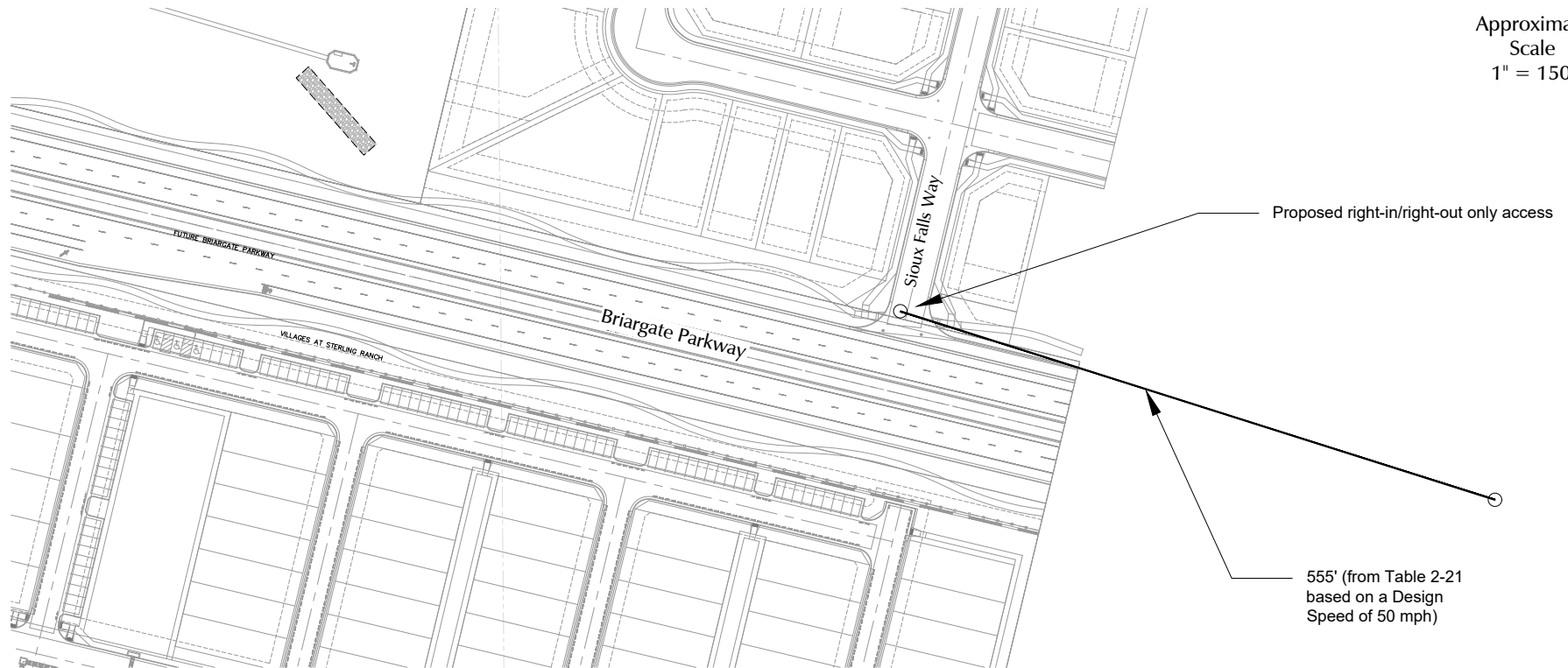
- Roadway connection planned with Sterling Ranch East Fil. No. 6
- Existing Roadway
- - Future Roadway

Figure 3
Short-Term Roadway Connections
 Sterling Ranch East Filing No. 6 (LSC #S244252)





Approximate
Scale
1" = 150'



LEGEND:

— ECM Required Intersection Sight Distance

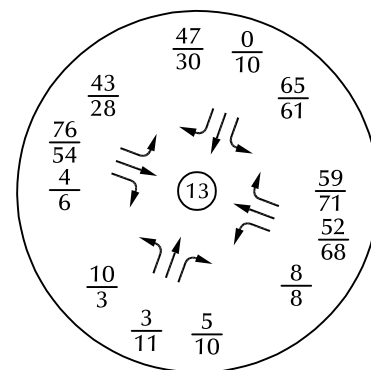
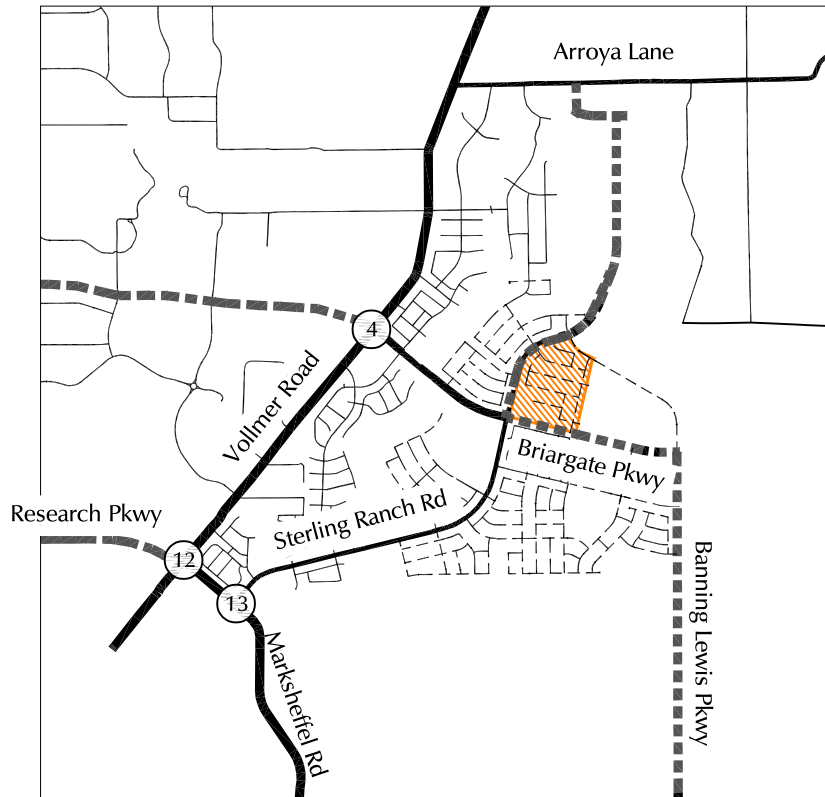
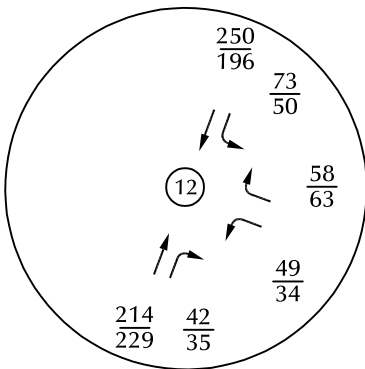
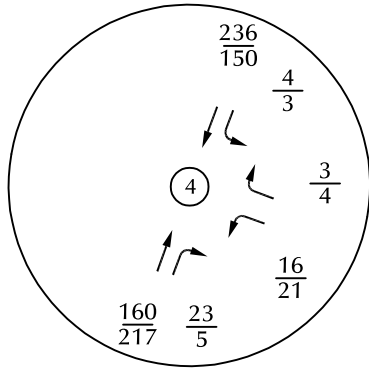
Figure 4b

Sight Distance Analysis - Briargate Pkwy Right-in/Right-out Only Access (Sioux Falls Way)

Sterling Ranch East Filing No. 6 (LSC #S244252)



1"=4,000'
scale



LEGEND:

$\frac{XX}{XX}$ = $\frac{\text{AM Peak-Hour Traffic (Veh/Hr)}}{\text{PM Peak-Hour Traffic (Veh/Hr)}}$

*Counts by LSC March 2024

**Counts by LSC March 2025 (These traffic counts were conducted about 4 months after the completion of Marksheffel Road between Vollmer Road and Woodmen Road)

— Existing Roadway
--- Future Roadway

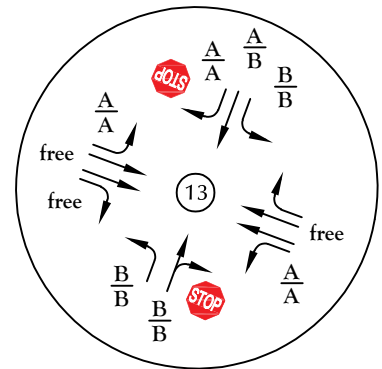
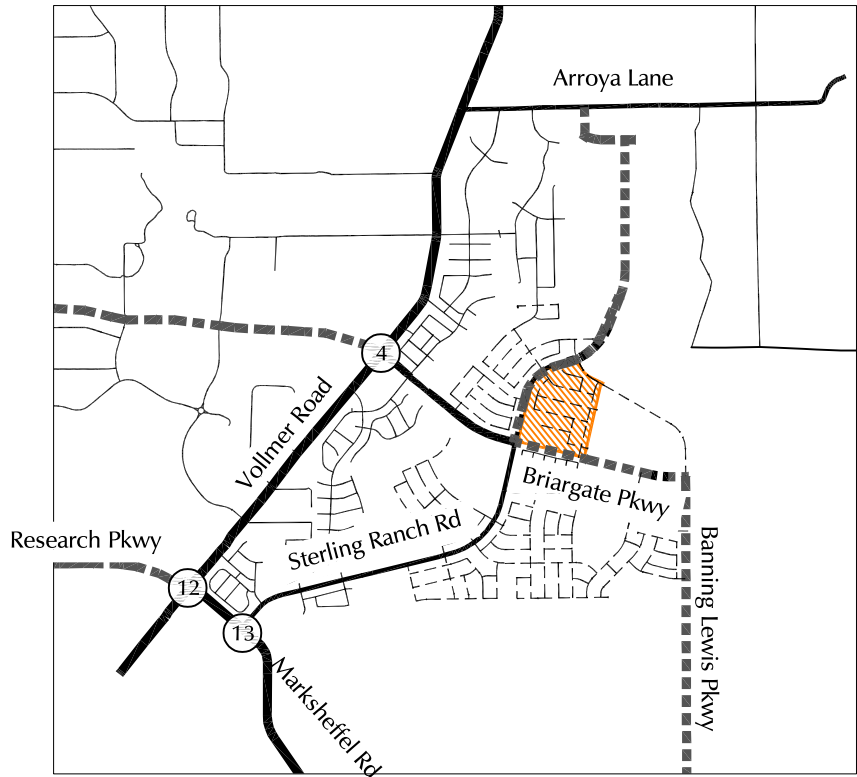
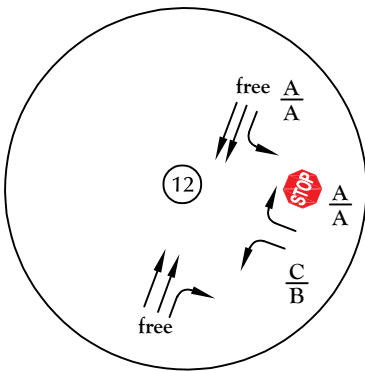
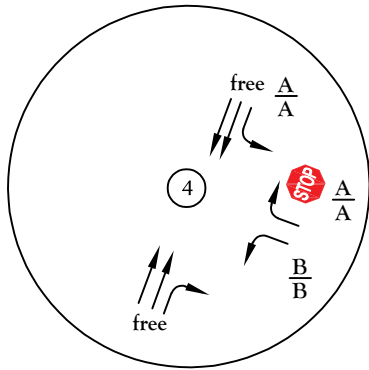


Figure 5a
Existing Peak-Hour
Traffic

Sterling Ranch East Filing No. 6 (LSC #S244252)



1"=4,000'
scale



LEGEND:



= Stop Sign

$\frac{A}{B}$

= $\frac{\text{AM Individual Movement Peak-Hour LOS}}{\text{PM Individual Movement Peak-Hour LOS}}$

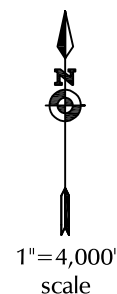
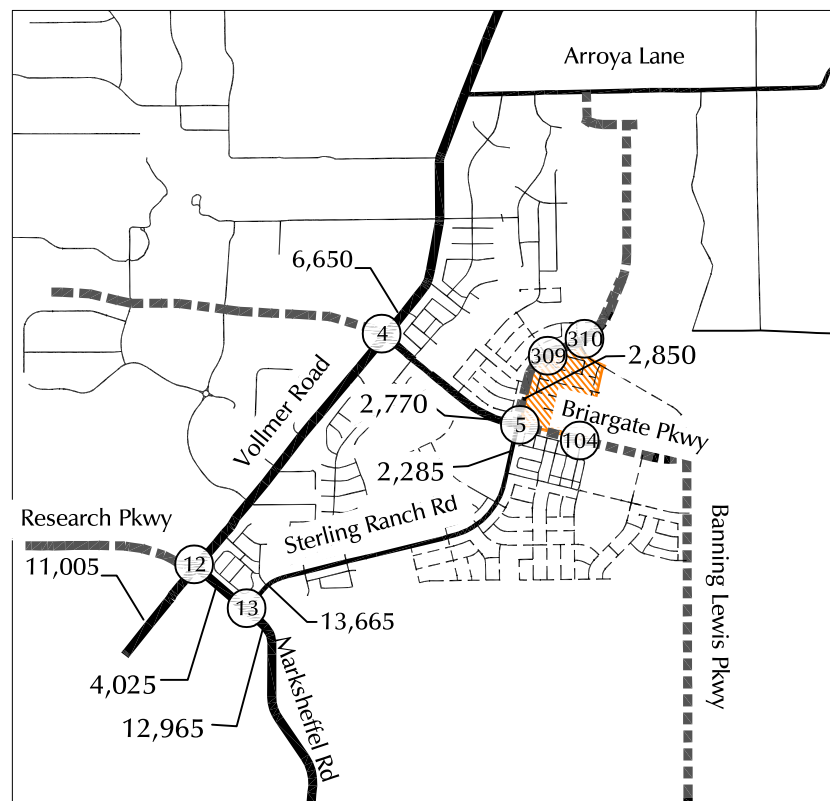
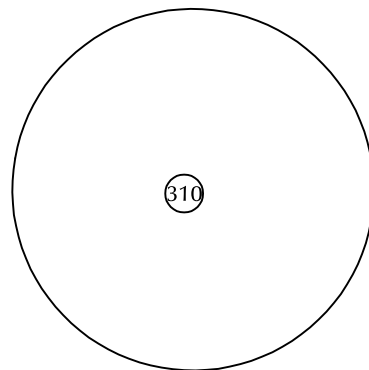
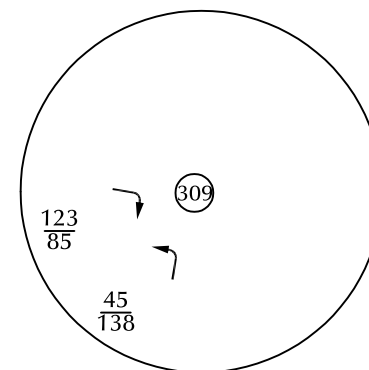
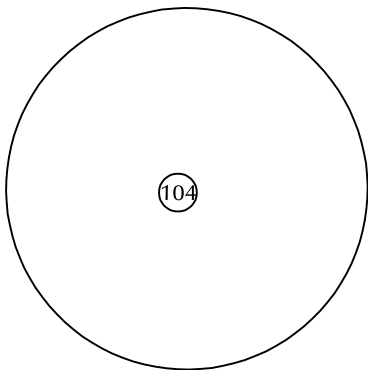
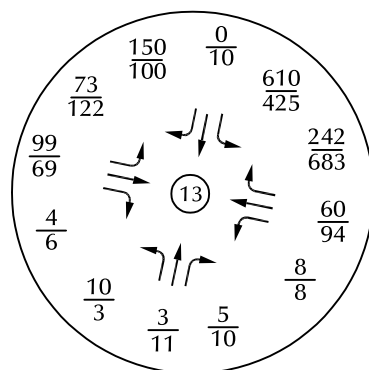
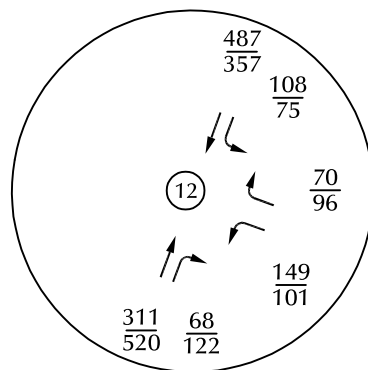
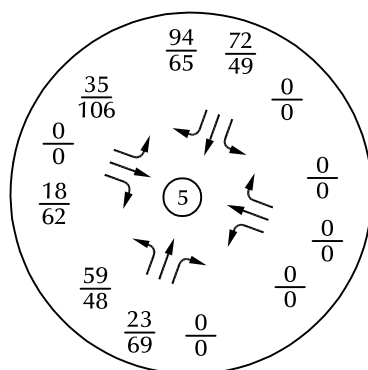
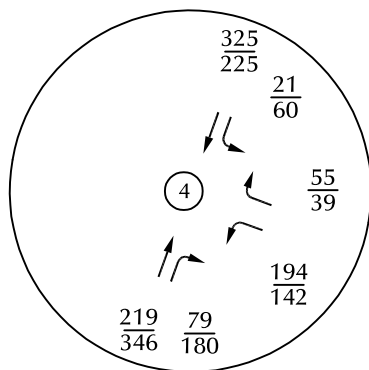
— Existing Roadway

- - - Future Roadway



Figure 5b
2025 Existing Traffic,
Lane Geometry, Traffic
Control, and LOS

Sterling Ranch East Filing No. 6 (LSC #S244252)



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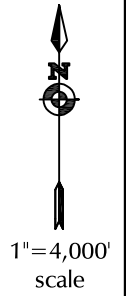
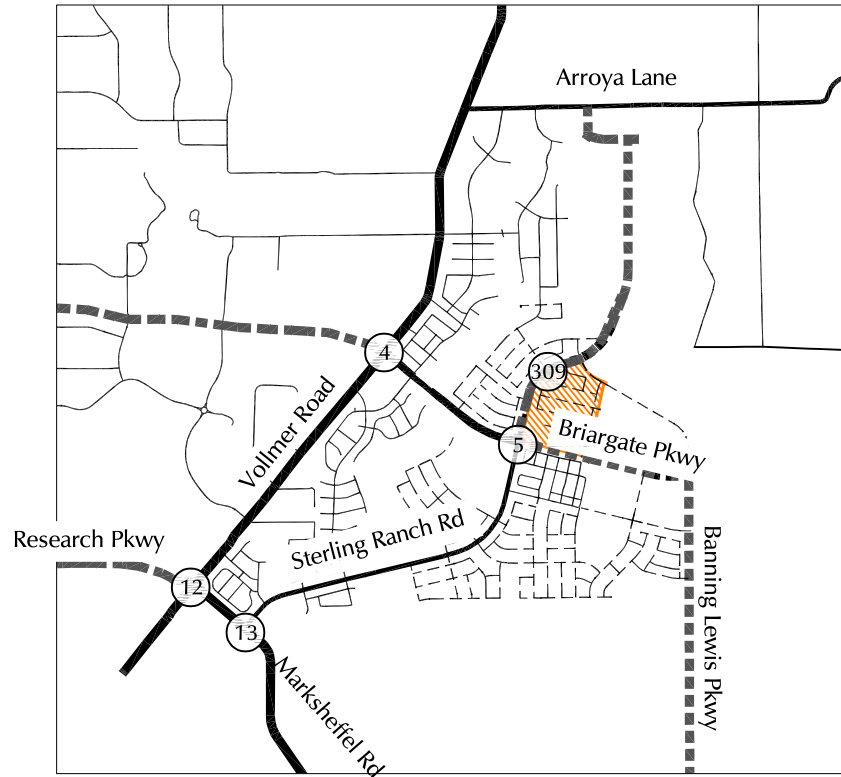
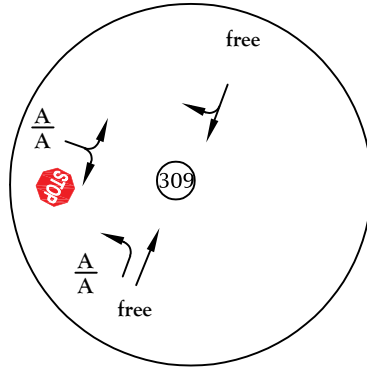
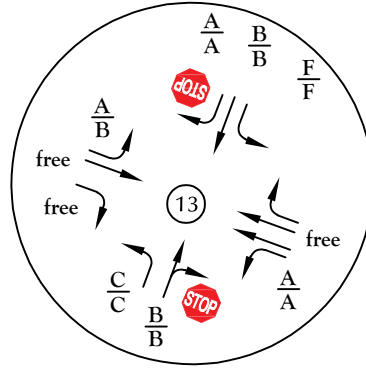
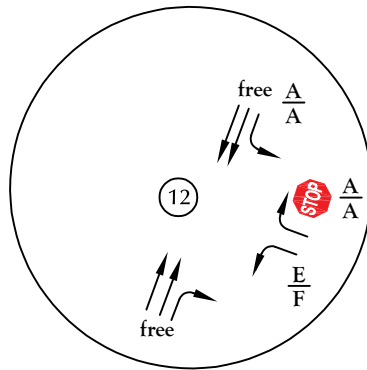
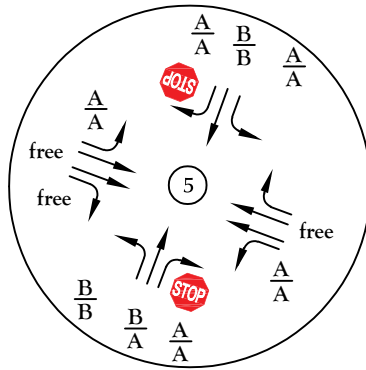
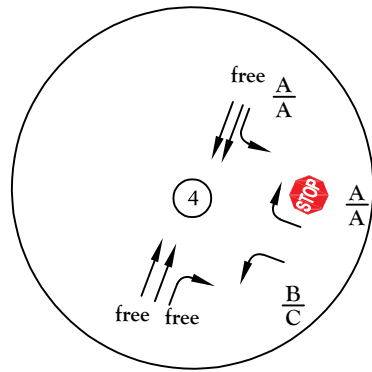
XX
XX = AM Peak-Hour Traffic (Veh/Hr)
PM Peak-Hour Traffic (Veh/Hr)

— Existing Roadway
--- Future Roadway

Short-Term Background Traffic

Figure 6a

Sterling Ranch East Filing No. 6 (LSC #S244252)



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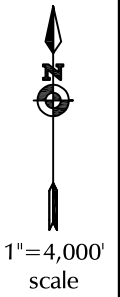
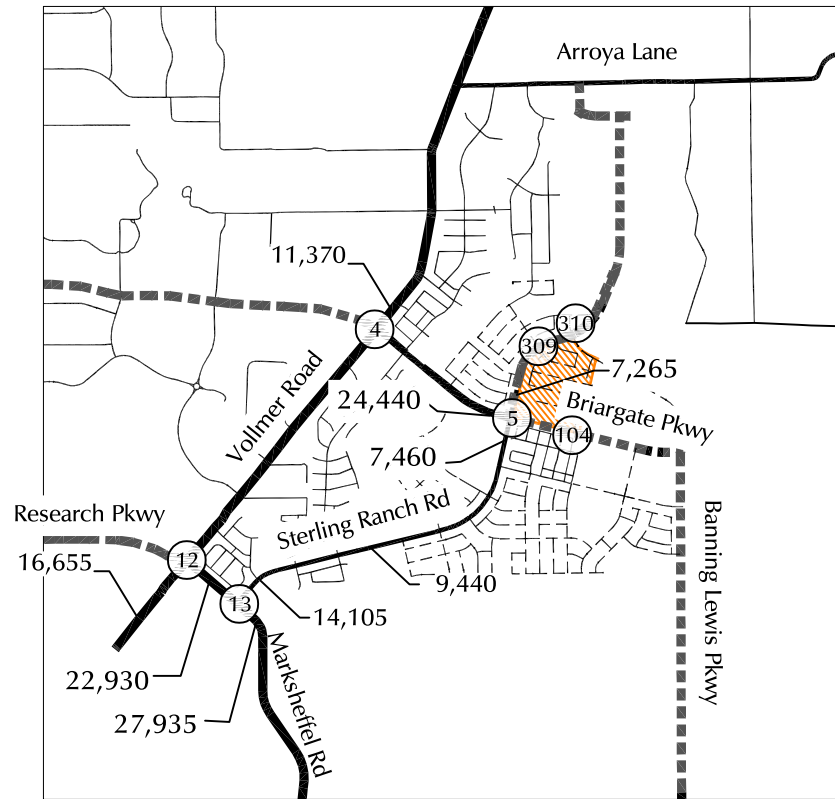
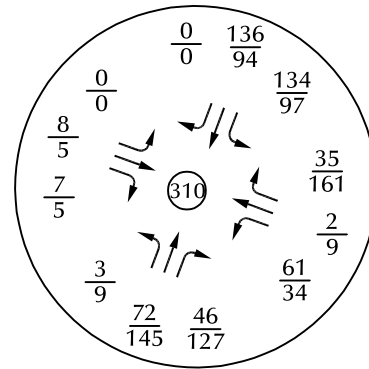
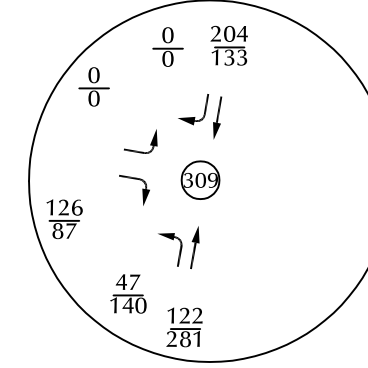
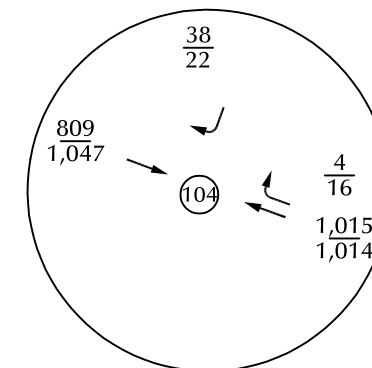
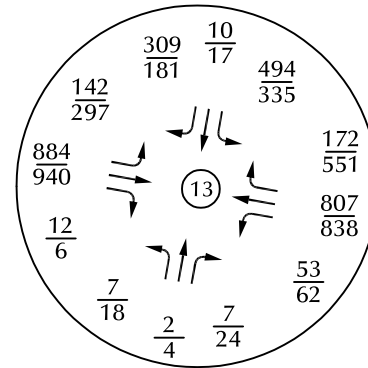
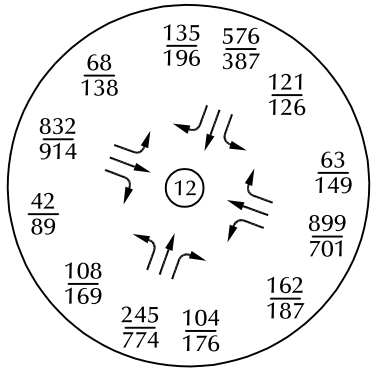
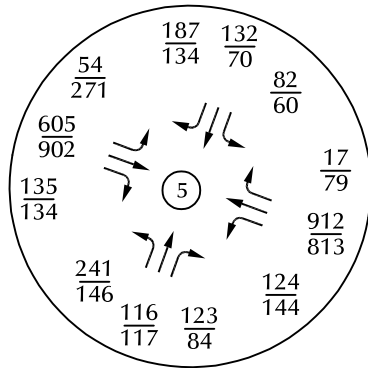
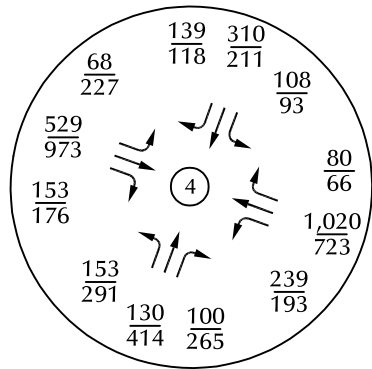
$\frac{A}{B}$	=	AM Individual Movement Peak-Hour LOS PM Individual Movement Peak-Hour LOS
$\frac{C}{D}$	=	AM Entire Intersection Peak-Hour Level of Service PM Entire Intersection Peak-Hour Level of Service

— Existing Roadway
 --- Future Roadway

 = Traffic Signal
 = Stop Sign

Figure 6b
 Short-Term Background
 Lane Geometry, Traffic
 Control, and LOS

Sterling Ranch East Filing No. 6 (LSC #S244252)



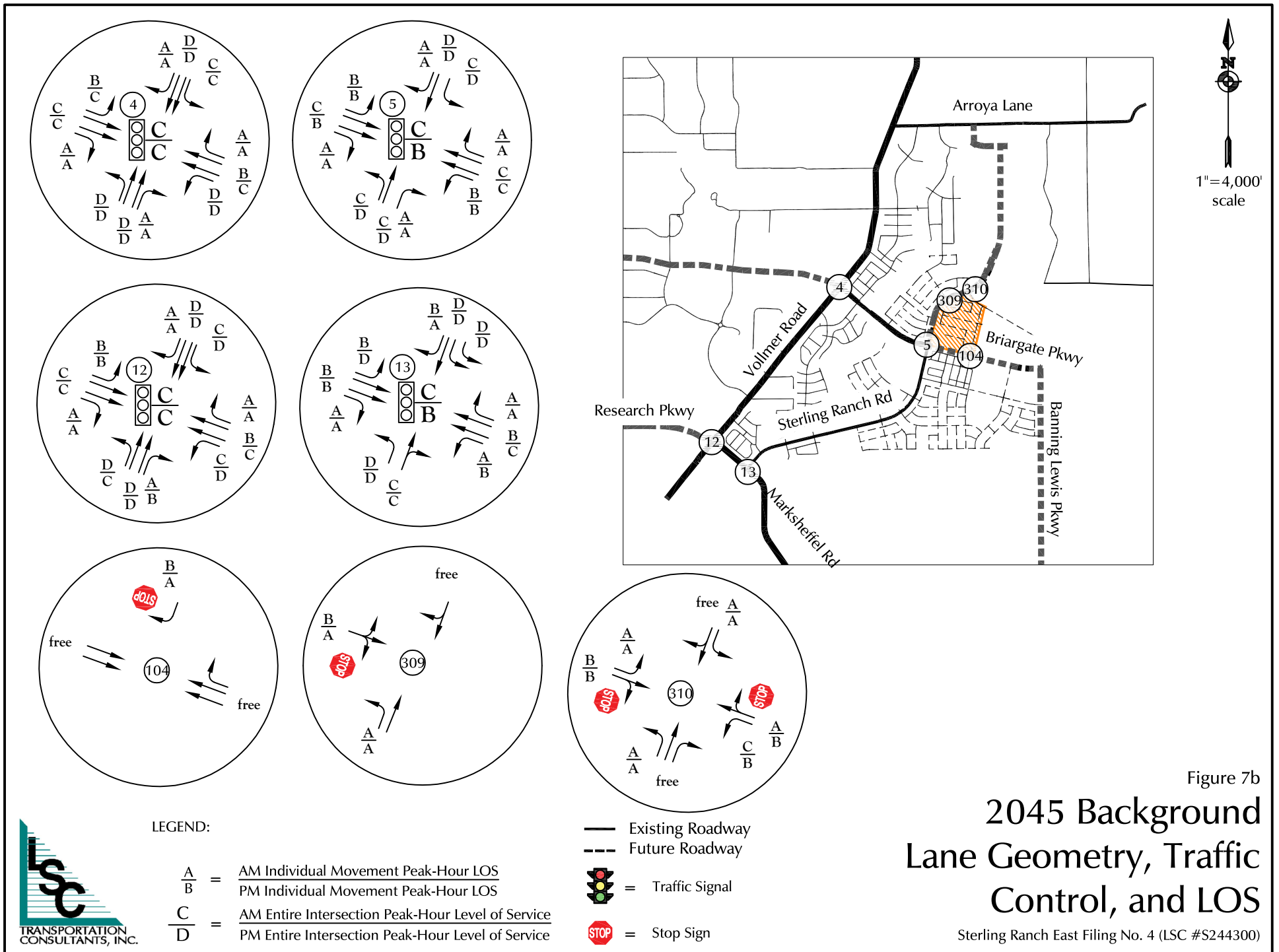
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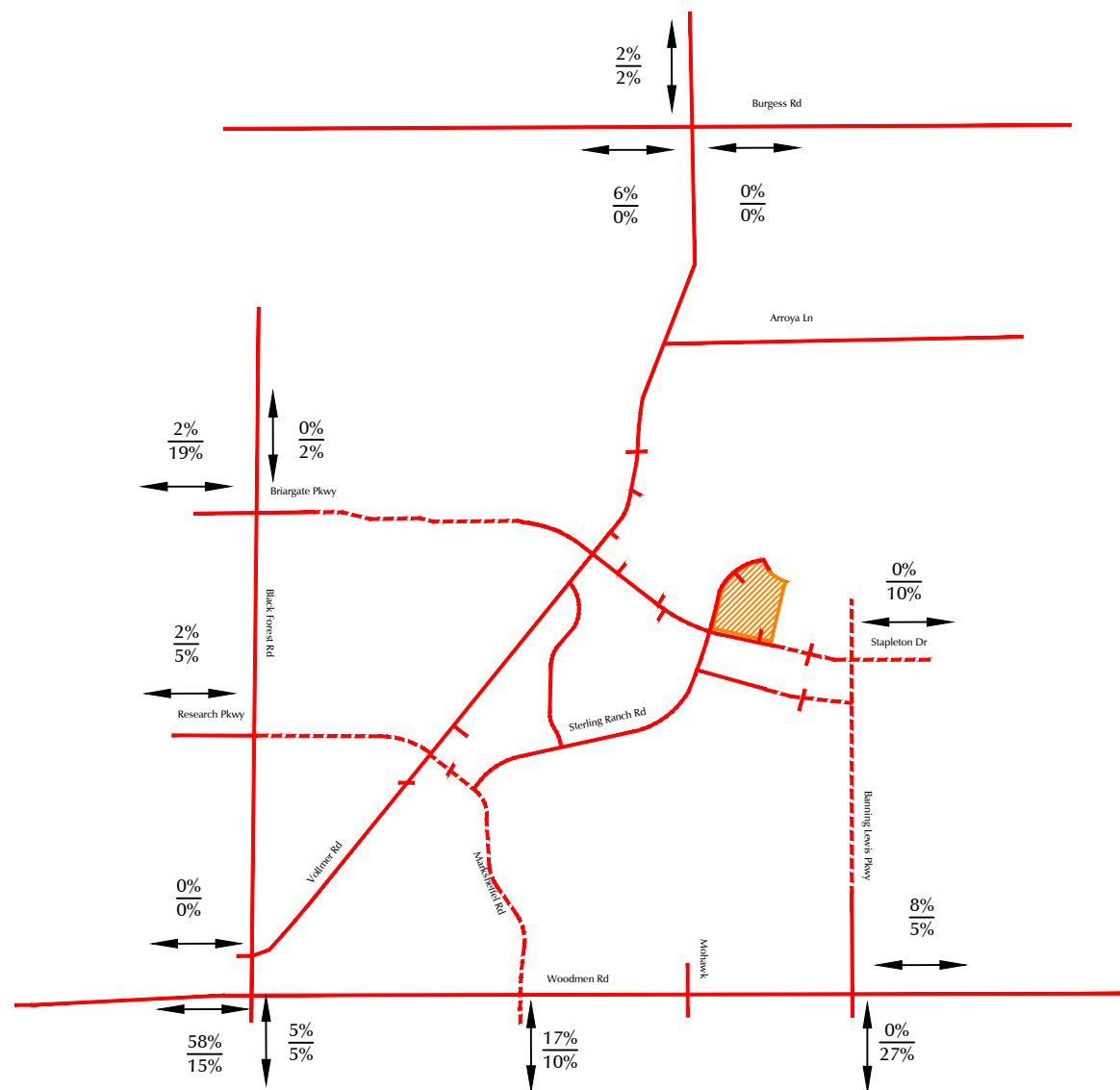
XX = AM Peak-Hour Traffic (Veh/Hr)
XX = PM Peak-Hour Traffic (Veh/Hr)

— Existing Roadway
--- Future Roadway

Figure 7a 2045 Background Traffic

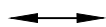
Sterling Ranch East Filing No. 6 (LSC #S244252)





Not to scale

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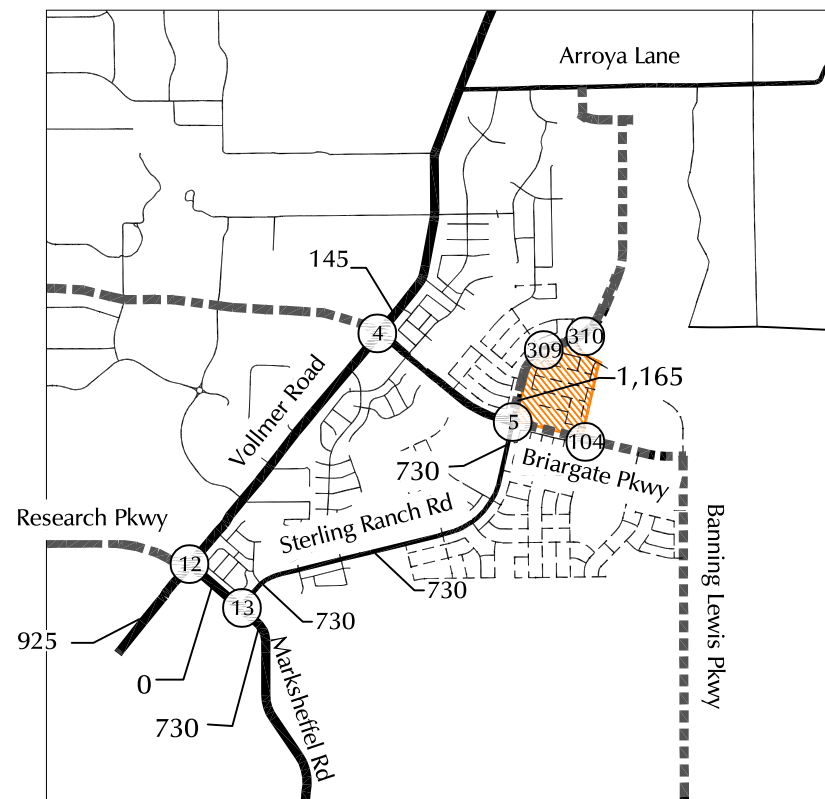
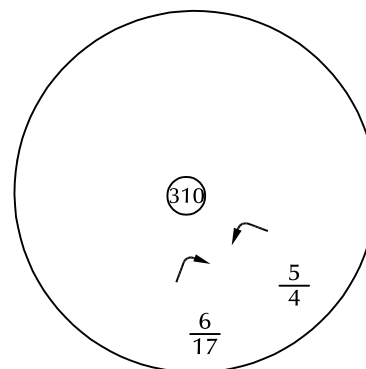
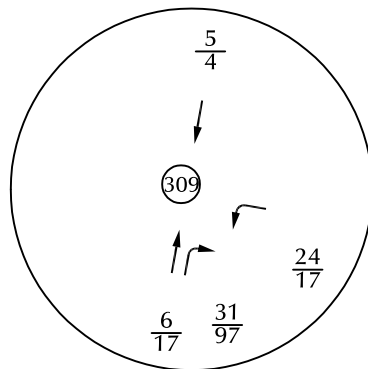
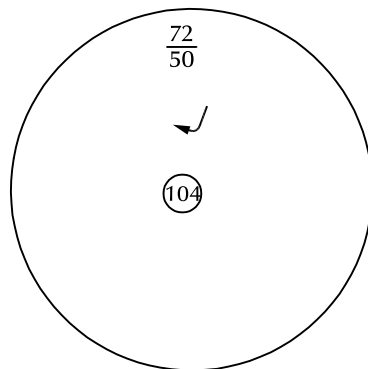
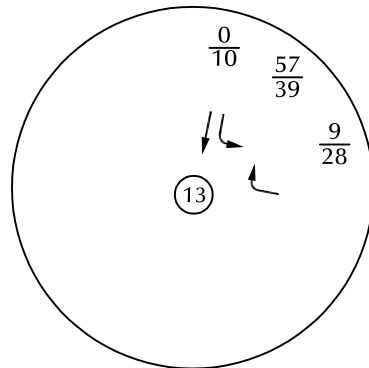
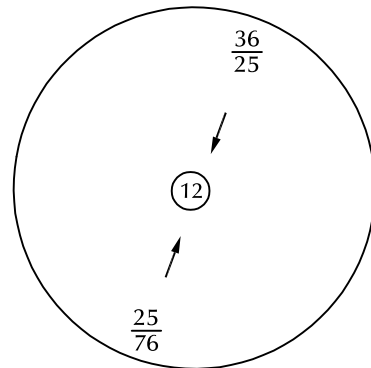
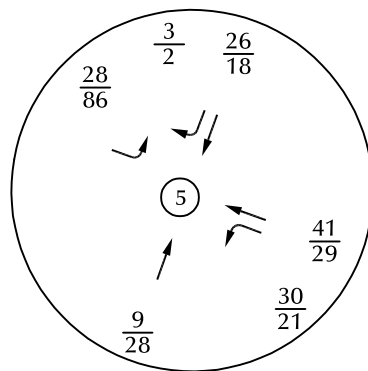
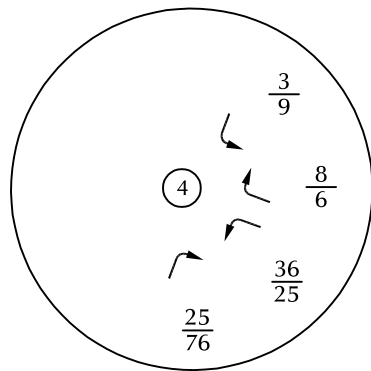


XX% = Percent of Short-Term Trips
XX% = Percent of Buildout Long-Term Trips

Estimated Directional Distribution of Site-Generated Trips

Figure 8

Sterling Ranch East Filing No. 6 (LSC #S244252)



1"=4,000'
scale



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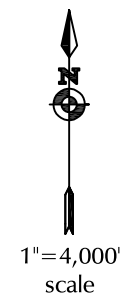
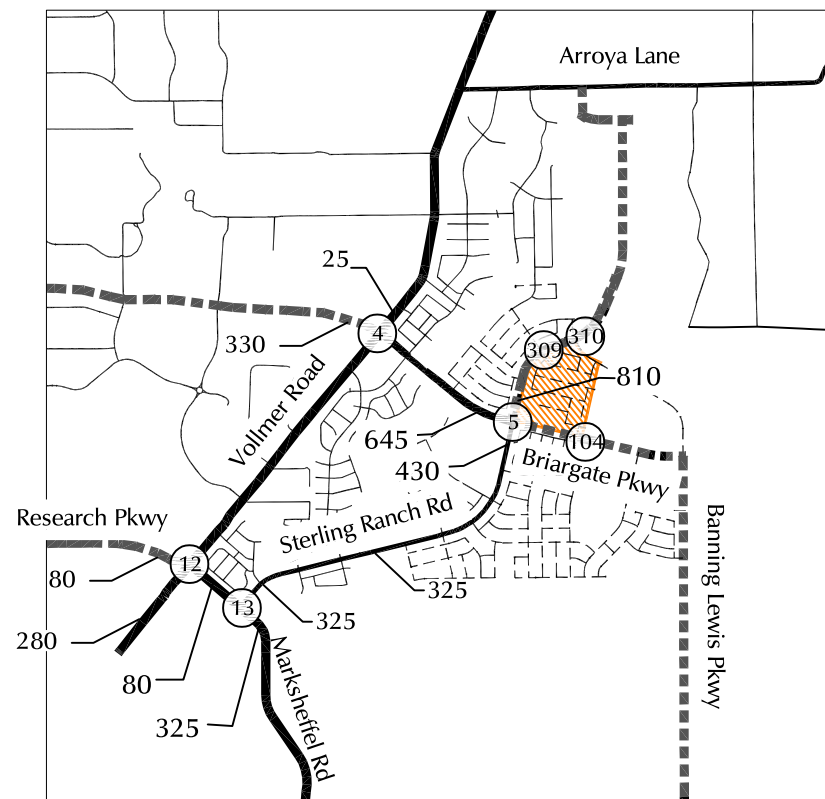
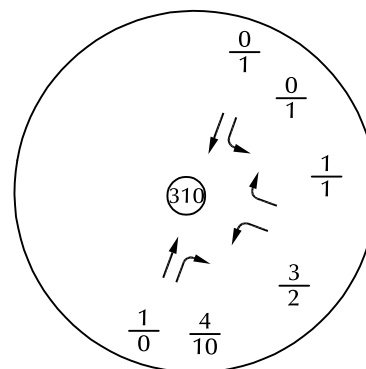
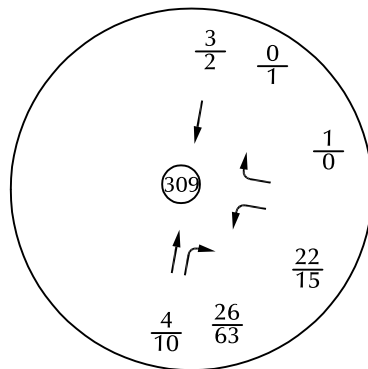
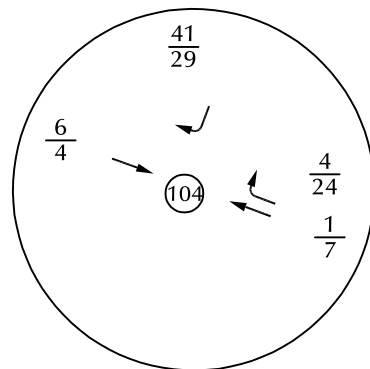
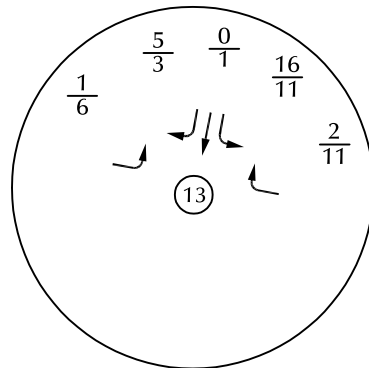
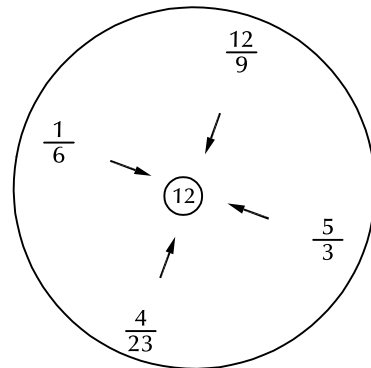
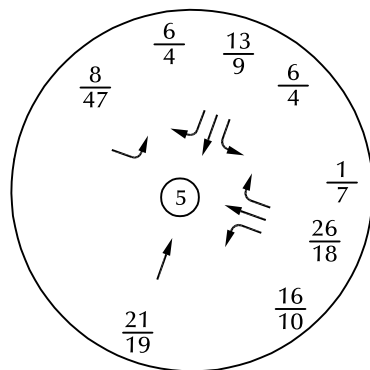
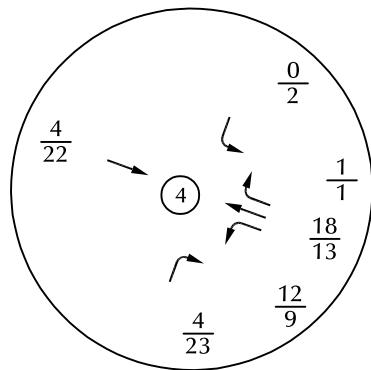
$\frac{XX}{XX}$ = $\frac{\text{AM Peak-Hour Traffic (Veh/Hr)}}{\text{PM Peak-Hour Traffic (Veh/Hr)}}$

— Existing Roadway
--- Future Roadway

Short-Term Site-Generated Traffic

Figure 9

Sterling Ranch East Filing No. 6 (LSC #S244252)



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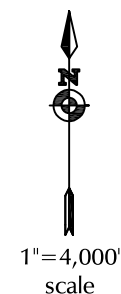
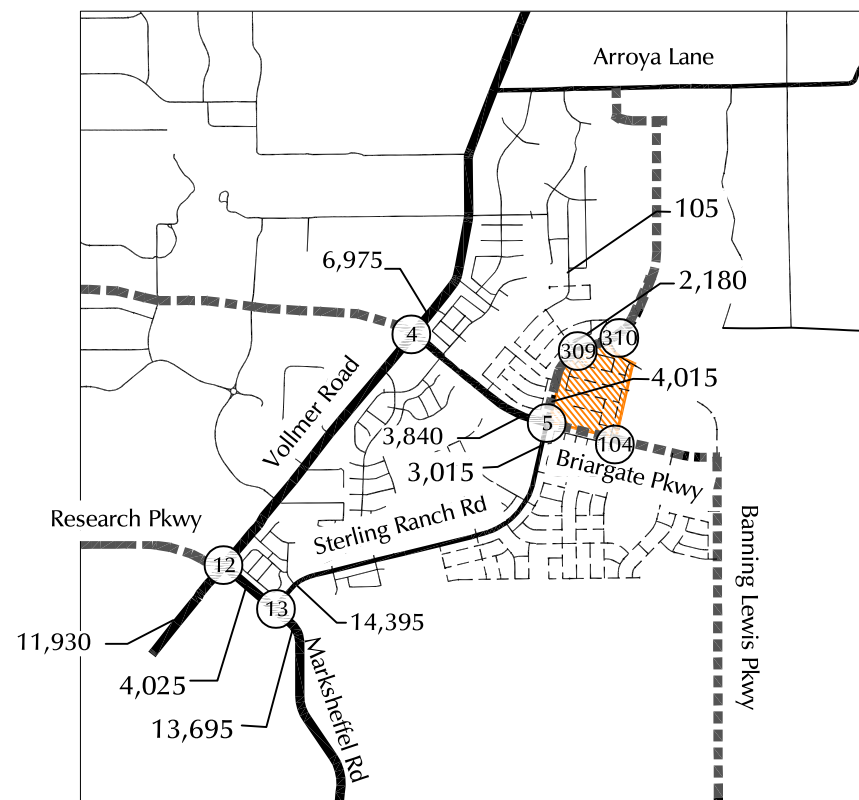
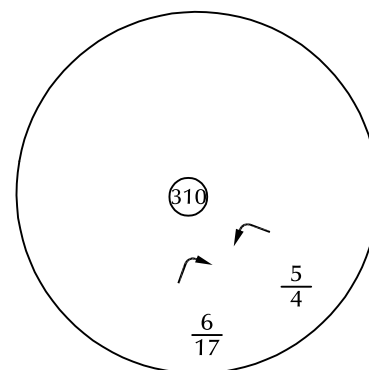
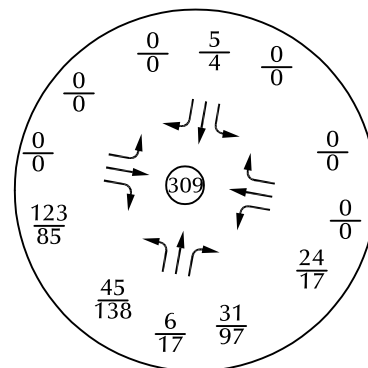
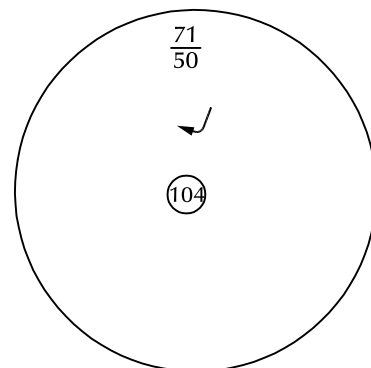
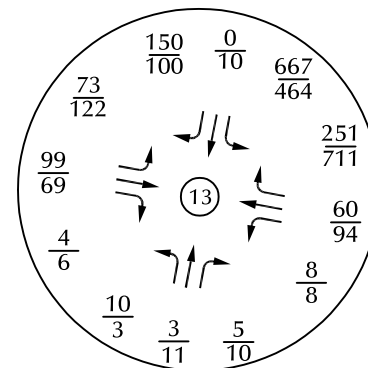
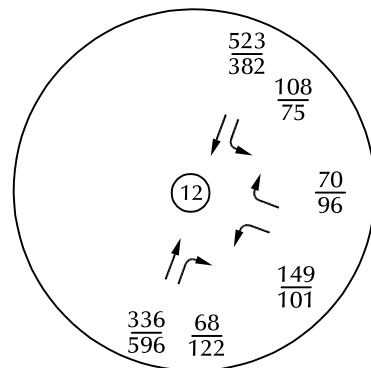
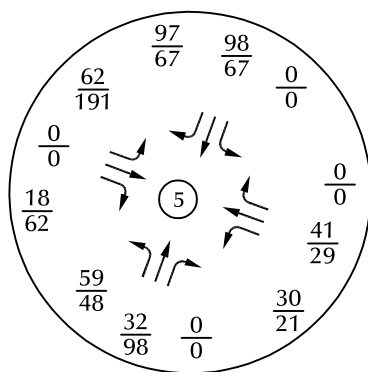
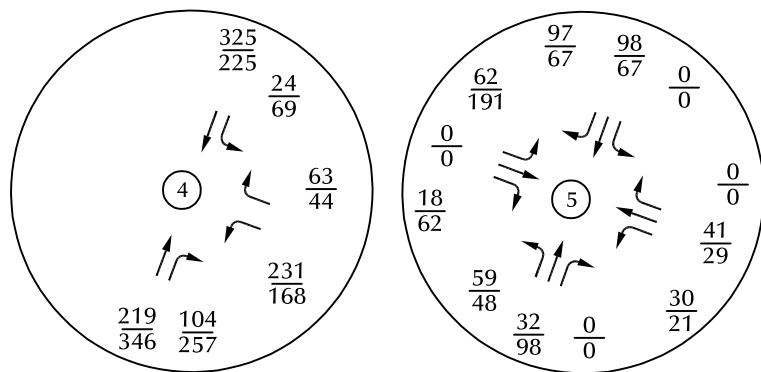
$\frac{XX}{XX}$ = $\frac{\text{AM Peak-Hour Traffic (Veh/Hr)}}{\text{PM Peak-Hour Traffic (Veh/Hr)}}$

— Existing Roadway
 --- Future Roadway

Long-Term Site-Generated Traffic

Figure 10

Sterling Ranch East Filing No. 6 (LSC #S244252)



LEGEND:

XX = AM Peak-Hour Traffic (Veh/Hr)
XX = PM Peak-Hour Traffic (Veh/Hr)

— Existing Roadway
--- Future Roadway

Short-Term Total Traffic

Figure 11a
Sterling Ranch East Filing No. 6 (LSC #S244252)

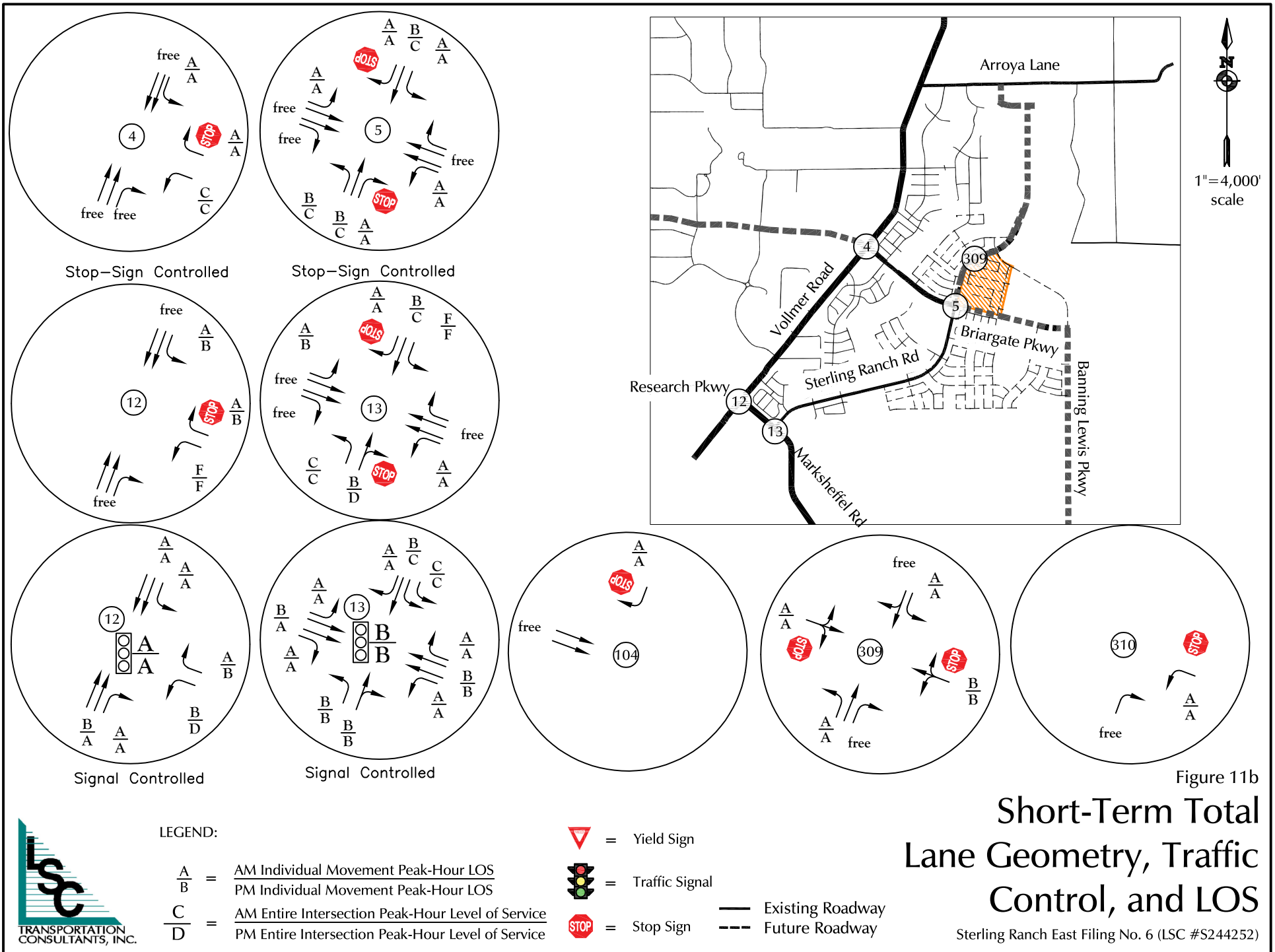
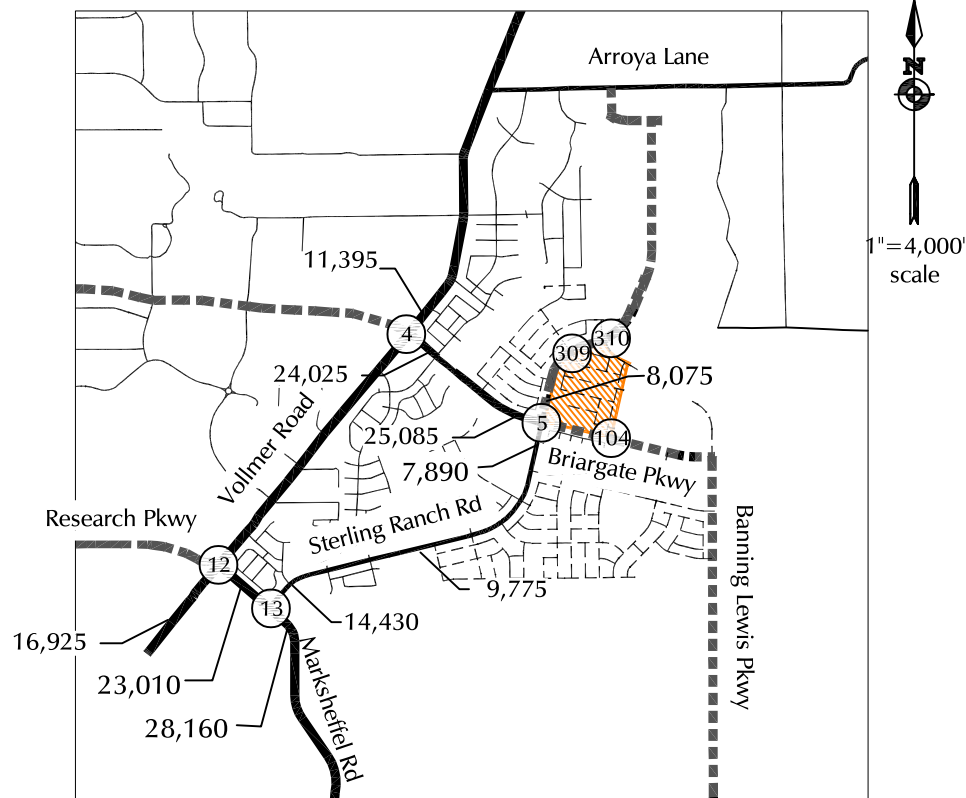
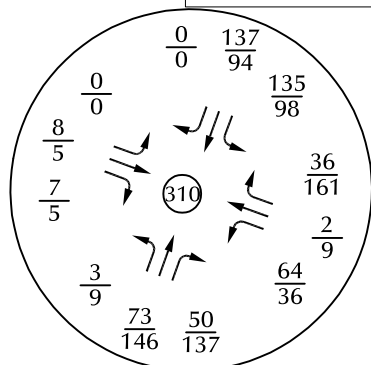
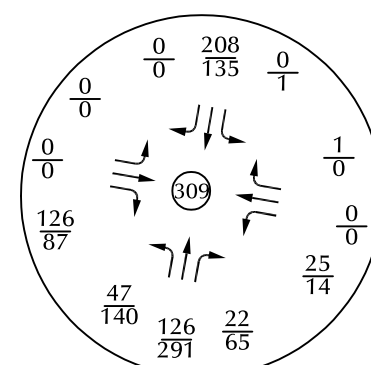
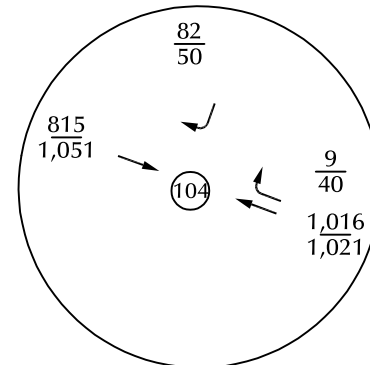
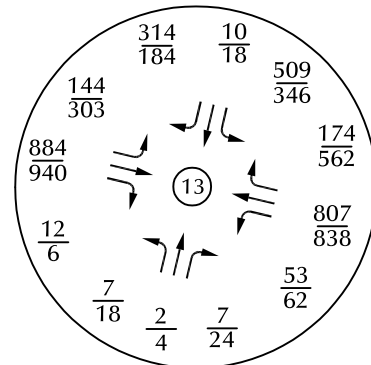
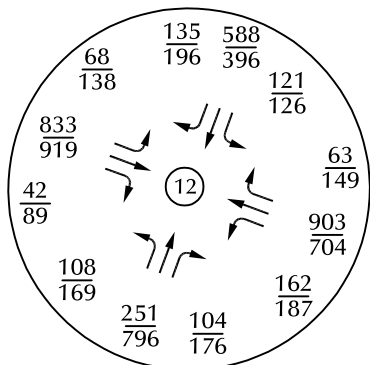
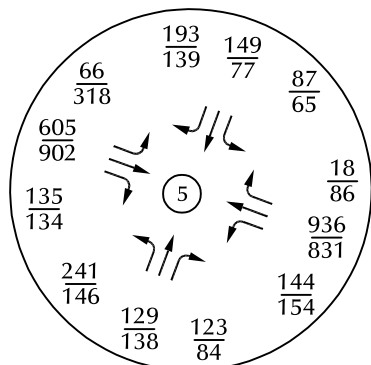
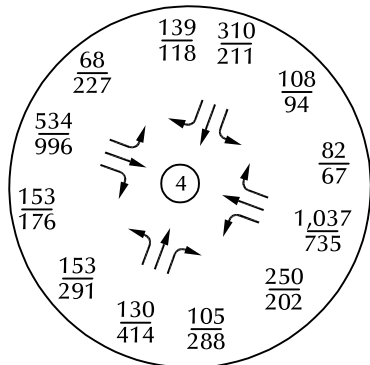


Figure 11b

Short-Term Total Lane Geometry, Traffic Control, and LOS

Sterling Ranch East Filing No. 6 (LSC #S244252)



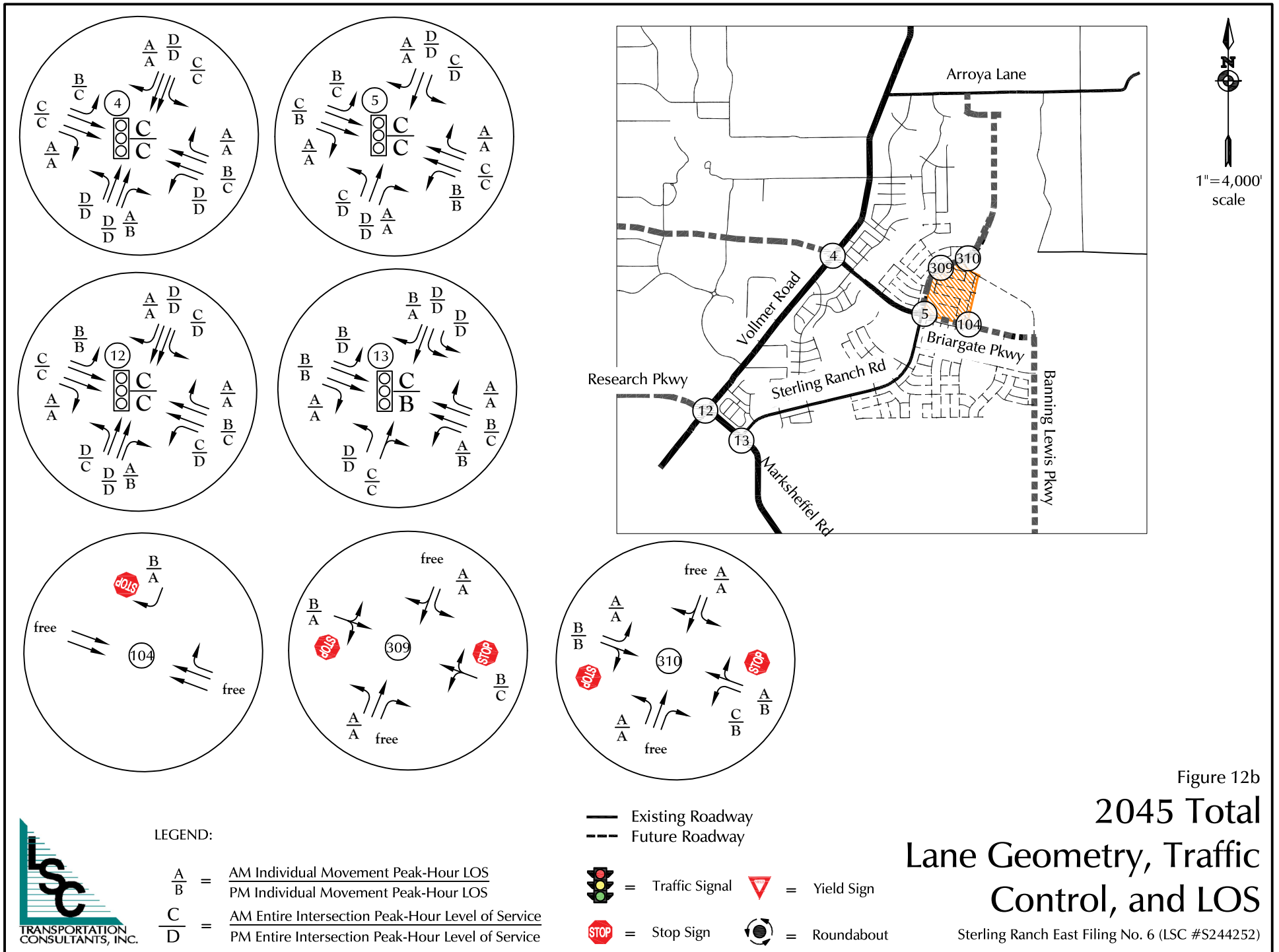
LEGEND:

XX = AM Peak-Hour Traffic (Veh/Hr)
XX = PM Peak-Hour Traffic (Veh/Hr)

— Existing Roadway
--- Future Roadway

Figure 12a
2045 Total Traffic

Sterling Ranch East Filing No. 6 (LSC #S244252)





Not to
Scale



- 4-Lane Urban Principal Arterial
- Urban Major Collector
- - - Urban Minor Collector
- Urban Local
- - - Urban Local (Low Volume)

Figure 13

Roadway Classification

Sterling Ranch East Filing No. 6 (LSC #S244252)



V1, B4, SR3, etc - Segment Identifier*

*See Table 6 for recommended roadway segment improvements for each segment.

Figure 14
**Roadway Improvement
 Segments***

Sterling Ranch East Filing No. 6 (LSC #S244252)

Traffic Counts

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

File Name : Sterling Rannch Rd - Marksheffel Rd AM

Site Code : S224580

Start Date : 3/6/2025

Page No : 1

Groups Printed- Unshifted

	Sterling Ranch Rd Southbound					Marksheffel Rd Westbound					Industrial Access Northbound					Marksheffel Rd Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
06:30	3	0	13	0	16	13	6	2	0	21	0	0	0	0	0	2	12	5	0	19	56
06:45	5	0	8	0	13	16	14	3	0	33	0	6	0	0	6	2	17	5	0	24	76
Total	8	0	21	0	29	29	20	5	0	54	0	6	0	0	6	4	29	10	0	43	132
07:00	8	0	17	0	25	17	11	0	0	28	2	4	0	0	6	3	12	5	0	20	79
07:15	10	0	17	0	27	8	6	1	0	15	3	0	3	0	6	1	24	4	0	29	77
07:30	16	0	15	0	31	16	19	4	0	39	1	1	2	0	4	1	20	9	0	30	104
07:45	9	0	18	0	27	18	15	1	1	35	0	2	3	0	5	1	13	12	0	26	93
Total	43	0	67	0	110	59	51	6	1	117	6	7	8	0	21	6	69	30	0	105	353
08:00	12	0	15	0	27	17	12	2	0	31	1	0	2	0	3	1	19	18	0	38	99
08:15	3	1	12	0	16	15	13	3	0	31	1	1	1	0	3	3	11	3	0	17	67
Grand Total	66	1	115	0	182	120	96	16	1	233	8	14	11	0	33	14	128	61	0	203	651
Apprch %	36.3	0.5	63.2	0		51.5	41.2	6.9	0.4		24.2	42.4	33.3	0		6.9	63.1	30	0		
Total %	10.1	0.2	17.7	0	28	18.4	14.7	2.5	0.2	35.8	1.2	2.2	1.7	0	5.1	2.2	19.7	9.4	0	31.2	

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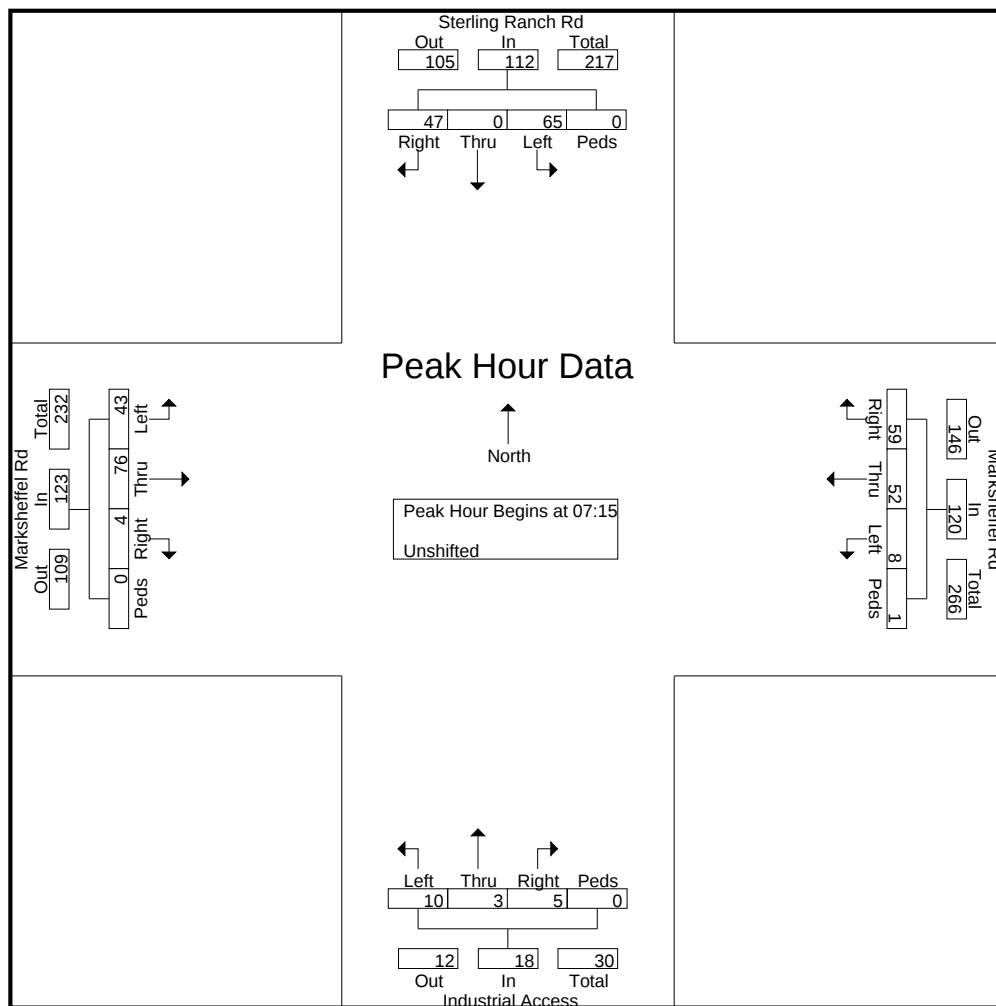
File Name : Sterling Ranch Rd - Marksheffel Rd AM

Site Code : S224580

Start Date : 3/6/2025

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	Sterling Ranch Rd Southbound					Marksheffel Rd Westbound					Industrial Access Northbound					Marksheffel Rd Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:30 to 08:15 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15																					
07:15	10	0	17	0	27	8	6	1	0	15	3	0	3	0	6	1	24	4	0	29	77
07:30	16	0	15	0	31	16	19	4	0	39	1	1	2	0	4	1	20	9	0	30	104
07:45	9	0	18	0	27	18	15	1	1	35	0	2	3	0	5	1	13	12	0	26	93
08:00	12	0	15	0	27	17	12	2	0	31	1	0	2	0	3	1	19	18	0	38	99
Total Volume	47	0	65	0	112	59	52	8	1	120	5	3	10	0	18	4	76	43	0	123	373
% App. Total	42	0	58	0		49.2	43.3	6.7	0.8		27.8	16.7	55.6	0		3.3	61.8	35	0		
PHF	.734	.000	.903	.000	.903	.819	.684	.500	.250	.769	.417	.375	.833	.000	.750	1.0	.792	.597	.000	.809	.897
																0					



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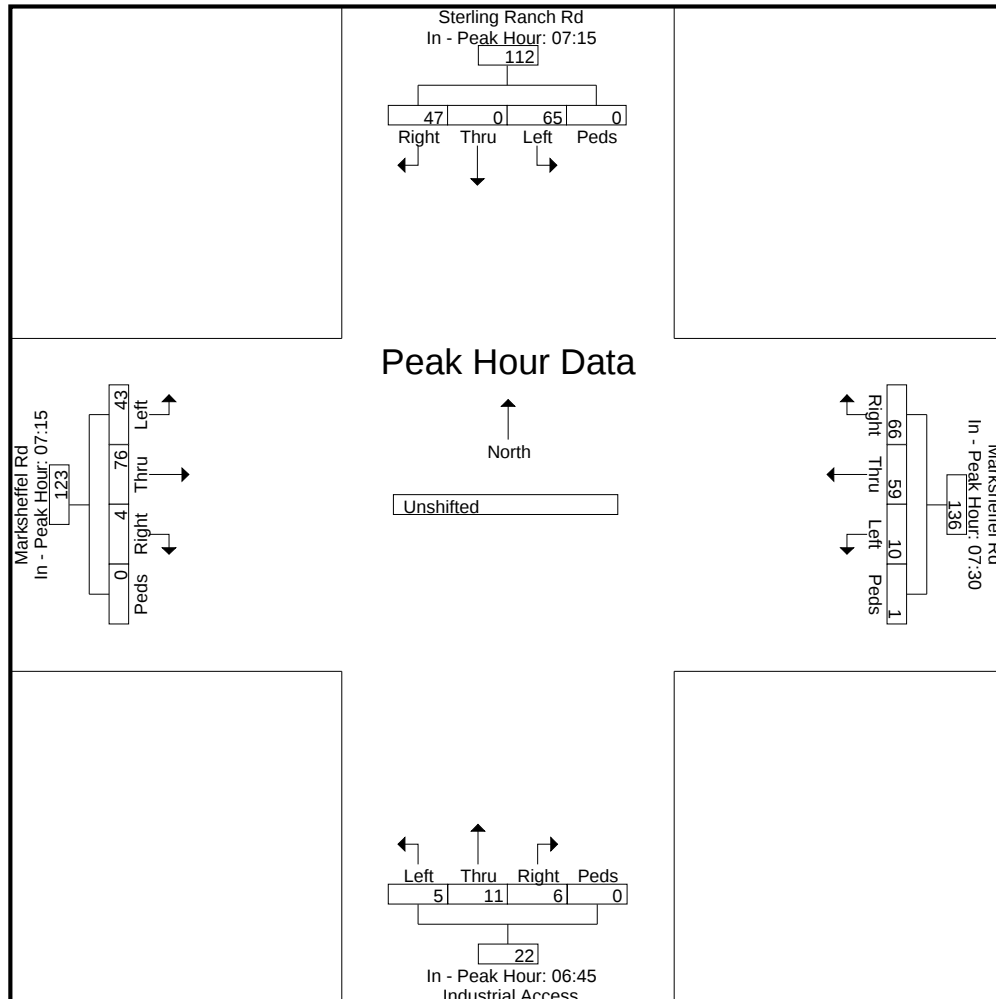
File Name : Sterling Rannch Rd - Marksheffel Rd AM

Site Code : S224580

Start Date : 3/6/2025

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	Sterling Ranch Rd Southbound					Marksheffel Rd Westbound					Industrial Access Northbound					Marksheffel Rd Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:30 to 08:15 - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	07:15					07:30					06:45					07:15					
+0 mins.	10	0	17	0	27	16	19	4	0	39	0	6	0	0	6	1	24	4	0	29	
+15 mins.	16	0	15	0	31	18	15	1	1	35	2	4	0	0	6	1	20	9	0	30	
+30 mins.	9	0	18	0	27	17	12	2	0	31	3	0	3	0	6	1	13	12	0	26	
+45 mins.	12	0	15	0	27	15	13	3	0	31	1	1	2	0	4	1	19	18	0	38	
Total Volume	47	0	65	0	112	66	59	10	1	136	6	11	5	0	22	4	76	43	0	123	
% App. Total	42	0	58	0		48.5	43.4	7.4	0.7		27.3	50	22.7	0		3.3	61.8	35	0		
PHF	.734	.000	.903	.000	.903	.917	.776	.625	.250	.872	.500	.458	.417	.000	.917	1.000	.792	.597	.000	.809	



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Groups Printed- Unshifted

	Sterling Ranch Rd Southbound					Marksheffel Rd Westbound					Industrial Access Northbound					Marksheffel Rd Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
16:00	5	6	20	0	31	14	13	5	0	32	5	7	0	0	12	0	12	10	0	22	97
16:15	9	0	16	0	25	18	23	2	0	43	2	2	0	0	4	2	17	10	0	29	101
16:30	10	1	20	0	31	14	17	1	0	32	1	1	1	0	3	0	18	6	0	24	90
16:45	6	3	5	0	14	25	15	0	0	40	2	1	2	0	5	4	7	2	0	13	72
Total	30	10	61	0	101	71	68	8	0	147	10	11	3	0	24	6	54	28	0	88	360
17:00	3	2	17	0	22	20	19	1	0	40	1	2	0	0	3	0	16	7	0	23	88
17:15	4	12	20	0	36	13	14	1	0	28	1	0	2	0	3	1	17	8	0	26	93
17:30	8	0	25	0	33	11	20	3	0	34	13	0	3	0	16	0	13	7	0	20	103
17:45	11	0	14	0	25	14	10	0	0	24	4	0	1	0	5	0	9	10	0	19	73
Total	26	14	76	0	116	58	63	5	0	126	19	2	6	0	27	1	55	32	0	88	357
Grand Total	56	24	137	0	217	129	131	13	0	273	29	13	9	0	51	7	109	60	0	176	717
Apprch %	25.8	11.1	63.1	0		47.3	48	4.8	0		56.9	25.5	17.6	0		4	61.9	34.1	0		
Total %	7.8	3.3	19.1	0	30.3	18	18.3	1.8	0	38.1	4	1.8	1.3	0	7.1	1	15.2	8.4	0	24.5	

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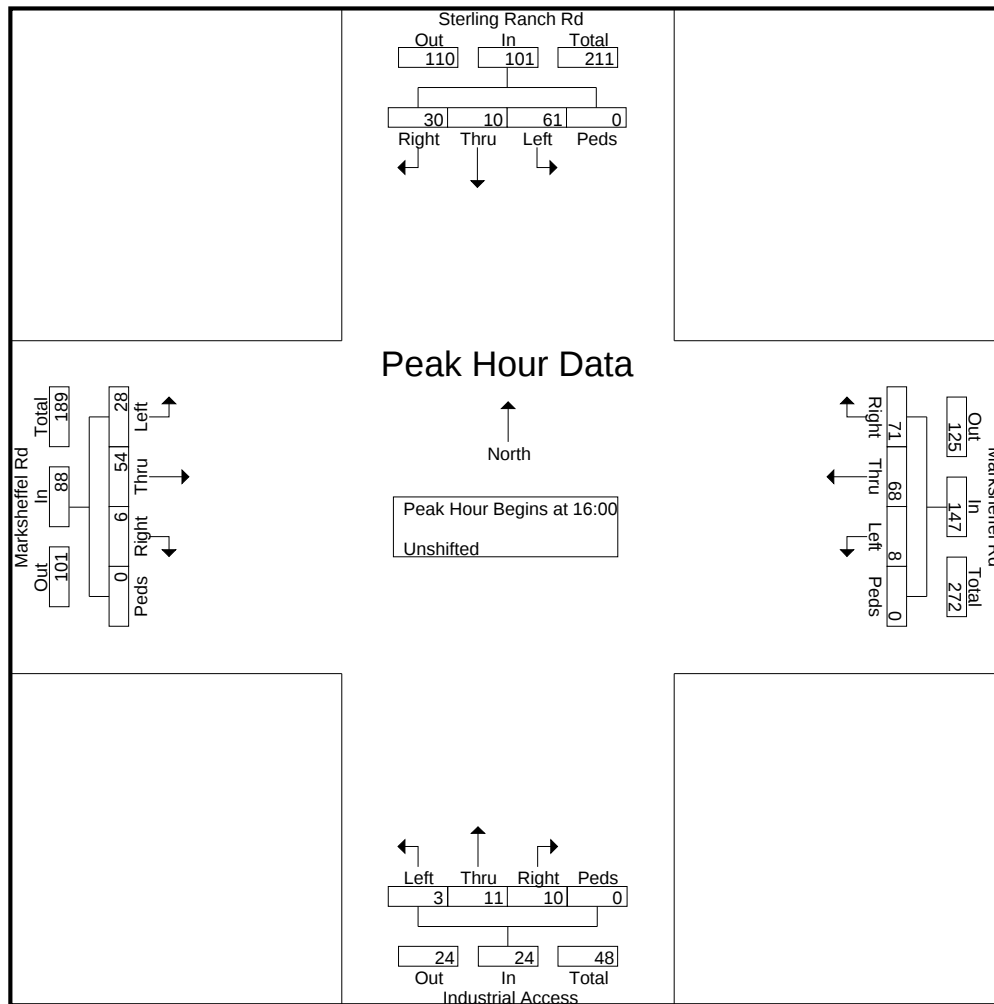
File Name : Sterling Ranch Rd - Marksheffel Rd PM

Site Code : S224580

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Page No : 2

	Sterling Ranch Rd Southbound					Marksheffel Rd Westbound					Industrial Access Northbound					Marksheffel Rd Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:00																					
16:00	5	6	20	0	31	14	13	5	0	32	5	7	0	0	12	0	12	10	0	22	97
16:15	9	0	16	0	25	18	23	2	0	43	2	2	0	0	4	2	17	10	0	29	101
16:30	10	1	20	0	31	14	17	1	0	32	1	1	1	0	3	0	18	6	0	24	90
16:45	6	3	5	0	14	25	15	0	0	40	2	1	2	0	5	4	7	2	0	13	72
Total Volume	30	10	61	0	101	71	68	8	0	147	10	11	3	0	24	6	54	28	0	88	360
% App. Total	29.7	9.9	60.4	0		48.3	46.3	5.4	0		41.7	45.8	12.5	0		6.8	61.4	31.8	0		
PHF	.750	.417	.763	.000	.815	.710	.739	.400	.000	.855	.500	.393	.375	.000	.500	.375	.750	.700	.000	.759	.891



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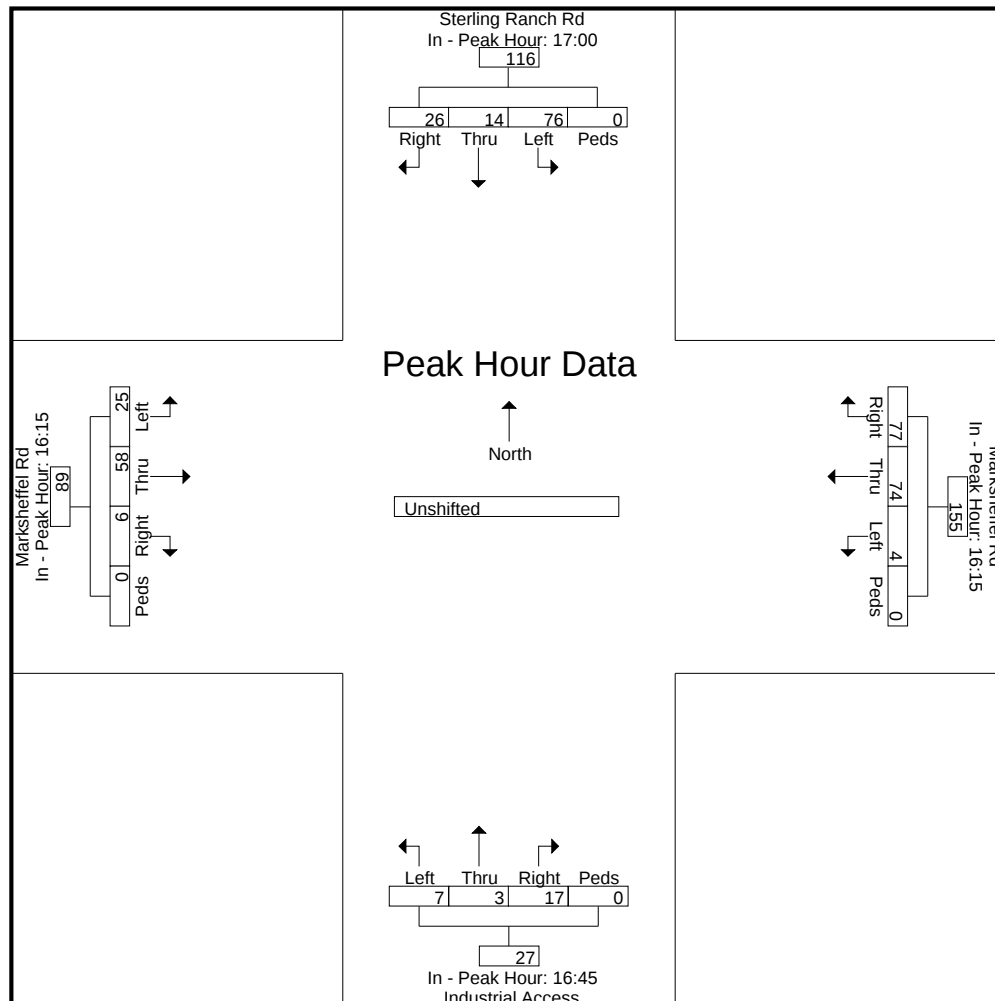
File Name : Sterling Rannch Rd - Marksheffel Rd PM

Site Code : S224580

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Page No : 3

	Sterling Ranch Rd Southbound					Marksheffel Rd Westbound					Industrial Access Northbound					Marksheffel Rd Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	17:00					16:15					16:45					16:15					
+0 mins.	3	2	17	0	22	18	23	2	0	43	2	1	2	0	5	2	17	10	0	29	
+15 mins.	4	12	20	0	36	14	17	1	0	32	1	2	0	0	3	0	18	6	0	24	
+30 mins.	8	0	25	0	33	25	15	0	0	40	1	0	2	0	3	4	7	2	0	13	
+45 mins.	11	0	14	0	25	20	19	1	0	40	13	0	3	0	16	0	16	7	0	23	
Total Volume	26	14	76	0	116	77	74	4	0	155	17	3	7	0	27	6	58	25	0	89	
% App. Total	22.4	12.1	65.5	0		49.7	47.7	2.6	0		63	11.1	25.9	0		6.7	65.2	28.1	0		
PHF	.591	.292	.760	.000	.806	.770	.804	.500	.000	.901	.327	.375	.583	.000	.422	.375	.806	.625	.000	.767	



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Site Code : S244580

Start Date : 3/6/2025

Page No : 1

Groups Printed- Unshifted

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06:30	0	27	0	0	27	0	0	2	0	2	0	16	0	0	16	0	0	0	0	0	45
06:45	0	36	0	0	36	1	0	4	0	5	4	29	0	0	33	0	0	0	0	0	74
Total	0	63	0	0	63	1	0	6	0	7	4	45	0	0	49	0	0	0	0	0	119
07:00	0	43	0	0	43	1	0	3	0	4	6	25	0	0	31	0	0	0	0	0	78
07:15	0	72	2	0	74	0	0	3	0	3	3	24	0	0	27	0	0	0	0	0	104
07:30	0	57	0	0	57	2	0	6	0	8	3	39	0	0	42	0	0	0	0	0	107
07:45	0	58	1	0	59	0	0	5	0	5	11	48	0	0	59	0	0	0	0	0	123
Total	0	230	3	0	233	3	0	17	0	20	23	136	0	0	159	0	0	0	0	0	412
08:00	0	49	1	0	50	1	0	2	0	3	6	49	0	0	55	0	0	0	0	0	108
08:15	0	38	0	0	38	1	0	4	0	5	5	44	0	0	49	0	0	0	0	0	92
Grand Total	0	380	4	0	384	6	0	29	0	35	38	274	0	0	312	0	0	0	0	0	731
Apprch %	0	99	1	0		17.1	0	82.9	0		12.2	87.8	0	0		0	0	0	0		
Total %	0	52	0.5	0	52.5	0.8	0	4	0	4.8	5.2	37.5	0	0	42.7	0	0	0	0	0	

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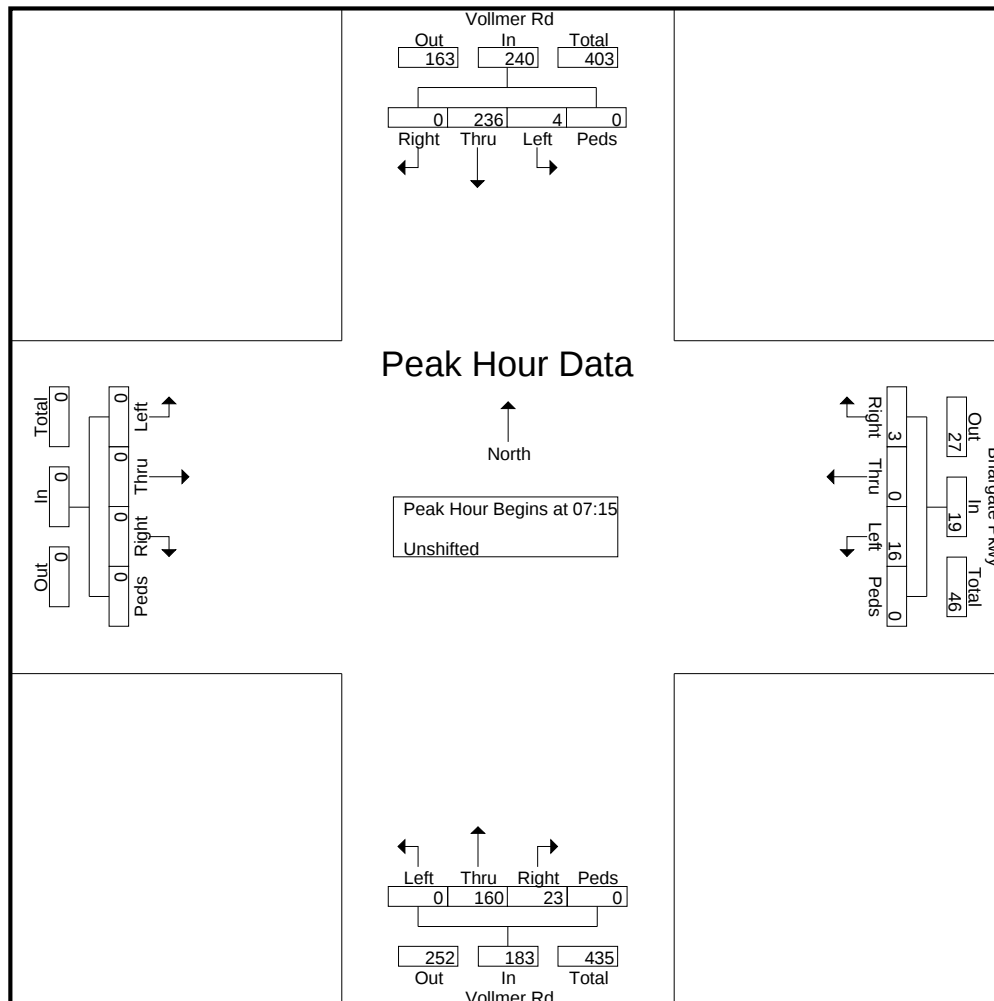
File Name : Vollmer Rd - Briargate Pkwy AM

Site Code : S244580

Start Date : 3/6/2025

Page No : 2

	Vollmer Rd Southbound					Briargate Pkwy Westbound					Vollmer Rd Northbound					Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:30 to 08:15 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15																					
07:15	0	72	2	0	74	0	0	3	0	3	3	24	0	0	27	0	0	0	0	0	104
07:30	0	57	0	0	57	2	0	6	0	8	3	39	0	0	42	0	0	0	0	0	107
07:45	0	58	1	0	59	0	0	5	0	5	11	48	0	0	59	0	0	0	0	0	123
08:00	0	49	1	0	50	1	0	2	0	3	6	49	0	0	55	0	0	0	0	0	108
Total Volume	0	236	4	0	240	3	0	16	0	19	23	160	0	0	183	0	0	0	0	0	442
% App. Total	0	98.3	1.7	0		15.8	0	84.2	0		12.6	87.4	0	0		0	0	0	0		
PHF	.000	.819	.500	.000	.811	.375	.000	.667	.000	.594	.523	.816	.000	.000	.775	.000	.000	.000	.000	.000	.898



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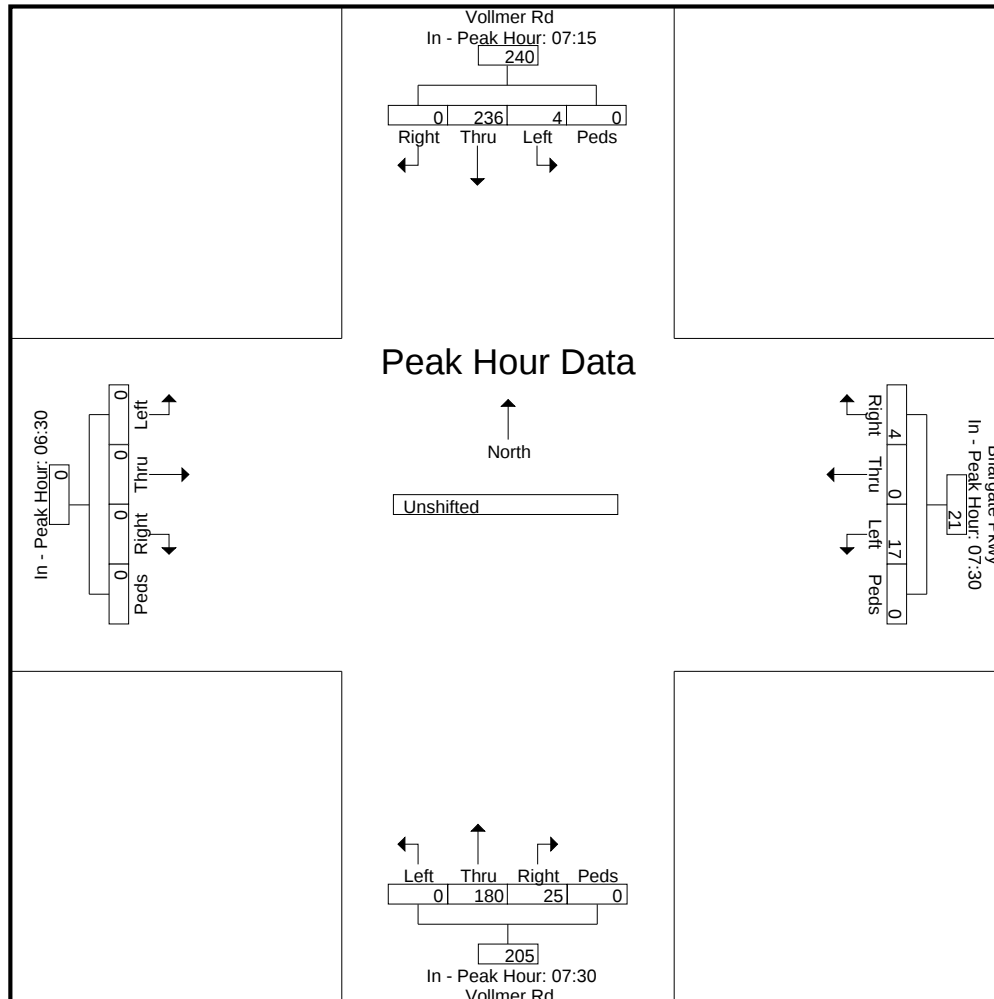
File Name : Vollmer Rd - Briargate Pkwy AM

Site Code : S244580

Start Date : 3/6/2025

Page No : 3

	Vollmer Rd Southbound					Briargate Pkwy Westbound					Vollmer Rd Northbound					Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:30 to 08:15 - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	07:15					07:30					07:30					06:30					
+0 mins.	0	72	2	0	74	2	0	6	0	8	3	39	0	0	42	0	0	0	0	0	
+15 mins.	0	57	0	0	57	0	0	5	0	5	11	48	0	0	59	0	0	0	0	0	
+30 mins.	0	58	1	0	59	1	0	2	0	3	6	49	0	0	55	0	0	0	0	0	
+45 mins.	0	49	1	0	50	1	0	4	0	5	5	44	0	0	49	0	0	0	0	0	
Total Volume	0	236	4	0	240	4	0	17	0	21	25	180	0	0	205	0	0	0	0	0	
% App. Total	0	98.3	1.7	0		19	0	81	0		12.2	87.8	0	0		0	0	0	0		
PHF	.000	.819	.500	.000	.811	.500	.000	.708	.000	.656	.568	.918	.000	.000	.869	.000	.000	.000	.000	.000	



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

File Name : Vollmer Rd - Briargate Pkwy PM

Site Code : S244580

Start Date : 3/6/2025

Page No : 1

Groups Printed- Unshifted

	Vollmer Rd Southbound					Briargate Blvd Westbound					Vollmer Rd Northbound					Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
16:00	0	27	2	0	29	0	0	5	0	5	0	35	0	0	35	0	0	0	0	0	69
16:15	0	36	0	0	36	0	0	3	0	3	4	50	0	0	54	0	0	0	0	0	93
16:30	0	37	2	0	39	2	0	7	0	9	2	46	0	0	48	0	0	0	0	0	96
16:45	0	31	0	0	31	1	0	9	0	10	1	45	0	0	46	0	0	0	0	0	87
Total	0	131	4	0	135	3	0	24	0	27	7	176	0	0	183	0	0	0	0	0	345
17:00	0	39	1	0	40	1	0	4	0	5	0	58	0	0	58	0	0	0	0	0	103
17:15	0	43	0	0	43	0	0	1	0	1	2	68	0	0	70	0	0	0	0	0	114
17:30	0	30	2	0	32	0	0	2	0	2	3	58	0	0	61	0	0	0	0	0	95
17:45	0	26	1	0	27	0	0	5	0	5	5	36	0	0	41	0	0	0	0	0	73
Total	0	138	4	0	142	1	0	12	0	13	10	220	0	0	230	0	0	0	0	0	385
Grand Total	0	269	8	0	277	4	0	36	0	40	17	396	0	0	413	0	0	0	0	0	730
Apprch %	0	97.1	2.9	0		10	0	90	0		4.1	95.9	0	0		0	0	0	0		
Total %	0	36.8	1.1	0	37.9	0.5	0	4.9	0	5.5	2.3	54.2	0	0	56.6	0	0	0	0	0	

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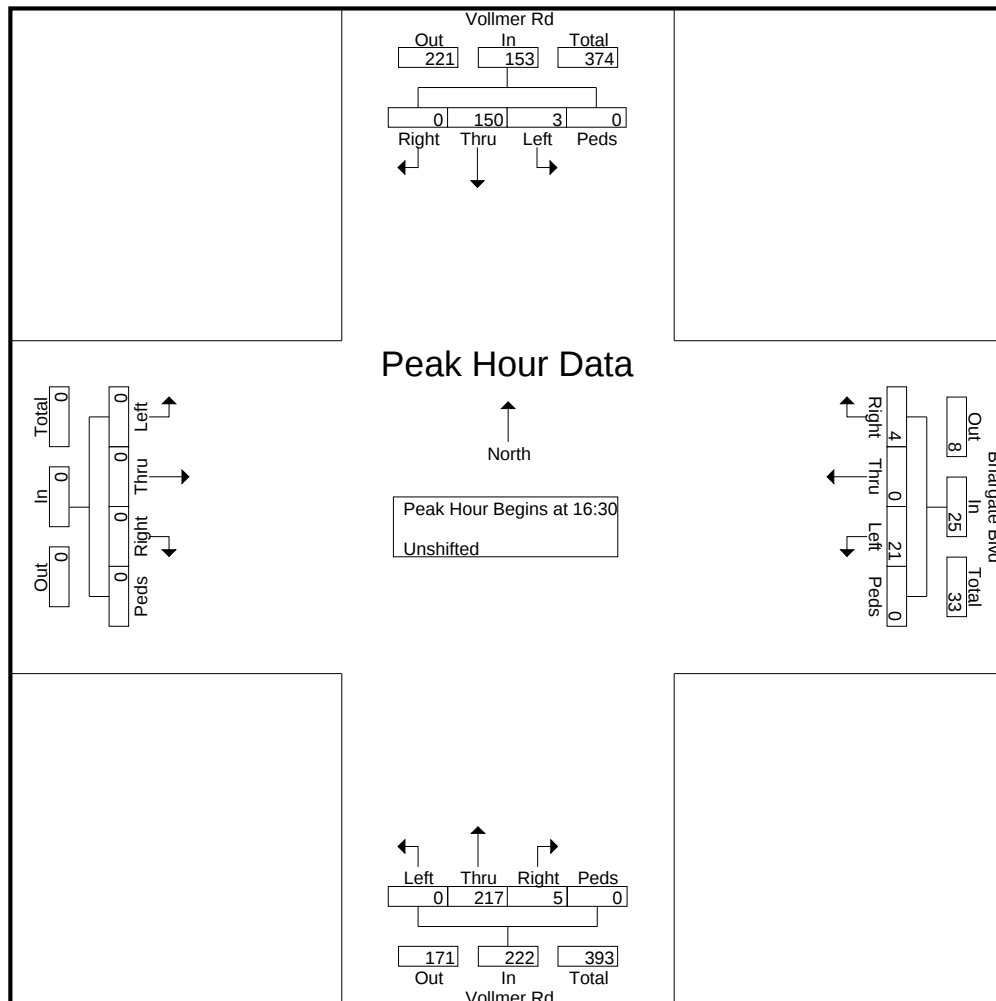
File Name : Vollmer Rd - Briargate Pkwy PM

Site Code : S244580

Start Date : 3/6/2025

Page No : 2

	Vollmer Rd Southbound					Briargate Blvd Westbound					Vollmer Rd Northbound					Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:30																					
16:30	0	37	2	0	39	2	0	7	0	9	2	46	0	0	48	0	0	0	0	0	96
16:45	0	31	0	0	31	1	0	9	0	10	1	45	0	0	46	0	0	0	0	0	87
17:00	0	39	1	0	40	1	0	4	0	5	0	58	0	0	58	0	0	0	0	0	103
17:15	0	43	0	0	43	0	0	1	0	1	2	68	0	0	70	0	0	0	0	0	114
Total Volume	0	150	3	0	153	4	0	21	0	25	5	217	0	0	222	0	0	0	0	0	400
% App. Total	0	98	2	0		16	0	84	0		2.3	97.7	0	0		0	0	0	0		
PHF	.000	.872	.375	.000	.890	.500	.000	.583	.000	.625	.625	.798	.000	.000	.793	.000	.000	.000	.000	.000	.877



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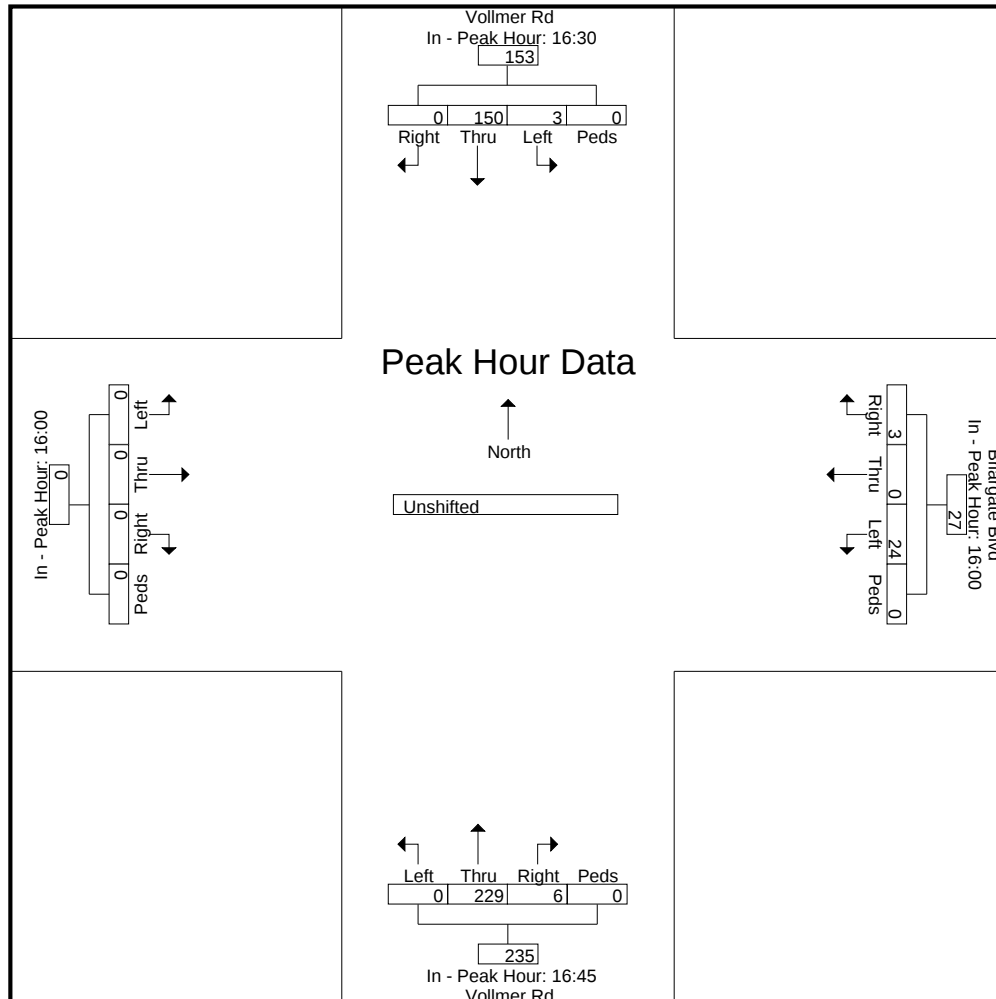
File Name : Vollmer Rd - Briargate Pkwy PM

Site Code : S244580

Start Date : 3/6/2025

Page No : 3

	Vollmer Rd Southbound					Briargate Blvd Westbound					Vollmer Rd Northbound					Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	16:30					16:00					16:45					16:00					
+0 mins.	0	37	2	0	39	0	0	5	0	5	1	45	0	0	46	0	0	0	0	0	
+15 mins.	0	31	0	0	31	0	0	3	0	3	0	58	0	0	58	0	0	0	0	0	
+30 mins.	0	39	1	0	40	2	0	7	0	9	2	68	0	0	70	0	0	0	0	0	
+45 mins.	0	43	0	0	43	1	0	9	0	10	3	58	0	0	61	0	0	0	0	0	
Total Volume	0	150	3	0	153	3	0	24	0	27	6	229	0	0	235	0	0	0	0	0	
% App. Total	0	98	2	0		11.1	0	88.9	0		2.6	97.4	0	0		0	0	0	0		
PHF	.000	.872	.375	.000	.890	.375	.000	.667	.000	.675	.500	.842	.000	.000	.839	.000	.000	.000	.000	.000	



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

File Name : Vollmer Rd - Marksheffel Rd AM

Site Code : S244580

Start Date : 3/6/2025

Page No : 1

Groups Printed- Unshifted

	Vollmer Rd Southbound					Marksheffel Rd Westbound					Vollmer Rd Northbound					Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
06:30	0	14	3	0	17	2	0	0	0	2	3	4	0	0	7	0	0	0	0	0	26
06:35	0	15	5	0	20	0	0	2	0	2	0	10	0	0	10	0	0	0	0	0	32
06:40	0	6	3	0	9	1	0	3	0	4	3	8	0	0	11	0	0	0	0	0	24
06:45	0	7	7	0	14	4	0	1	0	5	4	12	0	0	16	0	0	0	0	0	35
06:50	0	14	4	0	18	5	0	3	0	8	2	3	0	0	5	0	0	0	0	0	31
06:55	0	12	2	0	14	5	0	2	0	7	4	10	0	0	14	0	0	0	0	0	35
Total	0	68	24	0	92	17	0	11	0	28	16	47	0	0	63	0	0	0	0	0	183
07:00	0	19	4	0	23	2	0	4	0	6	1	6	0	0	7	0	0	0	0	0	36
07:05	0	20	6	0	26	2	0	1	0	3	2	16	0	0	18	0	0	0	0	0	47
07:10	0	13	6	0	19	4	0	5	0	9	2	4	0	0	6	0	0	0	0	0	34
07:15	0	15	11	0	26	3	0	5	0	8	2	3	0	0	5	0	0	0	0	0	39
07:20	0	30	10	0	40	3	0	3	0	6	1	16	0	0	17	0	0	0	0	0	63
07:25	0	25	4	0	29	2	0	3	0	5	4	8	0	0	12	0	0	0	0	0	46
07:30	0	24	8	0	32	3	0	7	0	10	2	19	0	0	21	0	0	0	0	0	63
07:35	0	23	7	0	30	10	0	6	0	16	2	11	0	0	13	0	0	0	0	0	59
07:40	0	22	6	0	28	5	0	5	0	10	3	10	0	0	13	0	0	0	0	0	51
07:45	0	26	7	0	33	2	0	3	0	5	1	21	0	0	22	0	0	0	0	0	60
07:50	0	22	4	0	26	8	0	8	0	16	2	27	0	0	29	0	0	0	0	0	71
07:55	0	17	3	1	21	7	0	3	0	10	9	15	0	0	24	0	0	0	0	0	55
Total	0	256	76	1	333	51	0	53	0	104	31	156	0	0	187	0	0	0	0	0	624
08:00	0	18	10	0	28	6	0	1	0	7	10	27	0	0	37	0	0	0	0	0	72
08:05	0	19	8	0	27	3	0	5	0	8	3	17	0	0	20	0	0	0	0	0	55
08:10	0	10	3	0	13	5	0	3	0	8	4	21	0	0	25	0	0	0	0	0	46
08:15	0	14	3	0	17	4	0	2	0	6	1	22	0	0	23	0	0	0	0	0	46
08:20	0	17	6	0	23	5	0	1	0	6	1	22	0	0	23	0	0	0	0	0	52
08:25	0	10	3	0	13	2	0	2	0	4	3	15	0	0	18	0	0	0	0	0	35
Grand Total	0	412	133	1	546	93	0	78	0	171	69	327	0	0	396	0	0	0	0	0	1113
Apprch %	0	75.5	24.4	0.2		54.4	0	45.6	0		17.4	82.6	0	0		0	0	0	0		
Total %	0	37	11.9	0.1	49.1	8.4	0	7	0	15.4	6.2	29.4	0	0	35.6	0	0	0	0	0	

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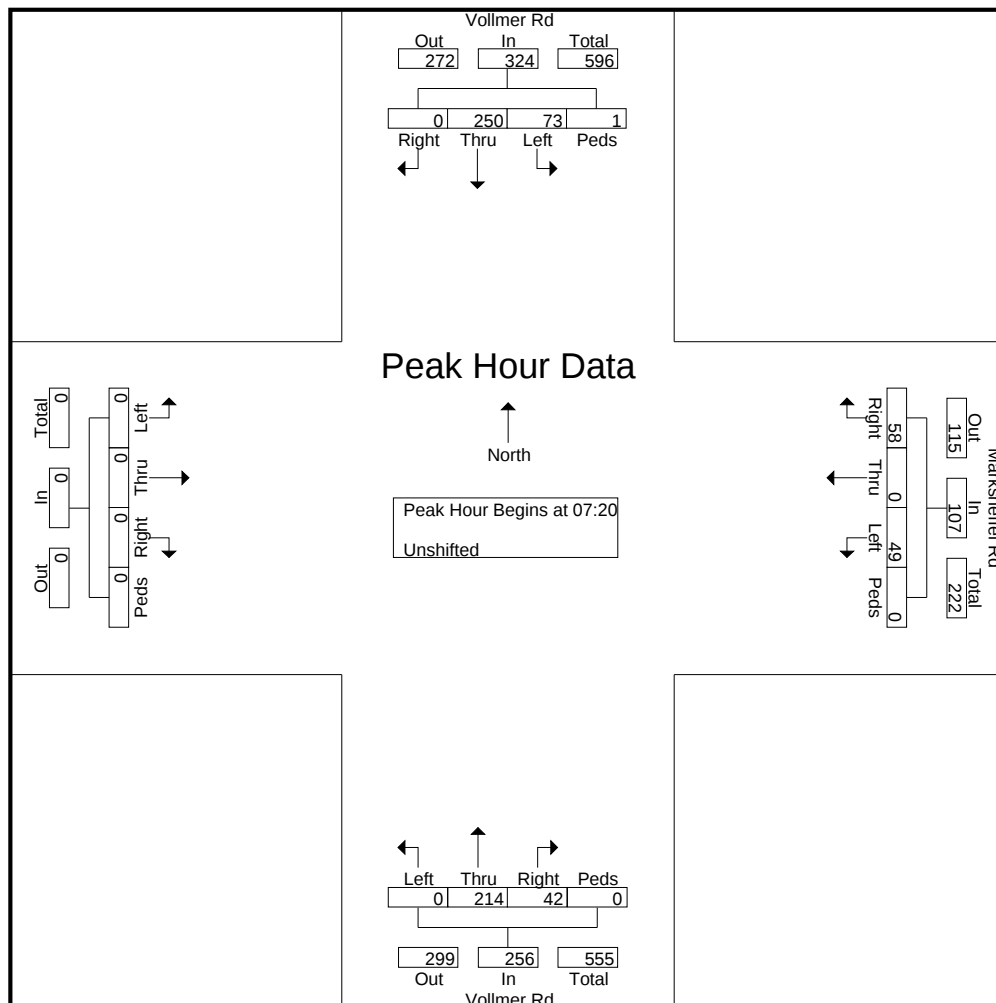
File Name : Vollmer Rd - Marksheffel Rd AM

Site Code : S244580

Start Date : 3/6/2025

Page No : 2

	Vollmer Rd Southbound					Marksheffel Rd Westbound					Vollmer Rd Northbound					Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:30 to 08:25 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:20																					
07:20	0	30	10	0	40	3	0	3	0	6	1	16	0	0	17	0	0	0	0	0	63
07:25	0	25	4	0	29	2	0	3	0	5	4	8	0	0	12	0	0	0	0	0	46
07:30	0	24	8	0	32	3	0	7	0	10	2	19	0	0	21	0	0	0	0	0	63
07:35	0	23	7	0	30	10	0	6	0	16	2	11	0	0	13	0	0	0	0	0	59
07:40	0	22	6	0	28	5	0	5	0	10	3	10	0	0	13	0	0	0	0	0	51
07:45	0	26	7	0	33	2	0	3	0	5	1	21	0	0	22	0	0	0	0	0	60
07:50	0	22	4	0	26	8	0	8	0	16	2	27	0	0	29	0	0	0	0	0	71
07:55	0	17	3	1	21	7	0	3	0	10	9	15	0	0	24	0	0	0	0	0	55
08:00	0	18	10	0	28	6	0	1	0	7	10	27	0	0	37	0	0	0	0	0	72
08:05	0	19	8	0	27	3	0	5	0	8	3	17	0	0	20	0	0	0	0	0	55
08:10	0	10	3	0	13	5	0	3	0	8	4	21	0	0	25	0	0	0	0	0	46
08:15	0	14	3	0	17	4	0	2	0	6	1	22	0	0	23	0	0	0	0	0	46
Total Volume	0	250	73	1	324	58	0	49	0	107	42	214	0	0	256	0	0	0	0	0	687
% App. Total	0	77.2	22.5	0.3		54.2	0	45.8	0		16.4	83.6	0	0		0	0	0	0		
PHF	.000	.694	.608	.083	.675	.483	.000	.510	.000	.557	.350	.660	.000	.000	.577	.000	.000	.000	.000	.000	.795



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

File Name : Vollmer Rd - Marksheffel Rd AM

Site Code : S244580

Start Date : 3/6/2025

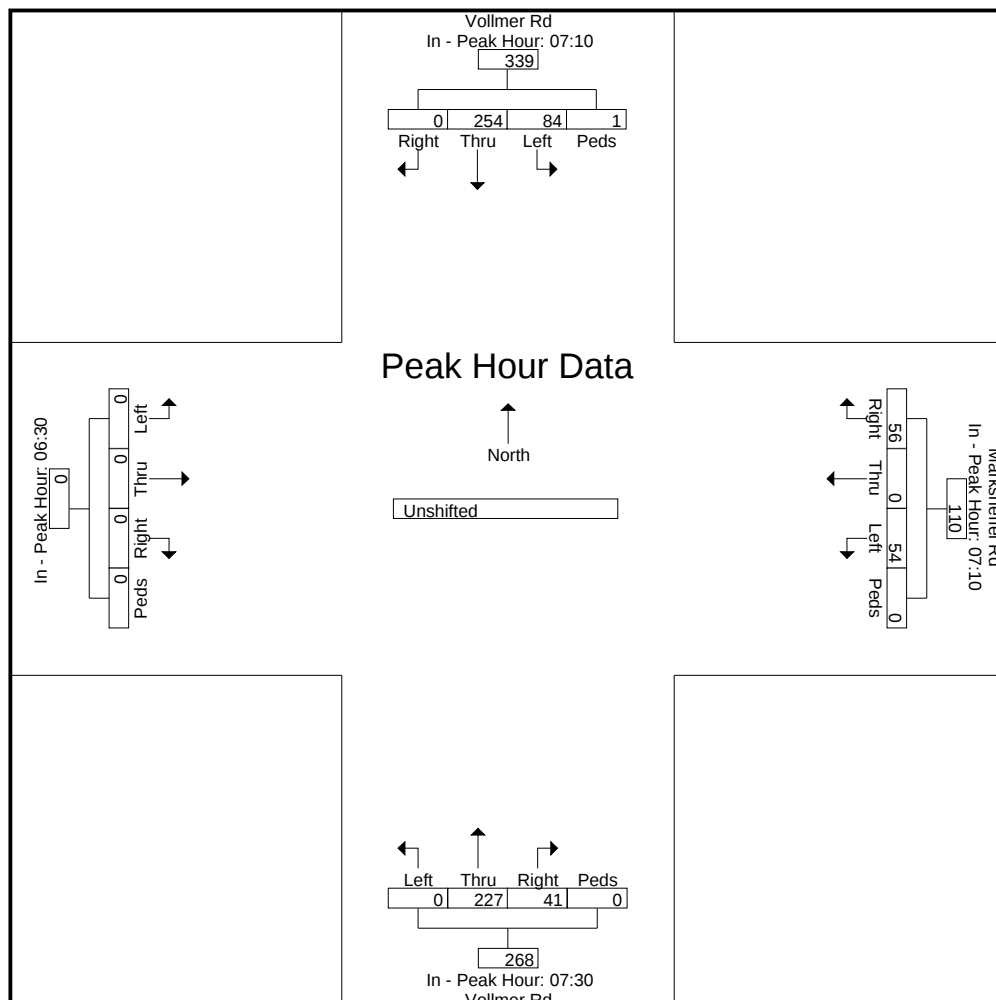
Page No : 3

	Vollmer Rd Southbound					Marksheffel Rd Westbound					Vollmer Rd Northbound					Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total

Peak Hour Analysis From 06:30 to 08:25 - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:10					07:10					07:30					06:30				
+0 mins.	0	13	6	0	19	4	0	5	0	9	2	19	0	0	21	0	0	0	0	0
+5 mins.	0	15	11	0	26	3	0	5	0	8	2	11	0	0	13	0	0	0	0	0
+10 mins.	0	30	10	0	40	3	0	3	0	6	3	10	0	0	13	0	0	0	0	0
+15 mins.	0	25	4	0	29	2	0	3	0	5	1	21	0	0	22	0	0	0	0	0
+20 mins.	0	24	8	0	32	3	0	7	0	10	2	27	0	0	29	0	0	0	0	0
+25 mins.	0	23	7	0	30	10	0	6	0	16	9	15	0	0	24	0	0	0	0	0
+30 mins.	0	22	6	0	28	5	0	5	0	10	10	27	0	0	37	0	0	0	0	0
+35 mins.	0	26	7	0	33	2	0	3	0	5	3	17	0	0	20	0	0	0	0	0
+40 mins.	0	22	4	0	26	8	0	8	0	16	4	21	0	0	25	0	0	0	0	0
+45 mins.	0	17	3	1	21	7	0	3	0	10	1	22	0	0	23	0	0	0	0	0
+50 mins.	0	18	10	0	28	6	0	1	0	7	1	22	0	0	23	0	0	0	0	0
+55 mins.	0	19	8	0	27	3	0	5	0	8	3	15	0	0	18	0	0	0	0	0
Total Volume	0	254	84	1	339	56	0	54	0	110	41	227	0	0	268	0	0	0	0	0
% App. Total	0	74.9	24.8	0.3		50.9	0	49.1	0		15.3	84.7	0	0		0	0	0	0	
PHF	.000	.706	.636	.083	.706	.467	.000	.563	.000	.573	.342	.701	.000	.000	.604	.000	.000	.000	.000	.000



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719-633-2868

File Name : Vollmer Rd - Marksheffel Rd PM

Site Code : S224580

Start Date : 3/6/2025

Page No : 1

Groups Printed- Unshifted

	Vollmer Rd Southbound					Marksheffel Rd Westbound					Vollmer Rd Northbound					Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
16:00	0	10	3	0	13	7	0	1	0	8	3	9	0	0	12	0	0	0	0	0	33
16:05	0	18	6	0	24	5	0	3	0	8	5	19	0	0	24	0	0	0	0	0	56
16:10	0	14	2	0	16	3	0	4	0	7	8	15	0	0	23	0	0	0	0	0	46
16:15	0	8	9	0	17	6	0	3	0	9	4	20	0	0	24	0	0	0	0	0	50
16:20	0	11	4	0	15	5	0	3	0	8	2	12	0	0	14	0	0	0	0	0	37
16:25	0	11	4	0	15	11	0	1	0	12	5	24	0	0	29	0	0	0	0	0	56
16:30	0	17	4	0	21	6	0	3	0	9	2	14	0	0	16	0	0	0	0	0	46
16:35	0	21	8	0	29	4	0	9	0	13	4	14	0	0	18	0	0	0	0	0	60
16:40	0	19	3	0	22	4	0	2	0	6	1	26	0	0	27	0	0	0	0	0	55
16:45	0	14	1	0	15	9	0	2	0	11	2	13	0	0	15	0	0	0	0	0	41
16:50	0	13	3	0	16	5	0	3	0	8	2	22	0	0	24	0	0	0	0	0	48
16:55	0	21	4	0	25	4	0	1	0	5	3	8	0	0	11	0	0	0	0	0	41
Total	0	177	51	0	228	69	0	35	0	104	41	196	0	0	237	0	0	0	0	0	569
17:00	0	15	5	0	20	4	0	3	0	7	4	25	0	0	29	0	0	0	0	0	56
17:05	0	11	8	1	20	8	0	0	0	8	4	16	0	0	20	0	0	0	0	0	48
17:10	0	17	4	0	21	6	0	1	0	7	2	20	0	0	22	0	0	0	0	0	50
17:15	0	13	7	0	20	5	0	2	0	7	5	15	0	0	20	0	0	0	0	0	47
17:20	0	17	2	0	19	4	0	3	0	7	3	28	0	1	32	0	0	0	0	0	58
17:25	0	22	3	0	25	4	0	2	0	6	5	21	0	0	26	0	0	0	0	0	57
17:30	0	13	2	0	15	6	0	6	0	12	0	21	0	0	21	0	0	0	0	0	48
17:35	0	10	7	0	17	8	0	5	0	13	5	21	0	0	26	0	0	0	0	0	56
17:40	0	13	2	0	15	4	0	1	0	5	2	20	0	0	22	0	0	0	0	0	42
17:45	0	11	5	0	16	5	0	3	0	8	5	22	0	0	27	0	0	0	0	0	51
17:50	0	16	3	0	19	5	0	7	0	12	2	14	0	0	16	0	0	0	0	0	47
17:55	0	13	2	0	15	1	0	2	0	3	3	18	0	0	21	0	0	0	0	0	39
Total	0	171	50	1	222	60	0	35	0	95	40	241	0	1	282	0	0	0	0	0	599
Grand Total	0	348	101	1	450	129	0	70	0	199	81	437	0	1	519	0	0	0	0	0	1168
Apprch %	0	77.3	22.4	0.2		64.8	0	35.2	0		15.6	84.2	0	0.2		0	0	0	0		
Total %	0	29.8	8.6	0.1	38.5	11	0	6	0	17	6.9	37.4	0	0.1	44.4	0	0	0	0	0	

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

File Name : Vollmer Rd - Marksheffel Rd PM

Site Code : S224580

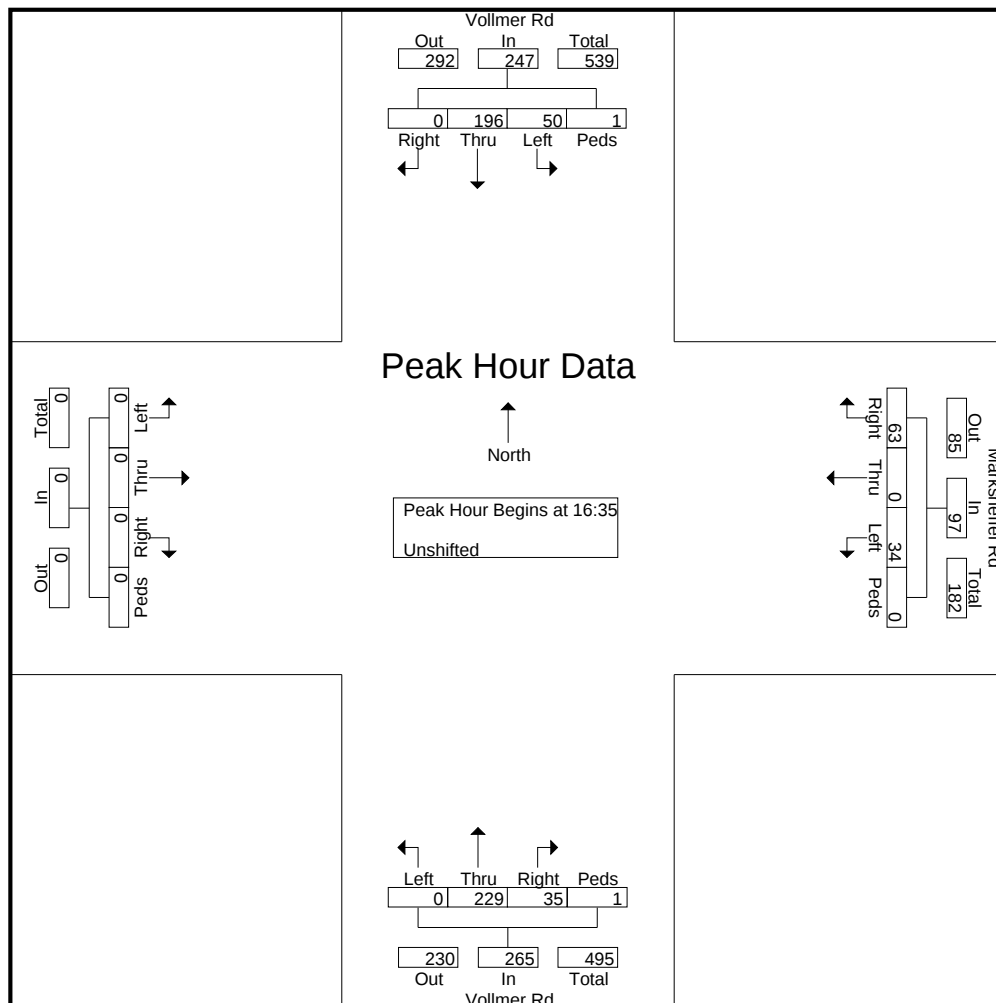
Start Date : 3/6/2025

Page No : 2

	Vollmer Rd Southbound					Marksheffel Rd Westbound					Vollmer Rd Northbound					Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total

Peak Hour Analysis From 16:00 to 17:55 - Peak 1 of 1
Peak Hour for Entire Intersection Begins at 16:35

16:35	0	21	8	0	29	4	0	9	0	13	4	14	0	0	18	0	0	0	0	0	60
16:40	0	19	3	0	22	4	0	2	0	6	1	26	0	0	27	0	0	0	0	0	55
16:45	0	14	1	0	15	9	0	2	0	11	2	13	0	0	15	0	0	0	0	0	41
16:50	0	13	3	0	16	5	0	3	0	8	2	22	0	0	24	0	0	0	0	0	48
16:55	0	21	4	0	25	4	0	1	0	5	3	8	0	0	11	0	0	0	0	0	41
17:00	0	15	5	0	20	4	0	3	0	7	4	25	0	0	29	0	0	0	0	0	56
17:05	0	11	8	1	20	8	0	0	0	8	4	16	0	0	20	0	0	0	0	0	48
17:10	0	17	4	0	21	6	0	1	0	7	2	20	0	0	22	0	0	0	0	0	50
17:15	0	13	7	0	20	5	0	2	0	7	5	15	0	0	20	0	0	0	0	0	47
17:20	0	17	2	0	19	4	0	3	0	7	3	28	0	1	32	0	0	0	0	0	58
17:25	0	22	3	0	25	4	0	2	0	6	5	21	0	0	26	0	0	0	0	0	57
17:30	0	13	2	0	15	6	0	6	0	12	0	21	0	0	21	0	0	0	0	0	48
Total Volume	0	196	50	1	247	63	0	34	0	97	35	229	0	1	265	0	0	0	0	0	609
% App. Total	0	79.4	20.2	0.4		64.9	0	35.1	0		13.2	86.4	0	0.4		0	0	0	0		
PHF	.000	.742	.521	.083	.710	.583	.000	.315	.000	.622	.583	.682	.000	.083	.690	.000	.000	.000	.000	.000	.846



LSC Transportation Consultants, Inc.

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

File Name : Vollmer Rd - Marksheffel Rd PM

Site Code : S224580

Start Date : 3/6/2025

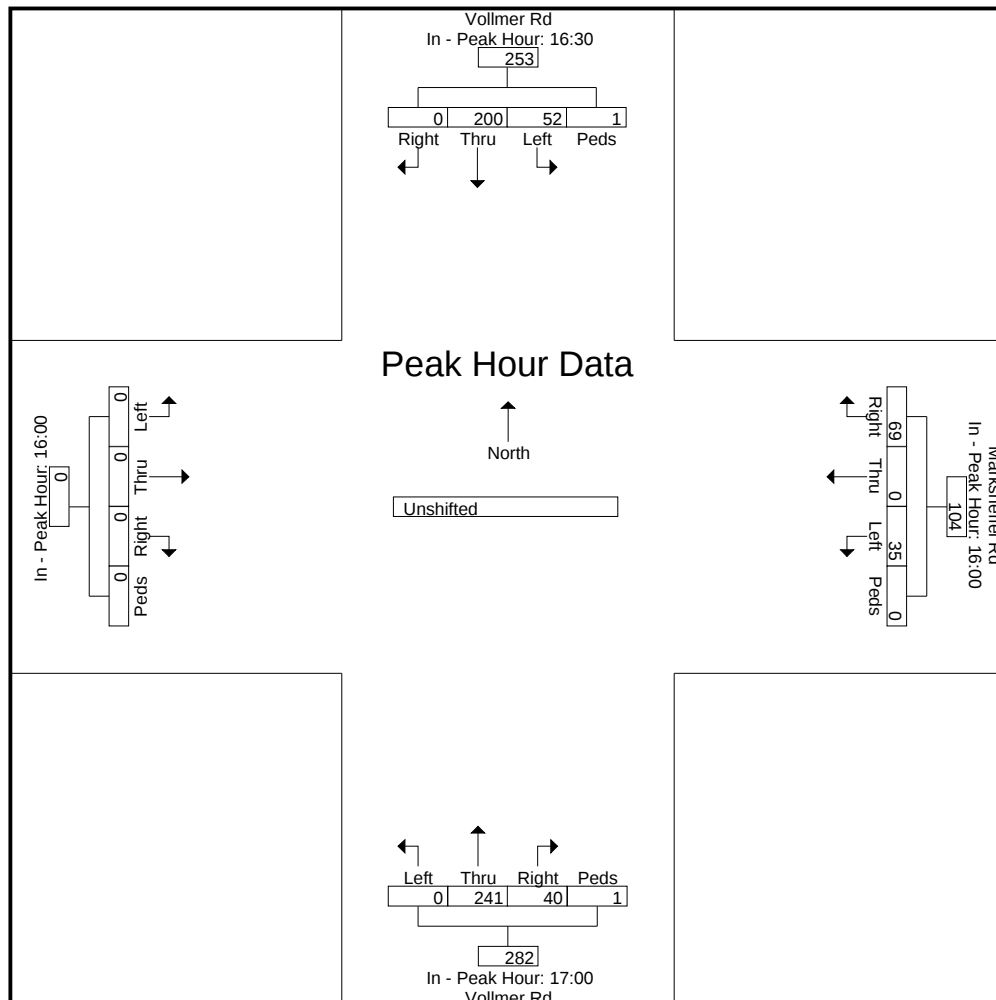
Page No : 3

	Vollmer Rd Southbound					Marksheffel Rd Westbound					Vollmer Rd Northbound					Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total

Peak Hour Analysis From 16:00 to 17:55 - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	16:30					16:00					17:00					16:00				
+0 mins.	0	17	4	0	21	7	0	1	0	8	4	25	0	0	29	0	0	0	0	0
+5 mins.	0	21	8	0	29	5	0	3	0	8	4	16	0	0	20	0	0	0	0	0
+10 mins.	0	19	3	0	22	3	0	4	0	7	2	20	0	0	22	0	0	0	0	0
+15 mins.	0	14	1	0	15	6	0	3	0	9	5	15	0	0	20	0	0	0	0	0
+20 mins.	0	13	3	0	16	5	0	3	0	8	3	28	0	1	32	0	0	0	0	0
+25 mins.	0	21	4	0	25	11	0	1	0	12	5	21	0	0	26	0	0	0	0	0
+30 mins.	0	15	5	0	20	6	0	3	0	9	0	21	0	0	21	0	0	0	0	0
+35 mins.	0	11	8	1	20	4	0	9	0	13	5	21	0	0	26	0	0	0	0	0
+40 mins.	0	17	4	0	21	4	0	2	0	6	2	20	0	0	22	0	0	0	0	0
+45 mins.	0	13	7	0	20	9	0	2	0	11	5	22	0	0	27	0	0	0	0	0
+50 mins.	0	17	2	0	19	5	0	3	0	8	2	14	0	0	16	0	0	0	0	0
+55 mins.	0	22	3	0	25	4	0	1	0	5	3	18	0	0	21	0	0	0	0	0
Total Volume	0	200	52	1	253	69	0	35	0	104	40	241	0	1	282	0	0	0	0	0
% App. Total	0	79.1	20.6	0.4		66.3	0	33.7	0		14.2	85.5	0	0.4		0	0	0	0	
PHF	.000	.758	.542	.083	.727	.523	.000	.324	.000	.667	.667	.717	.000	.083	.734	.000	.000	.000	.000	.000



LSC Transportation Consultants, Inc.

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

Level of Service Reports



HCM 6th TWSC
4: Vollmer Rd & Briargate Pkwy

Existing Traffic
AM Peak Hour

Intersection						
Int Delay, s/veh	0.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	16	3	160	23	4	236
Future Vol, veh/h	16	3	160	23	4	236
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	485	-	-	235	385	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	18	3	178	26	4	262
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	317	89	0	0	204	0
Stage 1	178	-	-	-	-	-
Stage 2	139	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	651	951	-	-	1365	-
Stage 1	835	-	-	-	-	-
Stage 2	873	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	649	951	-	-	1365	-
Mov Cap-2 Maneuver	685	-	-	-	-	-
Stage 1	835	-	-	-	-	-
Stage 2	870	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	10.1	0	0.1			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT		
Capacity (veh/h)	-	- 685 951 1365	-	-		
HCM Lane V/C Ratio	-	- 0.026 0.004 0.003	-	-		
HCM Control Delay (s)	-	- 10.4 8.8 7.6	-	-		
HCM Lane LOS	-	- B A A	-	-		
HCM 95th %tile Q(veh)	-	- 0.1 0 0	-	-		

Intersection						
Int Delay, s/veh	2.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	49	58	214	42	73	250
Future Vol, veh/h	49	58	214	42	73	250
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	300	-	-	155	300	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	81	81	71	71	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	60	72	301	59	84	287
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	613	151	0	0	360	0
Stage 1	301	-	-	-	-	-
Stage 2	312	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	424	868	-	-	1195	-
Stage 1	725	-	-	-	-	-
Stage 2	715	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	394	868	-	-	1195	-
Mov Cap-2 Maneuver	394	-	-	-	-	-
Stage 1	725	-	-	-	-	-
Stage 2	665	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	12.4	0	1.9			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT		
Capacity (veh/h)	-	- 394 868	1195	-		
HCM Lane V/C Ratio	-	- 0.154 0.082	0.07	-		
HCM Control Delay (s)	-	- 15.8 9.5	8.2	-		
HCM Lane LOS	-	- C A	A	-		
HCM 95th %tile Q(veh)	-	- 0.5 0.3	0.2	-		

HCM 6th TWSC
13: Sterling Ranch Rd & Marksheffel Rd

Existing Traffic
AM Peak Hour

Intersection												
Int Delay, s/veh	4.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	43	76	4	8	52	59	10	3	5	65	0	47
Future Vol, veh/h	43	76	4	8	52	59	10	3	5	65	0	47
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	300	-	200	250	-	205	0	-	-	155	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	76	76	76	78	78	78	90	90	90
Heavy Vehicles, %	2	2	70	70	2	2	88	2	88	2	2	2
Mvmt Flow	52	92	5	11	68	78	13	4	6	72	0	52

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	146	0	0	97	0	0	252	364	46	242	291	34
Stage 1	-	-	-	-	-	-	196	196	-	90	90	-
Stage 2	-	-	-	-	-	-	56	168	-	152	201	-
Critical Hdwy	4.14	-	-	5.5	-	-	9.26	6.54	8.66	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	8.26	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	8.26	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.9	-	-	4.38	4.02	4.18	3.52	4.02	3.32
Pot Cap-1 Maneuver	1434	-	-	1113	-	-	499	563	792	692	618	1032
Stage 1	-	-	-	-	-	-	589	737	-	907	820	-
Stage 2	-	-	-	-	-	-	748	758	-	835	734	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1434	-	-	1113	-	-	457	537	792	659	590	1032
Mov Cap-2 Maneuver	-	-	-	-	-	-	457	537	-	659	590	-
Stage 1	-	-	-	-	-	-	568	710	-	874	812	-
Stage 2	-	-	-	-	-	-	703	750	-	794	708	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	2.7			0.6			11.9			10.1		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	457	672	1434	-	-	1113	-	-	659	-	1032
HCM Lane V/C Ratio	0.028	0.015	0.036	-	-	0.009	-	-	0.11	-	0.051
HCM Control Delay (s)	13.1	10.4	7.6	-	-	8.3	-	-	11.1	0	8.7
HCM Lane LOS	B	B	A	-	-	A	-	-	B	A	A
HCM 95th %tile Q(veh)	0.1	0	0.1	-	-	0	-	-	0.4	-	0.2

HCM 6th TWSC
4: Vollmer Rd & Briargate Pkwy

Existing Traffic
PM Peak Hour

Intersection						
Int Delay, s/veh	0.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	21	4	217	5	3	150
Future Vol, veh/h	21	4	217	5	3	150
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	485	-	-	235	385	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	78	78	79	79	89	89
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	27	5	275	6	3	169
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	366	138	0	0	281	0
Stage 1	275	-	-	-	-	-
Stage 2	91	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	607	885	-	-	1278	-
Stage 1	747	-	-	-	-	-
Stage 2	922	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	606	885	-	-	1278	-
Mov Cap-2 Maneuver	642	-	-	-	-	-
Stage 1	747	-	-	-	-	-
Stage 2	920	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	10.6	0	0.2			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT		
Capacity (veh/h)	-	- 642 885 1278	-	-		
HCM Lane V/C Ratio	-	- 0.042 0.006 0.003	-	-		
HCM Control Delay (s)	-	- 10.9 9.1 7.8	-	-		
HCM Lane LOS	-	- B A A	-	-		
HCM 95th %tile Q(veh)	-	- 0.1 0 0	-	-		

Intersection						
Int Delay, s/veh	2.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	34	63	229	35	50	196
Future Vol, veh/h	34	63	229	35	50	196
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	300	-	-	155	300	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	83	83	85	85	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	41	76	269	41	57	225
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	496	135	0	0	310	0
Stage 1	269	-	-	-	-	-
Stage 2	227	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	503	889	-	-	1247	-
Stage 1	752	-	-	-	-	-
Stage 2	789	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	480	889	-	-	1247	-
Mov Cap-2 Maneuver	480	-	-	-	-	-
Stage 1	752	-	-	-	-	-
Stage 2	753	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	10.7	0	1.6			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT		
Capacity (veh/h)	-	- 480 889 1247	-	-		
HCM Lane V/C Ratio	-	- 0.085 0.085 0.046	-	-		
HCM Control Delay (s)	-	- 13.2 9.4 8	-	-		
HCM Lane LOS	-	- B A A	-	-		
HCM 95th %tile Q(veh)	-	- 0.3 0.3 0.1	-	-		

HCM 6th TWSC
13: Sterling Ranch Rd & Marksheffel Rd

Existing Traffic
PM Peak Hour

Intersection												
Int Delay, s/veh	4.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	28	54	6	8	68	71	3	11	10	61	10	30
Future Vol, veh/h	28	54	6	8	68	71	3	11	10	61	10	30
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	300	-	200	250	-	205	0	-	-	155	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	76	76	76	85	85	85	78	78	78	83	83	83
Heavy Vehicles, %	2	2	70	70	2	2	88	2	88	2	2	2
Mvmt Flow	37	71	8	9	80	84	4	14	13	73	12	36

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	164	0	0	79	0	0	209	327	36	215	251	40
Stage 1	-	-	-	-	-	-	145	145	-	98	98	-
Stage 2	-	-	-	-	-	-	64	182	-	117	153	-
Critical Hdwy	4.14	-	-	5.5	-	-	9.26	6.54	8.66	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	8.26	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	8.26	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.9	-	-	4.38	4.02	4.18	3.52	4.02	3.32
Pot Cap-1 Maneuver	1412	-	-	1136	-	-	544	590	806	723	651	1022
Stage 1	-	-	-	-	-	-	643	776	-	898	813	-
Stage 2	-	-	-	-	-	-	738	748	-	875	770	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1412	-	-	1136	-	-	504	570	806	680	629	1022
Mov Cap-2 Maneuver	-	-	-	-	-	-	504	570	-	680	629	-
Stage 1	-	-	-	-	-	-	626	756	-	875	806	-
Stage 2	-	-	-	-	-	-	696	742	-	823	750	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	2.4			0.4			10.9			10.2		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	504	662	1412	-	-	1136	-	-	680	629	1022
HCM Lane V/C Ratio	0.008	0.041	0.026	-	-	0.008	-	-	0.108	0.019	0.035
HCM Control Delay (s)	12.2	10.7	7.6	-	-	8.2	-	-	10.9	10.8	8.7
HCM Lane LOS	B	B	A	-	-	A	-	-	B	B	A
HCM 95th %tile Q(veh)	0	0.1	0.1	-	-	0	-	-	0.4	0.1	0.1

Intersection						
Int Delay, s/veh	3.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	150	56	217	72	22	325
Future Vol, veh/h	150	56	217	72	22	325
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	485	-	-	235	385	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	176	66	255	85	26	382
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	498	128	0	0	340	0
Stage 1	255	-	-	-	-	-
Stage 2	243	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	502	898	-	-	1216	-
Stage 1	764	-	-	-	-	-
Stage 2	775	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	491	898	-	-	1216	-
Mov Cap-2 Maneuver	572	-	-	-	-	-
Stage 1	764	-	-	-	-	-
Stage 2	759	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	12.8	0	0.5			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT		
Capacity (veh/h)	-	- 572 898	1216	-		
HCM Lane V/C Ratio	-	- 0.309 0.073	0.021	-		
HCM Control Delay (s)	-	- 14.1 9.3	8	-		
HCM Lane LOS	-	- B A	A	-		
HCM 95th %tile Q(veh)	-	- 1.3 0.2	0.1	-		

HCM 6th TWSC
5: Sterling Ranch Rd & Briargate Pkwy

Short-Term Background Traffic
AM Peak Hour

Intersection												
Int Delay, s/veh	7.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	28	0	18	31	42	0	59	20	0	0	68	8
Future Vol, veh/h	28	0	18	31	42	0	59	20	0	0	68	8
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	535	-	200	200	-	200	410	-	155	235	-	155
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	33	0	21	36	49	0	69	24	0	0	80	9
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	49	0	0	21	0	0	203	187	0	199	208	25
Stage 1	-	-	-	-	-	-	66	66	-	121	121	-
Stage 2	-	-	-	-	-	-	137	121	-	78	87	-
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	1556	-	-	1593	-	-	737	706	-	742	688	1045
Stage 1	-	-	-	-	-	-	937	839	-	870	795	-
Stage 2	-	-	-	-	-	-	852	795	-	922	822	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1556	-	-	1593	-	-	641	675	-	-	658	1045
Mov Cap-2 Maneuver	-	-	-	-	-	-	641	675	-	-	658	-
Stage 1	-	-	-	-	-	-	917	821	-	852	777	-
Stage 2	-	-	-	-	-	-	740	777	-	877	805	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	4.5			3.1			11.1			10.9		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	641	675	-	1556	-	-	1593	-	-	-	658	1045
HCM Lane V/C Ratio	0.108	0.035	-	0.021	-	-	0.023	-	-	-	0.122	0.009
HCM Control Delay (s)	11.3	10.5	0	7.4	-	-	7.3	-	-	0	11.2	8.5
HCM Lane LOS	B	B	A	A	-	-	A	-	-	A	B	A
HCM 95th %tile Q(veh)	0.4	0.1	-	0.1	-	-	0.1	-	-	-	0.4	0

Intersection						
Int Delay, s/veh	6.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	142	70	304	65	108	442
Future Vol, veh/h	142	70	304	65	108	442
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	300	-	-	155	300	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	167	82	358	76	127	520
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	872	179	0	0	434	0
Stage 1	358	-	-	-	-	-
Stage 2	514	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	290	833	-	-	1122	-
Stage 1	678	-	-	-	-	-
Stage 2	565	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	257	833	-	-	1122	-
Mov Cap-2 Maneuver	257	-	-	-	-	-
Stage 1	678	-	-	-	-	-
Stage 2	501	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	31.2	0	1.7			
HCM LOS	D					
Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT		
Capacity (veh/h)	-	- 257 833 1122	-	-		
HCM Lane V/C Ratio	-	- 0.65 0.099 0.113	-	-		
HCM Control Delay (s)	-	- 41.7 9.8 8.6	-	-		
HCM Lane LOS	-	- E A A	-	-		
HCM 95th %tile Q(veh)	-	- 4.1 0.3 0.4	-	-		

HCM 6th TWSC
13: Sterling Ranch Rd & Marksheffel Rd

Short-Term Background Traffic
AM Peak Hour

Intersection												
Int Delay, s/veh	86.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	71	99	4	8	60	236	10	3	5	628	1	142
Future Vol, veh/h	71	99	4	8	60	236	10	3	5	628	1	142
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	300	-	200	250	-	205	0	-	-	155	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	70	70	2	2	88	2	88	2	2	2
Mvmt Flow	84	116	5	9	71	278	12	4	6	739	1	167
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	349	0	0	121	0	0	338	651	58	317	378	36
Stage 1	-	-	-	-	-	-	284	284	-	89	89	-
Stage 2	-	-	-	-	-	-	54	367	-	228	289	-
Critical Hdwy	4.14	-	-	5.5	-	-	9.26	6.54	8.66	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	8.26	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	8.26	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.9	-	-	4.38	4.02	4.18	3.52	4.02	3.32
Pot Cap-1 Maneuver	1207	-	-	1083	-	-	420	386	775	~ 612	552	1029
Stage 1	-	-	-	-	-	-	507	675	-	908	820	-
Stage 2	-	-	-	-	-	-	750	621	-	754	672	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1207	-	-	1083	-	-	331	356	775	~ 567	509	1029
Mov Cap-2 Maneuver	-	-	-	-	-	-	331	356	-	~ 567	509	-
Stage 1	-	-	-	-	-	-	472	628	-	844	813	-
Stage 2	-	-	-	-	-	-	622	616	-	~ 692	625	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	3.3			0.2			14.3			141		
HCM LOS							B			F		
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	SBLn3	
Capacity (veh/h)	331	538	1207	-	-	1083	-	-	567	509	1029	
HCM Lane V/C Ratio	0.036	0.017	0.069	-	-	0.009	-	-	1.303	0.002	0.162	
HCM Control Delay (s)	16.3	11.8	8.2	-	-	8.4	-	-	171	12.1	9.2	
HCM Lane LOS	C	B	A	-	-	A	-	-	F	B	A	
HCM 95th %tile Q(veh)	0.1	0.1	0.2	-	-	0	-	-	30.5	0	0.6	
Notes												
~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon												

Intersection						
Int Delay, s/veh	2.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	3	1	5	5	0
Future Vol, veh/h	0	3	1	5	5	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	-	200	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	4	1	6	6	0

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	14	6	6
Stage 1	6	-	-
Stage 2	8	-	-
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	1005	1077	1615
Stage 1	1017	-	-
Stage 2	1015	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	1004	1077	1615
Mov Cap-2 Maneuver	1004	-	-
Stage 1	1016	-	-
Stage 2	1015	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.4	1.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1615	-	1077	-	-
HCM Lane V/C Ratio	0.001	-	0.003	-	-
HCM Control Delay (s)	7.2	-	8.4	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

HCM 6th TWSC
4: Vollmer Rd & Briargate Pkwy

Short-Term Total Traffic
PM Peak Hour

Intersection						
Int Delay, s/veh	4.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	194	55	219	79	21	325
Future Vol, veh/h	194	55	219	79	21	325
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	485	-	-	235	385	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	228	65	258	93	25	382
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	499	129	0	0	351	0
Stage 1	258	-	-	-	-	-
Stage 2	241	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	501	897	-	-	1204	-
Stage 1	761	-	-	-	-	-
Stage 2	776	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	490	897	-	-	1204	-
Mov Cap-2 Maneuver	571	-	-	-	-	-
Stage 1	761	-	-	-	-	-
Stage 2	760	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	14.1	0	0.5			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT		
Capacity (veh/h)	-	- 571 897 1204	-	-		
HCM Lane V/C Ratio	-	- 0.4 0.072 0.021	-	-		
HCM Control Delay (s)	-	- 15.4 9.3 8.1	-	-		
HCM Lane LOS	-	- C A A	-	-		
HCM 95th %tile Q(veh)	-	- 1.9 0.2 0.1	-	-		

HCM 6th TWSC
5: Sterling Ranch Rd & Briargate Pkwy

Short-Term Total Traffic
PM Peak Hour

Intersection												
Int Delay, s/veh	8.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	35	0	18	0	0	0	59	23	0	0	72	94
Future Vol, veh/h	35	0	18	0	0	0	59	23	0	0	72	94
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	535	-	200	200	-	200	410	-	155	235	-	155
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	41	0	21	0	0	0	69	27	0	0	85	111
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1	0	0	21	0	0	125	83	0	97	104	1
Stage 1	-	-	-	-	-	-	82	82	-	1	1	-
Stage 2	-	-	-	-	-	-	43	1	-	96	103	-
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	1620	-	-	1593	-	-	836	806	-	875	785	1083
Stage 1	-	-	-	-	-	-	917	826	-	1021	895	-
Stage 2	-	-	-	-	-	-	966	895	-	900	809	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1620	-	-	1593	-	-	674	786	-	-	765	1083
Mov Cap-2 Maneuver	-	-	-	-	-	-	674	786	-	-	765	-
Stage 1	-	-	-	-	-	-	894	805	-	995	895	-
Stage 2	-	-	-	-	-	-	785	895	-	848	789	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	4.8			0			10.6			9.4		
HCM LOS							B			A		
Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	674	786	-	1620	-	-	1593	-	-	-	765	1083
HCM Lane V/C Ratio	0.103	0.034	-	0.025	-	-	-	-	-	-	0.111	0.102
HCM Control Delay (s)	11	9.7	0	7.3	-	-	0	-	-	0	10.3	8.7
HCM Lane LOS	B	A	A	A	-	-	A	-	-	A	B	A
HCM 95th %tile Q(veh)	0.3	0.1	-	0.1	-	-	0	-	-	-	0.4	0.3

Intersection						
Int Delay, s/veh	7.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	149	70	311	68	108	487
Future Vol, veh/h	149	70	311	68	108	487
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	300	-	-	155	300	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	175	82	366	80	127	573
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	907	183	0	0	446	0
Stage 1	366	-	-	-	-	-
Stage 2	541	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	275	828	-	-	1111	-
Stage 1	672	-	-	-	-	-
Stage 2	548	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	244	828	-	-	1111	-
Mov Cap-2 Maneuver	244	-	-	-	-	-
Stage 1	672	-	-	-	-	-
Stage 2	486	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	37.2	0	1.6			
HCM LOS	E					
Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT		
Capacity (veh/h)	-	- 244 828	1111	-		
HCM Lane V/C Ratio	-	- 0.718 0.099	0.114	-		
HCM Control Delay (s)	-	- 50.1 9.8	8.7	-		
HCM Lane LOS	-	- F A	A	-		
HCM 95th %tile Q(veh)	-	- 4.9 0.3	0.4	-		

HCM 6th TWSC
13: Sterling Ranch Rd & Marksheffel Rd

Short-Term Total Traffic
PM Peak Hour

Intersection												
Int Delay, s/veh	79.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	73	99	4	8	60	242	10	3	5	610	1	150
Future Vol, veh/h	73	99	4	8	60	242	10	3	5	610	1	150
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	300	-	200	250	-	205	0	-	-	155	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	88	88	2	2	78	2	78	2	2	2
Mvmt Flow	86	116	5	9	71	285	12	4	6	718	1	176

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	356	0	0	121	0	0	342	662	58	321	382	36
Stage 1	-	-	-	-	-	-	288	288	-	89	89	-
Stage 2	-	-	-	-	-	-	54	374	-	232	293	-
Critical Hdwy	4.14	-	-	5.86	-	-	9.06	6.54	8.46	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	8.06	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	8.06	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	3.08	-	-	4.28	4.02	4.08	3.52	4.02	3.32
Pot Cap-1 Maneuver	1199	-	-	1010	-	-	433	381	796	~ 608	550	1029
Stage 1	-	-	-	-	-	-	521	672	-	908	820	-
Stage 2	-	-	-	-	-	-	770	616	-	750	669	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1199	-	-	1010	-	-	336	351	796	~ 562	506	1029
Mov Cap-2 Maneuver	-	-	-	-	-	-	336	351	-	~ 562	506	-
Stage 1	-	-	-	-	-	-	483	624	-	843	813	-
Stage 2	-	-	-	-	-	-	631	610	-	~ 687	621	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	3.4	0.2	14.2	130.6
HCM LOS			B	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	336	540	1199	-	-	1010	-	-	562	506	1029
HCM Lane V/C Ratio	0.035	0.017	0.072	-	-	0.009	-	-	1.277	0.002	0.171
HCM Control Delay (s)	16.1	11.8	8.2	-	-	8.6	-	-	160.7	12.1	9.2
HCM Lane LOS	C	B	A	-	-	A	-	-	F	B	A
HCM 95th %tile Q(veh)	0.1	0.1	0.2	-	-	0	-	-	28.8	0	0.6

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

Intersection						
Int Delay, s/veh	8.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	123	45	0	0	0
Future Vol, veh/h	0	123	45	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	200	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	145	53	0	0	0

Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	107	1	1	0	-	0
Stage 1	1	-	-	-	-	-
Stage 2	106	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	891	1084	1622	-	-	-
Stage 1	1022	-	-	-	-	-
Stage 2	918	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	862	1084	1622	-	-	-
Mov Cap-2 Maneuver	862	-	-	-	-	-
Stage 1	988	-	-	-	-	-
Stage 2	918	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.8	7.3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1622	-	1084	-	-
HCM Lane V/C Ratio	0.033	-	0.133	-	-
HCM Control Delay (s)	7.3	-	8.8	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.5	-	-

HCM 6th TWSC
4: Vollmer Rd & Briargate Pkwy

Short-Term Total Traffic
AM Peak Hour

Intersection						
Int Delay, s/veh	4.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	231	63	219	104	24	325
Future Vol, veh/h	231	63	219	104	24	325
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	485	-	-	235	385	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	272	74	258	122	28	382
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	505	129	0	0	380	0
Stage 1	258	-	-	-	-	-
Stage 2	247	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	496	897	-	-	1175	-
Stage 1	761	-	-	-	-	-
Stage 2	771	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	484	897	-	-	1175	-
Mov Cap-2 Maneuver	566	-	-	-	-	-
Stage 1	761	-	-	-	-	-
Stage 2	752	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	15.5	0	0.6			
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT		
Capacity (veh/h)	-	- 566 897 1175	-	-		
HCM Lane V/C Ratio	-	- 0.48 0.083 0.024	-	-		
HCM Control Delay (s)	-	- 17.1 9.4 8.1	-	-		
HCM Lane LOS	-	- C A A	-	-		
HCM 95th %tile Q(veh)	-	- 2.6 0.3 0.1	-	-		

HCM 6th TWSC
5: Sterling Ranch Rd & Briargate Pkwy

Short-Term Total Traffic
AM Peak Hour

Intersection												
Int Delay, s/veh	9.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	62	0	18	30	41	0	59	32	0	0	98	97
Future Vol, veh/h	62	0	18	30	41	0	59	32	0	0	98	97
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	535	-	200	200	-	200	410	-	155	235	-	155
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	73	0	21	35	48	0	69	38	0	0	115	114
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	48	0	0	21	0	0	298	264	0	283	285	24
Stage 1	-	-	-	-	-	-	146	146	-	118	118	-
Stage 2	-	-	-	-	-	-	152	118	-	165	167	-
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	1557	-	-	1593	-	-	632	640	-	647	623	1047
Stage 1	-	-	-	-	-	-	842	775	-	874	797	-
Stage 2	-	-	-	-	-	-	835	797	-	821	759	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1557	-	-	1593	-	-	453	596	-	-	581	1047
Mov Cap-2 Maneuver	-	-	-	-	-	-	453	596	-	-	581	-
Stage 1	-	-	-	-	-	-	802	739	-	833	779	-
Stage 2	-	-	-	-	-	-	620	779	-	743	723	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	5.8			3.1			13.3			10.8		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	453	596	-	1557	-	-	1593	-	-	-	581	1047
HCM Lane V/C Ratio	0.153	0.063	-	0.047	-	-	0.022	-	-	-	0.198	0.109
HCM Control Delay (s)	14.4	11.4	0	7.4	-	-	7.3	-	-	0	12.7	8.9
HCM Lane LOS	B	B	A	A	-	-	A	-	-	A	B	A
HCM 95th %tile Q(veh)	0.5	0.2	-	0.1	-	-	0.1	-	-	-	0.7	0.4

Intersection						
Int Delay, s/veh	8.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	149	70	336	68	108	523
Future Vol, veh/h	149	70	336	68	108	523
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	300	-	-	155	300	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	175	82	395	80	127	615

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	957	198	0
Stage 1	395	-	-
Stage 2	562	-	-
Critical Hdwy	6.84	6.94	-
Critical Hdwy Stg 1	5.84	-	-
Critical Hdwy Stg 2	5.84	-	-
Follow-up Hdwy	3.52	3.32	-
Pot Cap-1 Maneuver	256	810	-
Stage 1	650	-	-
Stage 2	534	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	226	810	-
Mov Cap-2 Maneuver	226	-	-
Stage 1	650	-	-
Stage 2	472	-	-

Approach	WB	NB	SB
HCM Control Delay, s	44.3	0	1.5
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	-	- 226 810 1083	-	-
HCM Lane V/C Ratio	-	- 0.776 0.102 0.117	-	-
HCM Control Delay (s)	-	- 60.5 9.9 8.8	-	-
HCM Lane LOS	-	- F A A	-	-
HCM 95th %tile Q(veh)	-	- 5.5 0.3 0.4	-	-

Timings
12: Vollmer Rd & Marksheffel Rd

Short-Term Total Traffic
AM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	149	70	336	68	108	523
Future Volume (vph)	149	70	336	68	108	523
Turn Type	Prot	Prot	NA	Perm	pm+pt	NA
Protected Phases	5	5	8		7	4
Permitted Phases				8	4	
Detector Phase	5	5	8	8	7	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	10.0	23.0	23.0	10.0	23.0
Total Split (s)	25.0	25.0	53.0	53.0	12.0	65.0
Total Split (%)	27.8%	27.8%	58.9%	58.9%	13.3%	72.2%
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 Effect Green (s)	10.9	10.9	15.7	15.7	21.1	24.0
Actuated g/C Ratio	0.29	0.29	0.41	0.41	0.56	0.63
v/c Ratio	0.34	0.16	0.27	0.11	0.20	0.28
Control Delay	16.9	5.5	13.2	4.6	6.2	5.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.9	5.5	13.2	4.6	6.2	5.7
LOS	B	A	B	A	A	A
Approach Delay	13.3		11.7			5.8
Approach LOS	B		B			A

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 38

Natural Cycle: 45

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.34

Intersection Signal Delay: 9.0

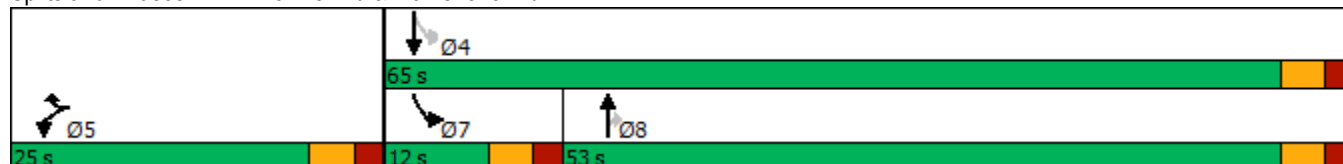
Intersection LOS: A

Intersection Capacity Utilization 36.0%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 12: Vollmer Rd & Marksheffel Rd



HCM 6th TWSC
13: Sterling Ranch Rd & Marksheffel Rd

Short-Term Total Traffic
AM Peak Hour

Intersection												
Int Delay, s/veh	107											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	73	99	4	8	60	251	10	3	5	667	1	150
Future Vol, veh/h	73	99	4	8	60	251	10	3	5	667	1	150
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	300	-	200	250	-	205	0	-	-	155	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	70	70	2	2	88	2	88	2	2	2
Mvmt Flow	86	116	5	9	71	295	12	4	6	785	1	176
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	366	0	0	121	0	0	342	672	58	321	382	36
Stage 1	-	-	-	-	-	-	288	288	-	89	89	-
Stage 2	-	-	-	-	-	-	54	384	-	232	293	-
Critical Hdwy	4.14	-	-	5.5	-	-	9.26	6.54	8.66	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	8.26	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	8.26	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.9	-	-	4.38	4.02	4.18	3.52	4.02	3.32
Pot Cap-1 Maneuver	1189	-	-	1083	-	-	417	376	775	~ 608	550	1029
Stage 1	-	-	-	-	-	-	503	672	-	908	820	-
Stage 2	-	-	-	-	-	-	750	610	-	~ 750	669	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1189	-	-	1083	-	-	324	346	775	~ 562	507	1029
Mov Cap-2 Maneuver	-	-	-	-	-	-	324	346	-	~ 562	507	-
Stage 1	-	-	-	-	-	-	467	624	-	843	813	-
Stage 2	-	-	-	-	-	-	615	605	-	~ 687	621	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	3.4			0.2			14.5			172.9		
HCM LOS							B			F		
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	SBLn3	
Capacity (veh/h)	324	529	1189	-	-	1083	-	-	562	507	1029	
HCM Lane V/C Ratio	0.036	0.018	0.072	-	-	0.009	-	-	1.396	0.002	0.171	
HCM Control Delay (s)	16.5	11.9	8.3	-	-	8.4	-	-	210	12.1	9.2	
HCM Lane LOS	C	B	A	-	-	A	-	-	F	B	A	
HCM 95th %tile Q(veh)	0.1	0.1	0.2	-	-	0	-	-	36	0	0.6	
Notes												
~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon												

Timings
13: Sterling Ranch Rd & Marksheffel Rd

Short-Term Total Traffic
AM Peak Hour

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	73	99	4	8	60	251	10	3	667	1	150
Future Volume (vph)	73	99	4	8	60	251	10	3	667	1	150
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8	7	4	
Permitted Phases	2		2	6		6	8				4
Detector Phase	5	2	2	1	6	6	3	8	7	4	4
Switch Phase											
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	15.0	5.0	10.0	5.0	10.0	10.0
Minimum Split (s)	10.0	23.0	23.0	10.0	23.0	23.0	10.0	23.0	10.0	23.0	23.0
Total Split (s)	10.0	40.0	40.0	10.0	40.0	40.0	10.0	23.0	17.0	30.0	30.0
Total Split (%)	11.1%	44.4%	44.4%	11.1%	44.4%	44.4%	11.1%	25.6%	18.9%	33.3%	33.3%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	Min	None	Min	Min	None	None	None	None	None
Act Effect Green (s)	20.2	19.5	19.5	18.3	15.6	15.6	6.7	10.4	12.4	13.2	13.2
Actuated g/C Ratio	0.44	0.42	0.42	0.40	0.34	0.34	0.15	0.23	0.27	0.29	0.29
v/c Ratio	0.15	0.08	0.01	0.03	0.06	0.40	0.09	0.04	0.85	0.00	0.30
Control Delay	9.0	10.9	0.0	9.0	14.0	4.7	16.3	15.1	30.7	15.0	5.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.0	10.9	0.0	9.0	14.0	4.7	16.3	15.1	30.7	15.0	5.1
LOS	A	B	A	A	B	A	B	B	C	B	A
Approach Delay		9.9			6.6			15.8		26.0	
Approach LOS		A			A			B		C	

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 46

Natural Cycle: 80

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.85

Intersection Signal Delay: 19.1

Intersection LOS: B

Intersection Capacity Utilization 46.5%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 13: Sterling Ranch Rd & Marksheffel Rd



HCM 6th TWSC
104: Briargate Pkwy & Sioux Falls Way

Short-Term Total Traffic
AM Peak Hour

Intersection						
Int Delay, s/veh	8.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑	↗		↗
Traffic Vol, veh/h	0	0	0	0	0	71
Future Vol, veh/h	0	0	0	0	0	71
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	0	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	84
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	-	0	-	0	-	1
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	0	1083
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	1083
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		8.6		
HCM LOS	A					
Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1		
Capacity (veh/h)	-	-	-	1083		
HCM Lane V/C Ratio	-	-	-	0.077		
HCM Control Delay (s)	-	-	-	8.6		
HCM Lane LOS	-	-	-	A		
HCM 95th %tile Q(veh)	-	-	-	0.2		

HCM 6th TWSC
309: Sterling Ranch Rd & Vancouver St

Short-Term Total Traffic
AM Peak Hour

Intersection												
Int Delay, s/veh	7.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	123	24	0	0	45	6	31	0	5	0
Future Vol, veh/h	0	0	123	24	0	0	45	6	31	0	5	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	200	-	200	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	145	28	0	0	53	7	36	0	6	0
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	137	155	6	192	119	7	6	0	0	43	0	0
Stage 1	6	6	-	113	113	-	-	-	-	-	-	-
Stage 2	131	149	-	79	6	-	-	-	-	-	-	-
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	737	1077	768	771	1075	1615	-	-	1566	-	-
Stage 1	1016	891	-	892	802	-	-	-	-	-	-	-
Stage 2	873	774	-	930	891	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	813	713	1077	648	746	1075	1615	-	-	1566	-	-
Mov Cap-2 Maneuver	813	713	-	648	746	-	-	-	-	-	-	-
Stage 1	982	891	-	863	776	-	-	-	-	-	-	-
Stage 2	844	748	-	805	891	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	8.9		10.8		4		0					
HCM LOS	A		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1615	-	-	1077	648	1566	-	-				
HCM Lane V/C Ratio	0.033	-	-	0.134	0.044	-	-	-				
HCM Control Delay (s)	7.3	-	-	8.9	10.8	0	-	-				
HCM Lane LOS	A	-	-	A	B	A	-	-				
HCM 95th %tile Q(veh)	0.1	-	-	0.5	0.1	0	-	-				

HCM 6th TWSC
310: Sterling Ranch Rd & Oshkosh Rd

Short-Term Total Traffic
AM Peak Hour

Intersection						
Int Delay, s/veh	3.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	0	0	6	0	0
Future Vol, veh/h	5	0	0	6	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	200	-	200	200	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	6	0	0	7	0	0
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	1	0	0	0	7	0
Stage 1	0	-	-	-	-	-
Stage 2	1	-	-	-	-	-
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	1022	-	-	-	1614	-
Stage 1	-	-	-	-	-	-
Stage 2	1022	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	1022	-	-	-	1614	-
Mov Cap-2 Maneuver	1022	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	1022	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	8.5	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	WBLn2	SBL	SBT	
Capacity (veh/h)	-	-	1022	-	1614	-
HCM Lane V/C Ratio	-	-	0.006	-	-	-
HCM Control Delay (s)	-	-	8.5	0	0	-
HCM Lane LOS	-	-	A	A	A	-
HCM 95th %tile Q(veh)	-	-	0	-	0	-

HCM 6th TWSC
4: Vollmer Rd & Briargate Pkwy

Short-Term Total Traffic
PM Peak Hour

Intersection						
Int Delay, s/veh	3.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	168	44	346	257	69	225
Future Vol, veh/h	168	44	346	257	69	225
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	485	-	-	235	385	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	198	52	407	302	81	265
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	702	204	0	0	709	0
Stage 1	407	-	-	-	-	-
Stage 2	295	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	372	803	-	-	886	-
Stage 1	641	-	-	-	-	-
Stage 2	730	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	338	803	-	-	886	-
Mov Cap-2 Maneuver	452	-	-	-	-	-
Stage 1	641	-	-	-	-	-
Stage 2	664	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	17.1	0	2.2			
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT		
Capacity (veh/h)	-	- 452 803	886	-		
HCM Lane V/C Ratio	-	- 0.437 0.064	0.092	-		
HCM Control Delay (s)	-	- 19 9.8	9.5	-		
HCM Lane LOS	-	- C A	A	-		
HCM 95th %tile Q(veh)	-	- 2.2 0.2	0.3	-		

HCM 6th TWSC
5: Sterling Ranch Rd & Briargate Pkwy

Short-Term Total Traffic
PM Peak Hour

Intersection												
Int Delay, s/veh	10.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	191	0	62	21	29	0	48	98	0	0	67	67
Future Vol, veh/h	191	0	62	21	29	0	48	98	0	0	67	67
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	535	-	200	200	-	200	410	-	155	235	-	155
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	225	0	73	25	34	0	56	115	0	0	79	79
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	34	0	0	73	0	0	557	534	0	592	607	17
Stage 1	-	-	-	-	-	-	450	450	-	84	84	-
Stage 2	-	-	-	-	-	-	107	84	-	508	523	-
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	1576	-	-	1525	-	-	413	451	-	390	409	1058
Stage 1	-	-	-	-	-	-	558	570	-	915	824	-
Stage 2	-	-	-	-	-	-	887	824	-	516	529	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1576	-	-	1525	-	-	278	380	-	-	345	1058
Mov Cap-2 Maneuver	-	-	-	-	-	-	278	380	-	-	345	-
Stage 1	-	-	-	-	-	-	478	488	-	784	811	-
Stage 2	-	-	-	-	-	-	729	811	-	338	453	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	5.8			3.1			19.4			13.6		
HCM LOS							C			B		
Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	278	380	-	1576	-	-	1525	-	-	-	345	1058
HCM Lane V/C Ratio	0.203	0.303	-	0.143	-	-	0.016	-	-	-	0.228	0.075
HCM Control Delay (s)	21.2	18.5	0	7.7	-	-	7.4	-	-	0	18.5	8.7
HCM Lane LOS	C	C	A	A	-	-	A	-	-	A	C	A
HCM 95th %tile Q(veh)	0.7	1.3	-	0.5	-	-	0	-	-	-	0.9	0.2

Intersection						
Int Delay, s/veh	5.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	101	96	596	122	75	382
Future Vol, veh/h	101	96	596	122	75	382
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	300	-	-	155	300	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	119	113	701	144	88	449
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1102	351	0	0	845	0
Stage 1	701	-	-	-	-	-
Stage 2	401	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	206	645	-	-	787	-
Stage 1	453	-	-	-	-	-
Stage 2	645	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	183	645	-	-	787	-
Mov Cap-2 Maneuver	183	-	-	-	-	-
Stage 1	453	-	-	-	-	-
Stage 2	573	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	34.1	0	1.7			
HCM LOS	D					
Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT		
Capacity (veh/h)	-	- 183 645	787	-		
HCM Lane V/C Ratio	-	- 0.649 0.175	0.112	-		
HCM Control Delay (s)	-	- 55.2 11.8	10.2	-		
HCM Lane LOS	-	- F B	B	-		
HCM 95th %tile Q(veh)	-	- 3.8 0.6	0.4	-		

Timings
12: Vollmer Rd & Marksheffel Rd

Short-Term Total Traffic
PM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	101	96	596	122	75	382
Future Volume (vph)	101	96	596	122	75	382
Turn Type	Prot	Prot	NA	Perm	pm+pt	NA
Protected Phases	1	1	8		7	4
Permitted Phases				8	4	
Detector Phase	1	1	8	8	7	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	10.0	23.0	23.0	10.0	23.0
Total Split (s)	25.0	25.0	53.0	53.0	12.0	65.0
Total Split (%)	27.8%	27.8%	58.9%	58.9%	13.3%	72.2%
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	Max	Max	Max	None
Act Effect Green (s)	10.7	10.7	48.1	48.1	60.1	60.1
Actuated g/C Ratio	0.13	0.13	0.60	0.60	0.74	0.74
v/c Ratio	0.51	0.37	0.33	0.14	0.16	0.17
Control Delay	40.3	10.3	9.2	2.0	4.0	3.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.3	10.3	9.2	2.0	4.0	3.5
LOS	D	B	A	A	A	A
Approach Delay	25.7		7.9			3.6
Approach LOS	C		A			A

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 80.8

Natural Cycle: 45

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.51

Intersection Signal Delay: 9.0

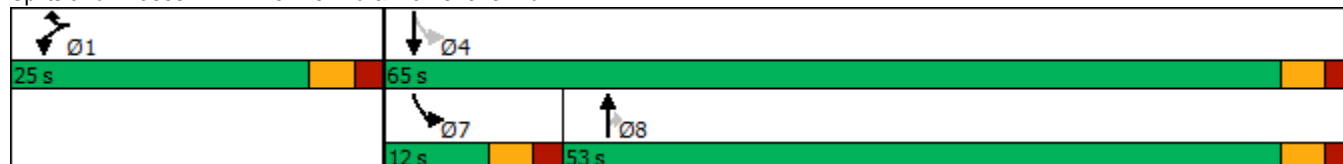
Intersection LOS: A

Intersection Capacity Utilization 38.7%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 12: Vollmer Rd & Marksheffel Rd



HCM 6th TWSC
13: Sterling Ranch Rd & Marksheffel Rd

Short-Term Total Traffic
PM Peak Hour

Intersection												
Int Delay, s/veh	77.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	122	69	6	8	94	711	3	11	10	464	10	100
Future Vol, veh/h	122	69	6	8	94	711	3	11	10	464	10	100
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	300	-	200	250	-	205	0	-	-	155	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	88	88	2	2	78	2	78	2	2	2
Mvmt Flow	144	81	7	9	111	836	4	13	12	546	12	118
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	947	0	0	88	0	0	449	1334	41	464	505	56
Stage 1	-	-	-	-	-	-	369	369	-	129	129	-
Stage 2	-	-	-	-	-	-	80	965	-	335	376	-
Critical Hdwy	4.14	-	-	5.86	-	-	9.06	6.54	8.46	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	8.06	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	8.06	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	3.08	-	-	4.28	4.02	4.08	3.52	4.02	3.32
Pot Cap-1 Maneuver	721	-	-	1051	-	-	351	153	820	~ 481	468	999
Stage 1	-	-	-	-	-	-	455	619	-	861	788	-
Stage 2	-	-	-	-	-	-	737	331	-	653	615	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	721	-	-	1051	-	-	254	121	820	~ 367	371	999
Mov Cap-2 Maneuver	-	-	-	-	-	-	254	121	-	~ 367	371	-
Stage 1	-	-	-	-	-	-	364	495	-	689	781	-
Stage 2	-	-	-	-	-	-	635	328	-	~ 502	492	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	7			0.1			24.4			212.7		
HCM LOS							C			F		
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	SBLn3	
Capacity (veh/h)	254	204	721	-	-	1051	-	-	367	371	999	
HCM Lane V/C Ratio	0.014	0.121	0.199	-	-	0.009	-	-	1.487	0.032	0.118	
HCM Control Delay (s)	19.4	25.1	11.2	-	-	8.5	-	-	260.8	15	9.1	
HCM Lane LOS	C	D	B	-	-	A	-	-	F	C	A	
HCM 95th %tile Q(veh)	0	0.4	0.7	-	-	0	-	-	29.3	0.1	0.4	
Notes												
~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon												

Timings 13: Sterling Ranch Rd & Marksheffel Rd

Short-Term Total Traffic
PM Peak Hour

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	122	69	6	8	94	711	3	11	464	10	100
Future Volume (vph)	122	69	6	8	94	711	3	11	464	10	100
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8	7	4	
Permitted Phases	2		2	6		6	8				4
Detector Phase	5	2	2	1	6	6	3	8	7	4	4
Switch Phase											
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	15.0	5.0	10.0	5.0	10.0	10.0
Minimum Split (s)	10.0	23.0	23.0	10.0	23.0	23.0	10.0	23.0	10.0	23.0	23.0
Total Split (s)	10.0	40.0	40.0	10.0	40.0	40.0	10.0	25.0	15.0	30.0	30.0
Total Split (%)	11.1%	44.4%	44.4%	11.1%	44.4%	44.4%	11.1%	27.8%	16.7%	33.3%	33.3%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	Min	None	Min	Min	None	None	None	None	None
Act Effect Green (s)	25.8	25.1	25.1	22.5	18.6	18.6	6.6	10.7	10.7	11.3	11.3
Actuated g/C Ratio	0.52	0.51	0.51	0.45	0.37	0.37	0.13	0.22	0.22	0.23	0.23
v/c Ratio	0.22	0.05	0.01	0.03	0.08	0.75	0.03	0.09	0.74	0.03	0.25
Control Delay	7.5	8.2	0.0	6.8	11.7	6.3	19.0	17.6	30.4	20.2	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.5	8.2	0.0	6.8	11.7	6.3	19.0	17.6	30.4	20.2	5.0
LOS	A	A	A	A	B	A	B	B	C	C	A
Approach Delay		7.5			6.9			17.8		25.8	
Approach LOS		A			A			B		C	

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 49.7

Natural Cycle: 80

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 13.9

Intersection LOS: B

Intersection Capacity Utilization 71.6%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 13: Sterling Ranch Rd & Marksheffel Rd



HCM 6th TWSC
104: Briargate Pkwy & Sioux Falls Way

Short-Term Total Traffic
PM Peak Hour

Intersection						
Int Delay, s/veh	8.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑	↗		↗
Traffic Vol, veh/h	0	0	0	0	0	50
Future Vol, veh/h	0	0	0	0	0	50
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	0	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	59
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	-	0	-	0	-	1
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	0	1083
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	1083
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		8.5		
HCM LOS	A					
Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1		
Capacity (veh/h)	-	-	-	1083		
HCM Lane V/C Ratio	-	-	-	0.054		
HCM Control Delay (s)	-	-	-	8.5		
HCM Lane LOS	-	-	-	A		
HCM 95th %tile Q(veh)	-	-	-	0.2		

HCM 6th TWSC
309: Sterling Ranch Rd & Vancouver St

Short-Term Total Traffic
PM Peak Hour

Intersection												
Int Delay, s/veh	5.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	85	17	0	0	138	17	97	0	4	0
Future Vol, veh/h	0	0	85	17	0	0	138	17	97	0	4	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	200	-	200	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	100	20	0	0	162	20	114	0	5	0
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	406	463	5	399	349	20	5	0	0	134	0	0
Stage 1	5	5	-	344	344	-	-	-	-	-	-	-
Stage 2	401	458	-	55	5	-	-	-	-	-	-	-
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	555	496	1078	561	575	1058	1616	-	-	1451	-	-
Stage 1	1017	892	-	671	637	-	-	-	-	-	-	-
Stage 2	626	567	-	957	892	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	512	446	1078	470	518	1058	1616	-	-	1451	-	-
Mov Cap-2 Maneuver	512	446	-	470	518	-	-	-	-	-	-	-
Stage 1	915	892	-	604	573	-	-	-	-	-	-	-
Stage 2	563	510	-	868	892	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	8.7		13		4.1		0					
HCM LOS	A		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1616	-	-	1078	470	1451	-	-				
HCM Lane V/C Ratio	0.1	-	-	0.093	0.043	-	-	-				
HCM Control Delay (s)	7.5	-	-	8.7	13	0	-	-				
HCM Lane LOS	A	-	-	A	B	A	-	-				
HCM 95th %tile Q(veh)	0.3	-	-	0.3	0.1	0	-	-				

HCM 6th TWSC
310: Sterling Ranch Rd & Oshkosh Rd

Short-Term Total Traffic
PM Peak Hour

Intersection						
Int Delay, s/veh	1.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	0	0	17	0	0
Future Vol, veh/h	4	0	0	17	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	200	-	200	200	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	0	0	20	0	0
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	1	0	0	0	20	0
Stage 1	0	-	-	-	-	-
Stage 2	1	-	-	-	-	-
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	1022	-	-	-	1596	-
Stage 1	-	-	-	-	-	-
Stage 2	1022	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	1022	-	-	-	1596	-
Mov Cap-2 Maneuver	1022	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	1022	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	8.5	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	WBLn2	SBL	SBT	
Capacity (veh/h)	-	-	1022	-	1596	-
HCM Lane V/C Ratio	-	-	0.005	-	-	-
HCM Control Delay (s)	-	-	8.5	0	0	-
HCM Lane LOS	-	-	A	A	A	-
HCM 95th %tile Q(veh)	-	-	0	-	0	-

Timings 4: Vollmer Rd & Briargate Pkwy

2045 Background Traffic
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	68	529	153	239	1020	80	153	130	100	108	310	139
Future Volume (vph)	68	529	153	239	1020	80	153	130	100	108	310	139
Turn Type	pm+pt	NA	Perm	Prot	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	8		8	4		4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	15.0	15.0	15.0	15.0	15.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	20.0	20.0	20.0	20.0	20.0	10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	12.0	57.0	57.0	20.0	65.0	65.0	17.0	28.0	28.0	15.0	26.0	26.0
Total Split (%)	10.0%	47.5%	47.5%	16.7%	54.2%	54.2%	14.2%	23.3%	23.3%	12.5%	21.7%	21.7%
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 Effect Green (s)	58.7	52.1	52.1	15.0	62.7	62.7	29.2	17.9	17.9	25.3	16.0	16.0
Actuated g/C Ratio	0.51	0.46	0.46	0.13	0.55	0.55	0.26	0.16	0.16	0.22	0.14	0.14
v/c Ratio	0.25	0.34	0.20	0.56	0.55	0.09	0.60	0.24	0.28	0.36	0.66	0.41
Control Delay	12.2	21.3	3.7	52.7	19.5	1.7	42.1	43.1	3.5	34.7	53.4	9.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.2	21.3	3.7	52.7	19.5	1.7	42.1	43.1	3.5	34.7	53.4	9.6
LOS	B	C	A	D	B	A	D	D	A	C	D	A
Approach Delay		16.8			24.4			32.3			38.8	
Approach LOS		B			C			C			D	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 114.4

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.66

Intersection Signal Delay: 26.2

Intersection LOS: C

Intersection Capacity Utilization 66.1%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 4: Vollmer Rd & Briargate Pkwy



Timings 5: Sterling Ranch Rd & Briargate Pkwy

2045 Background Traffic
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	54	605	135	124	912	17	241	116	123	82	132	187
Future Volume (vph)	54	605	135	124	912	17	241	116	123	82	132	187
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Free	pm+pt	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		Free	4		Free
Detector Phase	5	2	2	1	6	6	3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	20.0		5.0	20.0	
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	25.0		10.0	25.0	
Total Split (s)	12.0	55.0	55.0	12.0	55.0	55.0	21.0	32.0		21.0	32.0	
Total Split (%)	10.0%	45.8%	45.8%	10.0%	45.8%	45.8%	17.5%	26.7%		17.5%	26.7%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max		None	Max	
Act Effect Green (s)	56.6	50.0	50.0	58.1	52.5	52.5	47.8	36.1	120.0	37.2	28.1	120.0
Actuated g/C Ratio	0.47	0.42	0.42	0.48	0.44	0.44	0.40	0.30	1.00	0.31	0.23	1.00
v/c Ratio	0.25	0.43	0.19	0.38	0.62	0.02	0.52	0.22	0.08	0.20	0.32	0.12
Control Delay	17.3	26.1	4.1	18.8	28.9	0.1	29.8	34.7	0.1	24.6	41.0	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.3	26.1	4.1	18.8	28.9	0.1	29.8	34.7	0.1	24.6	41.0	0.2
LOS	B	C	A	B	C	A	C	C	A	C	D	A
Approach Delay		21.7			27.3			23.4			18.6	
Approach LOS		C			C			C			B	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 63 (53%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.62

Intersection Signal Delay: 23.7

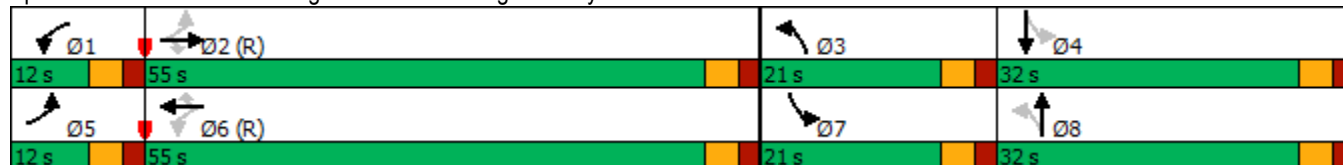
Intersection LOS: C

Intersection Capacity Utilization 76.1%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 5: Sterling Ranch Rd & Briargate Pkwy



Timings
12: Vollmer Rd & Marksheffel Rd

2045 Background Traffic
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	68	832	42	162	899	63	108	245	104	121	576	135
Future Volume (vph)	68	832	42	162	899	63	108	245	104	121	576	135
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)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	10.0	23.0	23.0	10.0	23.0	23.0	10.0	23.0	23.0	10.0	23.0	23.0
Total Split (s)	12.0	60.0	60.0	12.0	60.0	60.0	13.0	35.0	35.0	13.0	35.0	35.0
Total Split (%)	10.0%	50.0%	50.0%	10.0%	50.0%	50.0%	10.8%	29.2%	29.2%	10.8%	29.2%	29.2%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	C-Max	C-Max	None	C-Max	C-Max	None	Max	Max	None	Max	Max
Act Effect Green (s)	61.7	55.0	55.0	63.0	57.4	57.4	37.9	30.1	30.1	38.1	30.2	30.2
Actuated g/C Ratio	0.51	0.46	0.46	0.52	0.48	0.48	0.32	0.25	0.25	0.32	0.25	0.25
v/c Ratio	0.26	0.54	0.06	0.59	0.56	0.08	0.52	0.29	0.23	0.34	0.68	0.29
Control Delay	14.9	25.0	0.1	23.9	15.3	0.3	35.9	37.5	7.8	29.9	45.2	9.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.9	25.0	0.1	23.9	15.3	0.3	35.9	37.5	7.8	29.9	45.2	9.5
LOS	B	C	A	C	B	A	D	D	A	C	D	A
Approach Delay		23.1			15.7			30.4			37.2	
Approach LOS		C			B			C			D	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.68

Intersection Signal Delay: 25.1

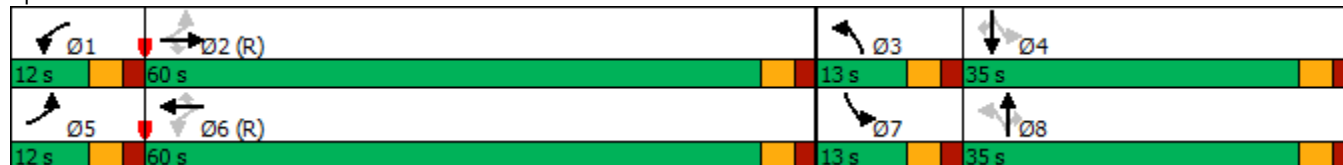
Intersection LOS: C

Intersection Capacity Utilization 70.5%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 12: Vollmer Rd & Marksheffel Rd



Timings
13: Sterling Ranch Rd & Marksheffel Rd

2045 Background Traffic
AM Peak Hour

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	142	884	12	53	807	172	7	2	494	10	309
Future Volume (vph)	142	884	12	53	807	172	7	2	494	10	309
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8	7	4	
Permitted Phases	2		2	6		6	8				4
Detector Phase	5	2	2	1	6	6	3	8	7	4	4
Switch Phase											
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	15.0	5.0	10.0	20.0	10.0	10.0
Minimum Split (s)	10.0	20.0	20.0	10.0	20.0	20.0	10.0	15.0	25.0	20.0	20.0
Total Split (s)	12.0	51.0	51.0	12.0	51.0	51.0	12.0	25.0	32.0	45.0	45.0
Total Split (%)	10.0%	42.5%	42.5%	10.0%	42.5%	42.5%	10.0%	20.8%	26.7%	37.5%	37.5%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None
Act Effect Green (s)	81.7	73.9	73.9	76.3	69.5	69.5	8.0	10.0	23.4	24.1	24.1
Actuated g/C Ratio	0.68	0.62	0.62	0.64	0.58	0.58	0.07	0.08	0.20	0.20	0.20
v/c Ratio	0.35	0.43	0.01	0.15	0.41	0.18	0.06	0.06	0.78	0.03	0.59
Control Delay	13.2	11.9	0.0	8.8	16.6	3.2	41.1	33.0	54.4	36.3	11.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.2	11.9	0.0	8.8	16.6	3.2	41.1	33.0	54.4	36.3	11.2
LOS	B	B	A	A	B	A	D	C	D	D	B
Approach Delay		12.0			14.0			36.6		37.7	
Approach LOS		B			B			D		D	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.78

Intersection Signal Delay: 20.0

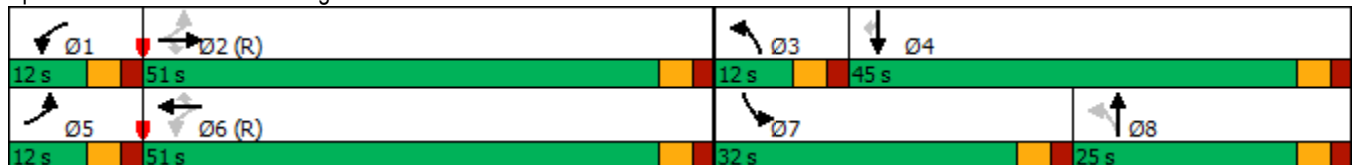
Intersection LOS: C

Intersection Capacity Utilization 63.4%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 13: Sterling Ranch Rd & Marksheffel Rd



Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑	↗		↗
Traffic Vol, veh/h	0	809	1015	4	0	38
Future Vol, veh/h	0	809	1015	4	0	38
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	200	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	852	1068	4	0	40
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	-	0	-	0	-	534
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	0	491
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	491
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		13		
HCM LOS	B					
Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1		
Capacity (veh/h)	-	-	-	491		
HCM Lane V/C Ratio	-	-	-	0.081		
HCM Control Delay (s)	-	-	-	13		
HCM Lane LOS	-	-	-	B		
HCM 95th %tile Q(veh)	-	-	-	0.3		

Intersection						
Int Delay, s/veh	3.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	126	47	122	204	0
Future Vol, veh/h	0	126	47	122	204	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	-	200	-	-	-
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	0	133	49	128	215	0

Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	441	215	215	0	-	0
Stage 1	215	-	-	-	-	-
Stage 2	226	-	-	-	-	-
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	574	825	1355	-	-	-
Stage 1	821	-	-	-	-	-
Stage 2	812	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	553	825	1355	-	-	-
Mov Cap-2 Maneuver	553	-	-	-	-	-
Stage 1	791	-	-	-	-	-
Stage 2	812	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.2	2.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1355	-	825	-	-
HCM Lane V/C Ratio	0.037	-	0.161	-	-
HCM Control Delay (s)	7.8	-	10.2	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.6	-	-

Intersection												
Int Delay, s/veh	4.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	8	7	61	2	35	3	72	46	134	136	0
Future Vol, veh/h	0	8	7	61	2	35	3	72	46	134	136	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	0	-	200	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	8	7	64	2	37	3	76	48	141	143	0

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	551	555	143	515	507	76	143	0	0	124	0	0
Stage 1	425	425	-	82	82	-	-	-	-	-	-	-
Stage 2	126	130	-	433	425	-	-	-	-	-	-	-
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	445	440	905	470	468	985	1440	-	-	1463	-	-
Stage 1	607	586	-	926	827	-	-	-	-	-	-	-
Stage 2	878	789	-	601	586	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	395	397	905	424	422	985	1440	-	-	1463	-	-
Mov Cap-2 Maneuver	395	397	-	424	422	-	-	-	-	-	-	-
Stage 1	606	530	-	924	825	-	-	-	-	-	-	-
Stage 2	841	787	-	530	530	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	11.9		12.8		0.2		3.8	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1440	-	-	-	538	424	919	1463	-	-
HCM Lane V/C Ratio	0.002	-	-	-	0.029	0.151	0.042	0.096	-	-
HCM Control Delay (s)	7.5	-	-	0	11.9	15	9.1	7.7	-	-
HCM Lane LOS	A	-	-	A	B	C	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	0.1	0.5	0.1	0.3	-	-

Timings

4: Vollmer Rd & Briargate Pkwy

2045 Background Traffic
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	227	973	176	193	723	66	291	414	265	93	211	118
Future Volume (vph)	227	973	176	193	723	66	291	414	265	93	211	118
Turn Type	pm+pt	NA	Perm	Prot	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	8		8	4		4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	15.0	15.0	15.0	15.0	15.0	8.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	20.0	20.0	20.0	20.0	20.0	13.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	12.0	53.0	53.0	20.0	61.0	61.0	22.0	28.0	28.0	19.0	25.0	25.0
Total Split (%)	10.0%	44.2%	44.2%	16.7%	50.8%	50.8%	18.3%	23.3%	23.3%	15.8%	20.8%	20.8%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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 Effect Green (s)	55.1	48.1	48.1	15.0	56.1	56.1	34.9	20.2	20.2	23.9	13.8	13.8
Actuated g/C Ratio	0.49	0.42	0.42	0.13	0.49	0.49	0.31	0.18	0.18	0.21	0.12	0.12
v/c Ratio	0.64	0.66	0.24	0.45	0.43	0.08	0.82	0.67	0.55	0.38	0.52	0.38
Control Delay	23.8	29.5	4.1	49.8	20.0	1.1	51.3	49.6	9.2	33.0	50.9	6.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.8	29.5	4.1	49.8	20.0	1.1	51.3	49.6	9.2	33.0	50.9	6.7
LOS	C	C	A	D	C	A	D	D	A	C	D	A
Approach Delay		25.2			24.6			38.9			34.6	
Approach LOS		C			C			D			C	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 113.4

Natural Cycle: 75

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.82

Intersection Signal Delay: 29.7

Intersection LOS: C

Intersection Capacity Utilization 78.0%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 4: Vollmer Rd & Briargate Pkwy



Timings 5: Sterling Ranch Rd & Briargate Pkwy

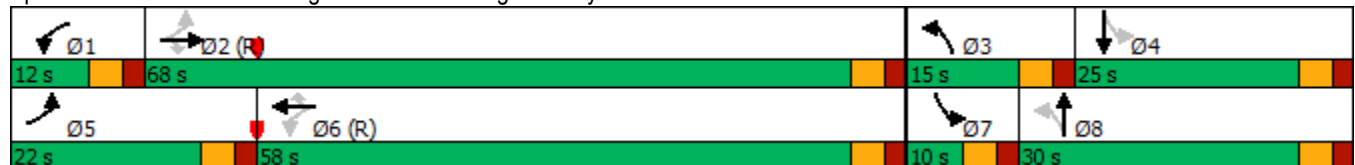
2045 Background Traffic
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	271	902	134	144	813	79	146	117	84	60	70	134
Future Volume (vph)	271	902	134	144	813	79	146	117	84	60	70	134
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Free	pm+pt	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		Free	4		Free
Detector Phase	5	2	2	1	6	6	3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	20.0		5.0	20.0	
Minimum Split (s)	10.0	23.0	23.0	10.0	23.0	23.0	10.0	25.0		10.0	25.0	
Total Split (s)	22.0	68.0	68.0	12.0	58.0	58.0	15.0	30.0		10.0	25.0	
Total Split (%)	18.3%	56.7%	56.7%	10.0%	48.3%	48.3%	12.5%	25.0%		8.3%	20.8%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None		None	None	
Act Effect Green (s)	77.4	66.1	66.1	66.3	59.4	59.4	32.0	24.0	120.0	21.0	20.0	120.0
Actuated g/C Ratio	0.64	0.55	0.55	0.55	0.50	0.50	0.27	0.20	1.00	0.18	0.17	1.00
v/c Ratio	0.68	0.49	0.15	0.45	0.49	0.10	0.45	0.33	0.06	0.26	0.24	0.09
Control Delay	18.1	18.3	2.7	14.6	22.7	0.2	38.8	43.5	0.1	35.8	45.8	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	18.1	18.3	2.7	14.6	22.7	0.2	38.8	43.5	0.1	35.8	45.8	0.1
LOS	B	B	A	B	C	A	D	D	A	D	D	A
Approach Delay		16.7			19.9			31.0			20.4	
Approach LOS		B			B			C			C	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.68
Intersection Signal Delay: 19.8
Intersection Capacity Utilization 66.7%
Analysis Period (min) 15
Intersection LOS: B
ICU Level of Service C

Splits and Phases: 5: Sterling Ranch Rd & Briargate Pkwy



Timings
12: Vollmer Rd & Marksheffel Rd

2045 Background Traffic
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	138	914	89	187	701	149	169	774	176	126	387	196
Future Volume (vph)	138	914	89	187	701	149	169	774	176	126	387	196
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)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	20.0	20.0	5.0	20.0	20.0
Minimum Split (s)	10.0	23.0	23.0	10.0	23.0	23.0	10.0	25.0	25.0	10.0	25.0	25.0
Total Split (s)	20.0	50.0	50.0	20.0	50.0	50.0	15.0	37.0	37.0	13.0	35.0	35.0
Total Split (%)	16.7%	41.7%	41.7%	16.7%	41.7%	41.7%	12.5%	30.8%	30.8%	10.8%	29.2%	29.2%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	C-Max	C-Max	None	C-Max	C-Max	None	Max	Max	None	Max	Max
Act Effect Green (s)	58.2	47.7	47.7	61.8	49.5	49.5	41.8	32.0	32.0	38.2	30.2	30.2
Actuated g/C Ratio	0.48	0.40	0.40	0.52	0.41	0.41	0.35	0.27	0.27	0.32	0.25	0.25
v/c Ratio	0.41	0.68	0.14	0.67	0.51	0.21	0.54	0.86	0.36	0.74	0.46	0.37
Control Delay	17.7	33.4	3.8	45.9	20.7	4.4	33.3	52.7	14.4	52.0	40.1	6.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.7	33.4	3.8	45.9	20.7	4.4	33.3	52.7	14.4	52.0	40.1	6.9
LOS	B	C	A	D	C	A	C	D	B	D	D	A
Approach Delay		29.2			22.9			43.8			33.0	
Approach LOS		C			C			D			C	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.86

Intersection Signal Delay: 32.3

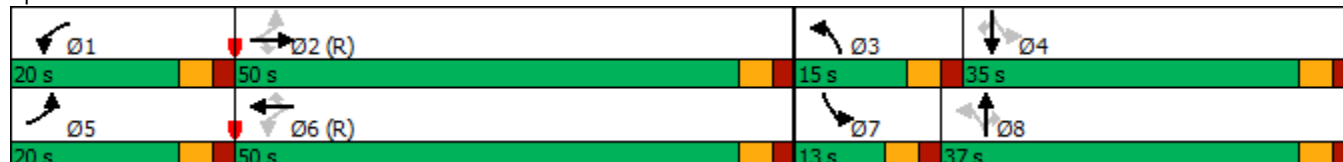
Intersection LOS: C

Intersection Capacity Utilization 80.7%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 12: Vollmer Rd & Marksheffel Rd



Timings
13: Sterling Ranch Rd & Marksheffel Rd

2045 Background Traffic
PM Peak Hour

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations		 			 			 	 		
Traffic Volume (vph)	297	940	6	62	838	551	18	4	335	17	181
Future Volume (vph)	297	940	6	62	838	551	18	4	335	17	181
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8	7	4	
Permitted Phases	2		2	6		6	8				4
Detector Phase	5	2	2	1	6	6	3	8	7	4	4
Switch Phase											
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	15.0	5.0	10.0	20.0	10.0	10.0
Minimum Split (s)	10.0	20.0	20.0	10.0	20.0	20.0	10.0	15.0	25.0	20.0	20.0
Total Split (s)	20.0	68.0	68.0	12.0	60.0	60.0	10.0	15.0	25.0	30.0	30.0
Total Split (%)	16.7%	56.7%	56.7%	10.0%	50.0%	50.0%	8.3%	12.5%	20.8%	25.0%	25.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None
Act Effect Green (s)	81.0	71.6	71.6	69.4	62.8	62.8	11.0	10.0	20.0	25.0	25.0
Actuated g/C Ratio	0.68	0.60	0.60	0.58	0.52	0.52	0.09	0.08	0.17	0.21	0.21
v/c Ratio	0.74	0.47	0.01	0.19	0.48	0.52	0.13	0.18	0.62	0.05	0.40
Control Delay	38.7	10.2	0.0	10.2	20.8	3.5	35.7	24.2	51.7	37.5	8.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.7	10.2	0.0	10.2	20.8	3.5	35.7	24.2	51.7	37.5	8.2
LOS	D	B	A	B	C	A	D	C	D	D	A
Approach Delay		17.0			13.8			28.8		36.5	
Approach LOS		B			B			C		D	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.74

Intersection Signal Delay: 18.9

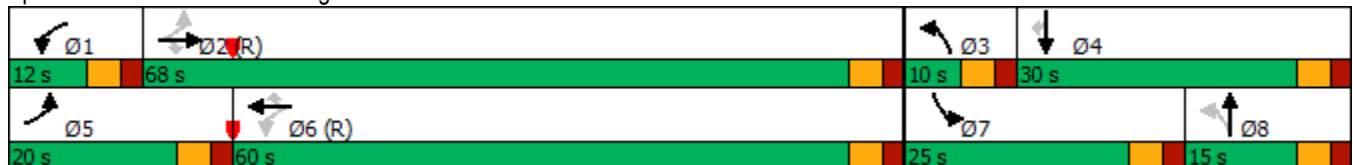
Intersection LOS: B

Intersection Capacity Utilization 71.4%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 13: Sterling Ranch Rd & Marksheffel Rd



HCM 6th TWSC
104: Briargate Pkwy & Sioux Falls Way

2045 Background Traffic
PM Peak Hour

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑	↗		↗
Traffic Vol, veh/h	0	1047	1014	16	0	22
Future Vol, veh/h	0	1047	1014	16	0	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	200	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1102	1067	17	0	23
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	-	0	-	0	-	534
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	0	491
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	491
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		12.7		
HCM LOS	B					
Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1		
Capacity (veh/h)	-	-	-	491		
HCM Lane V/C Ratio	-	-	-	0.047		
HCM Control Delay (s)	-	-	-	12.7		
HCM Lane LOS	-	-	-	B		
HCM 95th %tile Q(veh)	-	-	-	0.1		

Intersection						
Int Delay, s/veh	3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	87	140	281	133	0
Future Vol, veh/h	0	87	140	281	133	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	-	200	-	-	-
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	0	92	147	296	140	0

Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	730	140	140	0	-	0
Stage 1	140	-	-	-	-	-
Stage 2	590	-	-	-	-	-
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	389	908	1443	-	-	-
Stage 1	887	-	-	-	-	-
Stage 2	554	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	349	908	1443	-	-	-
Mov Cap-2 Maneuver	349	-	-	-	-	-
Stage 1	797	-	-	-	-	-
Stage 2	554	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.4	2.6	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1443	-	908	-	-
HCM Lane V/C Ratio	0.102	-	0.101	-	-
HCM Control Delay (s)	7.8	-	9.4	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0.3	-	0.3	-	-

Intersection												
Int Delay, s/veh	4.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	5	5	34	9	161	9	145	127	97	94	0
Future Vol, veh/h	0	5	5	34	9	161	9	145	127	97	94	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	0	-	200	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	5	5	36	9	169	9	153	134	102	99	0

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	630	608	99	479	474	153	99	0	0	287	0	0
Stage 1	303	303	-	171	171	-	-	-	-	-	-	-
Stage 2	327	305	-	308	303	-	-	-	-	-	-	-
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	394	410	957	497	489	893	1494	-	-	1275	-	-
Stage 1	706	664	-	831	757	-	-	-	-	-	-	-
Stage 2	686	662	-	702	664	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	294	375	957	457	447	893	1494	-	-	1275	-	-
Mov Cap-2 Maneuver	294	375	-	457	447	-	-	-	-	-	-	-
Stage 1	702	611	-	826	752	-	-	-	-	-	-	-
Stage 2	546	658	-	637	611	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	11.8		10.9		0.2		4.1	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1494	-	-	-	539	457	848	1275	-	-
HCM Lane V/C Ratio	0.006	-	-	-	0.02	0.078	0.211	0.08	-	-
HCM Control Delay (s)	7.4	-	-	0	11.8	13.5	10.4	8.1	-	-
HCM Lane LOS	A	-	-	A	B	B	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	0.1	0.3	0.8	0.3	-	-

Timings

4: Vollmer Rd & Briargate Pkwy

2045 Total Traffic

AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	68	533	153	251	1038	82	153	130	103	108	310	139
Future Volume (vph)	68	533	153	251	1038	82	153	130	103	108	310	139
Turn Type	pm+pt	NA	Perm	Prot	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	8		8	4		4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	15.0	15.0	15.0	15.0	15.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	20.0	20.0	20.0	20.0	20.0	10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	12.0	57.0	57.0	20.0	65.0	65.0	17.0	28.0	28.0	15.0	26.0	26.0
Total Split (%)	10.0%	47.5%	47.5%	16.7%	54.2%	54.2%	14.2%	23.3%	23.3%	12.5%	21.7%	21.7%
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 Effect Green (s)	58.7	52.1	52.1	15.0	62.7	62.7	29.2	17.9	17.9	25.3	16.0	16.0
Actuated g/C Ratio	0.51	0.46	0.46	0.13	0.55	0.55	0.26	0.16	0.16	0.22	0.14	0.14
v/c Ratio	0.26	0.34	0.20	0.59	0.56	0.09	0.60	0.24	0.28	0.36	0.66	0.41
Control Delay	12.3	21.4	3.7	53.4	19.7	1.9	42.1	43.1	3.8	34.7	53.4	9.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.3	21.4	3.7	53.4	19.7	1.9	42.1	43.1	3.8	34.7	53.4	9.6
LOS	B	C	A	D	B	A	D	D	A	C	D	A
Approach Delay		16.9			24.8			32.1			38.8	
Approach LOS		B			C			C			D	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 114.4

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.66

Intersection Signal Delay: 26.4

Intersection LOS: C

Intersection Capacity Utilization 66.6%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 4: Vollmer Rd & Briargate Pkwy



Timings 5: Sterling Ranch Rd & Briargate Pkwy

2045 Total Traffic
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	62	605	135	140	937	18	241	138	123	87	146	194
Future Volume (vph)	62	605	135	140	937	18	241	138	123	87	146	194
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Free	pm+pt	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		Free	4		Free
Detector Phase	5	2	2	1	6	6	3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	20.0		5.0	20.0	
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	25.0		10.0	25.0	
Total Split (s)	12.0	55.0	55.0	12.0	55.0	55.0	21.0	32.0		21.0	32.0	
Total Split (%)	10.0%	45.8%	45.8%	10.0%	45.8%	45.8%	17.5%	26.7%		17.5%	26.7%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max		None	Max	
Act Effect Green (s)	56.7	50.0	50.0	58.0	52.4	52.4	47.7	33.5	120.0	37.5	28.1	120.0
Actuated g/C Ratio	0.47	0.42	0.42	0.48	0.44	0.44	0.40	0.28	1.00	0.31	0.23	1.00
v/c Ratio	0.29	0.43	0.19	0.42	0.64	0.03	0.54	0.28	0.08	0.21	0.35	0.13
Control Delay	18.0	26.1	4.1	19.7	29.4	0.1	30.2	36.3	0.1	24.7	41.7	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.0	26.1	4.1	19.7	29.4	0.1	30.2	36.3	0.1	24.7	41.7	0.2
LOS	B	C	A	B	C	A	C	D	A	C	D	A
Approach Delay		21.7			27.7			24.6			19.4	
Approach LOS		C			C			C			B	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 63 (53%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.64

Intersection Signal Delay: 24.2

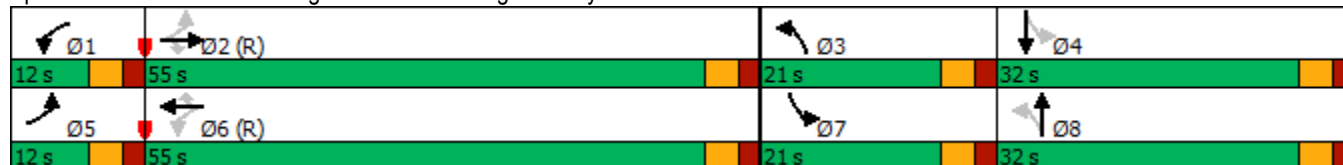
Intersection LOS: C

Intersection Capacity Utilization 76.8%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 5: Sterling Ranch Rd & Briargate Pkwy



Timings
12: Vollmer Rd & Marksheffel Rd

2045 Total Traffic
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	68	833	42	162	904	63	108	249	104	121	588	135
Future Volume (vph)	68	833	42	162	904	63	108	249	104	121	588	135
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)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	10.0	23.0	23.0	10.0	23.0	23.0	10.0	23.0	23.0	10.0	23.0	23.0
Total Split (s)	12.0	60.0	60.0	12.0	60.0	60.0	13.0	35.0	35.0	13.0	35.0	35.0
Total Split (%)	10.0%	50.0%	50.0%	10.0%	50.0%	50.0%	10.8%	29.2%	29.2%	10.8%	29.2%	29.2%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	C-Max	C-Max	None	C-Max	C-Max	None	Max	Max	None	Max	Max
Act Effect Green (s)	61.7	55.0	55.0	63.0	57.4	57.4	37.9	30.1	30.1	38.1	30.2	30.2
Actuated g/C Ratio	0.51	0.46	0.46	0.52	0.48	0.48	0.32	0.25	0.25	0.32	0.25	0.25
v/c Ratio	0.27	0.54	0.06	0.59	0.56	0.08	0.53	0.30	0.23	0.34	0.70	0.29
Control Delay	14.9	25.0	0.1	23.9	15.3	0.3	36.4	37.5	7.8	30.0	45.7	10.0
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	14.9	25.0	0.1	23.9	15.3	0.3	36.4	37.5	7.8	30.0	45.7	10.0
LOS	B	C	A	C	B	A	D	D	A	C	D	A
Approach Delay		23.1			15.7			30.6			37.7	
Approach LOS		C			B			C			D	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.70

Intersection Signal Delay: 25.3

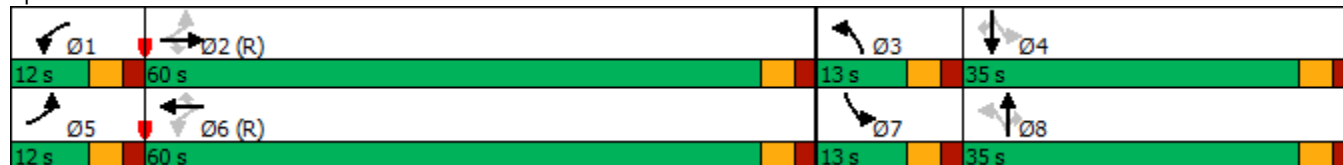
Intersection LOS: C

Intersection Capacity Utilization 70.9%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 12: Vollmer Rd & Marksheffel Rd



Timings
13: Sterling Ranch Rd & Marksheffel Rd

2045 Total Traffic
AM Peak Hour

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	143	884	12	53	807	173	7	2	511	10	314
Future Volume (vph)	143	884	12	53	807	173	7	2	511	10	314
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8	7	4	
Permitted Phases	2		2	6		6	8				4
Detector Phase	5	2	2	1	6	6	3	8	7	4	4
Switch Phase											
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	15.0	5.0	10.0	20.0	10.0	10.0
Minimum Split (s)	10.0	20.0	20.0	10.0	20.0	20.0	10.0	15.0	25.0	20.0	20.0
Total Split (s)	12.0	51.0	51.0	12.0	51.0	51.0	12.0	25.0	32.0	45.0	45.0
Total Split (%)	10.0%	42.5%	42.5%	10.0%	42.5%	42.5%	10.0%	20.8%	26.7%	37.5%	37.5%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None
Act Effect Green (s)	81.4	73.5	73.5	75.9	69.0	69.0	8.0	10.0	23.7	24.4	24.4
Actuated g/C Ratio	0.68	0.61	0.61	0.63	0.58	0.58	0.07	0.08	0.20	0.20	0.20
v/c Ratio	0.36	0.43	0.01	0.15	0.42	0.18	0.06	0.06	0.79	0.03	0.60
Control Delay	13.7	12.1	0.0	9.0	16.9	3.2	41.1	33.0	54.9	36.0	11.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.7	12.1	0.0	9.0	16.9	3.2	41.1	33.0	54.9	36.0	11.6
LOS	B	B	A	A	B	A	D	C	D	D	B
Approach Delay		12.1			14.2			36.6		38.3	
Approach LOS		B			B			D		D	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.79

Intersection Signal Delay: 20.5

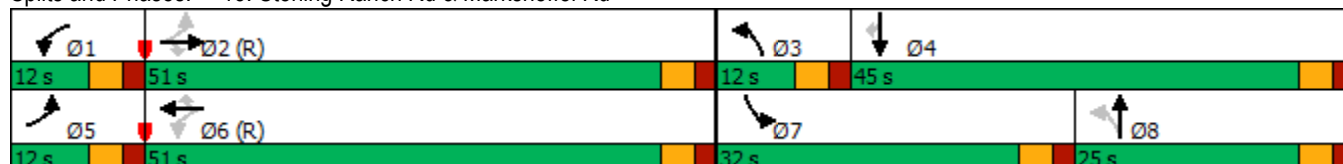
Intersection LOS: C

Intersection Capacity Utilization 64.0%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 13: Sterling Ranch Rd & Marksheffel Rd



HCM 6th TWSC
104: Briargate Pkwy & Sioux Falls Way

2045 Total Traffic
AM Peak Hour

Intersection						
Int Delay, s/veh	0.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑	↗		↗
Traffic Vol, veh/h	0	815	1016	8	0	80
Future Vol, veh/h	0	815	1016	8	0	80
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	200	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	858	1069	8	0	84
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	-	0	-	0	-	535
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	0	490
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	490
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		13.9		
HCM LOS	B					
Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1		
Capacity (veh/h)	-	-	-	490		
HCM Lane V/C Ratio	-	-	-	0.172		
HCM Control Delay (s)	-	-	-	13.9		
HCM Lane LOS	-	-	-	B		
HCM 95th %tile Q(veh)	-	-	-	0.6		

HCM 6th TWSC
309: Sterling Ranch Rd & Vancouver St

2045 Total Traffic
AM Peak Hour

Intersection												
Int Delay, s/veh	3.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↖	↑	↗	↖	↗	
Traffic Vol, veh/h	0	0	126	22	0	1	47	126	26	0	208	0
Future Vol, veh/h	0	0	126	22	0	1	47	126	26	0	208	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	200	-	200	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	133	23	0	1	49	133	27	0	219	0

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	464	477	219	517	450	133	219	0	0	160	0	0
Stage 1	219	219	-	231	231	-	-	-	-	-	-	-
Stage 2	245	258	-	286	219	-	-	-	-	-	-	-
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	508	487	821	469	504	916	1350	-	-	1419	-	-
Stage 1	783	722	-	772	713	-	-	-	-	-	-	-
Stage 2	759	694	-	721	722	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	493	469	821	382	486	916	1350	-	-	1419	-	-
Mov Cap-2 Maneuver	493	469	-	382	486	-	-	-	-	-	-	-
Stage 1	755	722	-	744	687	-	-	-	-	-	-	-
Stage 2	731	669	-	605	722	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	10.2		14.8		1.8		0	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1350	-	-	821 392	1419	-	-
HCM Lane V/C Ratio	0.037	-	-	0.162 0.062	-	-	-
HCM Control Delay (s)	7.8	-	-	10.2 14.8	0	-	-
HCM Lane LOS	A	-	-	B B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.6 0.2	0	-	-

HCM 6th TWSC
310: Sterling Ranch Rd & Oshkosh Rd

2045 Total Traffic
AM Peak Hour

Intersection												
Int Delay, s/veh	5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	8	7	64	2	36	3	73	51	135	137	0
Future Vol, veh/h	0	8	7	64	2	36	3	73	51	135	137	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	0	-	200	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	8	7	67	2	38	3	77	54	142	144	0

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	558	565	144	519	511	77	144	0	0	131	0	0
Stage 1	428	428	-	83	83	-	-	-	-	-	-	-
Stage 2	130	137	-	436	428	-	-	-	-	-	-	-
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	440	434	903	467	466	984	1438	-	-	1454	-	-
Stage 1	605	585	-	925	826	-	-	-	-	-	-	-
Stage 2	874	783	-	599	585	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	389	391	903	421	419	984	1438	-	-	1454	-	-
Mov Cap-2 Maneuver	389	391	-	421	419	-	-	-	-	-	-	-
Stage 1	604	528	-	923	824	-	-	-	-	-	-	-
Stage 2	836	781	-	528	528	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12	12.9	0.2	3.8
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1438	-	-	-	532	421	919	1454	-	-
HCM Lane V/C Ratio	0.002	-	-	-	0.03	0.16	0.044	0.098	-	-
HCM Control Delay (s)	7.5	-	-	0	12	15.2	9.1	7.7	-	-
HCM Lane LOS	A	-	-	A	B	C	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	0.1	0.6	0.1	0.3	-	-

Timings

4: Vollmer Rd & Briargate Pkwy

2045 Total Traffic

PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	227	995	176	202	735	67	291	414	288	94	211	118
Future Volume (vph)	227	995	176	202	735	67	291	414	288	94	211	118
Turn Type	pm+pt	NA	Perm	Prot	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	8		8	4		4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	15.0	15.0	15.0	15.0	15.0	8.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	20.0	20.0	20.0	20.0	20.0	13.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	12.0	53.0	53.0	20.0	61.0	61.0	22.0	28.0	28.0	19.0	25.0	25.0
Total Split (%)	10.0%	44.2%	44.2%	16.7%	50.8%	50.8%	18.3%	23.3%	23.3%	15.8%	20.8%	20.8%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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 Effect Green (s)	55.1	48.1	48.1	15.0	56.1	56.1	35.2	20.3	20.3	24.2	14.0	14.0
Actuated g/C Ratio	0.48	0.42	0.42	0.13	0.49	0.49	0.31	0.18	0.18	0.21	0.12	0.12
v/c Ratio	0.65	0.68	0.24	0.47	0.44	0.08	0.81	0.67	0.59	0.38	0.51	0.37
Control Delay	24.6	30.0	4.4	50.4	20.3	1.2	50.9	49.5	11.2	32.9	50.6	6.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.6	30.0	4.4	50.4	20.3	1.2	50.9	49.5	11.2	32.9	50.6	6.6
LOS	C	C	A	D	C	A	D	D	B	C	D	A
Approach Delay		25.8			25.1			38.7			34.4	
Approach LOS		C			C			D			C	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 113.7

Natural Cycle: 80

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.81

Intersection Signal Delay: 29.9

Intersection LOS: C

Intersection Capacity Utilization 78.6%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 4: Vollmer Rd & Briargate Pkwy



Timings 5: Sterling Ranch Rd & Briargate Pkwy

2045 Total Traffic
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	318	902	134	155	831	86	146	136	84	65	78	138
Future Volume (vph)	318	902	134	155	831	86	146	136	84	65	78	138
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Free	pm+pt	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		Free	4		Free
Detector Phase	5	2	2	1	6	6	3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	20.0		5.0	20.0	
Minimum Split (s)	10.0	23.0	23.0	10.0	23.0	23.0	10.0	25.0		10.0	25.0	
Total Split (s)	22.0	68.0	68.0	12.0	58.0	58.0	15.0	30.0		10.0	25.0	
Total Split (%)	18.3%	56.7%	56.7%	10.0%	48.3%	48.3%	12.5%	25.0%		8.3%	20.8%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None		None	None	
Act Effect Green (s)	77.7	66.1	66.1	64.8	57.9	57.9	32.0	24.0	120.0	21.0	20.0	120.0
Actuated g/C Ratio	0.65	0.55	0.55	0.54	0.48	0.48	0.27	0.20	1.00	0.18	0.17	1.00
v/c Ratio	0.78	0.49	0.15	0.49	0.51	0.11	0.45	0.38	0.06	0.28	0.26	0.09
Control Delay	25.3	18.4	2.7	15.7	24.0	0.4	38.8	44.6	0.1	36.6	46.2	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	25.3	18.4	2.7	15.7	24.0	0.4	38.8	44.6	0.1	36.6	46.2	0.1
LOS	C	B	A	B	C	A	D	D	A	D	D	A
Approach Delay		18.4			20.9			32.1			21.3	
Approach LOS		B			C			C			C	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.78

Intersection Signal Delay: 21.2

Intersection LOS: C

Intersection Capacity Utilization 82.0%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 5: Sterling Ranch Rd & Briargate Pkwy



Timings
12: Vollmer Rd & Marksheffel Rd

2045 Total Traffic
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	138	919	89	187	704	149	169	796	176	126	396	196
Future Volume (vph)	138	919	89	187	704	149	169	796	176	126	396	196
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)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	20.0	20.0	5.0	20.0	20.0
Minimum Split (s)	10.0	23.0	23.0	10.0	23.0	23.0	10.0	25.0	25.0	10.0	25.0	25.0
Total Split (s)	20.0	50.0	50.0	20.0	50.0	50.0	15.0	37.0	37.0	13.0	35.0	35.0
Total Split (%)	16.7%	41.7%	41.7%	16.7%	41.7%	41.7%	12.5%	30.8%	30.8%	10.8%	29.2%	29.2%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	C-Max	C-Max	None	C-Max	C-Max	None	Max	Max	None	Max	Max
Act Effect Green (s)	58.1	47.7	47.7	61.9	49.5	49.5	41.8	32.0	32.0	38.2	30.2	30.2
Actuated g/C Ratio	0.48	0.40	0.40	0.52	0.41	0.41	0.35	0.27	0.27	0.32	0.25	0.25
v/c Ratio	0.41	0.69	0.14	0.67	0.51	0.21	0.55	0.89	0.36	0.74	0.47	0.37
Control Delay	17.7	33.5	3.8	46.3	20.7	4.4	33.7	54.9	14.8	52.0	40.3	6.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.7	33.5	3.8	46.3	20.7	4.4	33.7	54.9	14.8	52.0	40.3	6.9
LOS	B	C	A	D	C	A	C	D	B	D	D	A
Approach Delay		29.3			23.0			45.6			33.2	
Approach LOS		C			C			D			C	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.89

Intersection Signal Delay: 33.0

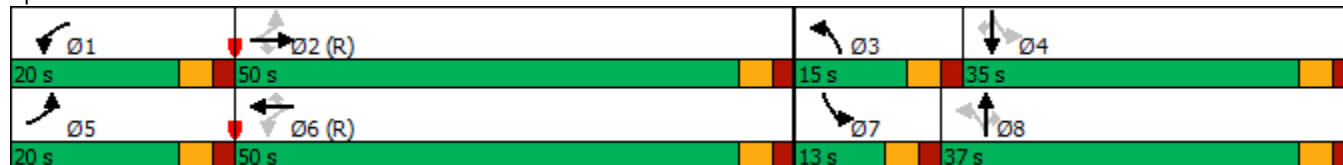
Intersection LOS: C

Intersection Capacity Utilization 81.4%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 12: Vollmer Rd & Marksheffel Rd



Timings
13: Sterling Ranch Rd & Marksheffel Rd

2045 Total Traffic
PM Peak Hour

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	303	940	6	62	838	562	18	4	346	18	184
Future Volume (vph)	303	940	6	62	838	562	18	4	346	18	184
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8	7	4	
Permitted Phases	2		2	6		6	8				4
Detector Phase	5	2	2	1	6	6	3	8	7	4	4
Switch Phase											
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	15.0	5.0	10.0	20.0	10.0	10.0
Minimum Split (s)	10.0	20.0	20.0	10.0	20.0	20.0	10.0	15.0	25.0	20.0	20.0
Total Split (s)	20.0	68.0	68.0	12.0	60.0	60.0	10.0	15.0	25.0	30.0	30.0
Total Split (%)	16.7%	56.7%	56.7%	10.0%	50.0%	50.0%	8.3%	12.5%	20.8%	25.0%	25.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None
Act Effect Green (s)	81.0	71.6	71.6	69.3	62.7	62.7	11.0	10.0	20.0	25.0	25.0
Actuated g/C Ratio	0.68	0.60	0.60	0.58	0.52	0.52	0.09	0.08	0.17	0.21	0.21
v/c Ratio	0.75	0.47	0.01	0.19	0.48	0.53	0.13	0.18	0.64	0.05	0.40
Control Delay	39.6	10.3	0.0	10.2	20.8	3.5	35.7	24.2	52.3	37.5	8.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.6	10.3	0.0	10.2	20.8	3.5	35.7	24.2	52.3	37.5	8.2
LOS	D	B	A	B	C	A	D	C	D	D	A
Approach Delay		17.3			13.7			28.8		37.0	
Approach LOS		B			B			C		D	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 19.2

Intersection LOS: B

Intersection Capacity Utilization 72.4%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 13: Sterling Ranch Rd & Marksheffel Rd



HCM 6th TWSC
104: Briargate Pkwy & Sioux Falls Way

2045 Total Traffic
PM Peak Hour

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑	↗		↗
Traffic Vol, veh/h	0	1051	1021	40	0	51
Future Vol, veh/h	0	1051	1021	40	0	51
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	200	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1106	1075	42	0	54
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	-	0	-	0	-	538
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	0	488
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	488
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		13.3		
HCM LOS	B					
Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1		
Capacity (veh/h)	-	-	-	488		
HCM Lane V/C Ratio	-	-	-	0.11		
HCM Control Delay (s)	-	-	-	13.3		
HCM Lane LOS	-	-	-	B		
HCM 95th %tile Q(veh)	-	-	-	0.4		

HCM 6th TWSC
309: Sterling Ranch Rd & Vancouver St

2045 Total Traffic
PM Peak Hour

Intersection												
Int Delay, s/veh	3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	87	15	0	0	140	291	63	1	135	0
Future Vol, veh/h	0	0	87	15	0	0	140	291	63	1	135	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	200	-	200	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	92	16	0	0	147	306	66	1	142	0
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	777	810	142	790	744	306	142	0	0	372	0	0
Stage 1	144	144	-	600	600	-	-	-	-	-	-	-
Stage 2	633	666	-	190	144	-	-	-	-	-	-	-
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	314	314	906	308	343	734	1441	-	-	1186	-	-
Stage 1	859	778	-	488	490	-	-	-	-	-	-	-
Stage 2	468	457	-	812	778	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	289	282	906	255	308	734	1441	-	-	1186	-	-
Mov Cap-2 Maneuver	289	282	-	255	308	-	-	-	-	-	-	-
Stage 1	771	777	-	438	440	-	-	-	-	-	-	-
Stage 2	420	410	-	729	777	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	9.4		20		2.2		0.1					
HCM LOS	A		C									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1441	-	-	906	255	1186	-	-				
HCM Lane V/C Ratio	0.102	-	-	0.101	0.062	0.001	-	-				
HCM Control Delay (s)	7.8	-	-	9.4	20	8	-	-				
HCM Lane LOS	A	-	-	A	C	A	-	-				
HCM 95th %tile Q(veh)	0.3	-	-	0.3	0.2	0	-	-				

HCM 6th TWSC
310: Sterling Ranch Rd & Oshkosh Rd

2045 Total Traffic
PM Peak Hour

Intersection												
Int Delay, s/veh	4.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	5	5	36	9	161	9	146	137	98	94	0
Future Vol, veh/h	0	5	5	36	9	161	9	146	137	98	94	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	0	-	200	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	5	5	38	9	169	9	154	144	103	99	0

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	638	621	99	482	477	154	99	0	0	298	0	0
Stage 1	305	305	-	172	172	-	-	-	-	-	-	-
Stage 2	333	316	-	310	305	-	-	-	-	-	-	-
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	389	403	957	495	487	892	1494	-	-	1263	-	-
Stage 1	705	662	-	830	756	-	-	-	-	-	-	-
Stage 2	681	655	-	700	662	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	289	368	957	454	444	892	1494	-	-	1263	-	-
Mov Cap-2 Maneuver	289	368	-	454	444	-	-	-	-	-	-	-
Stage 1	701	608	-	825	751	-	-	-	-	-	-	-
Stage 2	541	651	-	634	608	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	11.9		11		0.2		4.1	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1494	-	-	-	532	454	847	1263	-	-
HCM Lane V/C Ratio	0.006	-	-	-	0.02	0.083	0.211	0.082	-	-
HCM Control Delay (s)	7.4	-	-	0	11.9	13.7	10.4	8.1	-	-
HCM Lane LOS	A	-	-	A	B	B	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	0.1	0.3	0.8	0.3	-	-

Appendix Table 1

Appendix Table 1: Area Traffic Impact Studies

Study	PCD File No ⁽¹⁾	Consultant	Date
Sterling Ranch Reports			
Sterling Ranch Updated Traffic Impact Analysis	SKP07007	LSC Transportation Consultants, Inc	June 5, 2008
Sterling Ranch Phase 1 Traffic Impact Study	P151	LSC Transportation Consultants, Inc	March 16, 2015
Sterling Ranch Phases 1-3 Transportation Memorandum	SP1415	LSC Transportation Consultants, Inc	October 2, 2017
Branding Iron at Sterling Ranch Filing No. 1 and Homestead at Sterling Ranch Filing No. 1 Transportation Memorandum	SF1724 SF1725	LSC Transportation Consultants, Inc	December 19, 2017
Sterling Ranch Filing No. 2 Transportation Memorandum	SF1820	LSC Transportation Consultants, Inc	April 3, 2018
Sterling Ranch Phase 2 Preliminary Plan Traffic Impact Study	SP203	LSC Transportation Consultants, Inc	December 20, 2018
Homestead at Sterling Ranch Filing No. 2 Transportation Memorandum	SF194	LSC Transportation Consultants, Inc	March 3, 2020
Branding Iron at Sterling Ranch Filing No. 2 Transportation Memorandum	SF1918	LSC Transportation Consultants, Inc	May 6, 2020
Sterling Ranch Filing No. 2 and Phase 2 Traffic Impact Study	SF2015 SP191	LSC Transportation Consultants, Inc	June 23, 2021
Sterling Ranch Filing No. 3 Transportation Memorandum	SF2132	LSC Transportation Consultants, Inc	April 19, 2022
Homestead North Phase 1 Updated Transportation Memorandum	SP208	LSC Transportation Consultants, Inc	January 11, 2022
Homestead North Filing No. 1 Traffic Technical Memorandum	SF2213	LSC Transportation Consultants, Inc	February 2, 2022
Homestead North Filing No. 2 Traffic Technical Memorandum	SF2218	LSC Transportation Consultants, Inc	April 15, 2022
Homestead North Filing 3 Traffic Impact Study	SF2229	LSC Transportation Consultants, Inc	June 17, 2022
The Villages at Sterling Ranch East Preliminary Plan/Traffic Generation Analysis	PUDSP226	SM Rocha, LLC	July 1, 2022
Sterling Ranch Sketch Plan Amendment Master Traffic Impact Study	SKP224	LSC Transportation Consultants, Inc	March 17, 2023
Sterling Ranch East - Rezoning & Preliminary Plan Traffic Impact Study	SP-22-004, P-22-012, P-22-013	LSC Transportation Consultants, Inc	March 17, 2023 ⁽²⁾
Foursquare at Sterling Ranch East Transportation Memorandum	PUDSP226 SF2239	LSC Transportation Consultants, Inc	April 20, 2023
Sterling Ranch East Filing Nos 1 & 2 Traffic Technical Memorandum	SF2235 SF2237	LSC Transportation Consultants, Inc	February 10, 2023
Sterling Ranch Filing No. 4 Transportation Memorandum	SF2230	LSC Transportation Consultants, Inc	February 21, 2023
Copper Chase at Sterling Ranch Traffic Impact Study	PUDSP222	LSC Transportation Consultants, Inc	April 28, 2023
Sterling Ranch Filing No. 5 Traffic Impact Study	PUDSP-23-002	LSC Transportation Consultants, Inc	November 15, 2023
Sterling Ranch East - Filing 5 Rezone & Preliminary Plan Traffic Impact Study	P237 & SP235	LSC Transportation Consultants, Inc	January 15, 2024
Sterling Ranch Sketch Plan 2023 Amendment & Rezone Traffic Technical Memorandum	SKP235, P239, P2311	LSC Transportation Consultants, Inc	January 17, 2024
Sterling Ranch Sketch Plan Amendment #4 & Sterling Ranch East Filing No. 7 Rezone Master Traffic Impact Addendum/Technical	SKP241 & P2415	LSC Transportation Consultants, Inc	November 18, 2024
Sterling Ranch East Filing No. 3 Traffic Impact Study	SF2428	LSC Transportation Consultants, Inc	January 7, 2025
Sterling Ranch East - Filing 6 Rezone & Preliminary Plan Traffic Impact Study	P2414 & SP244	LSC Transportation Consultants, Inc	March 20, 2025
Villages at Sterling Ranch East Traffic Impact Study	SF2439	LSC Transportation Consultants, Inc	April 24, 2025
Sterling Ranch East Filing No. 8 Traffic Impact Study	PUDSP256	LSC Transportation Consultants, Inc	October 28, 2025
Sterling Ranch East Filing No. 4Traffic Impact Study	SF2615	LSC Transportation Consultants, Inc	June 25, 2026
Retreat at TimberRidge Reports			
The Retreat at TimberRidge Traffic Impact Analysis	PUD173	LSC Transportation Consultants, Inc	January 25, 2018
The Retreat at TimberRidge Preliminary Plan Traffic Technical Memorandum	SP182	LSC Transportation Consultants, Inc	June 29, 2018
The Retreat at TimberRidge Filing No. 1 Traffic Technical Memorandum	SF199	LSC Transportation Consultants, Inc	April 3, 2020
The Retreat at TimberRidge Filing No. 2 Updated Traffic Technical Memorandum	SF2121	LSC Transportation Consultants, Inc	October 4, 2021
The Retreat at TimberRidge Filing No. 3 Traffic Technical Memorandum	SF2241	LSC Transportation Consultants, Inc	November 15, 2023
The Retreat at TimberRidge Filing No. 4 Traffic Technical Memorandum	SF1827	LSC Transportation Consultants, Inc	February 21, 2024
Other Area Reports			
Wolf Ranch School Site Traffic Impact Study	OAR1720	Matrix Design Group, Inc.	May 5, 2017
The Ranch Sketch Plan Traffic Impact Analysis	SKP186	LSC Transportation Consultants, Inc	July 9, 2019
Lodge III Traffic Impact Study	OAR	LSC Transportation Consultants, Inc	December 13, 2019
Continental 613 Traffic Impact Study	OAR2177	LSC Transportation Consultants, Inc	July 16, 2021
Solace at Black Forest Traffic Impact and Access Analysis	OAR2134	LSC Transportation Consultants, Inc	August 13, 2021
Traffic Impact Study Addendum for Percheron	OAR2173	SM Rocha, LLC	October, 2021
Woodmen East Commercial Center Traffic Impact Analysis	OAR2191	LSC Transportation Consultants, Inc	December 8, 2021
Traffic Impact Study for Jaynes Property	SKP225	SM Rocha, LLC	May, 2022
Briargate-Stapleton Corridor Study	briargate-stapleton.com	Wilson & Company	December 7, 2023
Sterling Recycling Facility Transportation Memorandum	PPR2341	LSC Transportation Consultants, Inc	August 24, 2023
Notes:			
(1) Follow the links listed below to obtain the most recent version of each listed study. To obtain a copy of the version of each study used in preparing this report please contact LSC Transportation Consultants, Inc.			
Source: LSC Transportation Consultants, Inc.			Aug-26

MTCP Maps

Figure 22. 2045 Roadway Functional Classifications

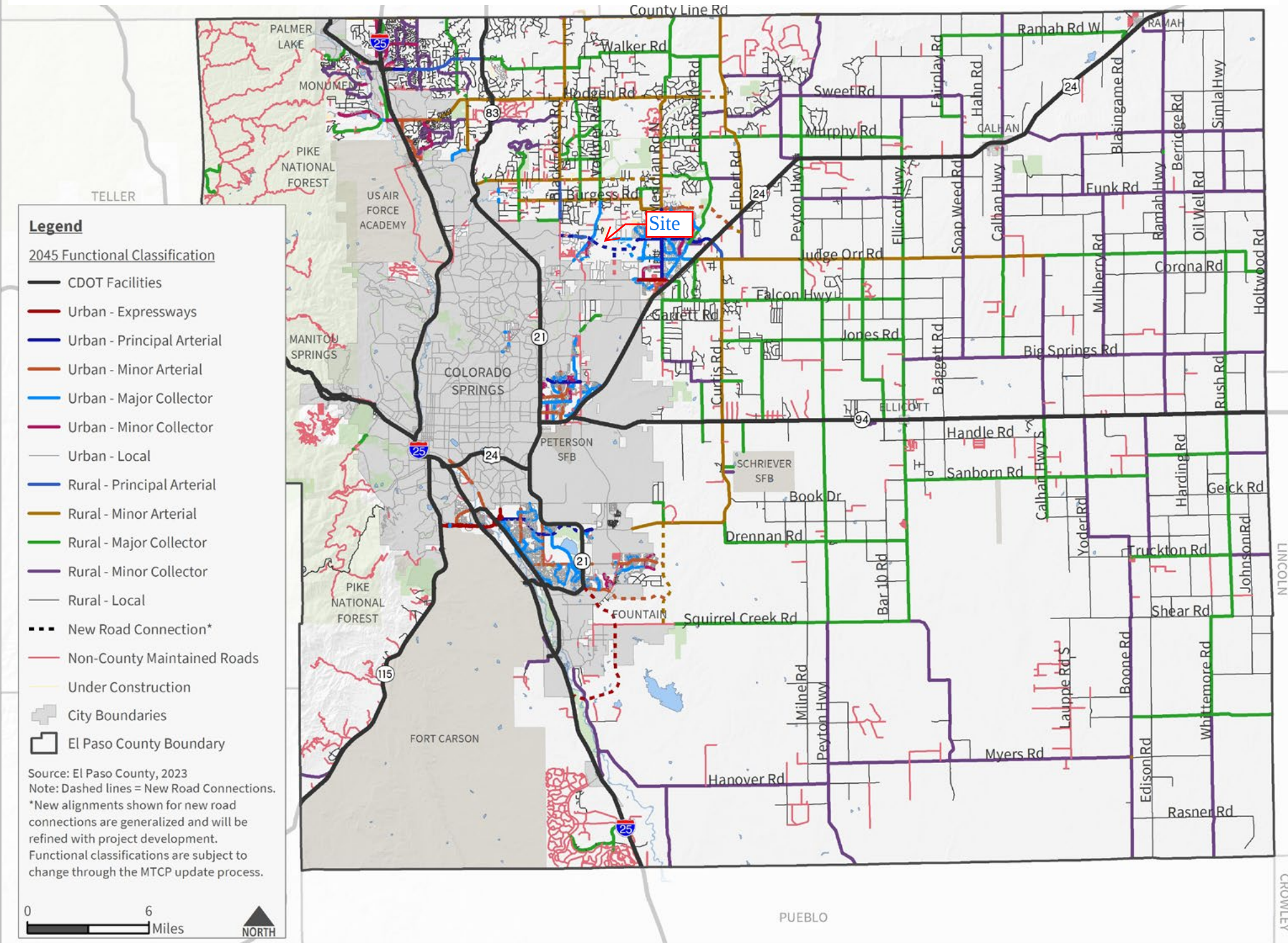
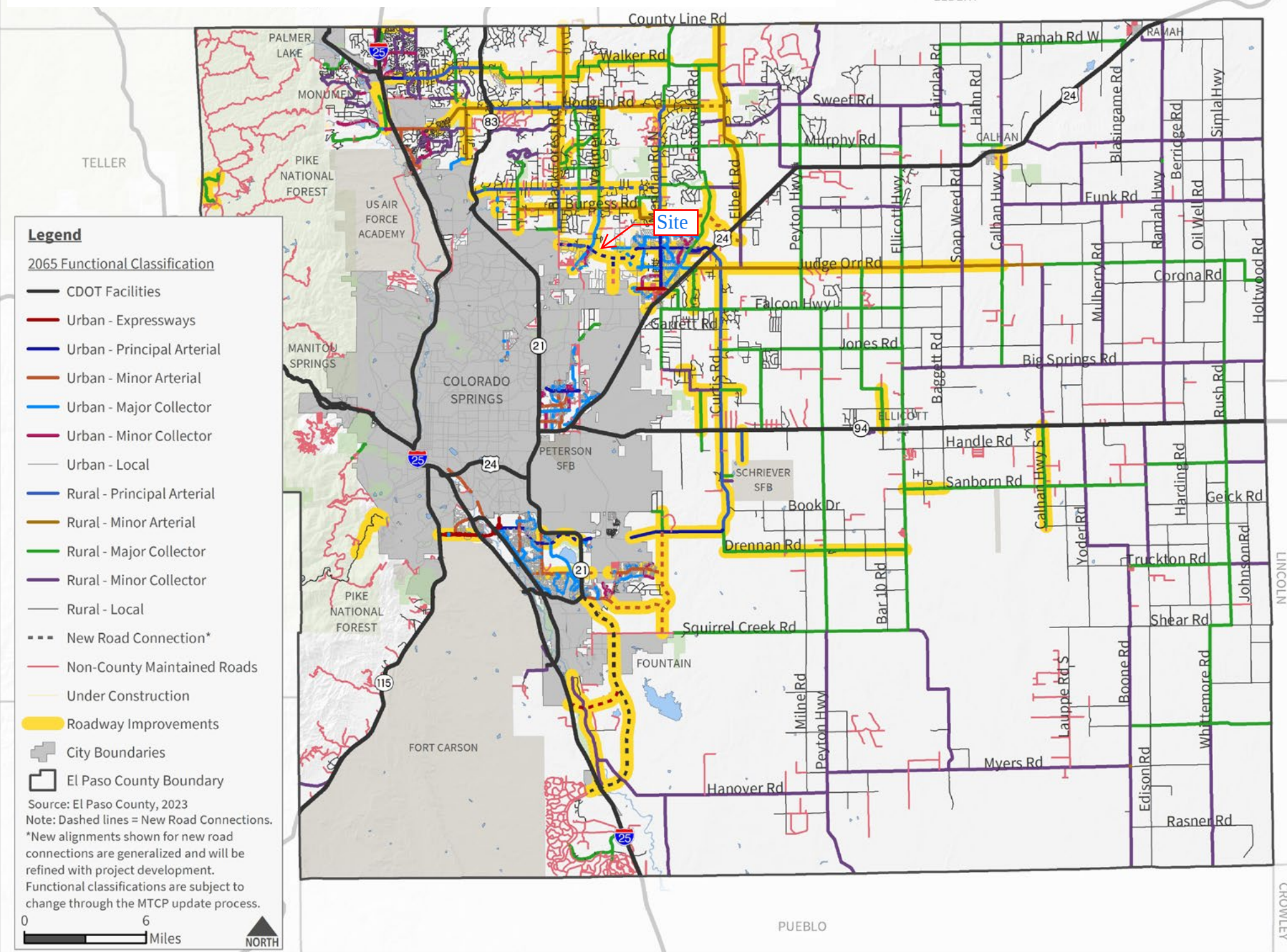


Figure 39. 2065 Corridor Preservation Plan



Crash History

CUID	System Code	Crash Date	Crash Time	Location 1	Location 2	Location	Road Description	First HE	Second HE	MHE	Crash Type	Approach	Overtaking Turn	Number Killed	Number Injured	Total Vehicles	Road Contour Curves	Road Contour Grade	Road Condition	Lighting Condition	Weather Condition	Lane Position	TU-1 Direction	TU-1 Movement	TU-1 Type	TU-1 Speed Limit	TU-1 Estimated Speed	TU-1 Speed	TU-1 Driver Action	TU-1 Human Contributing Factor	Record Status	Processing Status	Last Updated
Briargate Parkway/Vollmer Road																																	
July 1 - Dec 31, 2023																																	
NONE REPORTED																																	
FY 2024																																	
Dry W/visible Road Treatment																																	
Dark – Unlighted																																	
Making Right Turn																																	
SUV																																	
45																																	
50																																	
Careless Driving																																	
Aggressive Driving																																	
Coded																																	
Completed																																	
Dec 31 2024 1:59AM																																	
FY 2025																																	
NONE REPORTED																																	
Jan 1 - Jun 30, 2026																																	
NONE REPORTED																																	

CUID	System Code	Crash Date	Crash Time	Location 1	Location 2	Location	Road Description	First HE	Second HE	Third HE	Fourth HE	MHE	Crash Type	Approach Overtaking Turn	Number Killed	Number Injured	Injury 01	Total Vehicles	Road Contour Curves	Road Contour Grade	Road Condition s	Lighting Condition	Weather Condition	Lane Position	TU-1 Direction	TU-1 Movement	TU-1 Type	TU-1 Speed Limit	TU-1 Estimated Speed	TU-1 Driver Action	TU-1 Human Contributing Factor	
MARKSHEFFEL ROAD/VOLLMER ROAD																																
July 1 - Dec 31, 2023																																
FY 2024																																
FY 2025																																
2593823		County Road	9/9/2025	11:05:00	VOLLMER RD	MARKSHEFFEL RD	Ran off left side	Non-Intersection	Curb	Sign	Barricade	Fence	Curb	Curb	Not Applicable	0	1	1	1	Straight	Level	Dry	Daylight	Clear	SLS	Southwest	Going Straight	Passenger Car/ Passenger Van	35	50	Careless Driving	Asleep or Fatigued
Jan 1 - Jun 30, 2026																																
NONE REPORTED																																

CUID	System Cc	Rd_Numbε	Rd_Section	City_Stree	Crash Date
Marksheffel Road/Sterling Ranch Road					
July 1 - Dec 31, 2023					
					NONE REPORTED
FY 2024					
					NONE REPORTED
FY 2025					
					NONE REPORTED
Jan 1 - Jun 30, 2026					
					NONE REPORTED