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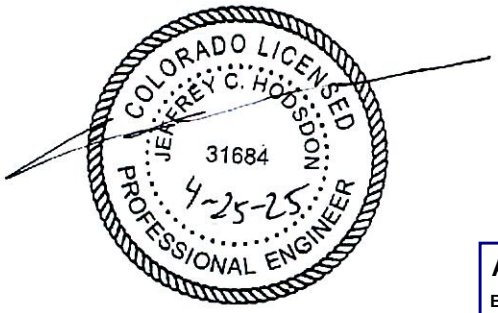
Villages at Sterling Ranch
Traffic Impact Study
PCD File No. SF2439
(LSC #S224580)
April 24, 2025

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.



Accepted for File
By: Gilbert LaForce, P.E.
Engineering Manager
Date: 06/19/2025 8:18:41 AM
El Paso County Department of Public Works

Developer's Statement

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

4/25/2025
Date

Villages at Sterling Ranch

Traffic Impact Study

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

APRIL 24, 2025

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

LSC #S224580

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CONTENTS

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April 24, 2025

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

RE: Villages at Sterling Ranch
Traffic Impact Study
El Paso County, Colorado
EPC File No.: SF2439
LSC #S224580

Dear Mr. Moreland:

LSC Transportation Consultants, Inc. has prepared this updated Traffic Impact Study for the proposed Villages at Sterling Ranch. As shown in Figure 1, the site is located east of the future Sterling Ranch Road and south 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, posted speed limits, and crash history;
- 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;
- The assignment of the projected 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 threshold 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

LSC prepared a previous master traffic impact study (MTIS) for the entire Sterling Ranch development, 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 February 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 completed a study of 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 the Villages at Sterling Ranch 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 Villages at Sterling Ranch Plan. The site is planned to be developed with 227 residential dwelling units, including 54 duplexes, 38 detached single-family homes with an accessory dwelling unit, and 135 very small (550 to 950 square feet) single-family detached family homes. This is 19 fewer residential dwelling units than was assumed in the Sterling Ranch MTIS.

Pedestrian Plan

There are no proposed regional trails within the boundary of the site. Multiple community trails are included for circulation and recreational use through the Sterling Ranch Phase 1 Preliminary Plan located west and south of the Villages at Sterling Ranch Preliminary Plan.

Detached sidewalks will be provided along Sterling Ranch Road, and Oak Park Drive. The multi-use paved shoulder on Sterling Ranch Road will accommodate bicycles. Sidewalks will eventually be provided along Briargate Parkway and will be constructed as part of Sterling Ranch East Filing 6.

Figure 2 shows the proposed sidewalks within the Villages at Sterling Ranch. Attached 5-foot-wide concrete sidewalks are planned on all of the local streets within Villages at Sterling Ranch. Sidewalks are not planned adjacent to the private streets; however, a series of smaller tracts located between

blocks of units provide common open spaces, including sidewalks, between the residential roadways and the proposed lots. All lots within the subdivision will have direct access to a sidewalk that connects to a public sidewalk.

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 west of the site on the west side of Sterling Ranch Road and elementary school sites south and east of the site. No information or plans are available for the school sites and a separate site-specific traffic impact study including pedestrian plans will be required to be approved prior to school site development.

Proposed Access Points

Figure 3 shows the roadway connections that are existing, currently under construction, or are planned to be constructed in the short term. As shown in Figure 3, in the short term, Briargate Parkway has been constructed to its final cross section between Vollmer Road and Wheatlands Drive and is currently under construction from Wheatland Drive to Sterling Ranch Road. A short section east of Sterling Ranch Road is planned in the short term, as part of Sterling Ranch East Filing No. 7. Marksheffel Road has recently been completed between Vollmer Road and Woodmen Road. Sterling Ranch Road has been constructed from Marksheffel Road to Dines Boulevard and is currently under construction between Dines Boulevard and Briargate Parkway. It is planned to be extended north of Briargate Parkway in the short term, as part Sterling Ranch East Filing No. 2, Four Square at Sterling Ranch, and Sterling Ranch East Filing No. 6.

Figure 2 shows the proposed access plan. Two full-movement access points are proposed to Oak Park Drive. The proposed spacing is greater than the 330-foot minimum intersection spacing for Urban Non-Residential Collectors when intersecting local roadways contained in Table 2-7 of the *El Paso County Engineering Criteria Manual* (*ECM*).

Sight Distance Analysis

Figure 4a shows the intersection sight-distance analysis at the intersection of Sterling Ranch Road (Urban Non-Residential Collector)/Oak Park Drive (Urban Non-Residential Collector). Based on a design speed of 40 miles per hour (mph) and the criteria contained in Table 2-21 of the *Engineering Criteria Manual* (*ECM*), the required intersection sight distance at this intersection is 445 feet. As shown in Figure 4a, the intersection sight distance can be met.

Figure 4b shows the intersection sight-distance analysis at the future site access points to Oak Park Drive (Non-Residential Collector). Based on a design speed of 40 miles per hour (mph) and the criteria contained in Table 2-21 of the *Engineering Criteria Manual* (*ECM*), the required intersection sight distance at the future intersections is 445 feet. As shown on Figure 4b the intersection sight distance can be met at both of the future 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 Villages at Sterling Ranch area ("the site") as well as traffic to be generated in the short term by buildout of Homestead at Sterling Ranch, Branding Iron at Sterling Ranch, Sterling Ranch Filings 2-4, Copper Chase at Sterling Ranch, Homestead North at Sterling Ranch Filings 1-3, the Retreat at TimberRidge Filings 1-4, the planned FourSquare at Sterling Ranch East development, the approved filings within Sterling Ranch East Preliminary Plan 1 (Sterling Ranch East Filings 1, 2, and 3), Sterling Ranch East Filing 5, and Sterling Ranch East Filing 6.

Note that the short-term scenario assumes no traffic due to future anticipated land uses within Sterling Ranch East Preliminary Plan 1 beyond Sterling Ranch East Filings 1 and 2, including the residential areas east of Sterling Ranch Road and north of Idaho Falls Drive and the future school sites. Trips projected from these other short-term developments outside of the Villages at Sterling Ranch 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 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. It includes updated 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], Sterling Ranch Road/Oak Park Drive [#8]), Research Parkway/Marksheffel Road/Vollmer Road [#12], and Marksheffel Road/Sterling Ranch Road [#13]), updated analysis of Vollmer Road/Burgess Road [#1] that was recently converted to all-way, stop-sign control, and new analysis of the access points for the currently-proposed Villages at Sterling Ranch [#510 and #502].

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 Wheatland Drive was recently constructed to its full-lane cross section and is currently under construction between Wheatland Road and Sterling Ranch Road (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 Dines Boulevard. A segment between Dines Boulevard and Briargate Parkway is currently under construction as part of Sterling Ranch East Filing No.1. Sections north of Briargate Parkway are planned in the short term as part of Four Square at Sterling Ranch and Sterling Ranch East Filing No. 6.

Existing Traffic Volumes

Figure 5 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 2024 and 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 Average Control Delay (seconds per vehicle)	Unsignalized Intersections 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 existing study-area intersections 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 5c.

The intersection of Burgess Road/Vollmer Road was recently converted from two-way, stop-sign control to all-way, stop-sign control. All approaches at this intersection are currently operating at LOS C or better during the peak hours.

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 requested three-year crash history data from the Colorado State Patrol (CSP) for Vollmer Road and Marksheffel Road adjacent to the Sterling Ranch Sketch Plan area. CSP reported no crashes on these sections of road within the last three years.

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 Villages at Sterling Ranch boundary area).

Short-Term Scenario Baseline Conditions

Please refer to the description of the short-term scenario above. Figures 6a and 6b show the projected volumes for the short-term baseline scenario. Note that the short-term baseline scenario assumes only the approved filings within Sterling Ranch East Preliminary Plan 1 (Filing Nos 1, 2, and 3), Four Square at Sterling Ranch, Sterling Ranch East Filing No. 5, and Sterling Ranch East Filing No. 6 have been constructed in the short-term. No traffic due to future anticipated land uses within Sterling Ranch East Preliminary Plan 1 beyond Filings 1, 2, and 3, including the residential areas east of Sterling Ranch Road and north of Idaho Falls Drive and the future school sites, are included in the volumes shown in Figures 6a and 6b.

Figure 6c shows the lane geometry, traffic control, and level of service at the key area intersections, based on the short-term scenario baseline volumes.

Long-Term Scenario Baseline Conditions

Figure 7a shows the projected 2045 baseline daily traffic volumes on key street segments at the key area intersections and Figure 7b shows the projected 2045 peak-hour baseline 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 Sketch Plan Amendment #4 Master TIS report. The 2045 baseline daily traffic volumes assume buildout of the land uses within the Sterling Ranch Master Plan that were not included in the short-term scenario, 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.

Figure 7c shows the lane geometry, traffic control, and level of service at the key area intersections, based on the 2045 baseline volumes.

TRIP GENERATION

The site-generated vehicle trips were estimated using the nationally-published trip-generation rates from *Trip Generation, 11th Edition*, 2021 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. Although the currently-proposed Villages at Sterling Ranch has 19 fewer total residential dwelling units than was assumed in the MTIS, a higher percentage of those dwelling units are planned to be detached single homes, which have higher trip-generation rates than attached single-family homes. This results in a small increase in the trip-generation estimate for this parcel from what was assumed in the MTIS.

Villages at Sterling Ranch is projected to generate about 2,020 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 26 more 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 36 vehicles would enter and 110 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 120 vehicles would enter and 73 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 Amendment #4 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. Figures 9a and 9b show the short-term site-generated traffic volumes. These volumes assume only the street network shown in Figure 3. Figures 10a and 10b show 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 Figure 11b shows the projected short-term-total peak-hour traffic volumes at the key study-area intersections. These volumes are the sum of the short-term-baseline traffic volumes (from Figures 6a and 6b) and the short-term site-generated traffic volumes (from Figures 9a and 9b).

Figure 11c 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 Figure 12b shows 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 (from Figures 7a and 7b) and the long-term site-generated traffic volumes (from Figures 10a and10b).

Figure 12c 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 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*).

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

Table 4 shows the results of the analysis for the intersection of Marksheffel/Sterling Ranch. Based on the projected short-term total traffic volumes, only six of the eight hours analyzed are projected to meet the criteria for an Eight-Hour Vehicular-Volume Warrant. However, eleven of the hours analyzed are projected to meet the criteria for a Four-Hour Vehicular-Volume Traffic-Signal Warrant. This analysis indicates that a traffic-signal warrant will likely be met in the short term.

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 baseline and total traffic scenarios for the morning and afternoon peak-hour periods using Synchro Version 11. 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 6c, 7c, 11c, and 12c show the level of service analysis results. The level of service reports are attached.

Intersection #1: Vollmer Road/Burgess Road

The intersection of Vollmer Road/Burgess Road was recently converted from a two-way, stop-sign-controlled intersection to an all-way stop-sign-controlled intersection. All approaches are projected to operate at LOS C or better during the peak hours based on the short-term-total traffic volumes. By 2045, it was assumed that this intersection will need to be reconstructed as a modern roundabout to maintain an acceptable level of service. As a modern roundabout it is projected to operate at LOS C or better for all approaches during the peak hours, based on the 2045 total traffic volumes.

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 12b and the lane geometry shown in Figure 12c.

Intersection #5: Briargate Parkway/Sterling Ranch Road

A section of Briargate Parkway from Wheatland Drive to just east of Sterling Ranch Road is planned to be constructed to its final cross section in the short term. The intersection of Briargate/Sterling Ranch is projected to operate at LOS B 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 12b and the lane geometry shown in Figure 12c.

Intersection #8: Oak Park Drive/Sterling Ranch Road

Oak Park Drive is planned to be constructed east from Sterling Ranch Road to the east site boundary as part of the Villages at Sterling Ranch development. Based on the short-term total traffic volumes shown in Figure 11b and the lane geometry shown in Figure 11c, the intersection of Oak Park/Sterling Ranch is projected to operate at LOS B or better for all movements during the peak hours as a stop-sign controlled intersection.

By 2045, it was assumed that the future K-8 school planned for the parcel southwest of Briargate/Sterling Ranch would be constructed and that an exit-only access would be constructed aligning with the Oak Park/Sterling Ranch intersection. Based on the 2045 total traffic volumes shown in Figure 12b and the lane geometry shown in Figure 12c, the eastbound and westbound left-turn movements are projected to operate at LOS D during the morning peak hour and LOS C during the afternoon peak hour. This side-street level of service is based on the assumption of morning school-peak-hour traffic coinciding with the general morning peak hour and the low peak-hour factor associated with projected school traffic.

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 E 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 12b and the lane geometry shown in Figure 12c.

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 #501 and #502: Oak Park Drive Access Points

Both of the proposed full-movement site-access points to Oak Park Drive are projected to operate at LOS B or better for all movements as stop-sign controlled intersections, based on the projected short-term and 2045 total traffic volumes.

ROADWAY FUNCTIONAL CLASSIFICATIONS AND LANEAGE

Figure 13 shows the recommended functional classifications and number of through lanes for the streets in the study area.

RECOMMENDED IMPROVEMENTS

Intersection Improvements

Figures 11c and 12c 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 needed with the Villages at Sterling Ranch. The recommended improvements are based on the short-term and 2045 total traffic volumes shown in Figures 11b and 12b and the criteria contained in the El Paso County *Engineering Criteria Manual* (*ECM*). The following auxiliary lanes will be required with the currently-proposed Villages Sterling Ranch:
    - A northbound right-turn deceleration lane on Sterling Ranch Road approaching Oak Park Drive. This lane should be 155 feet long, plus a 160-foot taper.
    - A southbound left-turn lane on Sterling Ranch Road approaching Oak Park Place. A center painted median is part of the standard Non-Residential Collector cross section and a left-turn lane is planned with Sterling Ranch East Filing 1.
    - Eastbound left-turn lanes on Park Place approaching the site-access points. A center painted median is part of the standard Non-Residential Collector cross section. The center median should be striped to provide a 255-foot-long turn lane plus a160-foot taper approaching St. Louis Road and a 205-foot-long turn lane plus a 160-foot taper approaching Indianapolis Road.

Roadway Segment Improvements

Table 6 shows a list of the roadway-segment improvements in the vicinity of the site. Please see Figure 14 for a map of the key street-segment locations. These recommendations are consistent with the LSC MTIS for the Sterling Ranch Sketch Plan Amendment #4, dated February 18, 2024 (SKP224).

WAIVER AND DEVIATION REQUESTS

The following deviations to the criteria contained in *Land Development Code* (*LDC*) and the *El Paso County Engineering Criteria Manual* (*ECM*) have been recently submitted as part of this application:

- *LDC* Chapter 8.4.4(E)(2): Private roads to serve portion of the community
- *LDC* Chapter 8.4.4(E)(3): Modifications to the road width and roadway terminations for the private roads
- *ECM* Section 22.4.B.7 Figure 2-17 and ECM Table 2-7: A smaller private road cross section (22-foot paved width and 11-foot lane width).
- *ECM* Section 2.3.8: Permanent hammerhead turnarounds on private roads
- *LCD* Chapter 8.4.4.C: Lots utilizing private shared driveways will not have direction frontage on or across from a public road
- *ECM* Section 2.5.2.C.2: Private roadway intersections will provide ramps for 3-way crossings
- *ECM* Section 2.3.3.F.3: Tangent lengths on broken back curves less than the minimum length

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 l
- 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 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 $2,527 per single-family dwelling unit. The total building permit fee amount for the 227 residential dwelling units would be $573,629. 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 and 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

- Villages at Sterling Ranch is projected to generate about 2,020 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 36 vehicles would enter and 110 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 120 vehicles would enter and 73 vehicles would exit the site.

Level of Service

- The intersection of Vollmer/Burgess was recently converted from two-way, stop-sign control to all-way, stop-sign control. This intersection is projected to operate at a satisfactory level of service (LOS C or better) in the short-term as an all-way, stop-sign-controlled intersection with no improvements. By 2045, it was assumed that the intersection will be converted to a modern roundabout in order to maintain an acceptable 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.
- Old Park Drive is planned to be constructed east from Sterling Ranch Road to the east site boundary as part of the Villages at Sterling Ranch development. Based on the short-term total traffic volumes shown in Figure 11b and the lane geometry shown in Figure 11c, the intersection of Oak Park/Sterling Ranch is projected to operate at LOS B or better for all movements during the peak hours as a stop-sign-controlled intersection. By 2045, it was assumed that the future K-8 school planned for the parcel southwest of Briargate/Sterling Ranch would be constructed and that an exit-only access would be constructed aligning with the Oak Park/Sterling Ranch intersection. Based on the 2045 total traffic volumes shown in Figure 12b and the lane geometry shown in Figure 12c, the eastbound and westbound left-turn movements are projected to operate at LOS D during the morning peak hour and LOS C during

the afternoon peak hour. This side-street level of service is based on the assumption of morning school-peak-hour traffic coinciding with the general morning peak hour and the low peak-hour factor associated with projected school traffic.

- The proposed site-access points to Oak Park are projected to operate at a satisfactory level of service as stop-sign-controlled intersections through 2045.

Recommended Improvements

Intersection and roadway-segment improvements are recommended. Please refer to the "Roadway Improvements" section above for details. Also, Roadway improvements are detailed in Tables 5 and 6.

Escrow Analysis

Table 7 shows the impact of 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.

* * * * *

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

TRANSPORTATION
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Table 2
Trip Generation Estimate
Villages at Sterling Ranch

ITE Code	ITE Land Use	Quantity	Unit	Trip Generation Rates[1] Daily	AM Peak Hour In	AM Peak Hour Out	PM Peak Hour In	PM Peak Hour Out	Total Trips Generated Daily	AM Peak Hour In	AM Peak Hour Out	PM Peak Hour In	PM Peak Hour Out
Trip Generation Estimate Based on the Currently Proposed Land Uses													
215	Single-Family Attached Housing	54	DU	7.20	0.12	0.36	0.34	0.23	389	6	19	18	13
210	Single-Family Detached Housing	173	DU	9.43	0.18	0.53	0.59	0.35	1,631	30	91	102	60
		227	**DU**						**2,020**	**36**	**110**	**120**	**73**
***Sterling Ranch Sketch Plan Amendment Master Traffic Impact Study* (SKP 22-004) March 15, 2023**													
215	Single-Family Attached Housing	146	DU	7.20	0.12	0.36	0.34	0.23	1,051	18	53	49	34
210	Single-Family Detached Housing	100	DU	9.43	0.18	0.53	0.59	0.35	943	18	53	59	35
		246	**DU**						**1,994**	**35**	**105**	**108**	**69**
					Change (Increase) in Trip Generation Estimate				**26**	**1**	**5**	**12**	**4**

Notes:

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

(2) DU = Dwelling Unit

Source: LSC Transportation Consultants, Inc.

Mar-25

Table 3
Traffic Signal Warrant Analysis
Marksheffel Road/Vollmer Road

Hour	Short-Term Background Traffic		Villages at Sterling Ranch East Generated Traffic		Short-Term Total Traffic		Warrant Analysis[1]											
							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					
	Major[2] Vollmer	Minor[3] Marksheffel	Major Vollmer	Minor Marksheffel	Major Vollmer	Minor Marksheffel	Condition A		Condition B		Condition A	Condition B	Condition A	Condition B	Warrant Threshold Minor Minimum	Warrant Threshold Met? WB	Warrant Threshold Minor Minimum	Warrant Threshold Met? WB
							Major	Minor	Major	Minor								
Short-Term Total Traffic[4]																		
12-1 AM	46	3	1	0	47	3	600	150	900	75	No	No	No	No	Low Volume	No	Low Volume	No
1-2 AM	19	3	0	0	19	3	600	150	900	75	No	No	No	No	Low Volume	No	Low Volume	No
2-3 AM	14	0	0	0	14	0	600	150	900	75	No	No	No	No	Low Volume	No	Low Volume	No
3-4 AM	27	3	0	0	27	3	600	150	900	75	No	No	No	No	Low Volume	No	Low Volume	No
4-5 AM	50	12	3	0	53	12	600	150	900	75	No	No	No	No	Low Volume	No	Low Volume	No
5-6 AM	112	29	5	1	117	30	600	150	900	75	No	No	No	No	Low Volume	No	Low Volume	No
6-7 AM	438	85	16	2	454	87	600	150	900	75	No	No	No	No	371	No	363	No
7-8 AM	899	147	27	3	926	150	600	150	900	75	No	No	No	Yes	175	No	169	No
8-9 AM	817	124	25	3	842	127	600	150	900	75	No	No	No	No	196	No	190	No
9-10 AM	669	78	18	2	687	80	600	150	900	75	No	No	No	No	262	No	255	No
10-11 AM	684	78	20	2	704	80	600	150	900	75	No	No	No	No	256	No	248	No
11-12 PM	858	74	22	2	880	76	600	150	900	75	No	No	No	No	186	No	180	No
12-1 PM	683	74	24	1	707	75	600	150	900	75	No	No	No	No	257	No	247	No
1-2 PM	698	78	25	2	723	80	600	150	900	75	No	No	No	No	251	No	239	No
2-3 PM	790	82	28	2	818	84	600	150	900	75	No	No	No	No	205	No	196	No
3-4 PM	886	79	30	2	916	81	600	150	900	75	No	No	No	Yes	179	No	171	No
4-5 PM	996	99	38	2	1034	101	600	150	900	75	No	Yes	No	Yes	151	No	140	No
5-6 PM	947	98	38	2	985	100	600	150	900	75	No	Yes	No	Yes	163	No	154	No
6-7 PM	570	78	30	2	600	80	600	150	900	75	No	No	No	No	305	No	290	No
7-8 PM	502	57	22	1	524	58	600	150	900	75	No	No	No	No	339	No	328	No
8-9 PM	394	41	20	1	414	42	600	150	900	75	No	No	No	No	Low Volume	No	383	No
9-10 PM	255	32	14	1	269	33	600	150	900	75	No	No	No	No	Low Volume	No	Low Volume	No
10-11 PM	135	15	8	0	143	15	600	150	900	75	No	No	No	No	Low Volume	No	Low Volume	No
11-12 AM	57	9	4	0	61	9	600	150	900	75	No	No	No	No	Low Volume	No	Low Volume	No
Numbers of Hours the Warrant Thresholds Are Met											0	2	0	4		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. *Mar-25*

Table 4
Traffic Signal Warrant Analysis
Marksheffel Road/Sterling Ranch Road

Hour	Short-Term Background Traffic: Major[2] Marksheffel	Short-Term Background Traffic: Minor[3] Sterling Ranch	Villages at Sterling Ranch East Generated Traffic: Major Marksheffel	Villages at Sterling Ranch East Generated Traffic: Minor Sterling Ranch	Short-Term Total Traffic: Major Marksheffel	Short-Term Total Traffic: Minor Sterling Ranch	Warrant Analysis[1] — Warrant 1: Eight-Hour Vehicular-Volume Evaluation — Warrant Thresholds: Condition A Major	Condition A Minor	Condition B Major	Condition B Minor	Warrant Threshold Met? — Short-Term Background: Condition A	Short-Term Background: Condition B	Short-Term Total: Condition A	Short-Term Total: Condition B	Warrant 2: Four-Hour Vehicular-Volume Evaluation — Short-Term Background: Warrant Threshold Minor Minimum	Short-Term Background: Warrant Threshold Met?	Short-Term Total: Warrant Threshold Minor Minimum	Short-Term Total: Warrant Threshold Met?
Short-Term Total Traffic[4]																		
12-1 AM	48	11	4	2	52	13	600	150	900	75	No	No	No	No	Low Volume	No	Low Volume	No
1-2 AM	20	11	2	2	22	13	600	150	900	75	No	No	No	No	Low Volume	No	Low Volume	No
2-3 AM	18	0	2	0	20	0	600	150	900	75	No	No	No	No	Low Volume	No	Low Volume	No
3-4 AM	21	11	2	2	23	13	600	150	900	75	No	No	No	No	Low Volume	No	Low Volume	No
4-5 AM	36	44	2	6	38	50	600	150	900	75	No	No	No	No	Low Volume	No	Low Volume	No
5-6 AM	65	110	4	15	69	125	600	150	900	75	No	No	No	No	Low Volume	No	Low Volume	No
6-7 AM	225	324	14	46	239	370	600	150	900	75	No	No	No	No	Low Volume	No	Low Volume	No
7-8 AM	453	560	27	79	480	639	600	150	900	75	No	No	No	No	364	Yes	350	Yes
8-9 AM	469	472	31	67	500	539	600	150	900	75	No	No	No	No	356	Yes	340	Yes
9-10 AM	396	296	27	42	423	338	600	150	900	75	No	No	No	No	Low Volume	No	379	No
10-11 AM	477	296	35	42	512	338	600	150	900	75	No	No	No	No	352	No	334	Yes
11-12 PM	606	280	46	40	652	320	600	150	900	75	Yes	No	Yes	No	288	No	269	Yes
12-1 PM	500	291	47	39	547	330	600	150	900	75	No	No	No	No	340	No	317	Yes
1-2 PM	534	307	51	41	585	348	600	150	900	75	No	No	No	No	323	No	298	Yes
2-3 PM	618	322	59	43	677	365	600	150	900	75	Yes	No	Yes	No	283	Yes	259	Yes
3-4 PM	732	312	72	42	804	354	600	150	900	75	Yes	No	Yes	No	234	Yes	199	Yes
4-5 PM	885	390	89	52	974	442	600	150	900	75	Yes	No	Yes	Yes	179	Yes	157	Yes
5-6 PM	863	385	87	51	950	436	600	150	900	75	Yes	No	Yes	Yes	184	Yes	163	Yes
6-7 PM	673	307	72	41	745	348	600	150	900	75	Yes	No	Yes	No	261	Yes	228	Yes
7-8 PM	504	224	53	30	557	254	600	150	900	75	No	No	No	No	338	No	312	No
8-9 PM	485	161	54	21	539	182	600	150	900	75	No	No	No	No	348	No	321	No
9-10 PM	343	125	38	17	381	142	600	150	900	75	No	No	No	No	Low Volume	No	Low Volume	No
10-11 PM	169	57	19	8	188	65	600	150	900	75	No	No	No	No	Low Volume	No	Low Volume	No
11-12 AM	95	36	11	5	106	41	600	150	900	75	No	No	No	No	Low Volume	No	Low Volume	No
Numbers of Hours the Warrant Thresholds Are Met											6	0	6	2		7		11
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. *Mar-25*

Table 5
Villages Sterling Ranch
Intersection Improvements

Item #	Improvement	Trigger	Timing	Responsibility
1) Burgess Road/Vollmer Road				
1	Plan for roundabout as ultimate traffic control in the future depending on intersection conditions - grades, available ROW, etc.	When the LOS degrades below LOS F	Long Term (Note: This intersection was recently converted from Two-Way, Stop-Sign Control to to All-Way, Stop-Sign Control)	This intersection may be an eligible intersection under the fee impact program
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	With Sterling Ranch East Filing 1	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	With Sterling Ranch East Filing 1	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	With Sterling Ranch East Filing No. 6	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 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	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	With Sterling Ranch East Filing 2	Sterling Ranch
7	Provide interim stop-sign control with a stop sign on the eastbound approach	with construction of the intersection	With Sterling Ranch East Filing 2	Sterling Ranch
8	Signalization of the intersection(1)	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
8) Sterling Ranch Road/Oak Park Place				
9	Construct a southbound left-turn lane on Sterling Ranch Road approaching Oak Park Place. The lane should be 220' long plus a 160' taper.	southbound left-turn volume > 25 vph	A center painter median is part of the standard Non-Residential Collector cross section and a left-turn lane is planned with Sterling Ranch East Filing 1	Sterling Ranch
10	Construct a northbound right-turn deceleration lane on Sterling Ranch Road approaching Oak Park Place. The lane should be 155' long plus a 160' taper.	northbound right-turn volume > 50 vph	Required With Villages at Sterling Ranch Planned with Sterling Ranch East Filing 5	Sterling Ranch
12) Marksheffel Road/Vollmer Road				
11	Signalization of the intersection(1)	Once warrants are met. The decision on timing of traffic signal installation rests with El Paso County Public Works.	Not Anticipated With Villages at Sterling Ranch	This intersection may be an eligible intersection under the fee impact program
13) Marksheffel Road/Sterling Ranch Road				
12	Signalization of the intersection(1)	Once warrants are met. The decision on timing of traffic signal installation rests with The City of Colorado Springs.	Not Anticipated With Villages at Sterling Ranch	SRMD#3

Notes:
(1) See Table 7 Traffic Signal Escrow Calculations

Source: LSC Transportation Consultants, Inc. (March 2025)

Table 6
Roadway Segment Improvements
Villages at Sterling Ranch East
(Page 1 of 2)

Segment ID[1] (See Figure 14 for map)	Improvement Description	Timing	Design ADT (vpd)	Projected 2044 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	**Completed**	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)	17,015	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.	**Completed**	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	**Completed**	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	**Completed**	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	**Completed**	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 *El Paso Engineering Criteria Manual* an appropriate taper ratio for a roadway with a design speed of 40 miles per hour is 20:1

(3) Source: Table 20 *Road Impact Fee Study Updated* November 16, 2016

Source: LSC Transportation Consultants, Inc. (April 2025)

Table 6
Roadway Segment Improvements
Villages Sterling Ranch East
(Page 2 of 2)

Segment ID[(1)] (See Figure 14 for map)	Improvement Description	Timing	Design ADT (vpd)	Projected 2042 ADT (vpd)	Responsibility
SR1	Construct Sterling Ranch Road as an Urban Major Collector from Marksheffel Road to Dines Boulevard	**Completed**	20,000	14,420	Sterling Ranch
SR2	Construct Sterling Ranch Road as an Urban Major Collector from Dines Boulevard to Briargate Parkway	**Short-Term – Currently Under Construction**	20,000	9,760	Sterling Ranch
SR3	Construct Sterling Ranch Road as an Urban Minor Collector from Briargate Parkway to Vancouver Street	**Short-Term – Currently Under Construction**	10,000	8,470	Sterling Ranch
SR4	Construct Sterling Ranch Road from Vancouver Street north to Appleton Drive	**Short-Term - with SRE Filing 6**	10,000	6,910	Sterling Ranch
SR5	Construct Sterling Ranch Road from Appleton Drive 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	**Completed**	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**	**Completed**	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)	**Completed** (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	**Completed**	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	**Completed**	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 *El Paso Engineering Criteria Manual*, an appropriate taper ratio for a roadway with a design speed of 40 miles per hour is 20:1

(3) Source: Table 20 *Road Impact Fee Study Updated* November 16, 2016

Source: LSC Transportation Consultants, Inc. (April 2025)

Table 7
Traffic Signal Escrow Calculation Table
Villages at Sterling Ranch East

	Traffic Volumes																				
	Northbound (Minor Approach)					Southbound (Minor Approach)					Eastbound (Major Approach)			Westbound (Major Approach)			Total Intersection Volume		Minor Approach Volume		Total Traffic Signal Cost	Fair Share Amount
	LT	TH	RT All RT	RT Included in the Minor Approach Volume[1]		LT	TH	RT All RT	RT Included in the Minor Approach Volume[1]		LT	TH	RT	LT	TH	RT						
	(vph)	(vph)	(vph)	(%)	(vph)	LT	TH	(vph)	(%)	(vph)	(vph)	(vph)	(vph)	(vph)	(vph)	(vph)	veh/hr	%	veh/hr	%*		
#5 Briargate Parkway/Sterling Ranch Road																						
AM Peak Hour																						
2045 Background Traffic	219	92	118	0%	0	91	186	181	0%	0	77	605	130	143	936	23						
Long-Term Site-Generated	22	0	5		0	0	0	0		0	0	0	7	1	0	0						
Total	**241**	**92**	**123**		**0**	**91**	**186**	**181**		**0**	**77**	**605**	**137**	**144**	**936**	**23**						
PM Peak Hour																						
2045 Background Traffic	128	148	80	0%	0	71	68	140	0%	0	317	902	106	150	832	97						
Long-Term Site-Generated	17	0	4		0	0	0	0		0	0	0	28	4	0	0						
Total	**145**	**148**	**84**		**0**	**71**	**68**	**140**		**0**	**317**	**902**	**134**	**154**	**832**	**97**						
AM Peak Hour + PM Peak Hour																						
2045 Background Traffic	347	240	198	0%	0	162	254	321	0%	0	394	1,507	236	293	1,768	120			1,003	96.3%		$625,671.79
Long-Term Site-Generated	39	0	9		0	0	0	0		0	0	0	35	5	0	0			39	3.7%	$650,000	$24,328.21
Total	**386**	**240**	**207**		**0**	**162**	**254**	**321**		**0**	**394**	**1,507**	**271**	**298**	**1,768**	**120**			**1,042**			
#12 Marksheffel Road/Research Parkway/Vollmer Road[2]																						
AM Peak Hour																						
2045 Background Traffic	108	255	104	50%	52	121	575	136	50%	68	69	831	42	160	894	63						
Long-Term Site-Generated	0	2	1		1	0	6	0		0	0	3	0	2	9	0						
Total	**108**	**257**	**105**		**53**	**121**	**581**	**136**		**68**	**69**	**834**	**42**	**162**	**903**	**63**						
PM Peak Hour																						
2045 Background Traffic	169	787	173	50%	87	126	392	197	50%	99	140	908	89	185	698	149						
Long-Term Site-Generated	0	7	3		2	0	4	0		0	0	11	0	2	7	0						
Total	**169**	**794**	**176**		**89**	**126**	**396**	**197**		**99**	**140**	**919**	**89**	**187**	**705**	**149**						
AM Peak Hour + PM Peak Hour																						
2045 Background Traffic	277	1,042	277	50%	139	247	967	333	50%	167	209	1,739	131	345	1,592	212	7,371	99.2%				$645,012.12
Long-Term Site-Generated	0	9	4		2	0	10	0		0	0	14	0	4	16	0	57	0.8%			$650,000	$4,987.88
Total	**277**	**1,051**	**281**		**141**	**247**	**977**	**333**		**167**	**209**	**1,753**	**131**	**349**	**1,608**	**212**	**7,428**					
#13 Marksheffel Road/Sterling Ranch Road[2]																						
AM Peak Hour																						
Short-Term Background Traffic	10	3	5	100%	5	560	0	147	50%	74	72	100	4	8	60	213						
Short-Term Site-Generated	0	0	0		0	79	0	3		2	1	0	0	0	0	26						
Short-Term Total	**10**	**3**	**5**		**5**	**639**	**0**	**150**		**76**	**73**	**100**	**4**	**8**	**60**	**239**						
2045 Background Traffic	7	2	7	100%	7	482	10	302	50%	151	141	884	12	53	807	169						
Long-Term Site-Generated	0	0	0		0	26	1	11		6	4	0	0	0	0	8						
Total	**7**	**2**	**7**		**7**	**508**	**11**	**313**		**157**	**145**	**884**	**12**	**53**	**807**	**177**						
PM Peak Hour																						
Short-Term Background Traffic	3	11	10	100%	10	390	10	98	50%	49	119	70	6	8	96	592						
Short-Term Site-Generated	0	0	0		0	52	0	2		1	3	0	0	0	0	86						
Short-Term Total	**3**	**11**	**10**		**10**	**442**	**10**	**100**		**50**	**122**	**70**	**6**	**8**	**96**	**678**						
2045 Background Traffic	18	4	24	100%	24	327	16	176	50%	88	287	940	6	62	838	531						
Short-Term Site-Generated	0	0	0		0	20	1	9		5	15	0	0	0	0	32						
Total	**18**	**4**	**24**		**24**	**347**	**17**	**185**		**93**	**302**	**940**	**6**	**62**	**838**	**563**						
AM Peak Hour + PM Peak Hour																						
Short-Term Background Traffic	13	14	15	100%	15	950	10	245	50%	123	191	170	10	16	156	805			2,473	90.8%		$590,323.17
Short-Term Site-Generated	0	0	0		0	131	0	5		3	4	0	0	0	0	112			250	9.2%	$650,000	$59,676.83
Short-Term Total	**13**	**14**	**15**		**15**	**1,081**	**10**	**250**		**126**	**195**	**170**	**10**	**16**	**156**	**917**			**2,723**			
2045 Background Traffic	25	6	31	100%	31	809	26	478	50%	239	428	1,824	18	115	1,645	700			5,866	98.0%		$637,288.99
Long-Term Site-Generated	0	0	0		0	46	2	20		10	19	0	0	0	0	40			117	2.0%	$650,000	$12,711.01
Total	**25**	**6**	**31**		**31**	**855**	**28**	**498**		**249**	**447**	**1,824**	**18**	**115**	**1,645**	**740**			**5,983**			

Notes:

(1) Traffic Volumes That Contribute to the Four-Hour and Eight-Hour Vehicular Volume Traffic Signal Warrant Minor Street Volume

(2) Intersections No. 12 and 13 are City of Colorado Springs intersections. The City may modify this formula (or use their own formula) for signal participation based on City-standard methodology.

Source: LSC Transportation Consultants, Inc. *Mar-25*

Figures 1-14

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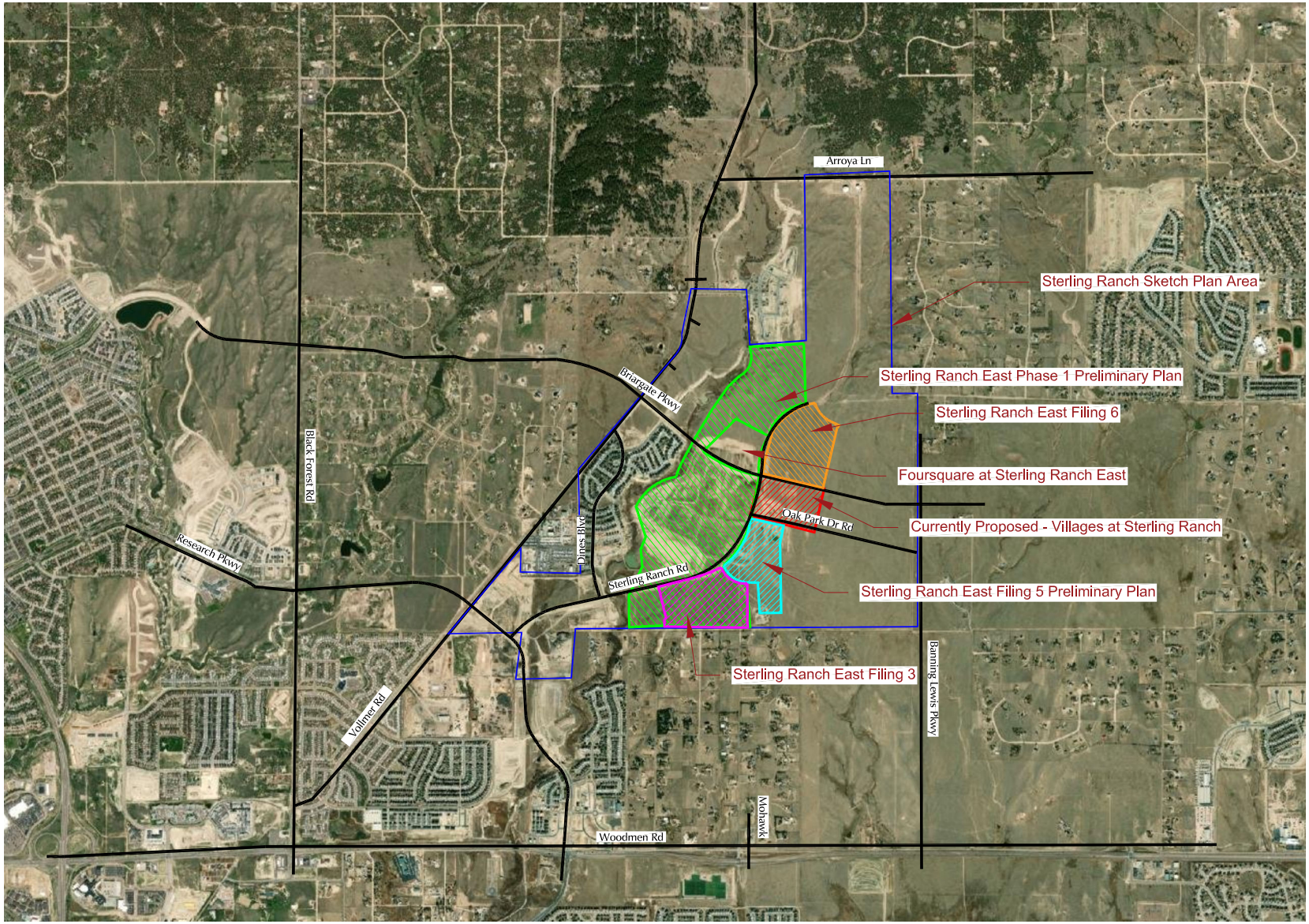
CONSULTANTS, INC.



N

Not to scale

LSC TRANSPORTATION CONSULTANTS, INC.

Figure 1

Vicinity Map

Villages at Sterling Ranch (LSC# S224580)

Approximate Scale: 1"=300'

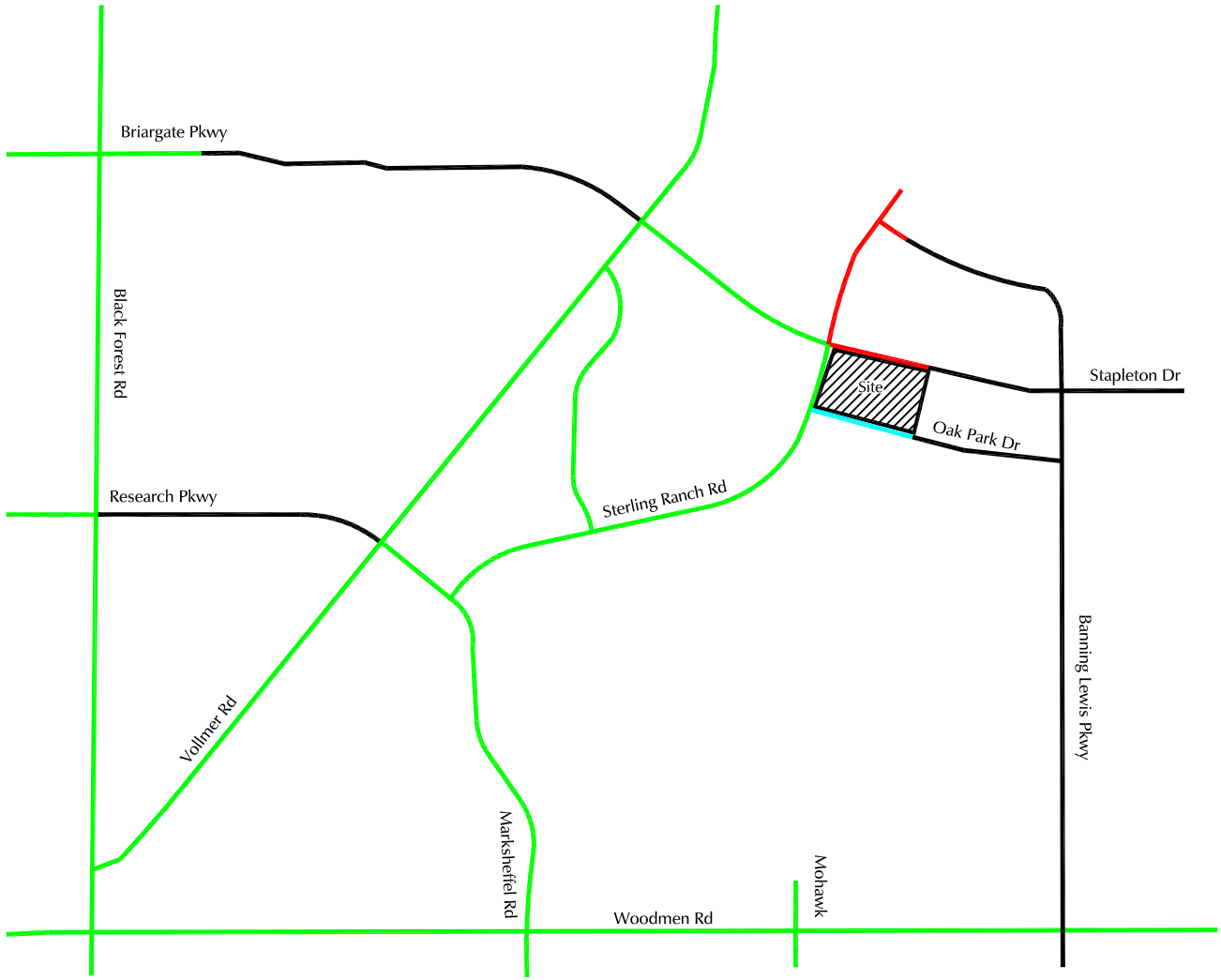
Trail & Sidewalks

TRANSPORTATION CONSULTANTS, INC.

Figure 2

Site Plan

Villages at Sterling Ranch (LSC# S224580)



Roadway connection planned with Sterling Ranch East Filing 1, Four Square at Sterling Ranch and/or Sterling Ranch East Filing 6

Roadway connection planned with Villages at Sterling Ranch

Existing Roadway

Future Roadway

TRANSPORTATION CONSULTANTS, INC.

Figure 3

Short-Term Roadway Connections

Villages at Sterling Ranch (LSC# S224580)

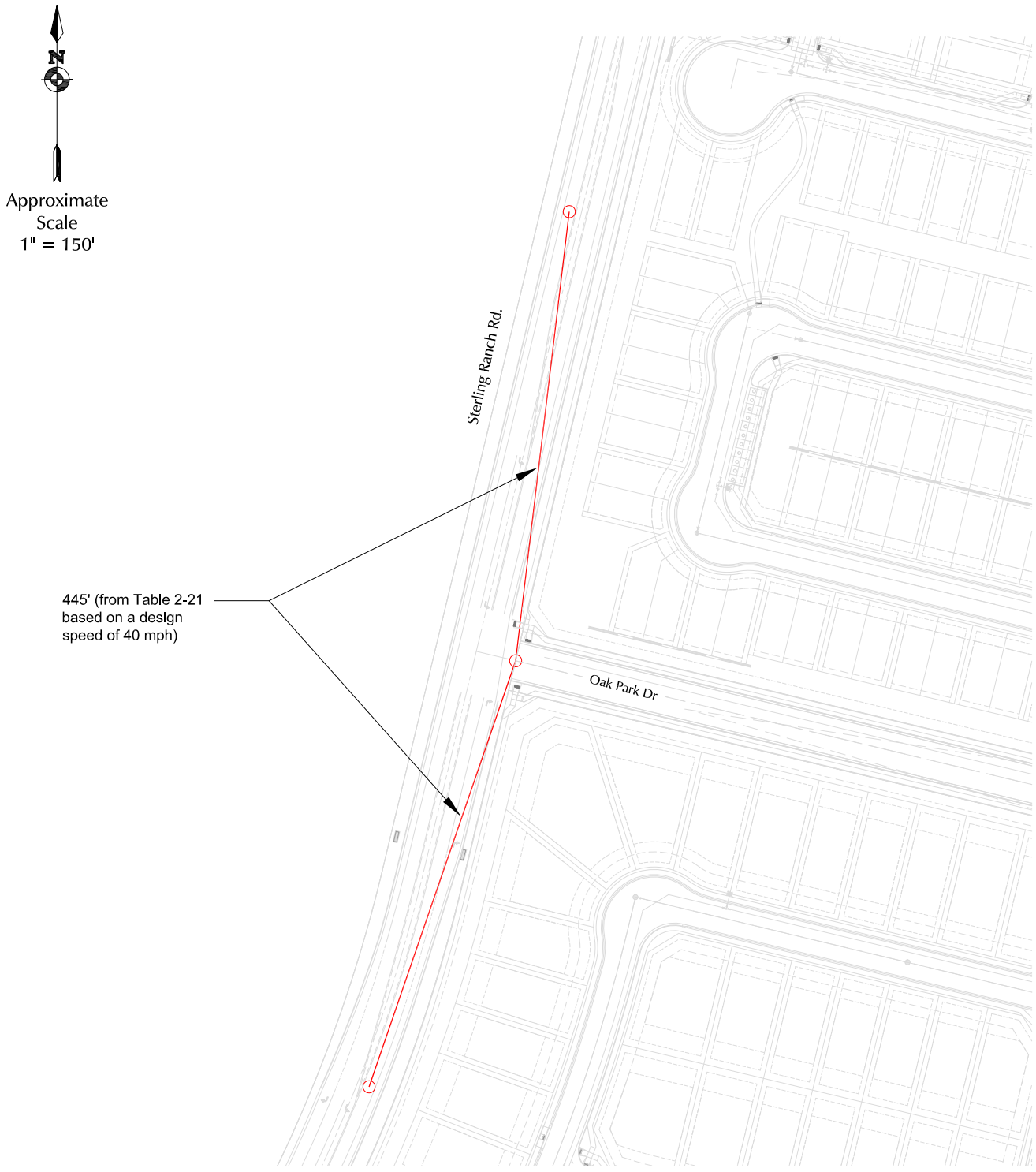
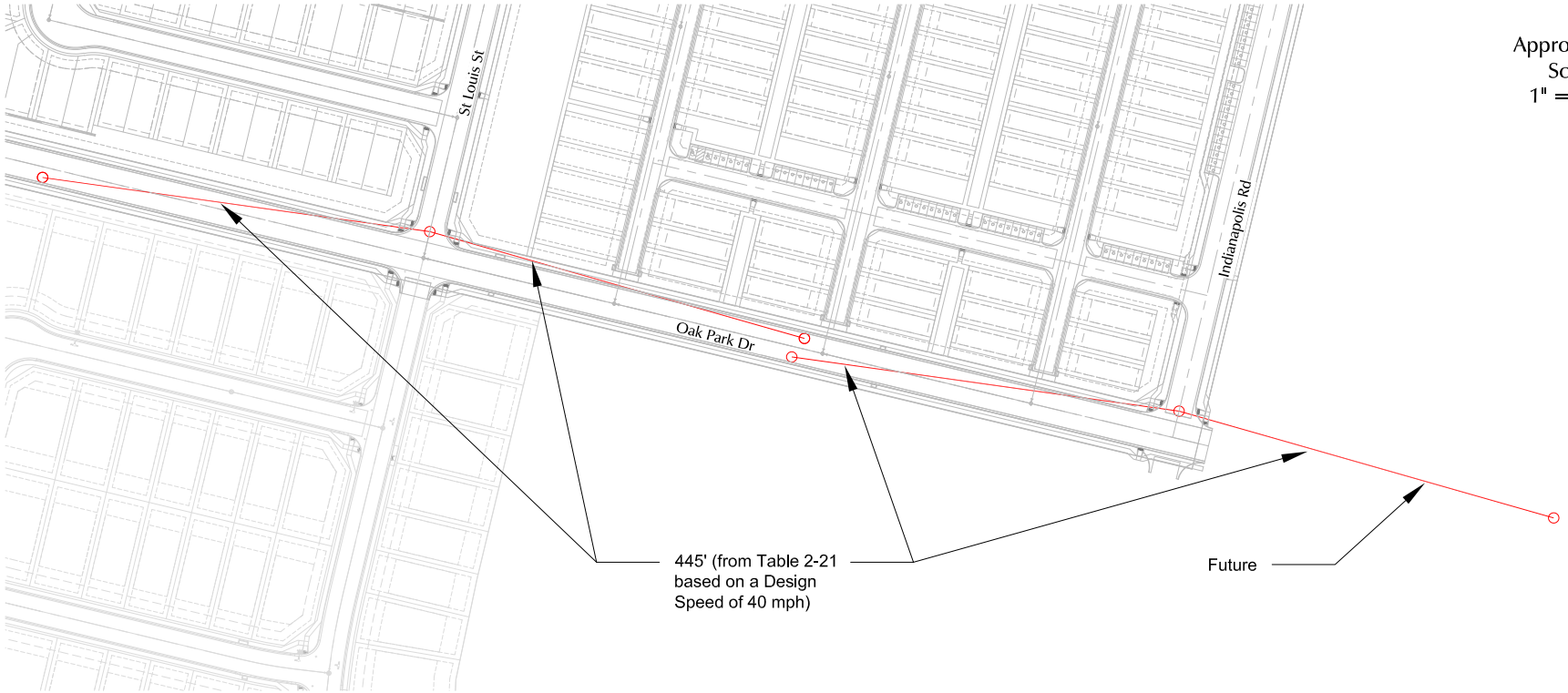


Figure 4a

Sight Distance Analysis- Sterling Ranch Road/Oak Park Dr Intersection

Villages at Sterling Ranch (LSC# S224580)

LSC TRANSPORTATION CONSULTANTS, INC.



Approximate
Scale
1" = 200'

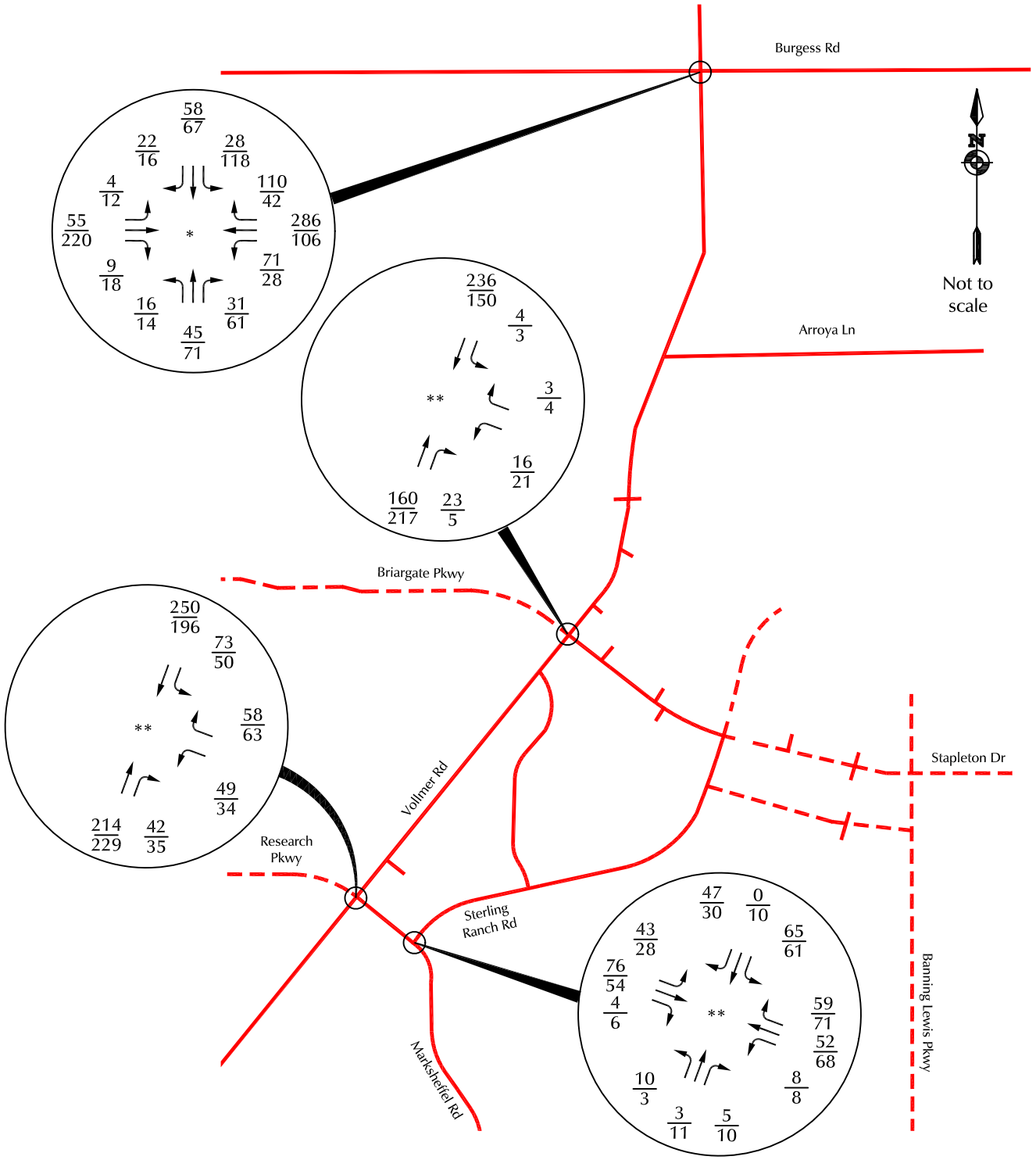
ECM Required Intersection Sight Distance

Figure 4b

Sight Distance Analysis - Oak Park Drive Intersections

Villages at Sterling Ranch (LSC# S224580)

LSC TRANSPORTATION CONSULTANTS, INC.



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)

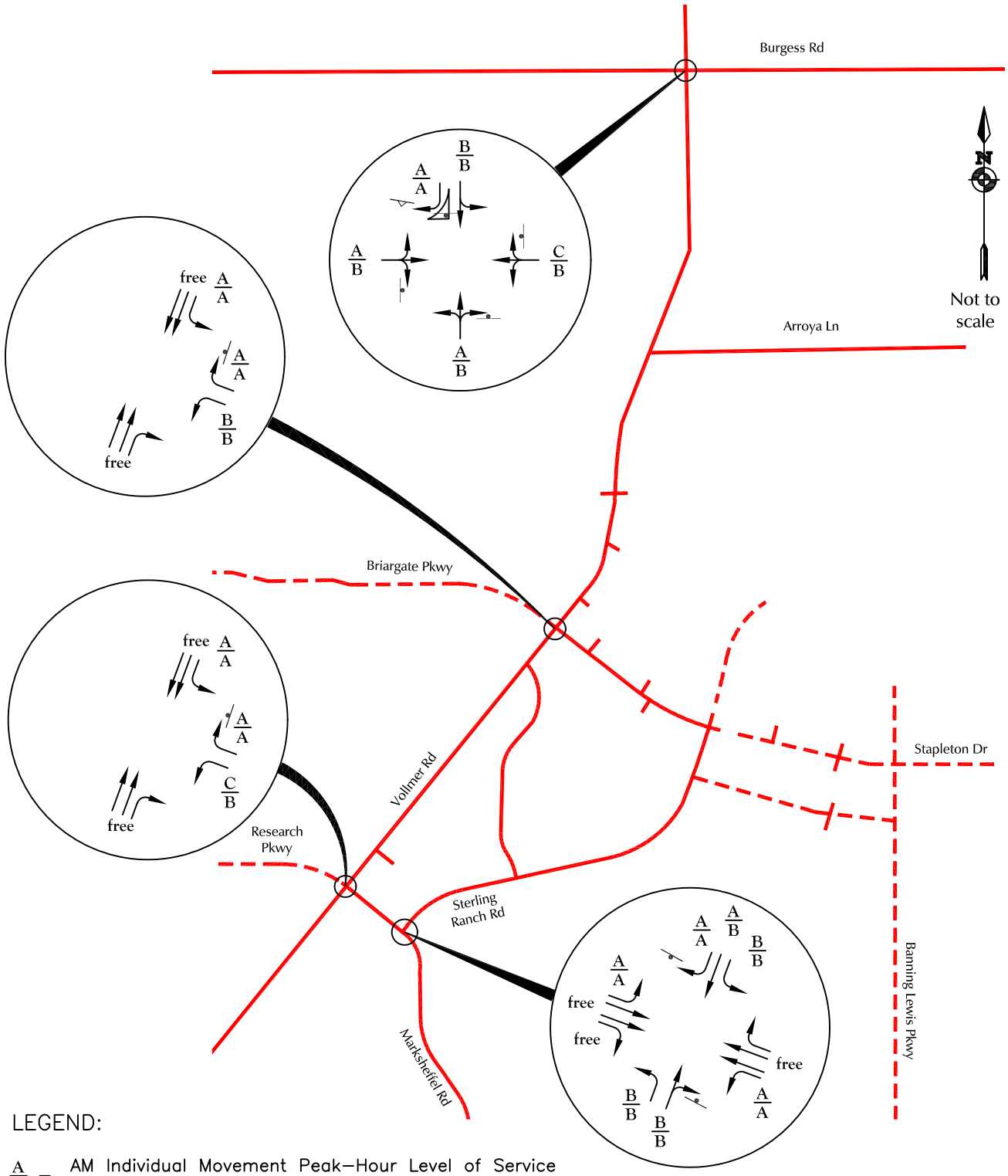
Existing Roadway
Future Roadway

TRANSPORTATION CONSULTANTS, INC.

Figure 5a

Existing Peak-Hour Traffic

Villages at Sterling Ranch (LSC# S224580)



LEGEND:

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

= Stop Sign

Existing Roadway

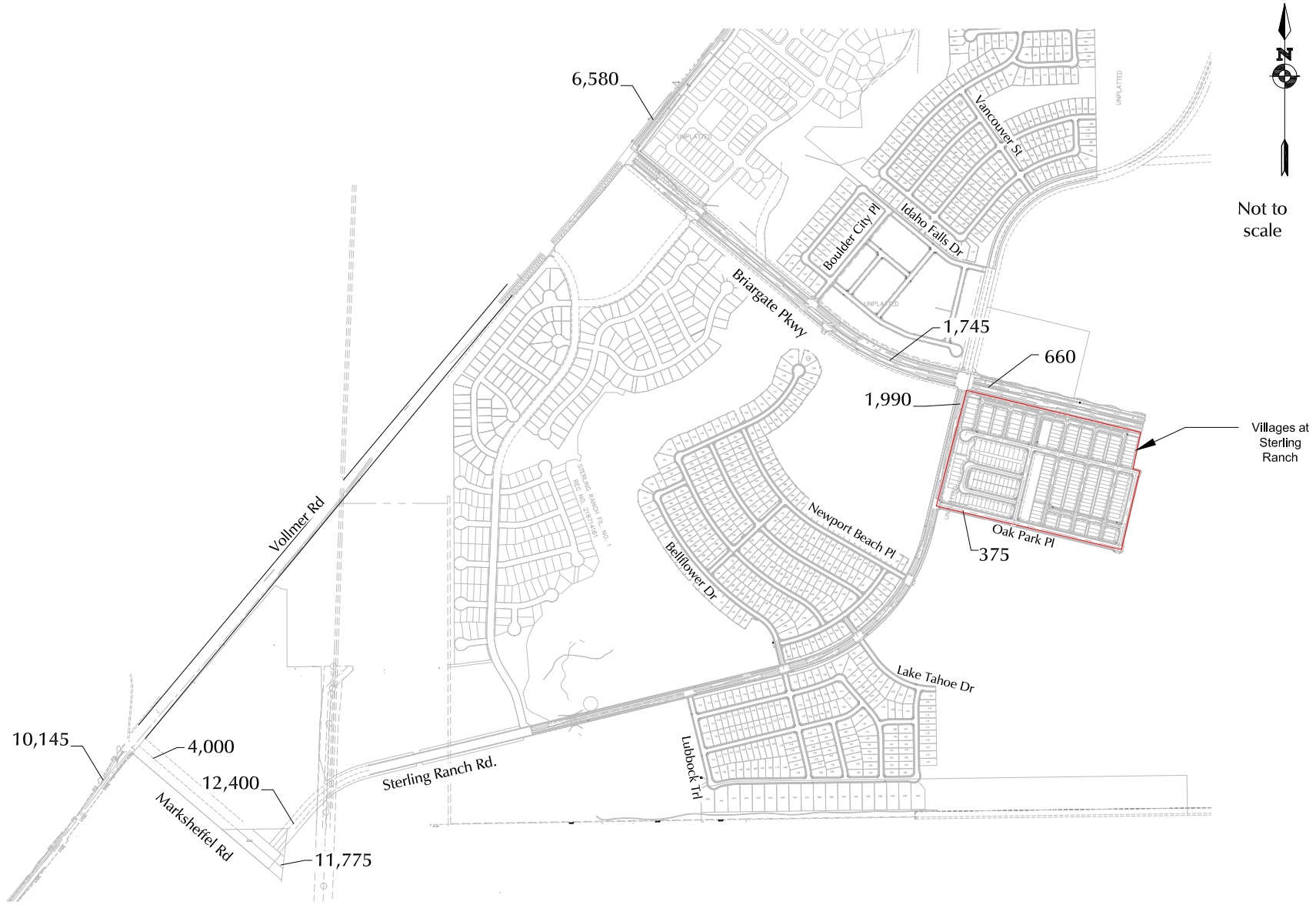
Future Roadway

Figure 5b

Existing Lane Geometry, Traffic Control, and Level of Service

Villages at Sterling Ranch (LSC# S224580)

LSC TRANSPORTATION CONSULTANTS, INC.



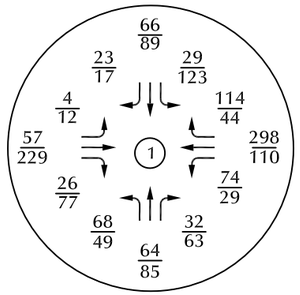
LEGEND: *XXX* = Average Weekday Traffic (vehicles per day)(AWT)

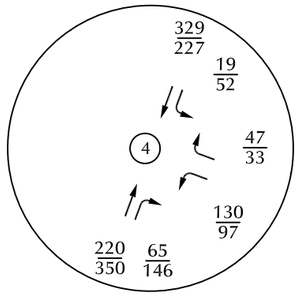
Figure 6a

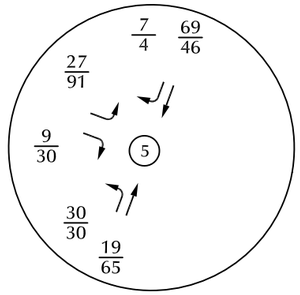
Short-Term Background Average Weekday Traffic

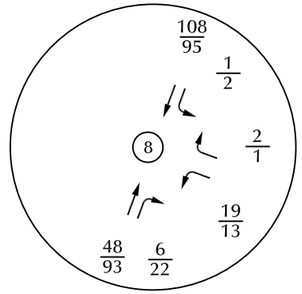
Villages at Sterling Ranch (LSC# S224580)

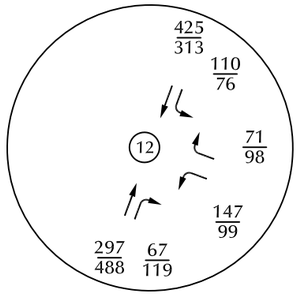
LSC TRANSPORTATION CONSULTANTS, INC.

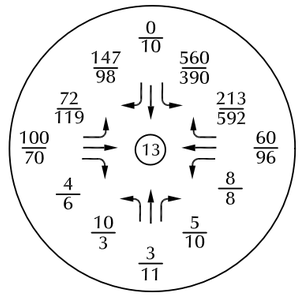


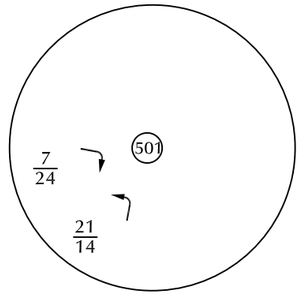




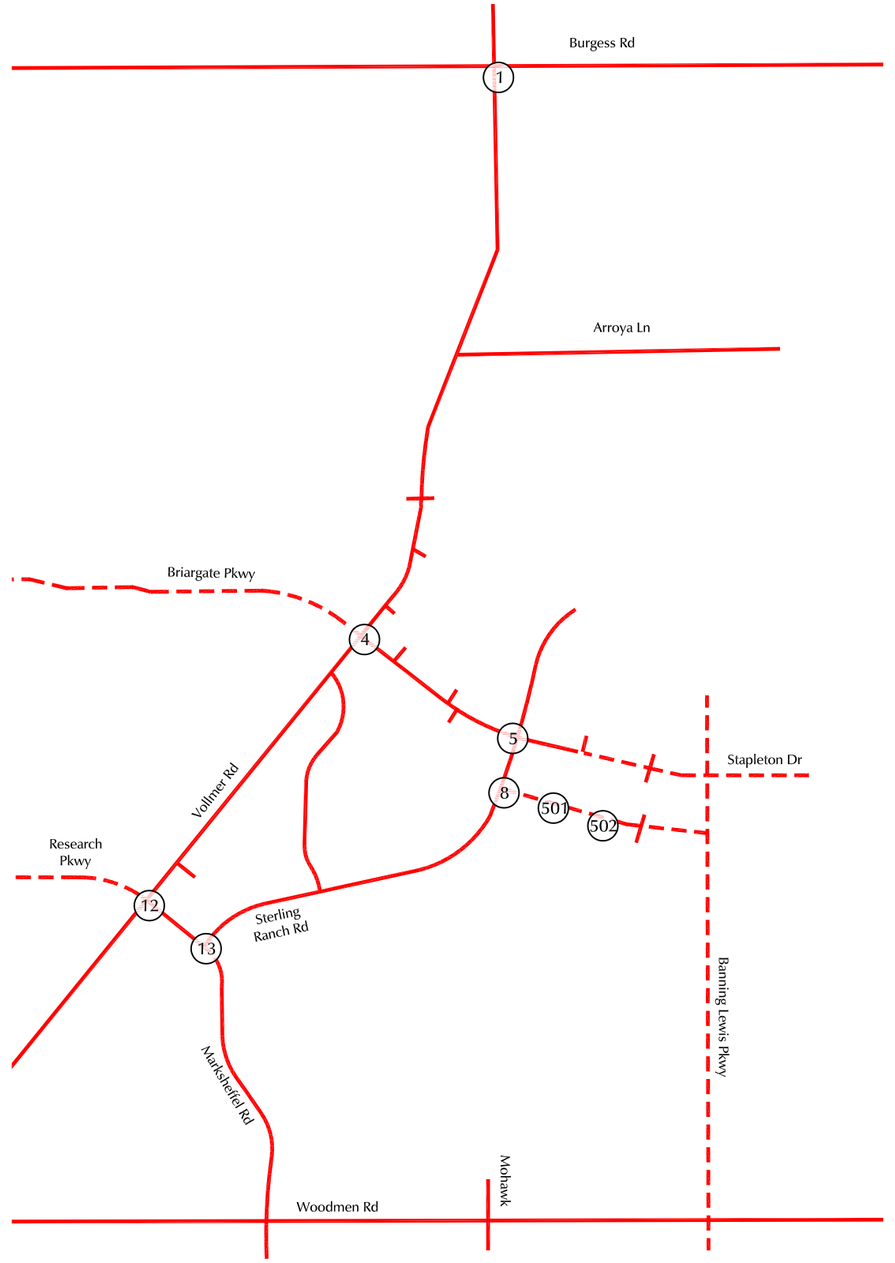








Intentionally
502
Left Blank



Not to scale

LEGEND: $\frac{XX}{XX} = \frac{\text{AM Peak-Hour Traffic (veh/hr)}}{\text{PM Peak-Hour Traffic (veh/hr)}}$

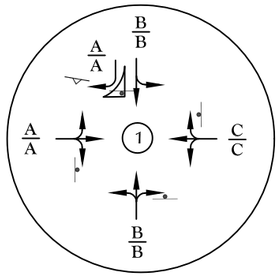
Existing Roadway
Future Roadway

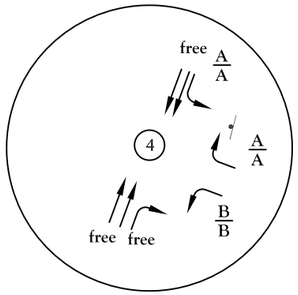
LSC TRANSPORTATION CONSULTANTS, INC.

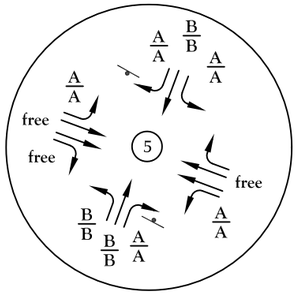
Figure 6b

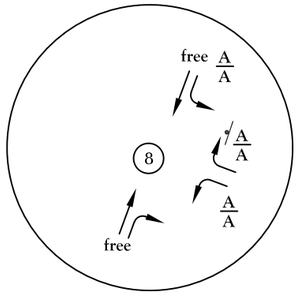
Short-Term Background Traffic

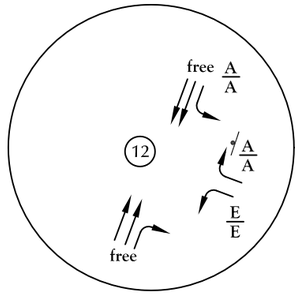
Villages at Sterling Ranch (LSC# S224580)

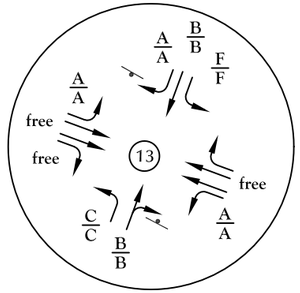


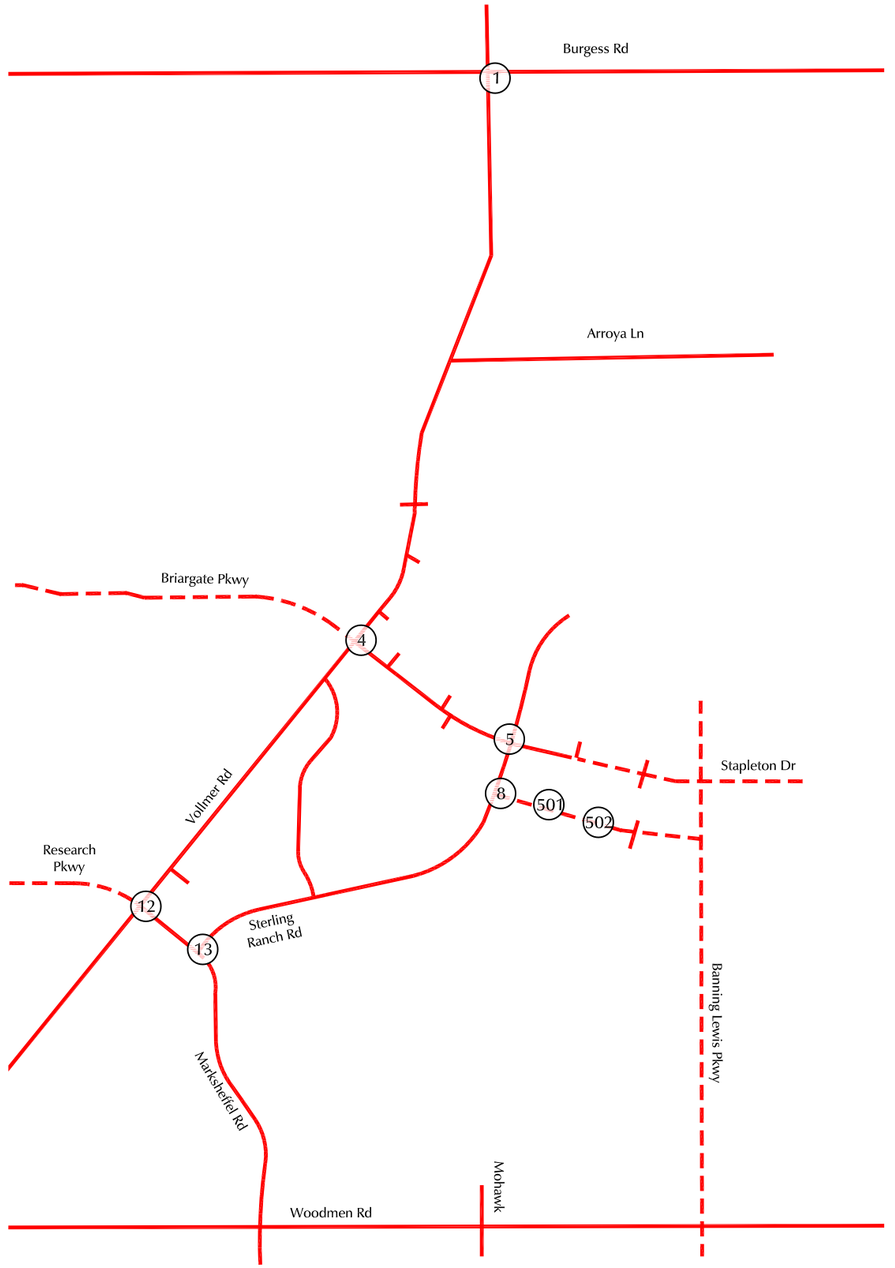












Not to scale

LEGEND:

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

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

= Stop Sign

= Traffic Signal

Existing Roadway

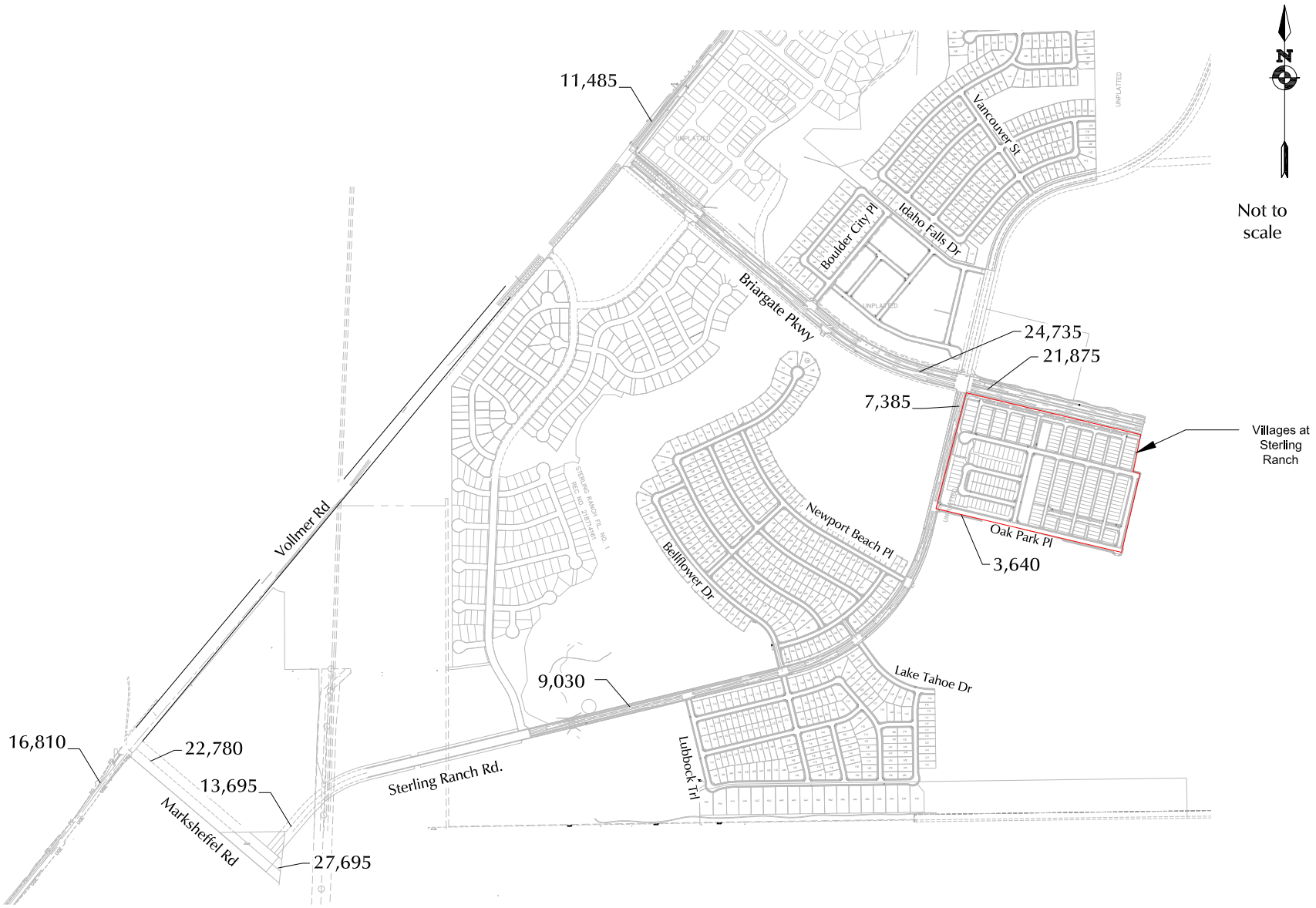
Future Roadway

TRANSPORTATION CONSULTANTS, INC.

Figure 6c

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

Villages at Sterling Ranch (LSC# S224580)



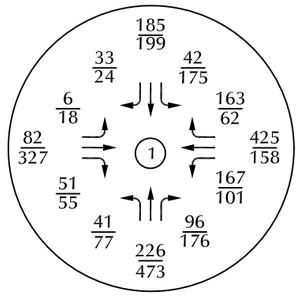
LEGEND: *XXX* = Average Weekday Traffic (vehicles per day)(AWT)

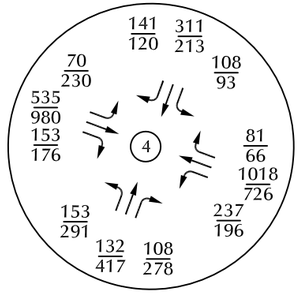
TRANSPORTATION CONSULTANTS, INC.

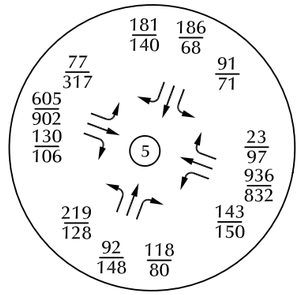
Figure 7a

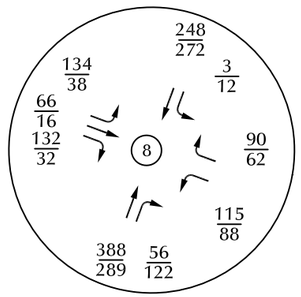
2045 Background Average Weekday Traffic

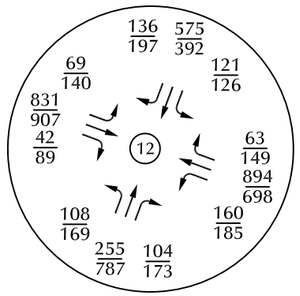
Villages at Sterling Ranch (LSC# S224580)

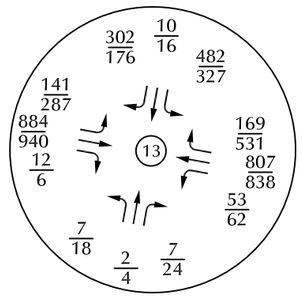


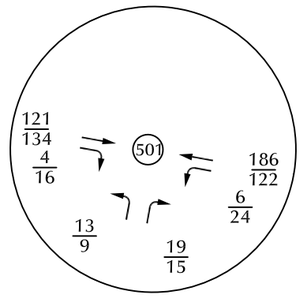


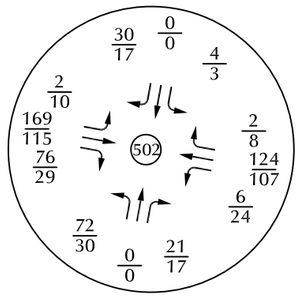


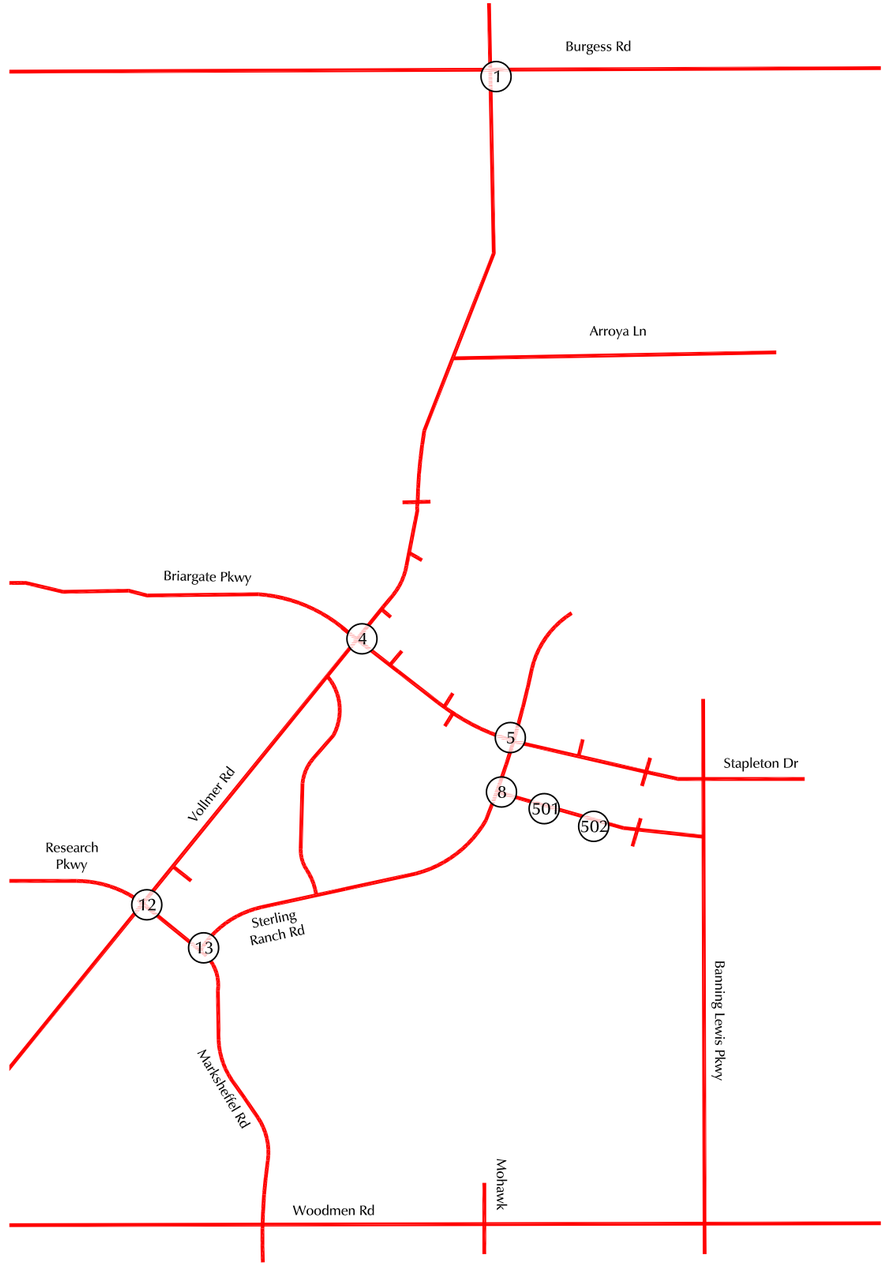












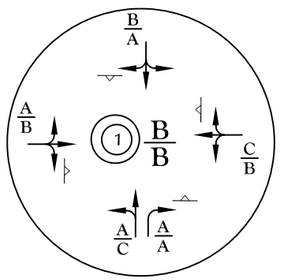
LEGEND: $\frac{XX}{XX}$ = $\frac{\text{AM Peak-Hour Traffic (veh/hr)}}{\text{PM Peak-Hour Traffic (veh/hr)}}$

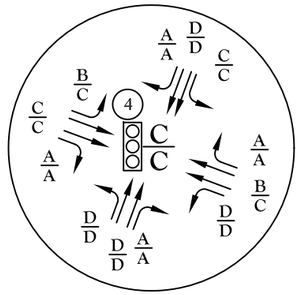
TRANSPORTATION CONSULTANTS, INC.

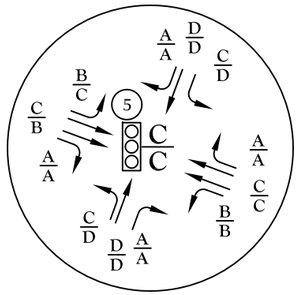
Figure 7b

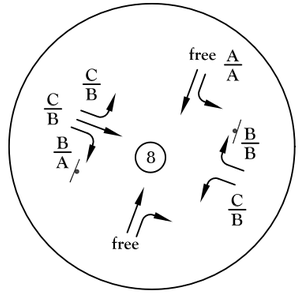
2045 Background Traffic

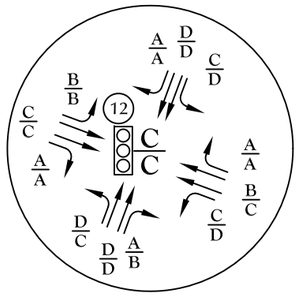
Villages at Sterling Ranch (LSC# S224580)

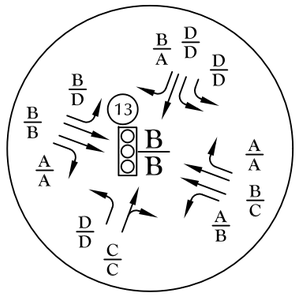


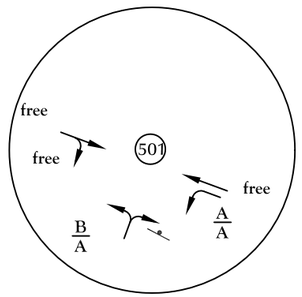


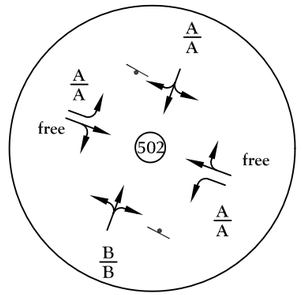


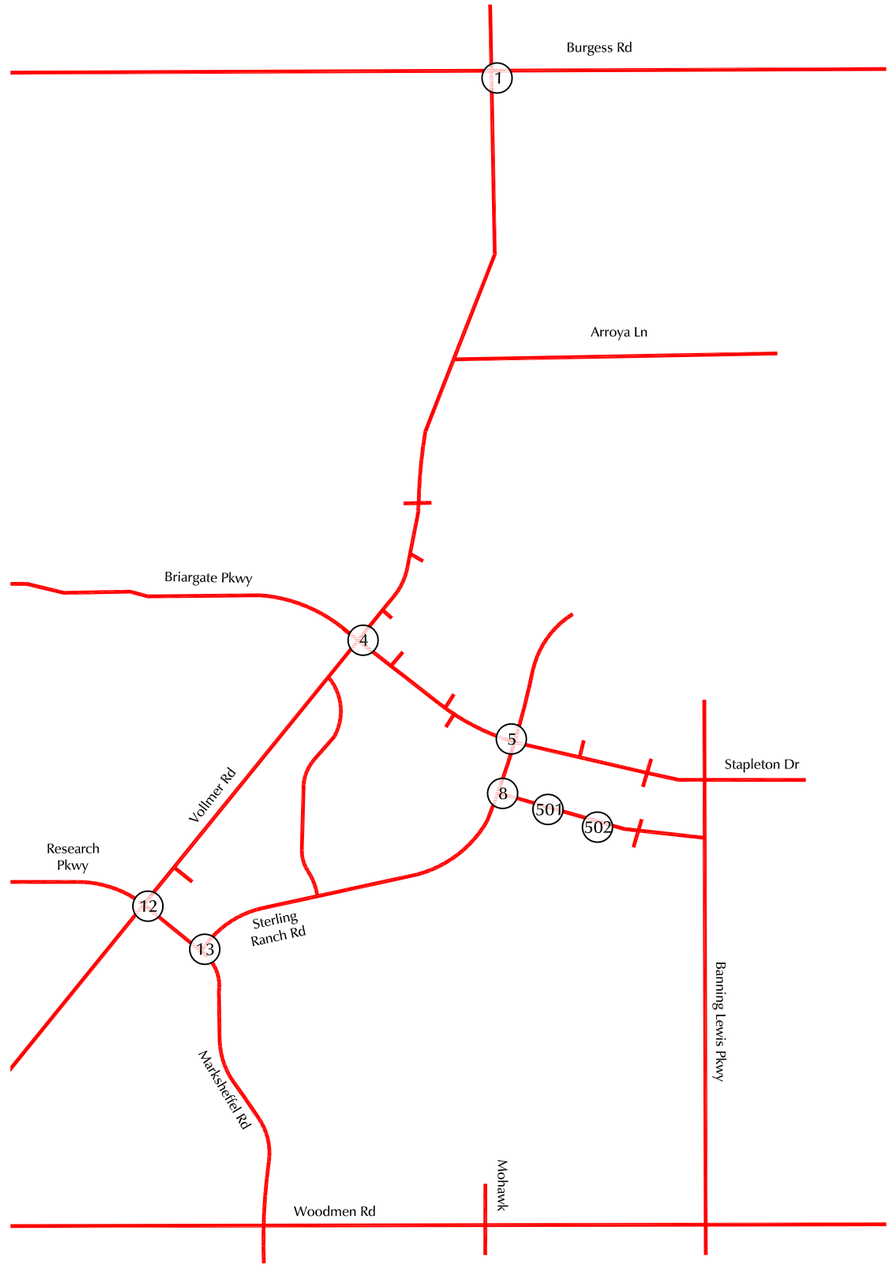












LEGEND:

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

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

= Stop Sign

= Yield Sign

= Traffic Signal

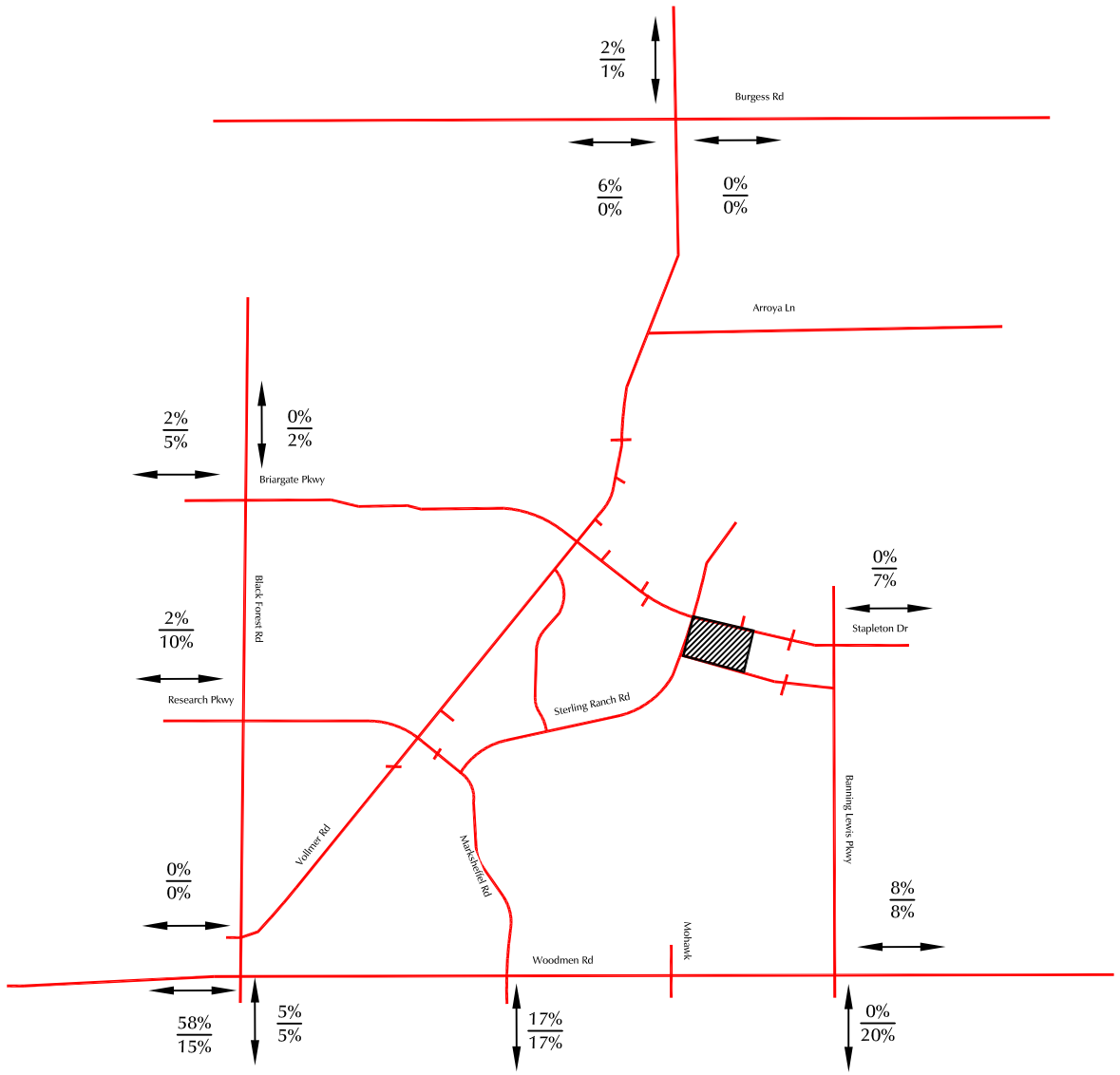
= Roundabout

LSC TRANSPORTATION CONSULTANTS, INC.

Figure 7c

2045 Background Lane Geometry, Traffic Control, and Level of Service

Villages at Sterling Ranch (LSC# S224580)



N

Not to scale

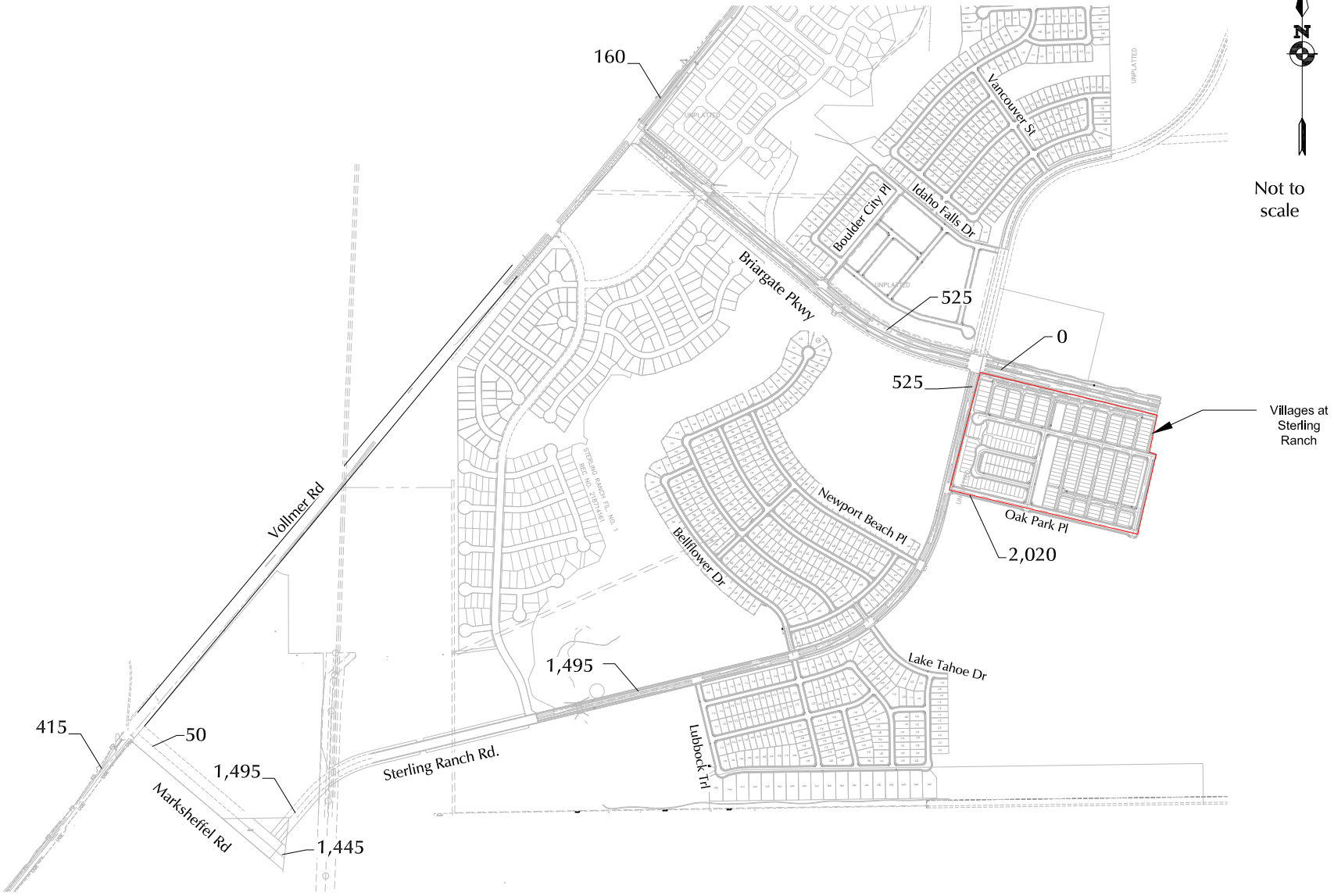
LEGEND: $\frac{XX\%}{XX\%}$ = $\frac{\text{Percent of Short-Term Trips}}{\text{Percent of Buildout Long-Term Trips}}$

TRANSPORTATION CONSULTANTS, INC.

Figure 8

Estimated Directional Distribution of Site-Generated Trips

Villages at Sterling Ranch (LSC# S224580)



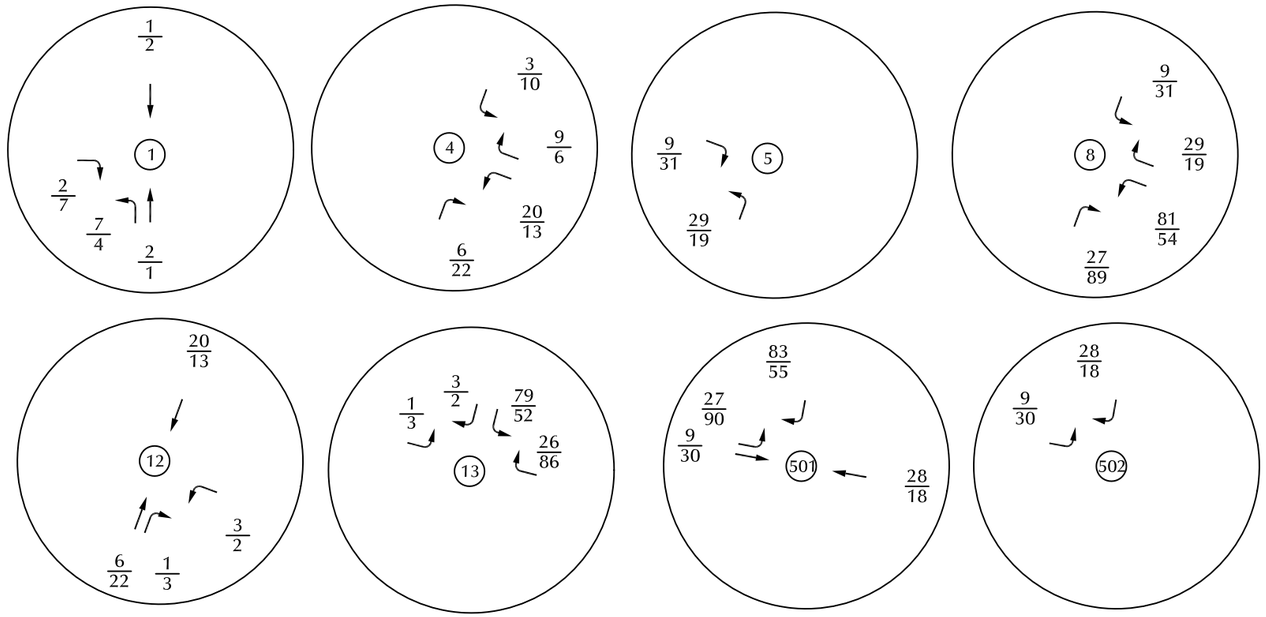
LEGEND: *XXX* = Average Weekday Traffic (vehicles per day)(AWT)

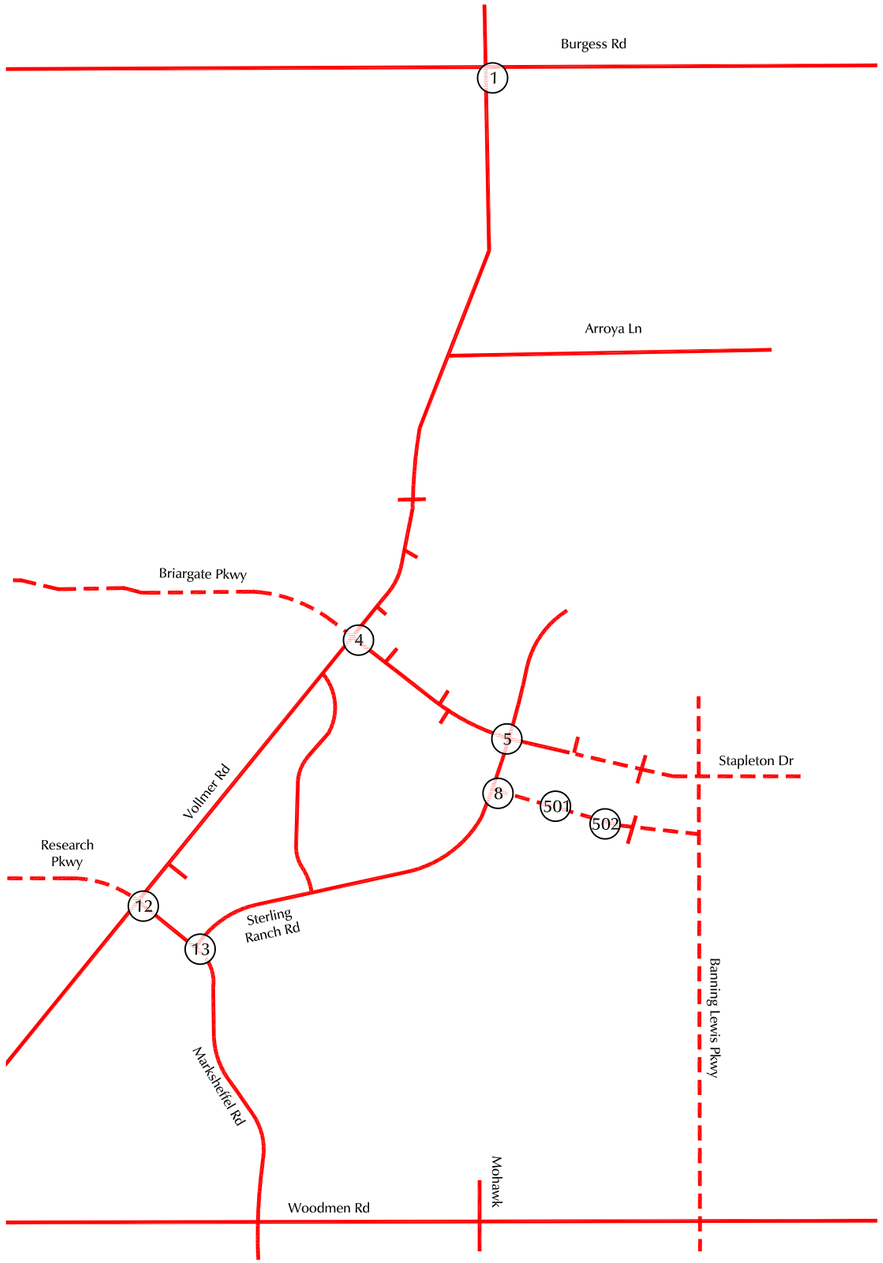
Figure 9a

Short-Term Site Generated Average Weekday Traffic

Villages at Sterling Ranch (LSC# S224580)

LSC TRANSPORTATION CONSULTANTS, INC.





LEGEND: $\frac{XX}{XX} = \frac{\text{AM Peak-Hour Traffic (veh/hr)}}{\text{PM Peak-Hour Traffic (veh/hr)}}$

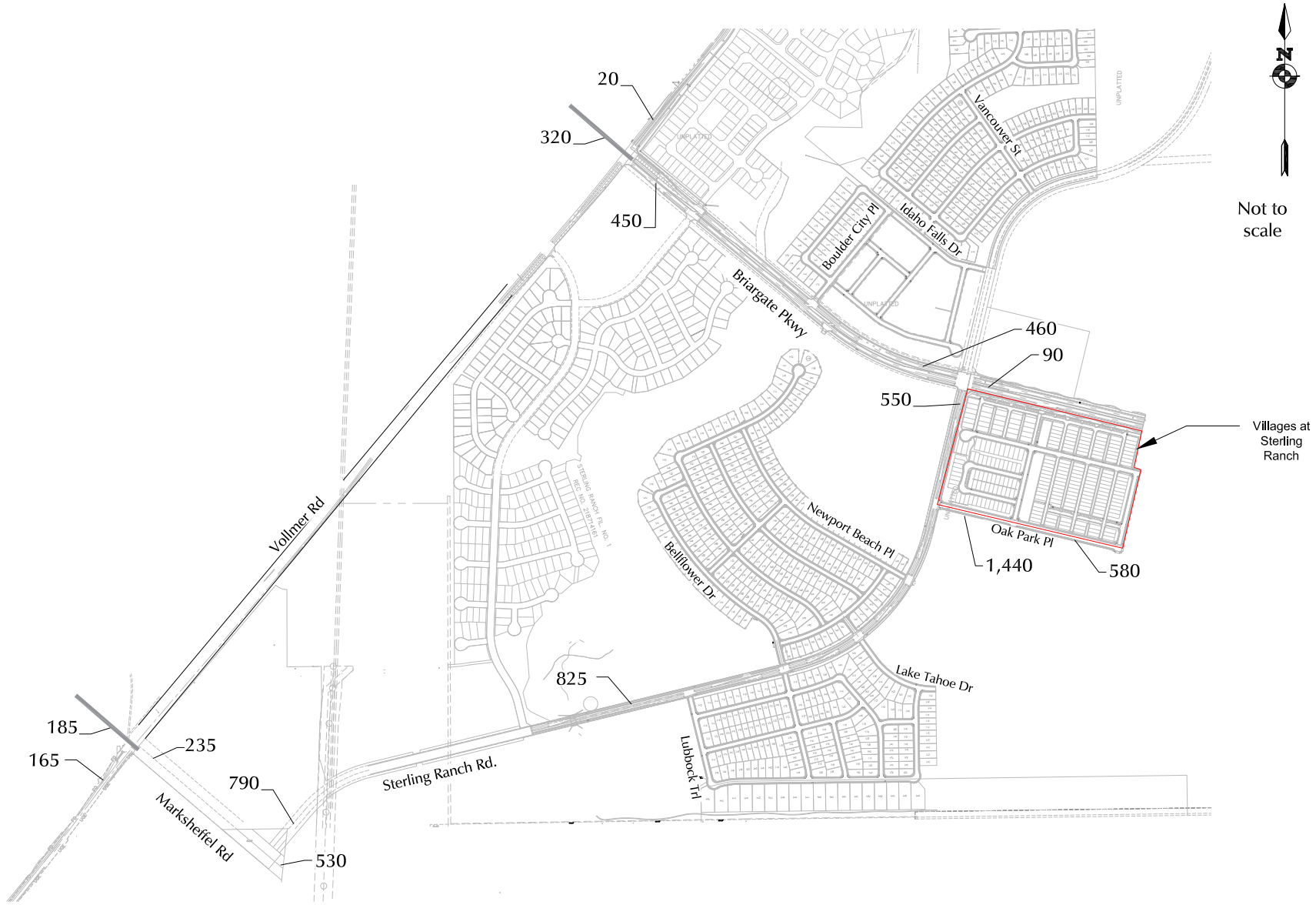
Existing Roadway
Future Roadway

TRANSPORTATION CONSULTANTS, INC.

Figure 9b

Short-Term Site-Generated Traffic

Villages at Sterling Ranch (LSC# S224580)



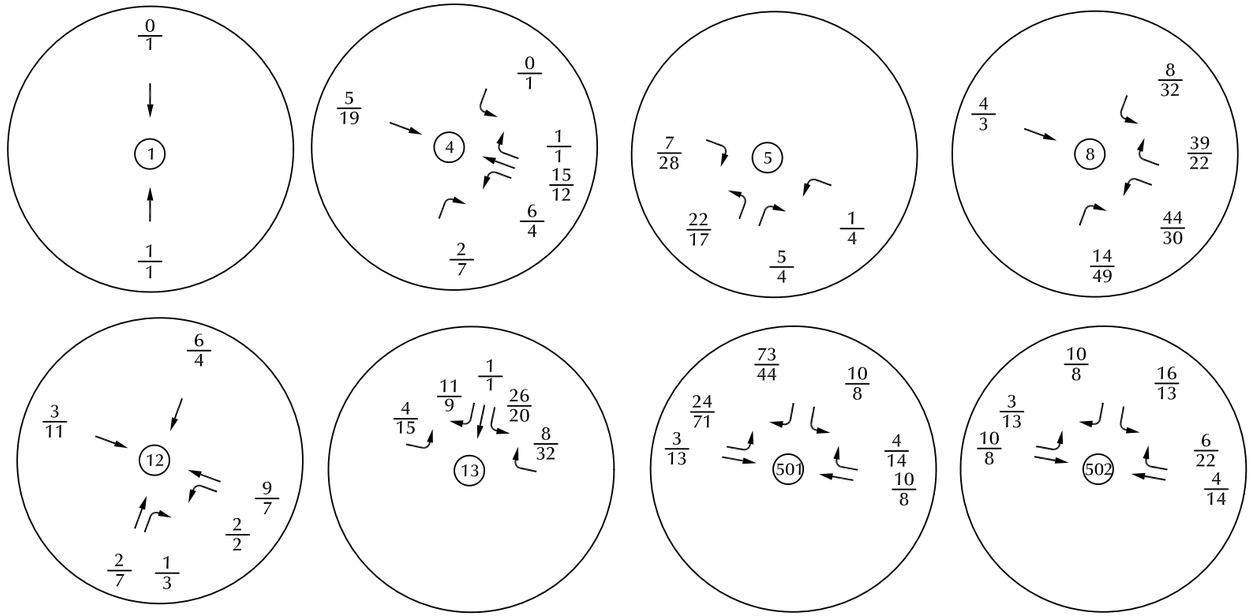
LEGEND: *XXX* = Average Weekday Traffic (vehicles per day)(AWT)

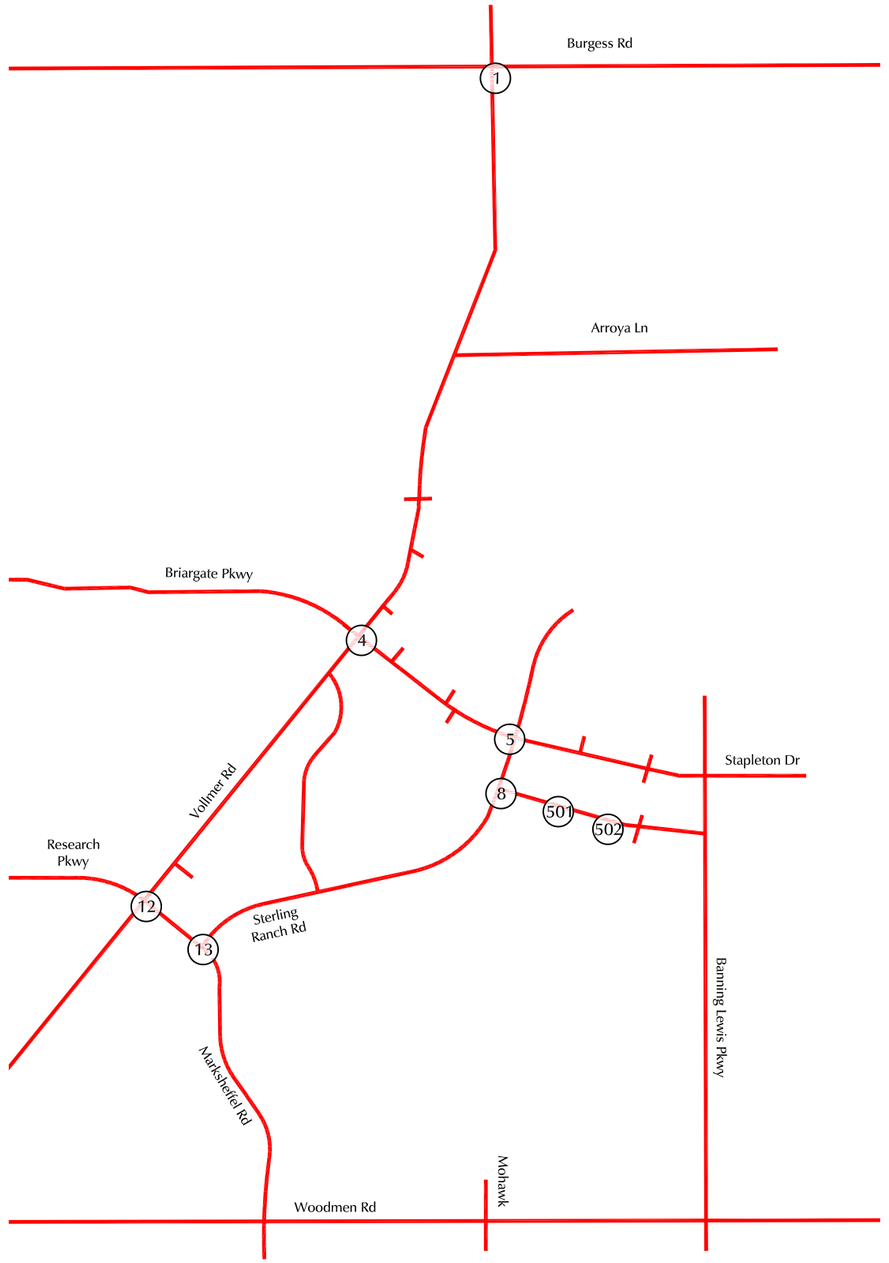
TRANSPORTATION CONSULTANTS, INC.

Figure 10a

Long-Term Site-Generated Average Weekday Traffic

Villages at Sterling Ranch (LSC# S224580)





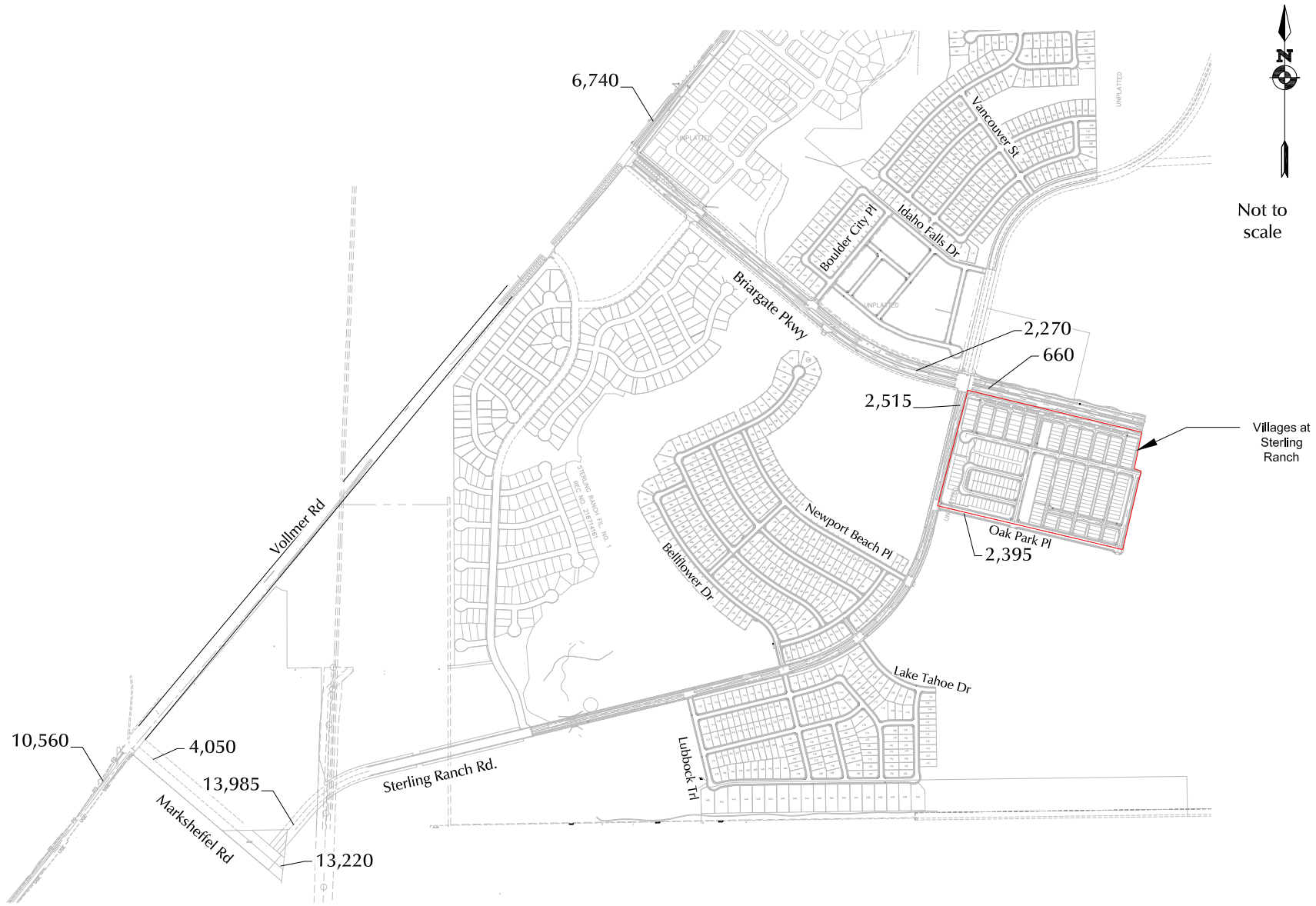
LEGEND: $\frac{XX}{XX} = \frac{\text{AM Peak-Hour Traffic (veh/hr)}}{\text{PM Peak-Hour Traffic (veh/hr)}}$

TRANSPORTATION CONSULTANTS, INC.

Figure 10b

Long-Term Site-Generated Traffic

Villages at Sterling Ranch (LSC# S224580)



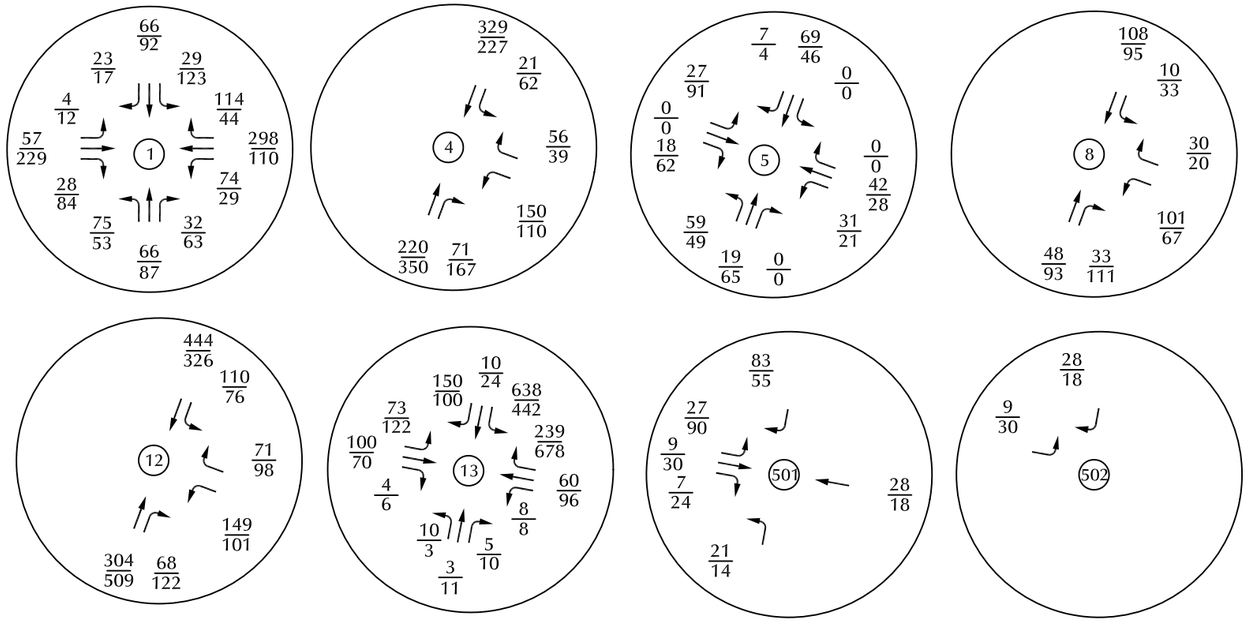
LEGEND: *XXX* = Average Weekday Traffic (vehicles per day)(AWT)

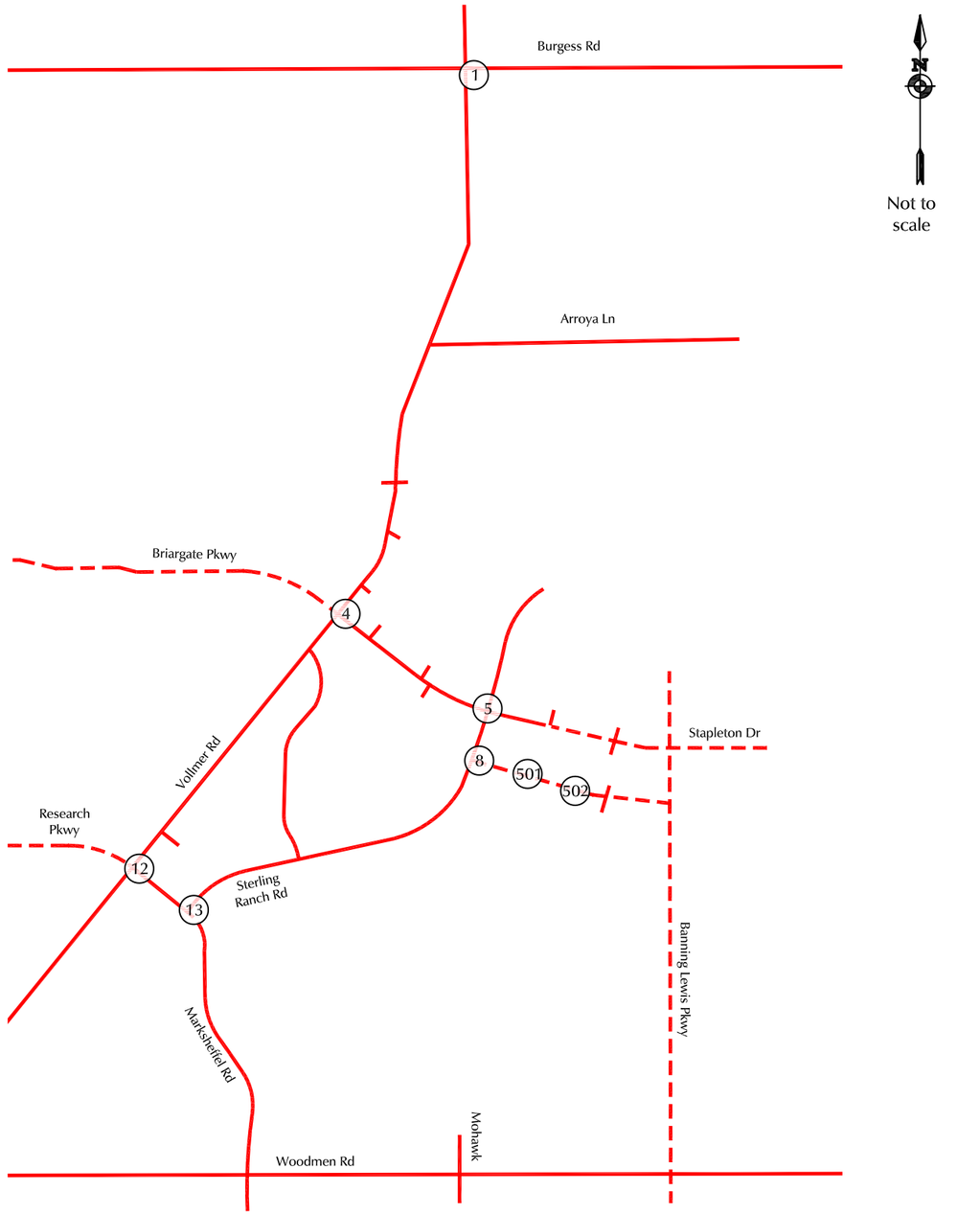
Figure 11a

Short-Term Total Average Weekday Traffic

Villages at Sterling Ranch (LSC# S224580)

TRANSPORTATION CONSULTANTS, INC.





N

Not to scale

LEGEND: $\frac{XX}{XX} = \frac{\text{AM Peak-Hour Traffic (veh/hr)}}{\text{PM Peak-Hour Traffic (veh/hr)}}$

Existing Roadway

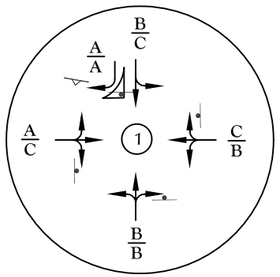
Future Roadway

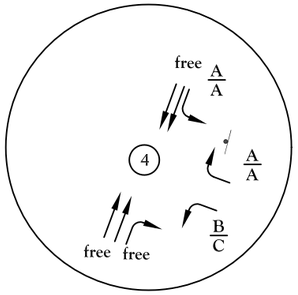
LSC TRANSPORTATION CONSULTANTS, INC.

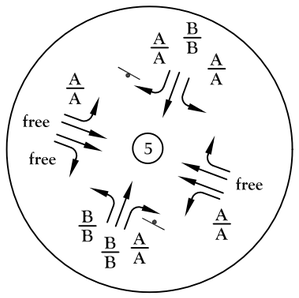
Figure 11b

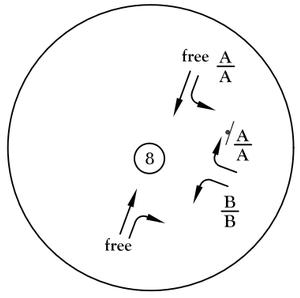
Short-Term Total Traffic

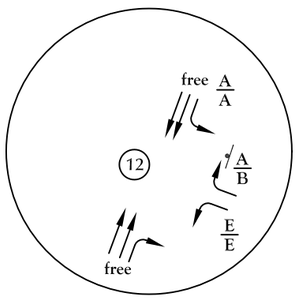
Villages at Sterling Ranch (LSC# S224580)



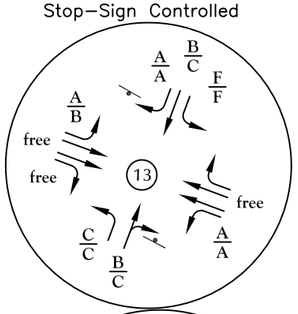


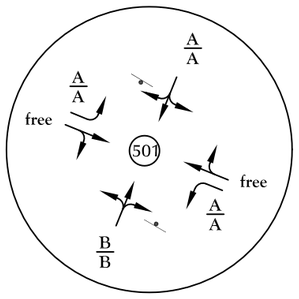


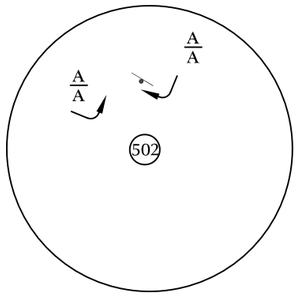


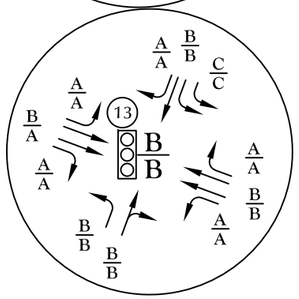


Stop–Sign Controlled

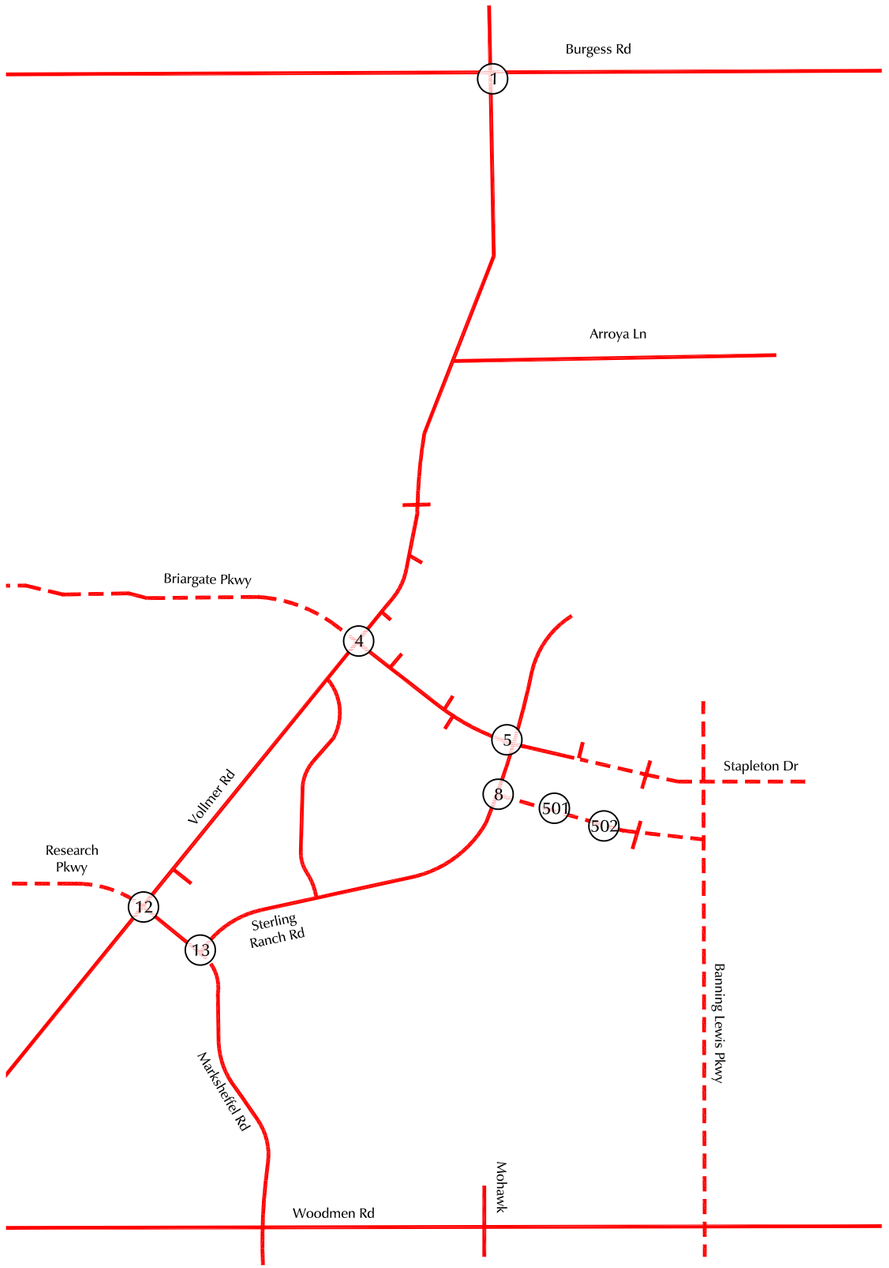








Signal Controlled



Not to scale

LEGEND:

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

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

= Yield Sign

= Stop Sign

= Traffic Signal

Existing Roadway

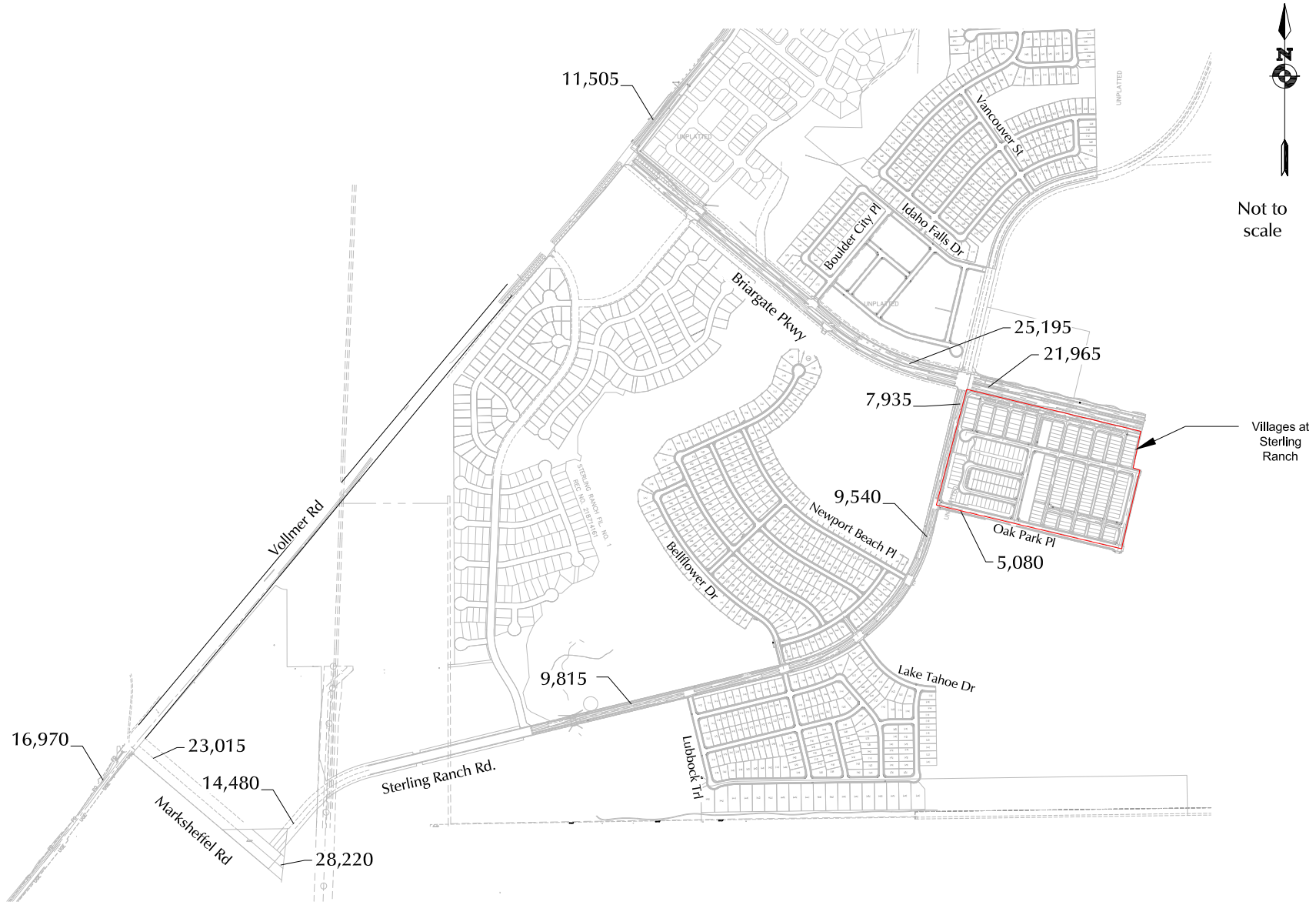
Future Roadway

TRANSPORTATION CONSULTANTS, INC.

Figure 11c

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

Villages at Sterling Ranch (LSC# S224580)



LEGEND:

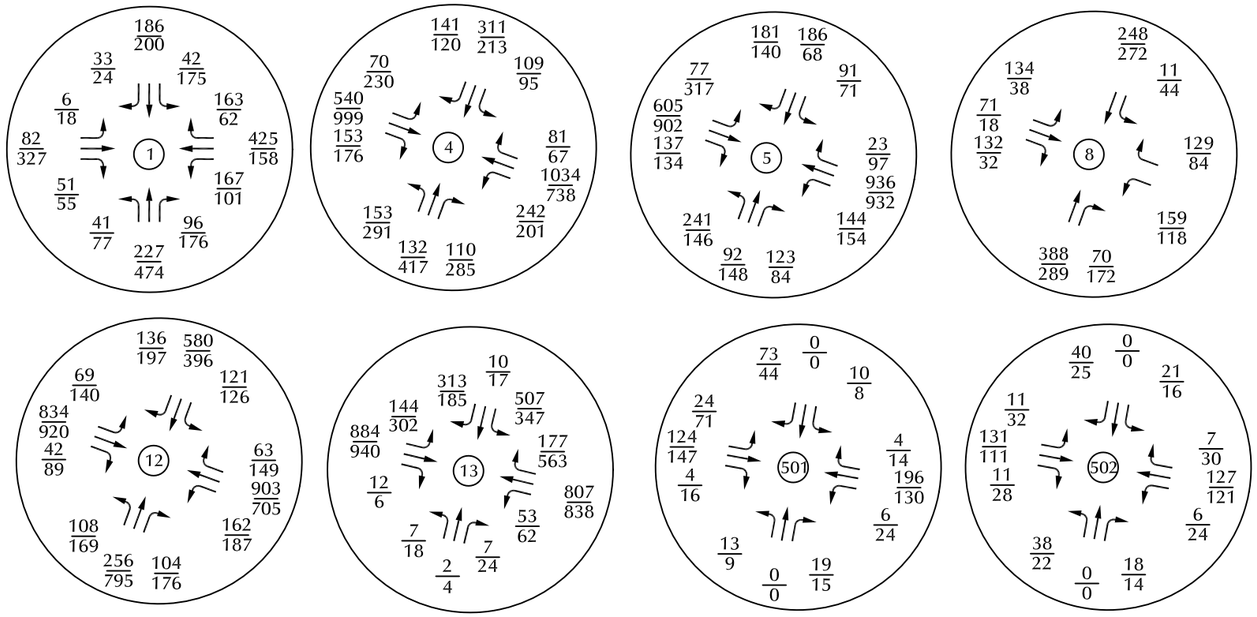
XXX = Average Weekday Traffic (vehicles per day)(AWT)

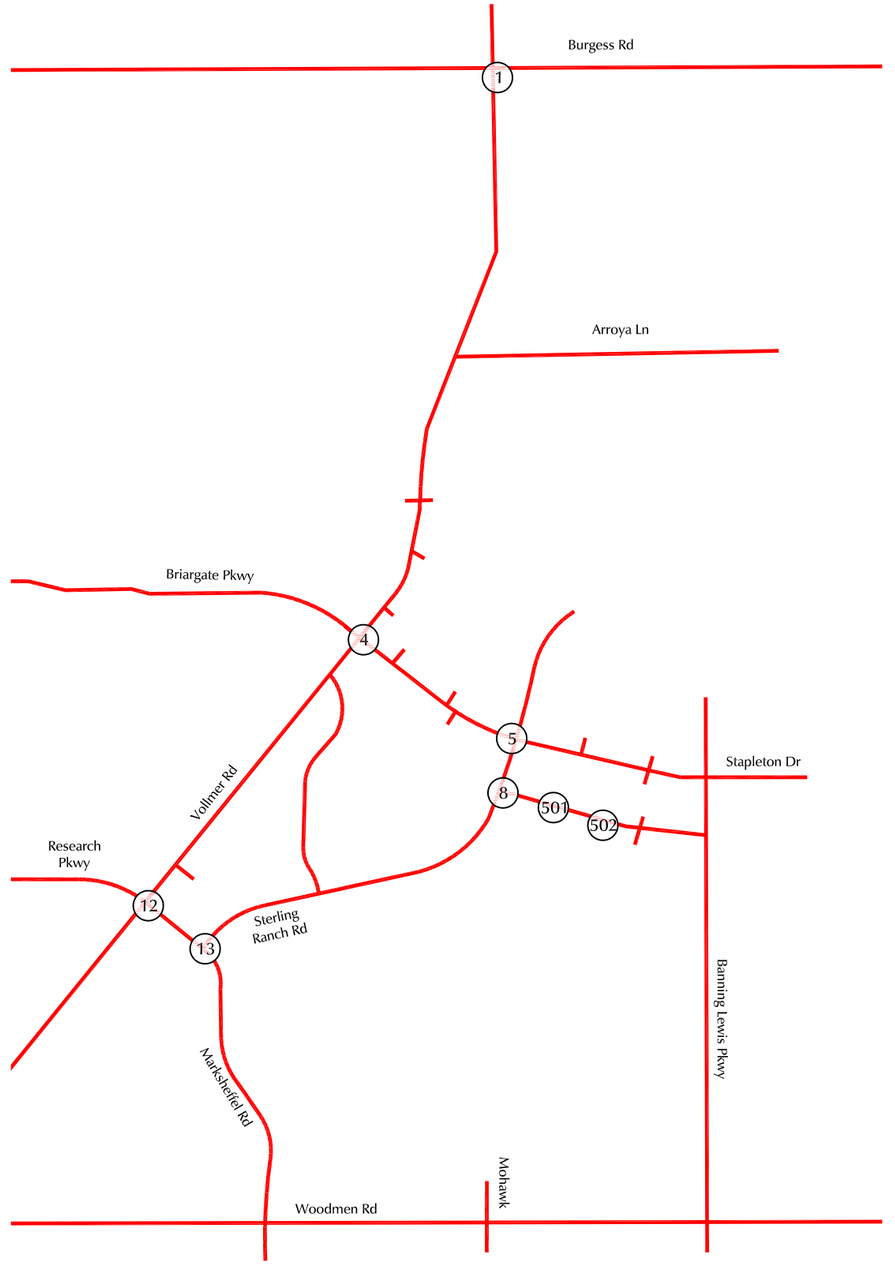
TRANSPORTATION CONSULTANTS, INC.

Figure 12a

2045 Total Average Weekday Traffic

Villages at Sterling Ranch (LSC# S224580)





Not to scale

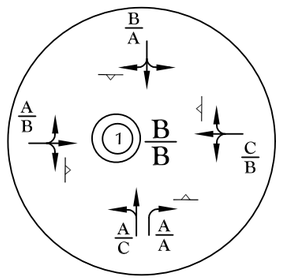
LEGEND: $\frac{XX}{XX} = \frac{\text{AM Peak-Hour Traffic (veh/hr)}}{\text{PM Peak-Hour Traffic (veh/hr)}}$

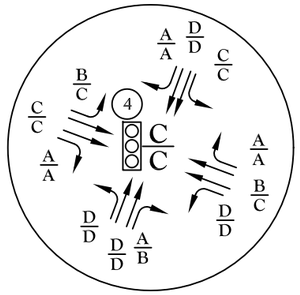
TRANSPORTATION CONSULTANTS, INC.

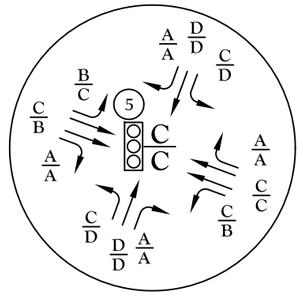
Figure 12b

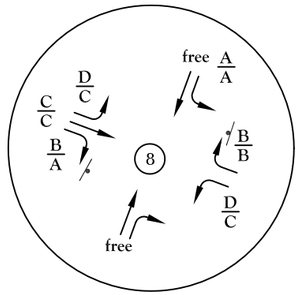
2045 Total Traffic

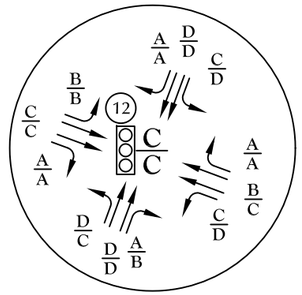
Villages at Sterling Ranch (LSC# S224580)

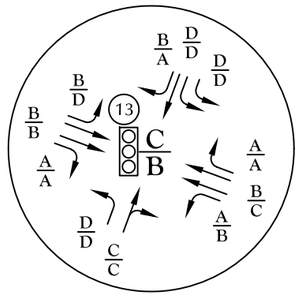


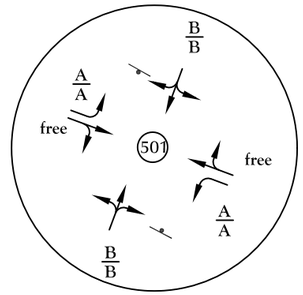


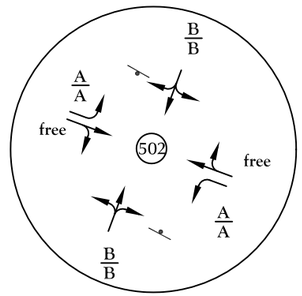


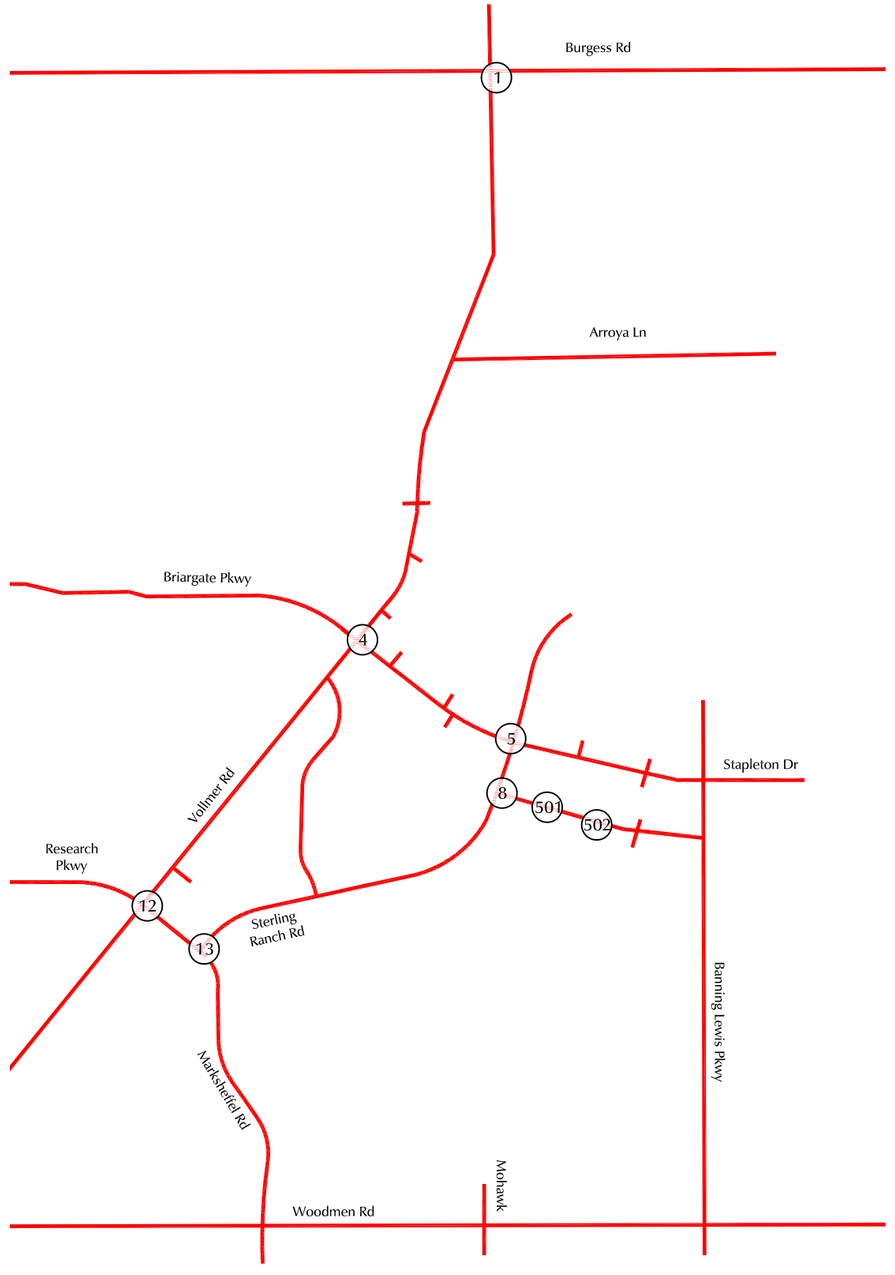












LEGEND:

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

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

= Stop Sign

= Yield Sign

= Traffic Signal

= Roundabout

LSC TRANSPORTATION CONSULTANTS, INC.

Figure 12c

2045 Total Lane Geometry, Traffic Control, and Level of Service

Villages at Sterling Ranch (LSC# S224580)

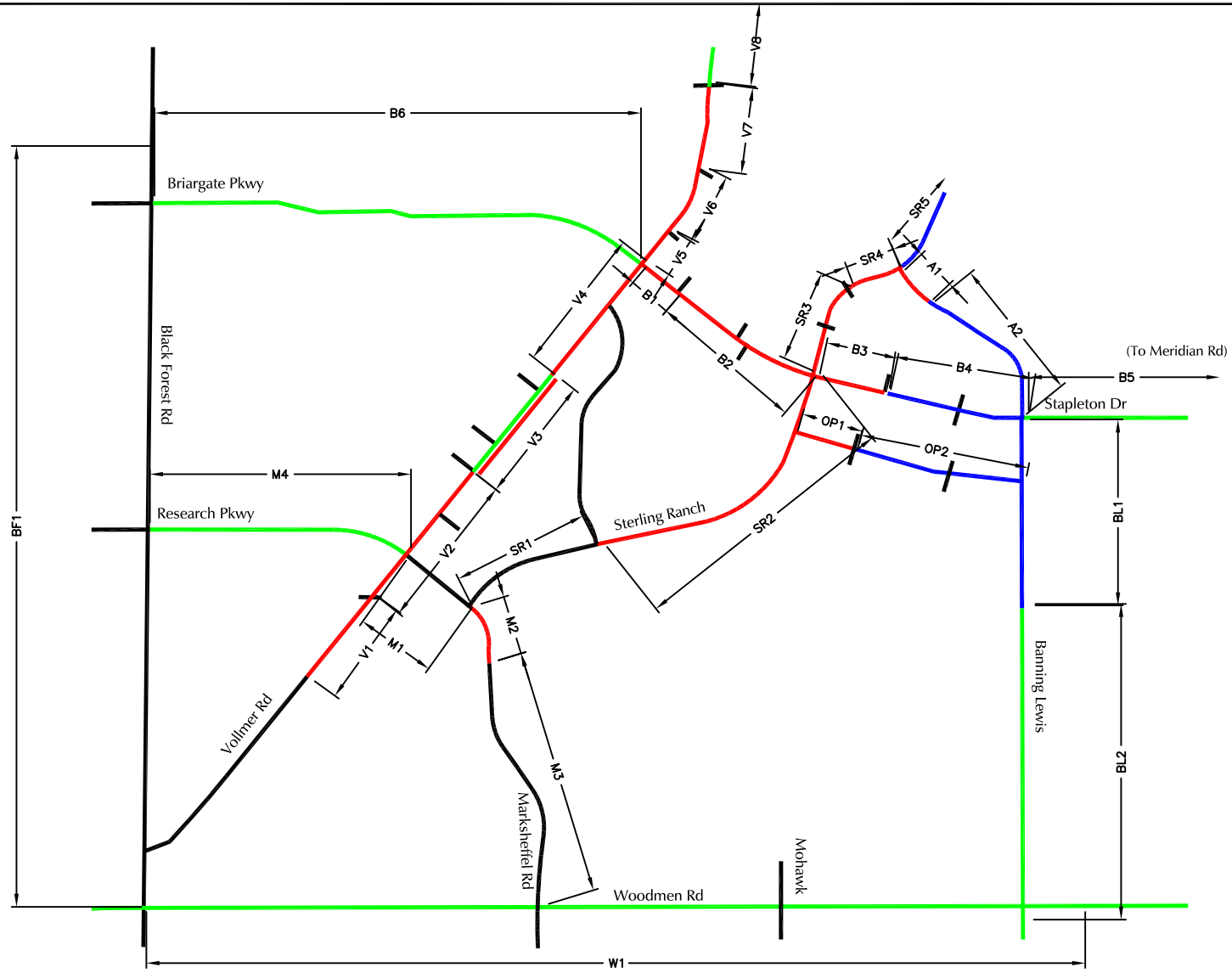
Approximate Scale: NTS

Figure 13

Roadway Classification

Villages at Sterling Ranch (LSC# S224580)

LSC TRANSPORTATION CONSULTANTS, INC.



V1, B4, SR3, etc - Segment Identifier*

- Short-Term
- Intermediate-Term
- Long-Term

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

TRANSPORTATION CONSULTANTS, INC.

Figure 14

Roadway Improvement Segments*

Villages at Sterling Ranch (LSC# S224580)

Traffic Counts

TRANSPORTATION
CONSULTANTS, INC.

LSC Transportation Consultants, Inc.

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

File Name : Vollmer Rd - Burgess Rd AM 3-6-24
Site Code : S224580
Start Date : 3/6/2024
Page No : 1

Groups Printed- Unshifted

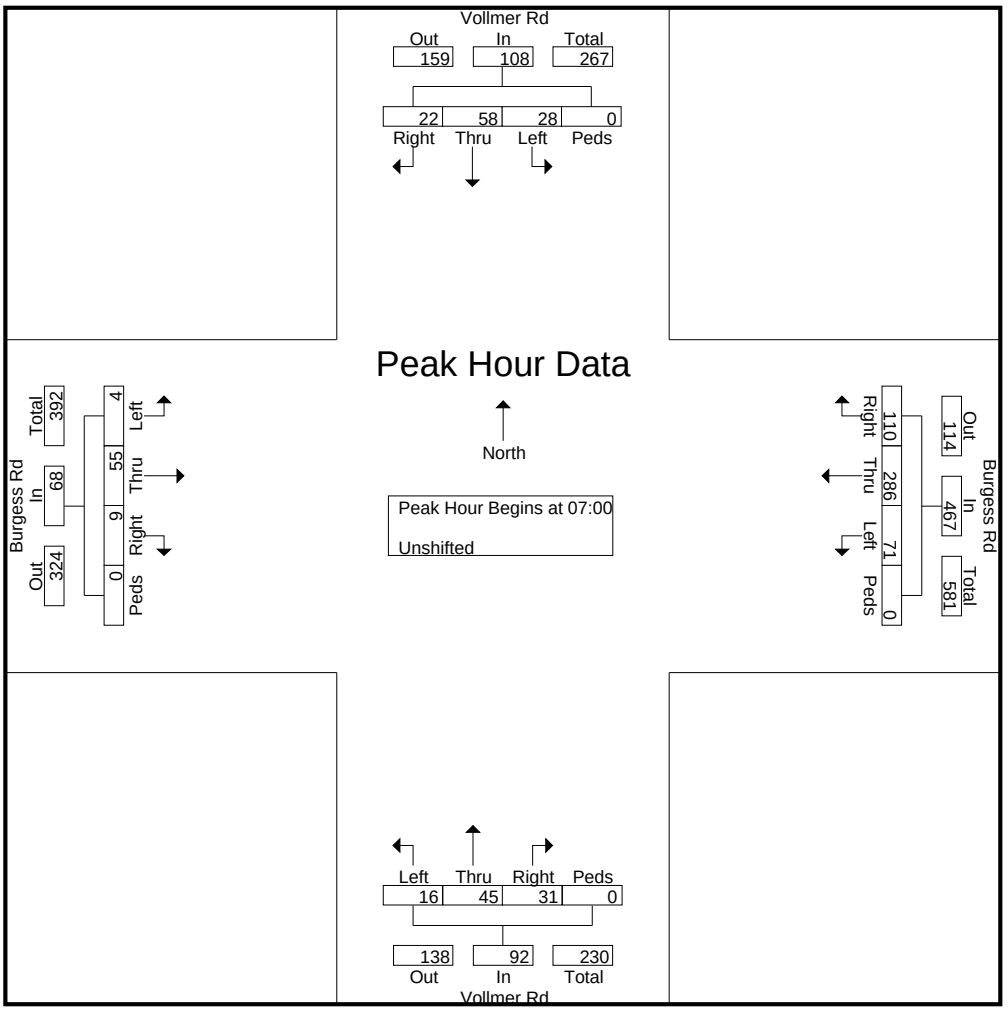
	Vollmer Rd Southbound					Burgess Rd Westbound					Vollmer Rd Northbound					Burgess Rd Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
06:30	1	7	0	0	8	10	16	3	0	29	1	2	0	0	3	0	0	0	0	0	40
06:35	0	5	3	0	8	4	16	5	0	25	0	1	0	0	1	3	3	0	0	6	40
06:40	1	5	0	0	6	4	12	1	0	17	1	5	0	0	6	0	6	0	0	6	35
06:45	0	0	3	0	3	5	19	4	0	28	3	2	0	0	5	1	4	1	0	6	42
06:50	1	2	1	0	4	9	13	5	0	27	0	2	0	0	2	0	2	0	0	2	35
06:55	4	2	2	0	8	4	10	8	0	22	2	0	2	0	4	0	4	0	0	4	38
Total	7	21	9	0	37	36	86	26	0	148	7	12	2	0	21	4	19	1	0	24	230
07:00	0	0	1	0	1	11	30	4	0	45	2	3	3	0	8	1	4	0	0	5	59
07:05	2	1	0	0	3	7	25	4	0	36	2	8	2	0	12	0	4	0	0	4	55
07:10	1	15	2	0	18	9	27	5	0	41	2	3	1	0	6	1	3	0	0	4	69
07:15	2	1	1	0	4	5	27	7	0	39	1	5	2	0	8	0	2	0	0	2	53
07:20	1	5	3	0	9	14	17	2	0	33	1	7	1	0	9	1	5	1	0	7	58
07:25	2	5	6	0	13	12	19	5	0	36	2	2	0	0	4	0	3	0	0	3	56
07:30	2	1	1	0	4	10	28	5	0	43	2	2	1	0	5	0	6	0	0	6	58
07:35	2	12	0	0	14	7	22	9	0	38	4	4	0	0	8	0	6	1	0	7	67
07:40	4	5	3	0	12	6	28	9	0	43	5	2	1	0	8	2	5	1	0	8	71
07:45	1	4	3	0	8	14	28	8	0	50	1	1	3	0	5	1	7	0	0	8	71
07:50	3	8	5	0	16	8	12	9	0	29	2	3	1	0	6	1	5	1	0	7	58
07:55	2	1	3	0	6	7	23	4	0	34	7	5	1	0	13	2	5	0	0	7	60
Total	22	58	28	0	108	110	286	71	0	467	31	45	16	0	92	9	55	4	0	68	735
08:00	2	1	0	0	3	3	16	1	0	20	4	4	1	0	9	3	11	2	0	16	48
08:05	1	7	1	0	9	7	17	0	0	24	5	6	0	0	11	1	1	2	0	4	48
08:10	1	6	3	0	10	6	18	3	0	27	2	3	3	0	8	0	4	0	0	4	49
08:15	3	3	0	0	6	8	10	2	0	20	2	3	1	0	6	0	1	1	0	2	34
08:20	3	9	4	0	16	5	19	4	0	28	3	7	1	0	11	1	3	3	0	7	62
08:25	4	7	5	0	16	4	8	2	0	14	3	6	1	0	10	1	4	3	0	8	48
Grand Total	43	112	50	0	205	179	460	109	0	748	57	86	25	0	168	19	98	16	0	133	1254
Apprch %	21	54.6	24.4	0		23.9	61.5	14.6	0		33.9	51.2	14.9	0		14.3	73.7	12	0		
Total %	3.4	8.9	4	0	16.3	14.3	36.7	8.7	0	59.6	4.5	6.9	2	0	13.4	1.5	7.8	1.3	0	10.6	

LSC Transportation Consultants, Inc.

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

File Name : Vollmer Rd - Burgess Rd AM 3-6-24
Site Code : S224580
Start Date : 3/6/2024

	Vollmer Rd Southbound					Burgess Rd Westbound					Vollmer Rd Northbound					Burgess 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 08:25 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00																					
07:00	0	0	1	0	1	11	**30**	4	0	45	2	3	**3**	0	8	1	4	0	0	5	59
07:05	2	1	0	0	3	7	25	4	0	36	2	**8**	2	0	12	0	4	0	0	4	55
07:10	1	**15**	2	0	**18**	9	27	5	0	41	2	3	1	0	6	1	3	0	0	4	69
07:15	2	1	1	0	4	5	27	7	0	39	1	5	2	0	8	0	2	0	0	2	53
07:20	1	5	3	0	9	**14**	17	2	0	33	1	7	1	0	9	1	5	**1**	0	7	58
07:25	2	5	**6**	0	13	12	19	5	0	36	2	2	0	0	4	0	3	0	0	3	56
07:30	2	1	1	0	4	10	28	5	0	43	2	2	1	0	5	0	6	0	0	6	58
07:35	2	12	0	0	14	7	22	**9**	0	38	4	4	0	0	8	0	6	1	0	7	67
07:40	**4**	5	3	0	12	6	28	9	0	43	5	2	1	0	8	**2**	5	1	0	**8**	**71**
07:45	1	4	3	0	8	14	28	8	0	**50**	1	1	3	0	5	1	**7**	0	0	8	71
07:50	3	8	5	0	16	8	12	9	0	29	2	3	1	0	6	1	5	1	0	7	58
07:55	2	1	3	0	6	7	23	4	0	34	**7**	5	1	0	**13**	2	5	0	0	7	60
Total Volume	22	58	28	0	108	110	286	71	0	467	31	45	16	0	92	9	55	4	0	68	735
% App. Total	20.4	53.7	25.9	0		23.6	61.2	15.2	0		33.7	48.9	17.4	0		13.2	80.9	5.9	0		
PHF	.458	.322	.389	.000	.500	.655	.794	.657	.000	.778	.369	.469	.444	.000	.590	.375	.655	.333	.000	.708	.863



LSC Transportation Consultants, Inc.

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

File Name : Vollmer Rd - Burgess Rd PM 3-5-24
Site Code : S224580
Start Date : 3/5/2024
Page No : 1

Groups Printed- Unshifted

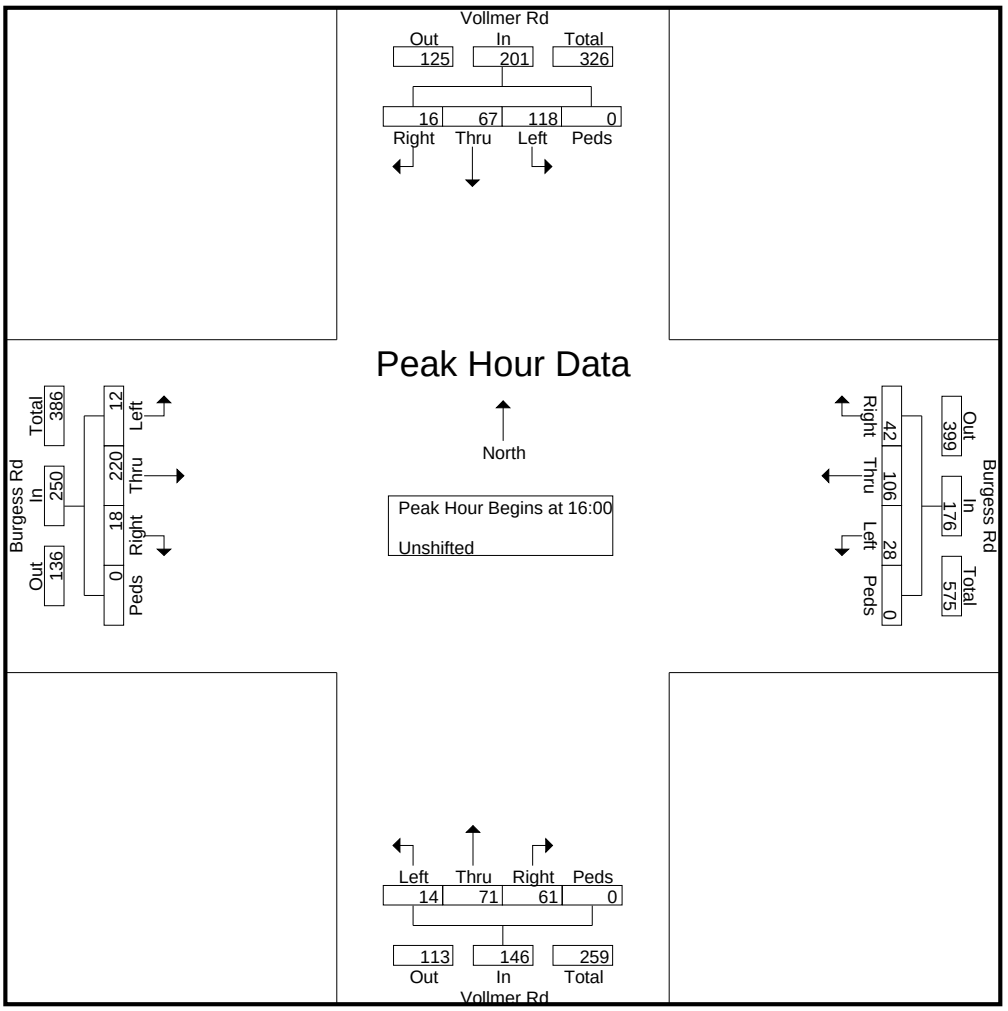
	Vollmer Rd Southbound					Burgess Rd Westbound					Vollmer Rd Northbound					Burgess Rd Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
16:00	1	8	13	0	22	4	8	4	0	16	4	1	2	0	7	5	15	1	0	21	66
16:05	3	4	6	0	13	4	9	2	0	15	9	5	1	0	15	4	19	1	0	24	67
16:10	1	4	9	0	14	7	7	3	0	17	6	3	2	0	11	1	12	2	0	15	57
16:15	0	6	13	0	19	4	5	1	0	10	3	7	3	0	13	1	18	4	0	23	65
16:20	3	8	8	0	19	2	13	5	0	20	4	8	1	0	13	0	21	1	0	22	74
16:25	1	9	17	0	27	3	9	1	0	13	5	7	1	0	13	2	17	0	0	19	72
16:30	0	7	6	0	13	5	8	0	0	13	5	3	1	0	9	0	19	1	0	20	55
16:35	4	4	11	0	19	4	7	3	0	14	2	6	2	0	10	0	19	1	0	20	63
16:40	1	4	7	0	12	2	11	1	0	14	5	6	0	0	11	1	25	0	0	26	63
16:45	0	6	5	0	11	1	9	2	0	12	8	9	0	0	17	2	19	0	0	21	61
16:50	0	5	14	0	19	4	12	6	0	22	6	8	0	0	14	1	22	1	0	24	79
16:55	2	2	9	0	13	2	8	0	0	10	4	8	1	0	13	1	14	0	0	15	51
Total	16	67	118	0	201	42	106	28	0	176	61	71	14	0	146	18	220	12	0	250	773
17:00	1	2	4	0	7	3	7	2	0	12	1	4	2	0	7	1	17	1	0	19	45
17:05	0	8	11	0	19	4	4	0	0	8	2	5	0	0	7	2	16	1	0	19	53
17:10	3	2	5	0	10	2	13	6	0	21	4	2	0	0	6	0	11	0	0	11	48
17:15	1	4	8	0	13	2	9	3	0	14	10	8	0	0	18	4	14	0	0	18	63
17:20	0	4	8	0	12	7	13	3	0	23	4	2	1	0	7	3	36	1	0	40	82
17:25	0	3	6	0	9	1	7	3	0	11	2	4	1	0	7	2	15	3	0	20	47
17:30	0	2	8	0	10	5	7	1	0	13	8	4	0	0	12	1	15	2	0	18	53
17:35	3	4	13	0	20	9	9	1	0	19	6	4	2	0	12	0	21	1	0	22	73
17:40	1	4	11	0	16	4	5	1	0	10	3	5	0	0	8	0	18	1	0	19	53
17:45	1	0	8	0	9	2	3	0	0	5	4	1	0	0	5	0	13	2	0	15	34
17:50	1	3	6	0	10	2	4	1	0	7	5	2	0	0	7	2	15	1	0	18	42
17:55	2	3	4	0	9	3	3	4	0	10	5	2	1	0	8	1	15	2	0	18	45
Total	13	39	92	0	144	44	84	25	0	153	54	43	7	0	104	16	206	15	0	237	638
Grand Total	29	106	210	0	345	86	190	53	0	329	115	114	21	0	250	34	426	27	0	487	1411
Apprch %	8.4	30.7	60.9	0		26.1	57.8	16.1	0		46	45.6	8.4	0		7	87.5	5.5	0		
Total %	2.1	7.5	14.9	0	24.5	6.1	13.5	3.8	0	23.3	8.2	8.1	1.5	0	17.7	2.4	30.2	1.9	0	34.5	

LSC Transportation Consultants, Inc.

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

File Name : Vollmer Rd - Burgess Rd PM 3-5-24
Site Code : S224580
Start Date : 3/5/2024
Page No : 2

	Vollmer Rd Southbound					Burgess Rd Westbound					Vollmer Rd Northbound					Burgess 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 17:55 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:00																					
16:00	1	8	13	0	22	4	8	4	0	16	4	1	2	0	7	**5**	15	1	0	21	66
16:05	3	4	6	0	13	4	9	2	0	15	**9**	5	1	0	15	4	19	1	0	24	67
16:10	1	4	9	0	14	**7**	7	3	0	17	6	3	2	0	11	1	12	2	0	15	57
16:15	0	6	13	0	19	4	5	1	0	10	3	7	**3**	0	13	1	18	**4**	0	23	65
16:20	3	8	8	0	19	2	**13**	5	0	20	4	8	1	0	13	0	21	1	0	22	74
16:25	1	**9**	**17**	0	**27**	3	9	1	0	13	5	7	1	0	13	2	17	0	0	19	72
16:30	0	7	6	0	13	5	8	0	0	13	5	3	1	0	9	0	19	1	0	20	55
16:35	**4**	4	11	0	19	4	7	3	0	14	2	6	2	0	10	0	19	1	0	20	63
16:40	1	4	7	0	12	2	11	1	0	14	5	6	0	0	11	1	**25**	0	0	**26**	63
16:45	0	6	5	0	11	1	9	2	0	12	8	**9**	0	0	**17**	2	19	0	0	21	61
16:50	0	5	14	0	19	4	12	**6**	0	**22**	6	8	0	0	14	1	22	1	0	24	**79**
16:55	2	2	9	0	13	2	8	0	0	10	4	8	1	0	13	1	14	0	0	15	51
Total Volume	16	67	118	0	201	42	106	28	0	176	61	71	14	0	146	18	220	12	0	250	773
% App. Total	8	33.3	58.7	0		23.9	60.2	15.9	0		41.8	48.6	9.6	0		7.2	88	4.8	0		
PHF	.333	.620	.578	.000	.620	.500	.679	.389	.000	.667	.565	.657	.389	.000	.716	.300	.733	.250	.000	.801	.815



LSC Transportation Consultants, Inc.

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

File Name : Vollmer Rd - Briargate Pkwy AM
Site Code : S244580
Start Date : 3/6/2025
Page No : 1

Groups Printed- Unshifted

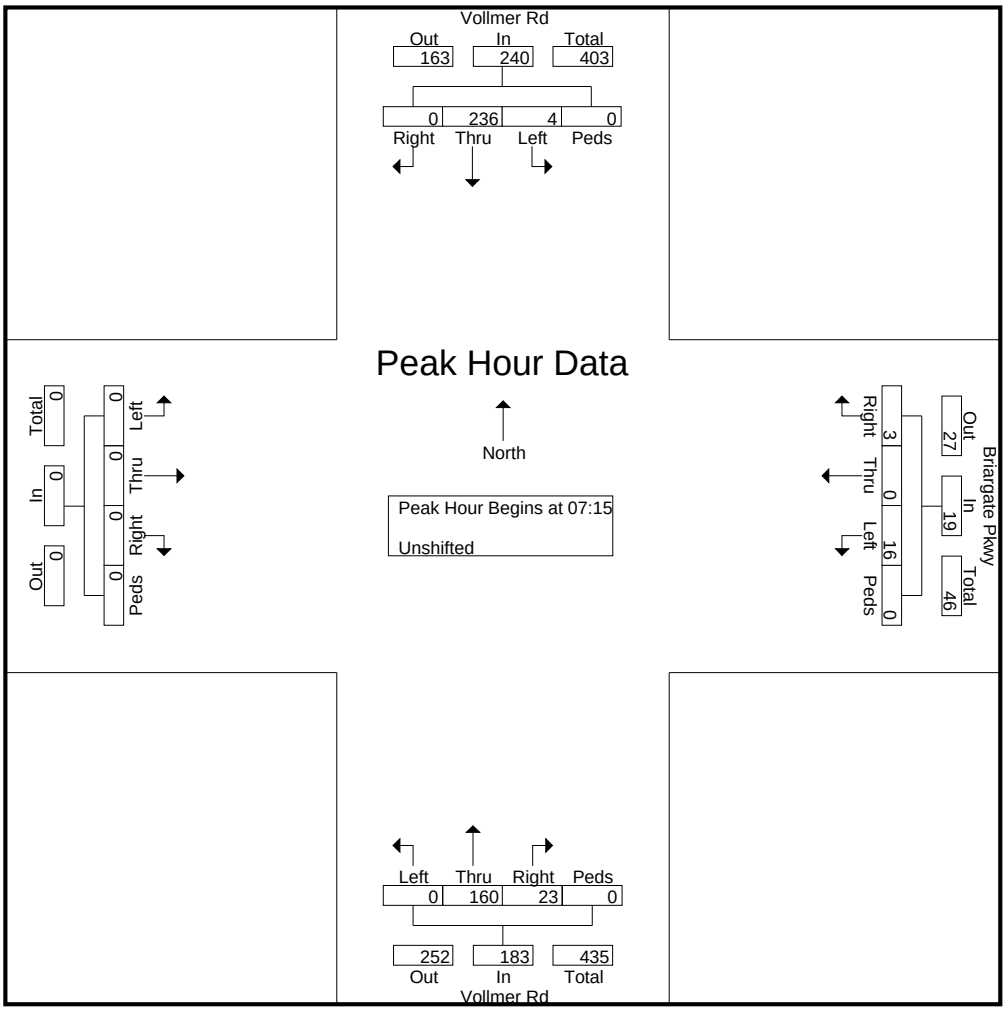
	Vollmer Rd Southbound					Briargate Pkwy Westbound					Vollmer Rd Northbound					Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
06:30	0	27	0	0	27	0	0	2	0	2	0	16	0	0	16	0	0	0	0	0	45
06:45	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	

LSC Transportation Consultants, Inc.

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

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



LSC Transportation Consultants, Inc.

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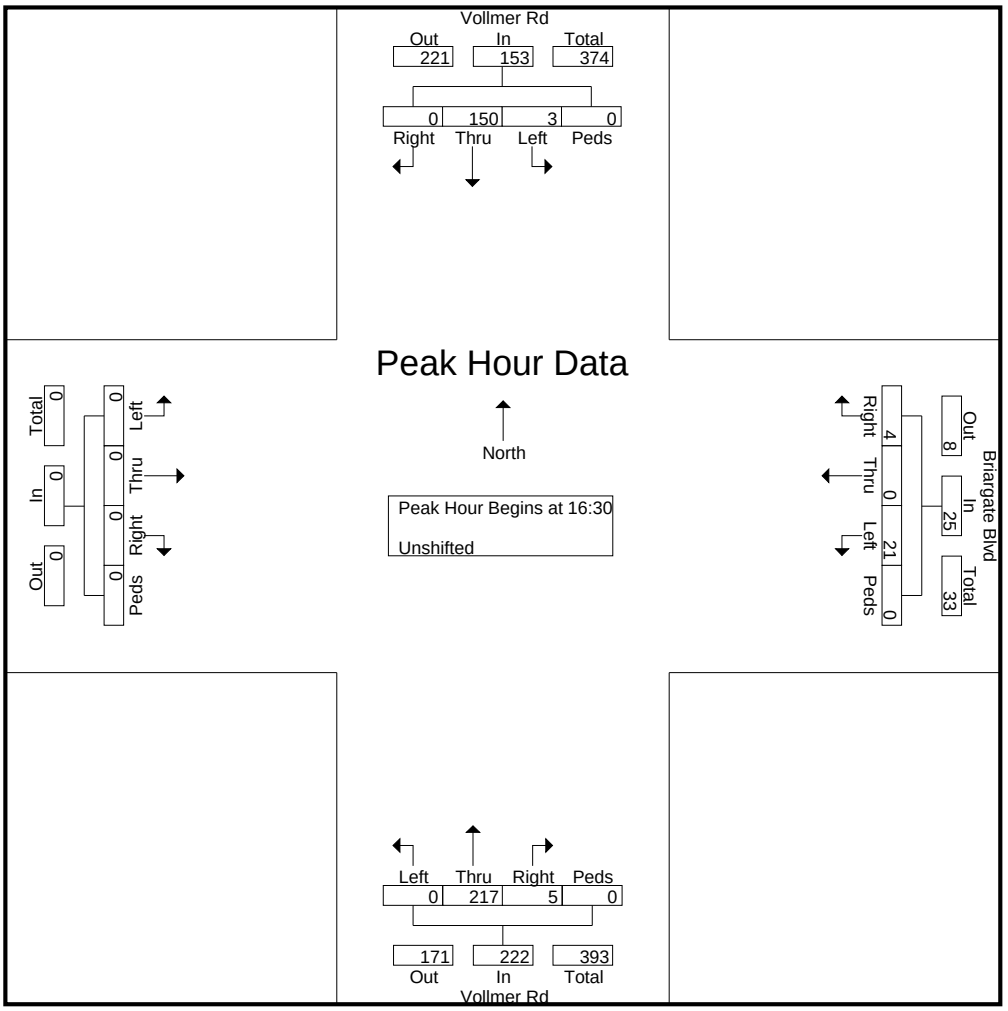
2504 E. Pikes Peak Ave, Suite 304
Colorado Springs, CO 80909
719-633-2868

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



LSC Transportation Consultants, Inc.

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

File Name : Vollmer Rd - Marksheffel Rd AM
Site Code : S244580
Start Date : 3/6/2025
Page No : 1

Groups Printed- Unshifted

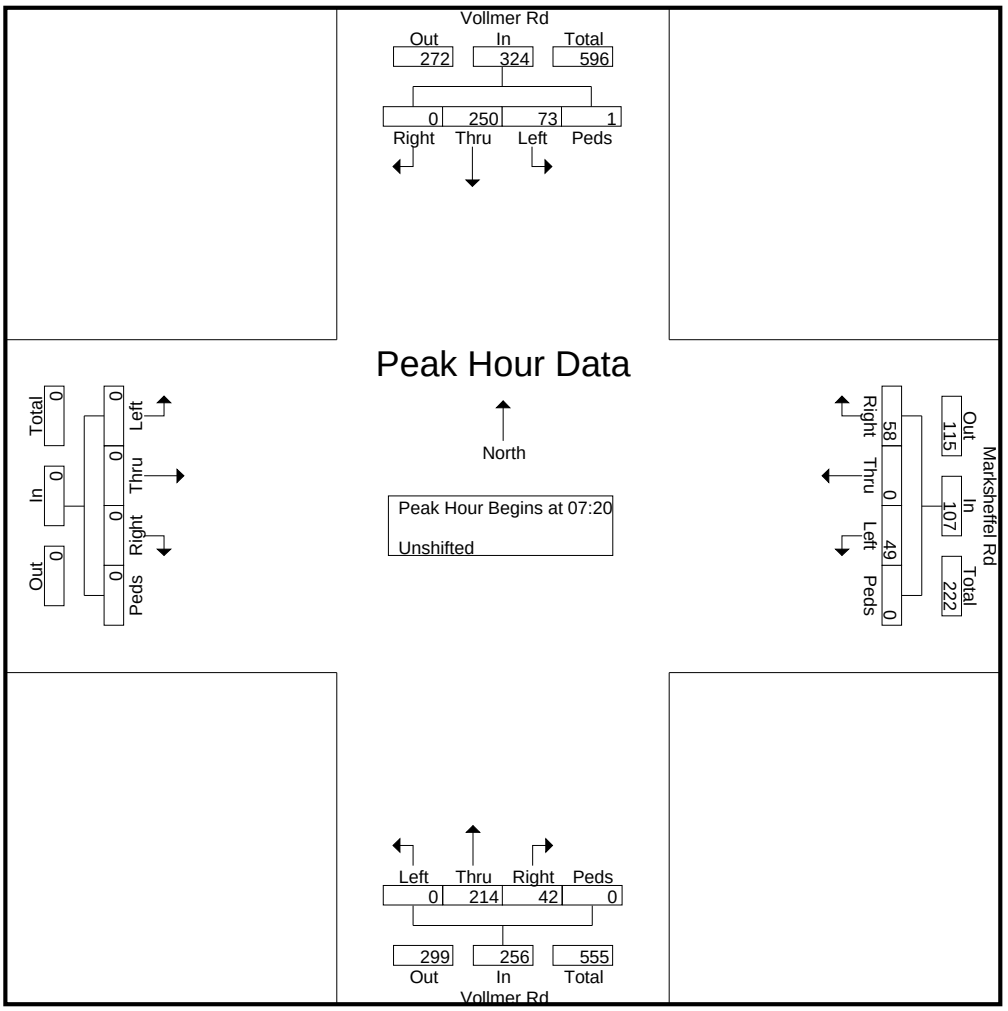
	Vollmer Rd Southbound					Marksheffel Rd Westbound					Vollmer Rd Northbound					Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
06:30	0	14	3	0	17	2	0	0	0	2	3	4	0	0	7	0	0	0	0	0	26
06:35	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	

LSC Transportation Consultants, Inc.

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

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



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 : 1

Groups Printed- Unshifted

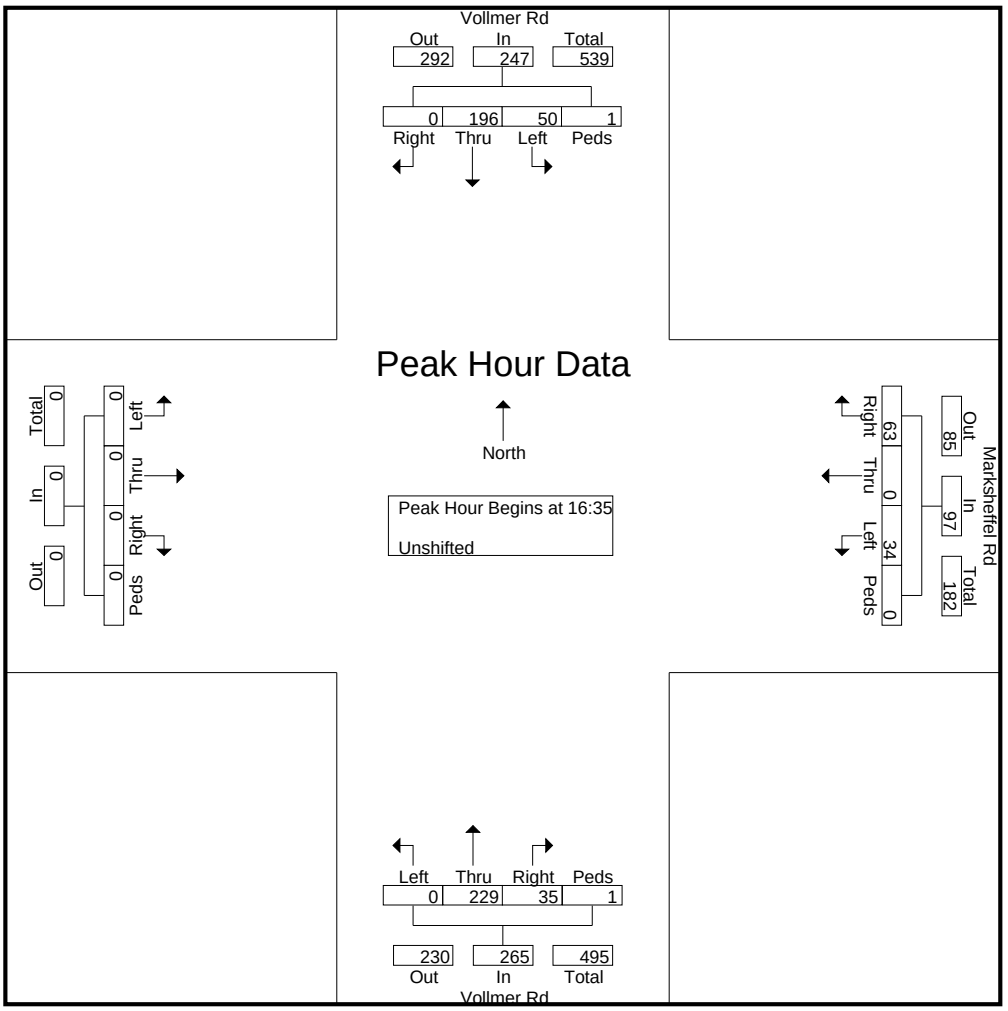
	Vollmer Rd Southbound					Marksheffel Rd Westbound					Vollmer Rd Northbound					Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
16:00	0	10	3	0	13	7	0	1	0	8	3	9	0	0	12	0	0	0	0	0	33
16:05	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	

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 : 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 : Sterling Rannch Rd - Marksheffel Rd AM
Site Code : S224580
Start Date : 3/6/2025
Page No : 1

Groups Printed- Unshifted

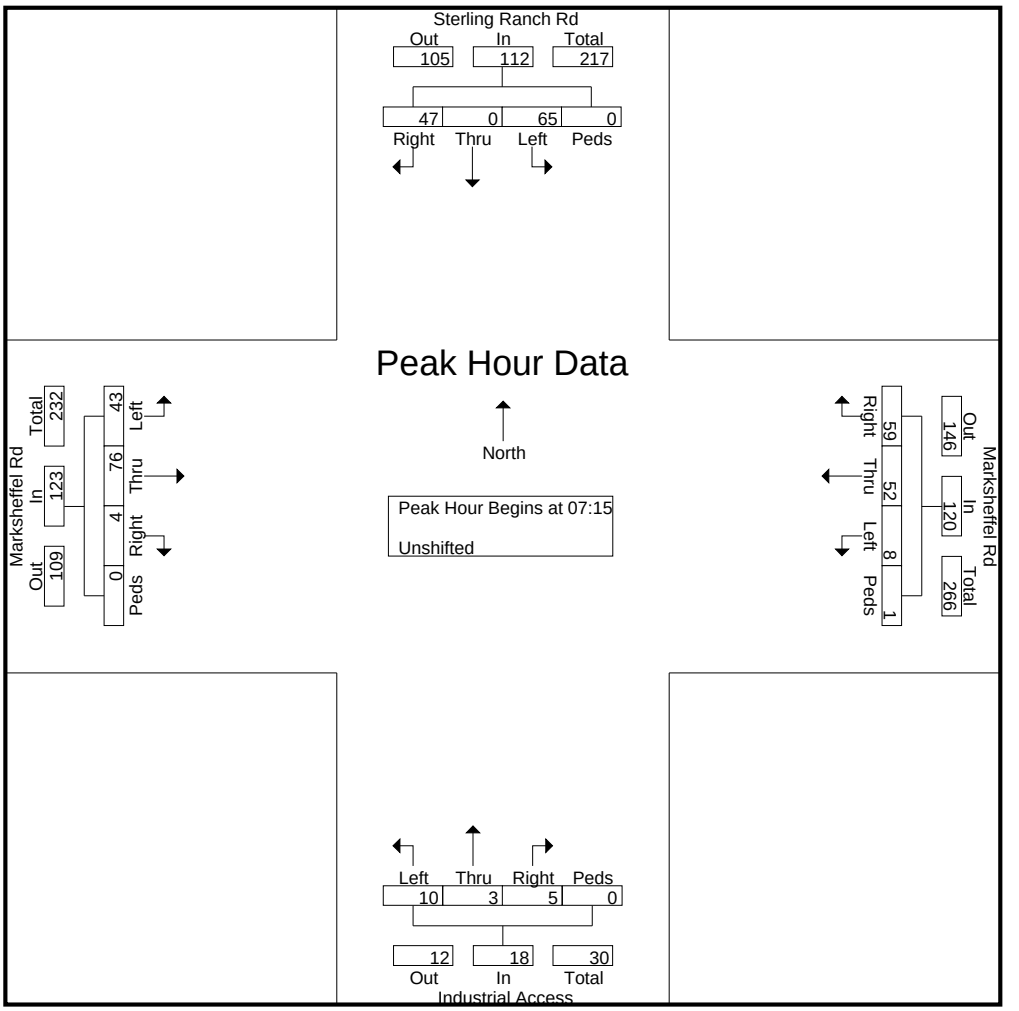
	Sterling Ranch Rd Southbound					Marksheffel Rd Westbound					Industrial Access Northbound					Marksheffel Rd Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
06:30	3	0	13	0	16	13	6	2	0	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	

LSC Transportation Consultants, Inc.

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

File Name : Sterling Rannch Rd - Marksheffel Rd AM
Site Code : S224580
Start Date : 3/6/2025
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 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	1.00	.792	.597	.000	.809	.897



LSC Transportation Consultants, Inc.

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

File Name : Sterling Rannch Rd - Marksheffel Rd PM
Site Code : S224580
Start Date : 3/6/2025
Page No : 1

Groups Printed- Unshifted

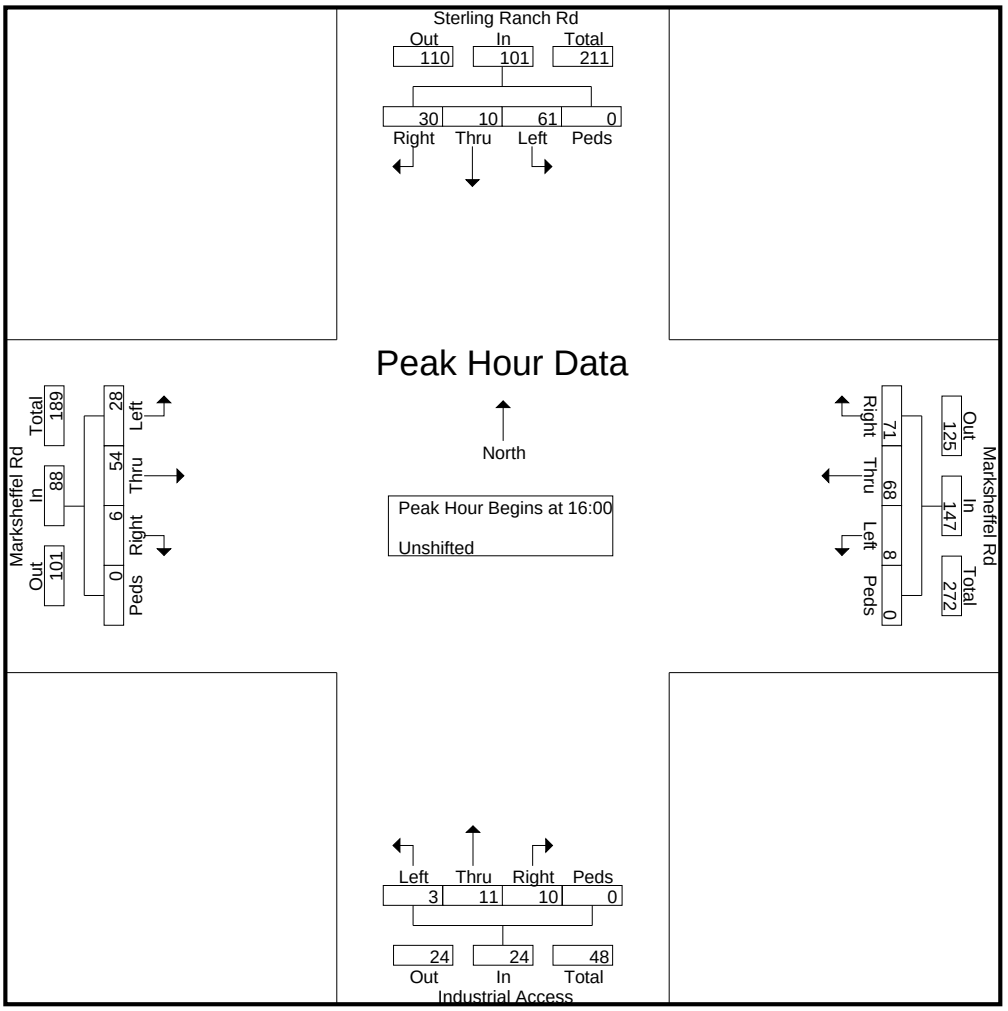
	Sterling Ranch Rd Southbound					Marksheffel Rd Westbound					Industrial Access Northbound					Marksheffel Rd Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
16:00	5	6	20	0	31	14	13	5	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	

LSC Transportation Consultants, Inc.

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

File Name : Sterling Rannch Rd - Marksheffel Rd PM
Site Code : S224580
Start Date : 3/6/2025
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



Level of Service Reports

TRANSPORTATION
CONSULTANTS, INC.

Intersection	
Intersection Delay, s/veh	13
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	55	9	71	286	110	16	45	31	28	58	22
Future Vol, veh/h	4	55	9	71	286	110	16	45	31	28	58	22
Peak Hour Factor	0.81	0.81	0.81	0.94	0.94	0.94	0.83	0.83	0.83	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	68	11	76	304	117	19	54	37	31	64	24
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	1
HCM Control Delay	8.9	15.2	9.7	9.9
HCM LOS	A	C	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	17%	6%	15%	33%	0%
Vol Thru, %	49%	81%	61%	67%	0%
Vol Right, %	34%	13%	24%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	92	68	467	86	22
LT Vol	16	4	71	28	0
Through Vol	45	55	286	58	0
RT Vol	31	9	110	0	22
Lane Flow Rate	111	84	497	96	24
Geometry Grp	4a	2	2	5	5
Degree of Util (X)	0.17	0.121	0.63	0.167	0.037
Departure Headway (Hd)	5.53	5.207	4.563	6.308	5.432
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	652	693	785	571	662
Service Time	3.538	3.207	2.638	4.014	3.139
HCM Lane V/C Ratio	0.17	0.121	0.633	0.168	0.036
HCM Control Delay	9.7	8.9	15.2	10.3	8.3
HCM Lane LOS	A	A	C	B	A
HCM 95th-tile Q	0.6	0.4	4.5	0.6	0.1

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	NBR	WBLn1	WBLn2	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	NBR	WBLn1	WBLn2	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	-

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

Intersection	
Intersection Delay, s/veh	12.5
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	220	18	28	106	42	14	71	61	118	67	16
Future Vol, veh/h	12	220	18	28	106	42	14	71	61	118	67	16
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.83	0.83	0.83	0.77	0.77	0.77
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	14	253	21	32	122	48	17	86	73	153	87	21
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	1
HCM Control Delay	13.1	11.4	11	13.8
HCM LOS	B	B	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	10%	5%	16%	64%	0%
Vol Thru, %	49%	88%	60%	36%	0%
Vol Right, %	42%	7%	24%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	146	250	176	185	16
LT Vol	14	12	28	118	0
Through Vol	71	220	106	67	0
RT Vol	61	18	42	0	16
Lane Flow Rate	176	287	202	240	21
Geometry Grp	4a	2	2	5	5
Degree of Util (X)	0.28	0.446	0.318	0.435	0.032
Departure Headway (Hd)	5.729	5.585	5.665	6.52	5.485
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	623	641	631	550	650
Service Time	3.798	3.647	3.732	4.281	3.245
HCM Lane V/C Ratio	0.283	0.448	0.32	0.436	0.032
HCM Control Delay	11	13.1	11.4	14.3	8.4
HCM Lane LOS	B	B	B	B	A
HCM 95th-tile Q	1.1	2.3	1.4	2.2	0.1

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	NBR	WBLn1	WBLn2	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	NBR	WBLn1	WBLn2	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	-

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	
Intersection Delay, s/veh	15.8
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	57	26	74	298	114	68	64	32	29	66	23
Future Vol, veh/h	4	57	26	74	298	114	68	64	32	29	66	23
Peak Hour Factor	0.81	0.81	0.81	0.94	0.94	0.94	0.83	0.83	0.83	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	70	32	79	317	121	82	77	39	32	73	26
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	1
HCM Control Delay	9.7	19.8	11.8	10.7
HCM LOS	A	C	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	41%	5%	15%	31%	0%
Vol Thru, %	39%	66%	61%	69%	0%
Vol Right, %	20%	30%	23%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	164	87	486	95	23
LT Vol	68	4	74	29	0
Through Vol	64	57	298	66	0
RT Vol	32	26	114	0	23
Lane Flow Rate	198	107	517	106	26
Geometry Grp	4a	2	2	5	5
Degree of Util (X)	0.325	0.166	0.718	0.196	0.041
Departure Headway (Hd)	5.919	5.56	5.002	6.688	5.819
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	607	642	724	535	613
Service Time	3.968	3.615	3.039	4.443	3.574
HCM Lane V/C Ratio	0.326	0.167	0.714	0.198	0.042
HCM Control Delay	11.8	9.7	19.8	11.1	8.8
HCM Lane LOS	B	A	C	B	A
HCM 95th-tile Q	1.4	0.6	6.1	0.7	0.1

Intersection	
Int Delay, s/veh	2.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	130	47	220	65	19	329
Future Vol, veh/h	130	47	220	65	19	329
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	153	55	259	76	22	387

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	497	130	0	0	335	0
Stage 1	259	-	-	-	-	-
Stage 2	238	-	-	-	-	-
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	896	-	-	1221	-
Stage 1	761	-	-	-	-	-
Stage 2	779	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	493	896	-	-	1221	-
Mov Cap-2 Maneuver	573	-	-	-	-	-
Stage 1	761	-	-	-	-	-
Stage 2	765	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.5	0	0.4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	573	896	1221	-
HCM Lane V/C Ratio	-	-	0.267	0.062	0.018	-
HCM Control Delay (s)	-	-	13.6	9.3	8	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	1.1	0.2	0.1	-

Intersection	
Int Delay, s/veh	7.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	27	0	9	31	42	0	30	19	0	0	69	7
Future Vol, veh/h	27	0	9	31	42	0	30	19	0	0	69	7
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	32	0	11	36	49	0	35	22	0	0	81	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	49	0	0	11	0	0	201	185	0	196	196	25
Stage 1	-	-	-	-	-	-	64	64	-	121	121	-
Stage 2	-	-	-	-	-	-	137	121	-	75	75	-
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	-	-	1607	-	-	739	708	-	745	698	1045
Stage 1	-	-	-	-	-	-	939	841	-	870	795	-
Stage 2	-	-	-	-	-	-	852	795	-	926	832	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1556	-	-	1607	-	-	644	678	-	-	668	1045
Mov Cap-2 Maneuver	-	-	-	-	-	-	644	678	-	-	668	-
Stage 1	-	-	-	-	-	-	919	823	-	852	778	-
Stage 2	-	-	-	-	-	-	740	778	-	882	815	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	5.5	3.1	10.7	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)	644	678	-	1556	-	-	1607	-	-	-	668	1045
HCM Lane V/C Ratio	0.055	0.033	-	0.02	-	-	0.023	-	-	-	0.122	0.008
HCM Control Delay (s)	10.9	10.5	0	7.4	-	-	7.3	-	-	0	11.1	8.5
HCM Lane LOS	B	B	A	A	-	-	A	-	-	A	B	A
HCM 95th %tile Q(veh)	0.2	0.1	-	0.1	-	-	0.1	-	-	-	0.4	0

Intersection	
Int Delay, s/veh	1.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	19	2	48	6	1	108
Future Vol, veh/h	19	2	48	6	1	108
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	205	0	-	205	205	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	22	2	56	7	1	127

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	185	56	0	0	63	0
Stage 1	56	-	-	-	-	-
Stage 2	129	-	-	-	-	-
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	804	1011	-	-	1540	-
Stage 1	967	-	-	-	-	-
Stage 2	897	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	803	1011	-	-	1540	-
Mov Cap-2 Maneuver	787	-	-	-	-	-
Stage 1	967	-	-	-	-	-
Stage 2	896	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.6	0	0.1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	787	1011	1540	-
HCM Lane V/C Ratio	-	-	0.028	0.002	0.001	-
HCM Control Delay (s)	-	-	9.7	8.6	7.3	-
HCM Lane LOS	-	-	A	A	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	0	-

Intersection	
Int Delay, s/veh	7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	147	71	297	67	110	425
Future Vol, veh/h	147	71	297	67	110	425
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	173	84	349	79	129	500

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	857	175	0	0	428	0
Stage 1	349	-	-	-	-	-
Stage 2	508	-	-	-	-	-
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	296	838	-	-	1128	-
Stage 1	685	-	-	-	-	-
Stage 2	569	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	262	838	-	-	1128	-
Mov Cap-2 Maneuver	262	-	-	-	-	-
Stage 1	685	-	-	-	-	-
Stage 2	504	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	31.4	0	1.8
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	262	838	1128	-
HCM Lane V/C Ratio	-	-	0.66	0.1	0.115	-
HCM Control Delay (s)	-	-	41.9	9.8	8.6	-
HCM Lane LOS	-	-	E	A	A	-
HCM 95th %tile Q(veh)	-	-	4.2	0.3	0.4	-

Intersection	
Int Delay, s/veh	57.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	72	100	4	8	60	213	10	3	5	560	1	147
Future Vol, veh/h	72	100	4	8	60	213	10	3	5	560	1	147
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	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	85	118	5	9	71	251	12	4	6	659	1	173

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	322	0	0	123	0	0	342	628	59	320	382	36
Stage 1	-	-	-	-	-	-	288	288	-	89	89	-
Stage 2	-	-	-	-	-	-	54	340	-	231	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	1235	-	-	1081	-	-	417	398	773	~ 609	550	1029
Stage 1	-	-	-	-	-	-	503	672	-	908	820	-
Stage 2	-	-	-	-	-	-	750	638	-	751	669	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1235	-	-	1081	-	-	326	368	773	~ 565	508	1029
Mov Cap-2 Maneuver	-	-	-	-	-	-	326	368	-	~ 565	508	-
Stage 1	-	-	-	-	-	-	468	626	-	845	813	-
Stage 2	-	-	-	-	-	-	618	633	-	690	623	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	3.3	0.2	14.4	94.9
HCM LOS			B	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	326	547	1235	-	-	1081	-	-	565	508	1029
HCM Lane V/C Ratio	0.036	0.017	0.069	-	-	0.009	-	-	1.166	0.002	0.168
HCM Control Delay (s)	16.5	11.7	8.1	-	-	8.4	-	-	117.6	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	-	-	22.6	0	0.6

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

Intersection	
Intersection Delay, s/veh	15.8
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	57	26	74	298	114	68	64	32	29	66	23
Future Vol, veh/h	4	57	26	74	298	114	68	64	32	29	66	23
Peak Hour Factor	0.81	0.81	0.81	0.94	0.94	0.94	0.83	0.83	0.83	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	70	32	79	317	121	82	77	39	32	73	26
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	1
HCM Control Delay	9.7	19.8	11.8	10.7
HCM LOS	A	C	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	41%	5%	15%	31%	0%
Vol Thru, %	39%	66%	61%	69%	0%
Vol Right, %	20%	30%	23%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	164	87	486	95	23
LT Vol	68	4	74	29	0
Through Vol	64	57	298	66	0
RT Vol	32	26	114	0	23
Lane Flow Rate	198	107	517	106	26
Geometry Grp	4a	2	2	5	5
Degree of Util (X)	0.325	0.166	0.718	0.196	0.041
Departure Headway (Hd)	5.919	5.56	5.002	6.688	5.819
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	607	642	724	535	613
Service Time	3.968	3.615	3.039	4.443	3.574
HCM Lane V/C Ratio	0.326	0.167	0.714	0.198	0.042
HCM Control Delay	11.8	9.7	19.8	11.1	8.8
HCM Lane LOS	B	A	C	B	A
HCM 95th-tile Q	1.4	0.6	6.1	0.7	0.1

Intersection	
Int Delay, s/veh	2.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	130	47	220	65	19	329
Future Vol, veh/h	130	47	220	65	19	329
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	153	55	259	76	22	387

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	497	130	0	0	335	0
Stage 1	259	-	-	-	-	-
Stage 2	238	-	-	-	-	-
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	896	-	-	1221	-
Stage 1	761	-	-	-	-	-
Stage 2	779	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	493	896	-	-	1221	-
Mov Cap-2 Maneuver	573	-	-	-	-	-
Stage 1	761	-	-	-	-	-
Stage 2	765	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.5	0	0.4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	573	896	1221	-
HCM Lane V/C Ratio	-	-	0.267	0.062	0.018	-
HCM Control Delay (s)	-	-	13.6	9.3	8	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	1.1	0.2	0.1	-

Intersection	
Int Delay, s/veh	7.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	27	0	9	31	42	0	30	19	0	0	69	7
Future Vol, veh/h	27	0	9	31	42	0	30	19	0	0	69	7
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	32	0	11	36	49	0	35	22	0	0	81	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	49	0	0	11	0	0	201	185	0	196	196	25
Stage 1	-	-	-	-	-	-	64	64	-	121	121	-
Stage 2	-	-	-	-	-	-	137	121	-	75	75	-
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	-	-	1607	-	-	739	708	-	745	698	1045
Stage 1	-	-	-	-	-	-	939	841	-	870	795	-
Stage 2	-	-	-	-	-	-	852	795	-	926	832	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1556	-	-	1607	-	-	644	678	-	-	668	1045
Mov Cap-2 Maneuver	-	-	-	-	-	-	644	678	-	-	668	-
Stage 1	-	-	-	-	-	-	919	823	-	852	778	-
Stage 2	-	-	-	-	-	-	740	778	-	882	815	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	5.5	3.1	10.7	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)	644	678	-	1556	-	-	1607	-	-	-	668	1045
HCM Lane V/C Ratio	0.055	0.033	-	0.02	-	-	0.023	-	-	-	0.122	0.008
HCM Control Delay (s)	10.9	10.5	0	7.4	-	-	7.3	-	-	0	11.1	8.5
HCM Lane LOS	B	B	A	A	-	-	A	-	-	A	B	A
HCM 95th %tile Q(veh)	0.2	0.1	-	0.1	-	-	0.1	-	-	-	0.4	0

Intersection	
Int Delay, s/veh	1.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	19	2	48	6	1	108
Future Vol, veh/h	19	2	48	6	1	108
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	205	0	-	205	205	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	22	2	56	7	1	127

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	185	56	0	0	63	0
Stage 1	56	-	-	-	-	-
Stage 2	129	-	-	-	-	-
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	804	1011	-	-	1540	-
Stage 1	967	-	-	-	-	-
Stage 2	897	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	803	1011	-	-	1540	-
Mov Cap-2 Maneuver	787	-	-	-	-	-
Stage 1	967	-	-	-	-	-
Stage 2	896	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.6	0	0.1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	787	1011	1540	-
HCM Lane V/C Ratio	-	-	0.028	0.002	0.001	-
HCM Control Delay (s)	-	-	9.7	8.6	7.3	-
HCM Lane LOS	-	-	A	A	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	0	-

Intersection	
Int Delay, s/veh	7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	147	71	297	67	110	425
Future Vol, veh/h	147	71	297	67	110	425
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	173	84	349	79	129	500

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	857	175	0	0	428	0
Stage 1	349	-	-	-	-	-
Stage 2	508	-	-	-	-	-
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	296	838	-	-	1128	-
Stage 1	685	-	-	-	-	-
Stage 2	569	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	262	838	-	-	1128	-
Mov Cap-2 Maneuver	262	-	-	-	-	-
Stage 1	685	-	-	-	-	-
Stage 2	504	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	31.4	0	1.8
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	262	838	1128	-
HCM Lane V/C Ratio	-	-	0.66	0.1	0.115	-
HCM Control Delay (s)	-	-	41.9	9.8	8.6	-
HCM Lane LOS	-	-	E	A	A	-
HCM 95th %tile Q(veh)	-	-	4.2	0.3	0.4	-

Intersection	
Int Delay, s/veh	57.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	72	100	4	8	60	213	10	3	5	560	1	147
Future Vol, veh/h	72	100	4	8	60	213	10	3	5	560	1	147
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	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	85	118	5	9	71	251	12	4	6	659	1	173

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	322	0	0	123	0	0	342	628	59	320	382	36
Stage 1	-	-	-	-	-	-	288	288	-	89	89	-
Stage 2	-	-	-	-	-	-	54	340	-	231	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	1235	-	-	1081	-	-	417	398	773	~ 609	550	1029
Stage 1	-	-	-	-	-	-	503	672	-	908	820	-
Stage 2	-	-	-	-	-	-	750	638	-	751	669	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1235	-	-	1081	-	-	326	368	773	~ 565	508	1029
Mov Cap-2 Maneuver	-	-	-	-	-	-	326	368	-	~ 565	508	-
Stage 1	-	-	-	-	-	-	468	626	-	845	813	-
Stage 2	-	-	-	-	-	-	618	633	-	690	623	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	3.3	0.2	14.4	94.9
HCM LOS			B	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	326	547	1235	-	-	1081	-	-	565	508	1029
HCM Lane V/C Ratio	0.036	0.017	0.069	-	-	0.009	-	-	1.166	0.002	0.168
HCM Control Delay (s)	16.5	11.7	8.1	-	-	8.4	-	-	117.6	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	-	-	22.6	0	0.6

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

Intersection	
Intersection Delay, s/veh	16
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	57	28	74	298	114	75	66	32	29	66	23
Future Vol, veh/h	4	57	28	74	298	114	75	66	32	29	66	23
Peak Hour Factor	0.81	0.81	0.81	0.94	0.94	0.94	0.83	0.83	0.83	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	70	35	79	317	121	90	80	39	32	73	26
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	1
HCM Control Delay	9.8	20.2	12.1	10.7
HCM LOS	A	C	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	43%	4%	15%	31%	0%
Vol Thru, %	38%	64%	61%	69%	0%
Vol Right, %	18%	31%	23%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	173	89	486	95	23
LT Vol	75	4	74	29	0
Through Vol	66	57	298	66	0
RT Vol	32	28	114	0	23
Lane Flow Rate	208	110	517	106	26
Geometry Grp	4a	2	2	5	5
Degree of Util (X)	0.344	0.171	0.724	0.197	0.042
Departure Headway (Hd)	5.947	5.601	5.044	6.729	5.86
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	602	637	713	532	609
Service Time	4.001	3.66	3.084	4.487	3.618
HCM Lane V/C Ratio	0.346	0.173	0.725	0.199	0.043
HCM Control Delay	12.1	9.8	20.2	11.1	8.9
HCM Lane LOS	B	A	C	B	A
HCM 95th-tile Q	1.5	0.6	6.3	0.7	0.1

Intersection	
Int Delay, s/veh	3.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	150	56	220	71	21	329
Future Vol, veh/h	150	56	220	71	21	329
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	259	84	25	387

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	503	130	0	0	343	0
Stage 1	259	-	-	-	-	-
Stage 2	244	-	-	-	-	-
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	498	896	-	-	1213	-
Stage 1	761	-	-	-	-	-
Stage 2	774	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	488	896	-	-	1213	-
Mov Cap-2 Maneuver	569	-	-	-	-	-
Stage 1	761	-	-	-	-	-
Stage 2	758	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	569	896	1213	-
HCM Lane V/C Ratio	-	-	0.31	0.074	0.02	-
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	-

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	27	0	18	31	42	0	59	19	0	0	69	7
Future Vol, veh/h	27	0	18	31	42	0	59	19	0	0	69	7
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	32	0	21	36	49	0	69	22	0	0	81	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	49	0	0	21	0	0	201	185	0	196	206	25
Stage 1	-	-	-	-	-	-	64	64	-	121	121	-
Stage 2	-	-	-	-	-	-	137	121	-	75	85	-
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	-	-	739	708	-	745	690	1045
Stage 1	-	-	-	-	-	-	939	841	-	870	795	-
Stage 2	-	-	-	-	-	-	852	795	-	926	824	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1556	-	-	1593	-	-	643	677	-	-	660	1045
Mov Cap-2 Maneuver	-	-	-	-	-	-	643	677	-	-	660	-
Stage 1	-	-	-	-	-	-	919	823	-	852	777	-
Stage 2	-	-	-	-	-	-	740	777	-	882	807	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	4.4	3.1	11.1	11
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	643	677	-	1556	-	-	1593	-	-	-	660	1045
HCM Lane V/C Ratio	0.108	0.033	-	0.02	-	-	0.023	-	-	-	0.123	0.008
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	4.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	101	30	48	33	10	108
Future Vol, veh/h	101	30	48	33	10	108
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	205	0	-	205	205	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	119	35	56	39	12	127

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	207	56	0	0	95	0
Stage 1	56	-	-	-	-	-
Stage 2	151	-	-	-	-	-
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	781	1011	-	-	1499	-
Stage 1	967	-	-	-	-	-
Stage 2	877	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	775	1011	-	-	1499	-
Mov Cap-2 Maneuver	765	-	-	-	-	-
Stage 1	967	-	-	-	-	-
Stage 2	870	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.2	0	0.6
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	765	1011	1499	-
HCM Lane V/C Ratio	-	-	0.155	0.035	0.008	-
HCM Control Delay (s)	-	-	10.6	8.7	7.4	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	0.5	0.1	0	-

Intersection	
Int Delay, s/veh	7.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	149	71	304	68	110	444
Future Vol, veh/h	149	71	304	68	110	444
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	84	358	80	129	522

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	877	179	0	0	438	0
Stage 1	358	-	-	-	-	-
Stage 2	519	-	-	-	-	-
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	288	833	-	-	1118	-
Stage 1	678	-	-	-	-	-
Stage 2	562	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	255	833	-	-	1118	-
Mov Cap-2 Maneuver	255	-	-	-	-	-
Stage 1	678	-	-	-	-	-
Stage 2	497	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	33.8	0	1.7
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	255	833	1118	-
HCM Lane V/C Ratio	-	-	0.687	0.1	0.116	-
HCM Control Delay (s)	-	-	45.3	9.8	8.6	-
HCM Lane LOS	-	-	E	A	A	-
HCM 95th %tile Q(veh)	-	-	4.5	0.3	0.4	-

Intersection	
Int Delay, s/veh	93.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	73	100	4	8	60	239	10	3	5	638	1	150
Future Vol, veh/h	73	100	4	8	60	239	10	3	5	638	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	118	5	9	71	281	12	4	6	751	1	176

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	352	0	0	123	0	0	344	660	59	322	384	36
Stage 1	-	-	-	-	-	-	290	290	-	89	89	-
Stage 2	-	-	-	-	-	-	54	370	-	233	295	-
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	1203	-	-	1081	-	-	415	382	773	~ 607	548	1029
Stage 1	-	-	-	-	-	-	501	671	-	908	820	-
Stage 2	-	-	-	-	-	-	750	619	-	~ 749	668	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1203	-	-	1081	-	-	322	352	773	~ 561	505	1029
Mov Cap-2 Maneuver	-	-	-	-	-	-	322	352	-	~ 561	505	-
Stage 1	-	-	-	-	-	-	465	623	-	844	813	-
Stage 2	-	-	-	-	-	-	615	614	-	~ 686	621	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	3.4	0.2	14.5	151.9
HCM LOS			B	F

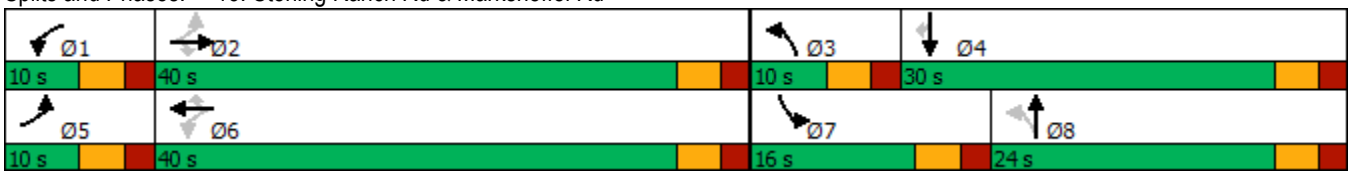
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	322	534	1203	-	-	1081	-	-	561	505	1029
HCM Lane V/C Ratio	0.037	0.018	0.071	-	-	0.009	-	-	1.338	0.002	0.171
HCM Control Delay (s)	16.6	11.9	8.2	-	-	8.4	-	-	185.7	12.1	9.2
HCM Lane LOS	C	B	A	-	-	A	-	-	F	B	A
HCM 95th %tile Q(veh)	0.1	0.1	0.2	-	-	0	-	-	32.4	0	0.6

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	73	100	4	8	60	239	10	3	638	1	150
Future Volume (vph)	73	100	4	8	60	239	10	3	638	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	24.0	16.0	30.0	30.0
Total Split (%)	11.1%	44.4%	44.4%	11.1%	44.4%	44.4%	11.1%	26.7%	17.8%	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 Effct Green (s)	20.2	19.5	19.5	18.3	15.6	15.6	6.7	10.4	11.4	12.2	12.2
Actuated g/C Ratio	0.45	0.43	0.43	0.41	0.35	0.35	0.15	0.23	0.25	0.27	0.27
v/c Ratio	0.14	0.08	0.01	0.03	0.06	0.38	0.08	0.04	0.86	0.00	0.32
Control Delay	8.5	10.5	0.0	8.6	13.6	4.6	16.0	14.8	32.9	15.0	5.3
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	8.5	10.5	0.0	8.6	13.6	4.6	16.0	14.8	32.9	15.0	5.3
LOS	A	B	A	A	B	A	B	B	C	B	A
Approach Delay		9.5			6.4			15.4		27.7	
Approach LOS		A			A			B		C	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 45	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay: 19.9	Intersection LOS: B
Intersection Capacity Utilization 45.7%	ICU Level of Service A
Analysis Period (min) 15	

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



Intersection	
Int Delay, s/veh	6.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	27	9	7	0	28	0	21	0	0	0	0	83
Future Vol, veh/h	27	9	7	0	28	0	21	0	0	0	0	83
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	205	-	-	205	-	-	-	-	-	-	-	-
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	32	11	8	0	33	0	25	0	0	0	0	98

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	33	0	0	19	0	0	161	112	15	112	116	33
Stage 1	-	-	-	-	-	-	79	79	-	33	33	-
Stage 2	-	-	-	-	-	-	82	33	-	79	83	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1579	-	-	1597	-	-	804	778	1065	866	774	1041
Stage 1	-	-	-	-	-	-	930	829	-	983	868	-
Stage 2	-	-	-	-	-	-	926	868	-	930	826	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1579	-	-	1597	-	-	717	762	1065	853	759	1041
Mov Cap-2 Maneuver	-	-	-	-	-	-	717	762	-	853	759	-
Stage 1	-	-	-	-	-	-	911	812	-	963	868	-
Stage 2	-	-	-	-	-	-	839	868	-	911	809	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	4.6	0	10.2	8.8
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	717	1579	-	-	1597	-	-	1041
HCM Lane V/C Ratio	0.034	0.02	-	-	-	-	-	0.094
HCM Control Delay (s)	10.2	7.3	-	-	0	-	-	8.8
HCM Lane LOS	B	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	0.3

Intersection	
Int Delay, s/veh	7.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	9	0	0	0	0	28
Future Vol, veh/h	9	0	0	0	0	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	205	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	0	0	0	0	33

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1	0	-	0	23	1
Stage 1	-	-	-	-	1	-
Stage 2	-	-	-	-	22	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1622	-	-	-	993	1084
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	1001	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1622	-	-	-	986	1084
Mov Cap-2 Maneuver	-	-	-	-	986	-
Stage 1	-	-	-	-	1015	-
Stage 2	-	-	-	-	1001	-

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

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1622	-	-	-	1084
HCM Lane V/C Ratio	0.007	-	-	-	0.03
HCM Control Delay (s)	7.2	-	-	-	8.4
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Intersection Delay, s/veh	16.9
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	229	84	29	110	44	53	87	63	123	92	17
Future Vol, veh/h	12	229	84	29	110	44	53	87	63	123	92	17
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.83	0.83	0.83	0.77	0.77	0.77
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	14	263	97	33	126	51	64	105	76	160	119	22
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	1
HCM Control Delay	19.3	13.6	14.8	18
HCM LOS	C	B	B	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	26%	4%	16%	57%	0%
Vol Thru, %	43%	70%	60%	43%	0%
Vol Right, %	31%	26%	24%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	203	325	183	215	17
LT Vol	53	12	29	123	0
Through Vol	87	229	110	92	0
RT Vol	63	84	44	0	17
Lane Flow Rate	245	374	210	279	22
Geometry Grp	4a	2	2	5	5
Degree of Util (X)	0.445	0.636	0.382	0.558	0.038
Departure Headway (Hd)	6.543	6.125	6.539	7.196	6.187
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	548	586	549	500	577
Service Time	4.608	4.18	4.606	4.956	3.947
HCM Lane V/C Ratio	0.447	0.638	0.383	0.558	0.038
HCM Control Delay	14.8	19.3	13.6	18.7	9.2
HCM Lane LOS	B	C	B	C	A
HCM 95th-tile Q	2.3	4.5	1.8	3.4	0.1

Intersection	
Int Delay, s/veh	2.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	110	39	350	167	62	227
Future Vol, veh/h	110	39	350	167	62	227
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	129	46	412	196	73	267

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	692	206	0	0	608	0
Stage 1	412	-	-	-	-	-
Stage 2	280	-	-	-	-	-
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	378	800	-	-	966	-
Stage 1	637	-	-	-	-	-
Stage 2	742	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	349	800	-	-	966	-
Mov Cap-2 Maneuver	460	-	-	-	-	-
Stage 1	637	-	-	-	-	-
Stage 2	686	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.3	0	1.9
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	460	800	966	-
HCM Lane V/C Ratio	-	-	0.281	0.057	0.076	-
HCM Control Delay (s)	-	-	15.9	9.8	9	-
HCM Lane LOS	-	-	C	A	A	-
HCM 95th %tile Q(veh)	-	-	1.1	0.2	0.2	-

Intersection	
Int Delay, s/veh	7.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	91	0	62	21	28	0	49	65	0	0	46	4
Future Vol, veh/h	91	0	62	21	28	0	49	65	0	0	46	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	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	107	0	73	25	33	0	58	76	0	0	54	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	33	0	0	73	0	0	308	297	0	335	370	17
Stage 1	-	-	-	-	-	-	214	214	-	83	83	-
Stage 2	-	-	-	-	-	-	94	83	-	252	287	-
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	1577	-	-	1525	-	-	621	613	-	595	558	1058
Stage 1	-	-	-	-	-	-	768	724	-	916	825	-
Stage 2	-	-	-	-	-	-	902	825	-	730	673	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1577	-	-	1525	-	-	533	562	-	-	512	1058
Mov Cap-2 Maneuver	-	-	-	-	-	-	533	562	-	-	512	-
Stage 1	-	-	-	-	-	-	716	675	-	854	812	-
Stage 2	-	-	-	-	-	-	824	812	-	603	627	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	4.4	3.2	12.5	12.5
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	533	562	-	1577	-	-	1525	-	-	-	512	1058
HCM Lane V/C Ratio	0.108	0.136	-	0.068	-	-	0.016	-	-	-	0.106	0.004
HCM Control Delay (s)	12.6	12.4	0	7.4	-	-	7.4	-	-	0	12.9	8.4
HCM Lane LOS	B	B	A	A	-	-	A	-	-	A	B	A
HCM 95th %tile Q(veh)	0.4	0.5	-	0.2	-	-	0	-	-	-	0.4	0

Intersection	
Int Delay, s/veh	2.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	67	20	93	111	33	95
Future Vol, veh/h	67	20	93	111	33	95
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	205	0	-	205	205	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	79	24	109	131	39	112

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	299	109	0	0	240	0
Stage 1	109	-	-	-	-	-
Stage 2	190	-	-	-	-	-
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	692	945	-	-	1327	-
Stage 1	916	-	-	-	-	-
Stage 2	842	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	672	945	-	-	1327	-
Mov Cap-2 Maneuver	697	-	-	-	-	-
Stage 1	916	-	-	-	-	-
Stage 2	818	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.4	0	2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	697	945	1327	-
HCM Lane V/C Ratio	-	-	0.113	0.025	0.029	-
HCM Control Delay (s)	-	-	10.8	8.9	7.8	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	0.4	0.1	0.1	-

Intersection	
Int Delay, s/veh	4.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	101	98	509	122	76	326
Future Vol, veh/h	101	98	509	122	76	326
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	115	599	144	89	384

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	969	300	0	0	743	0
Stage 1	599	-	-	-	-	-
Stage 2	370	-	-	-	-	-
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	251	696	-	-	860	-
Stage 1	511	-	-	-	-	-
Stage 2	669	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	225	696	-	-	860	-
Mov Cap-2 Maneuver	225	-	-	-	-	-
Stage 1	511	-	-	-	-	-
Stage 2	600	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	24.6	0	1.8
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	225	696	860	-
HCM Lane V/C Ratio	-	-	0.528	0.166	0.104	-
HCM Control Delay (s)	-	-	37.6	11.2	9.7	-
HCM Lane LOS	-	-	E	B	A	-
HCM 95th %tile Q(veh)	-	-	2.8	0.6	0.3	-

Intersection	
Int Delay, s/veh	66.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	122	70	6	8	96	678	3	11	10	442	10	100
Future Vol, veh/h	122	70	6	8	96	678	3	11	10	442	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	82	7	9	113	798	4	13	12	520	12	118

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	911	0	0	89	0	0	451	1299	41	467	508	57
Stage 1	-	-	-	-	-	-	370	370	-	131	131	-
Stage 2	-	-	-	-	-	-	81	929	-	336	377	-
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	743	-	-	1050	-	-	349	160	820	~ 479	466	997
Stage 1	-	-	-	-	-	-	454	619	-	859	787	-
Stage 2	-	-	-	-	-	-	736	344	-	652	614	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	743	-	-	1050	-	-	254	128	820	~ 369	372	997
Mov Cap-2 Maneuver	-	-	-	-	-	-	254	128	-	~ 369	372	-
Stage 1	-	-	-	-	-	-	366	499	-	692	780	-
Stage 2	-	-	-	-	-	-	634	341	-	~ 505	495	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	6.8	0.1	23.4	184.4
HCM LOS			C	F

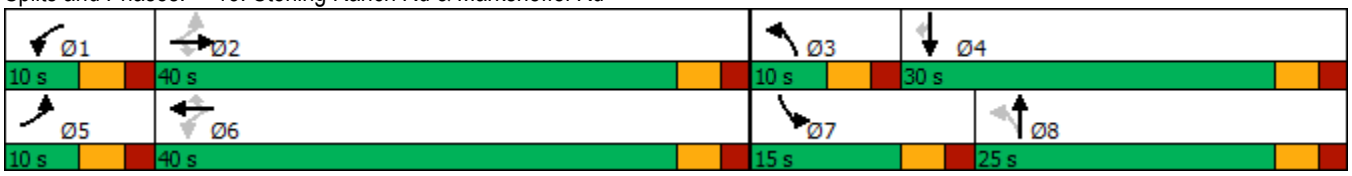
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	254	214	743	-	-	1050	-	-	369	372	997
HCM Lane V/C Ratio	0.014	0.115	0.193	-	-	0.009	-	-	1.409	0.032	0.118
HCM Control Delay (s)	19.4	24	11	-	-	8.5	-	-	227.9	15	9.1
HCM Lane LOS	C	C	B	-	-	A	-	-	F	C	A
HCM 95th %tile Q(veh)	0	0.4	0.7	-	-	0	-	-	26.3	0.1	0.4

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	122	70	6	8	96	678	3	11	442	10	100
Future Volume (vph)	122	70	6	8	96	678	3	11	442	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 Effct Green (s)	25.1	24.5	24.5	21.8	17.9	17.9	6.6	10.6	10.6	11.3	11.3
Actuated g/C Ratio	0.51	0.50	0.50	0.44	0.37	0.37	0.13	0.22	0.22	0.23	0.23
v/c Ratio	0.23	0.05	0.01	0.03	0.09	0.74	0.03	0.09	0.70	0.03	0.25
Control Delay	7.6	8.4	0.0	7.0	12.0	6.1	18.3	17.0	28.5	19.5	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.6	8.4	0.0	7.0	12.0	6.1	18.3	17.0	28.5	19.5	4.9
LOS	A	A	A	A	B	A	B	B	C	B	A
Approach Delay		7.7			6.9			17.2		24.0	
Approach LOS		A			A			B		C	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 49	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.74	
Intersection Signal Delay: 13.2	Intersection LOS: B
Intersection Capacity Utilization 69.6%	ICU Level of Service C
Analysis Period (min) 15	

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



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	90	30	24	0	18	0	14	0	0	0	0	55
Future Vol, veh/h	90	30	24	0	18	0	14	0	0	0	0	55
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	205	-	-	205	-	-	-	-	-	-	-	-
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	106	35	28	0	21	0	16	0	0	0	0	65

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	21	0	0	63	0	0	315	282	49	282	296	21
Stage 1	-	-	-	-	-	-	261	261	-	21	21	-
Stage 2	-	-	-	-	-	-	54	21	-	261	275	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1595	-	-	1540	-	-	638	627	1020	670	616	1056
Stage 1	-	-	-	-	-	-	744	692	-	998	878	-
Stage 2	-	-	-	-	-	-	958	878	-	744	683	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1595	-	-	1540	-	-	568	586	1020	636	575	1056
Mov Cap-2 Maneuver	-	-	-	-	-	-	568	586	-	636	575	-
Stage 1	-	-	-	-	-	-	695	646	-	932	878	-
Stage 2	-	-	-	-	-	-	899	878	-	695	638	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	4.6	0	11.5	8.6
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	568	1595	-	-	1540	-	-	1056
HCM Lane V/C Ratio	0.029	0.066	-	-	-	-	-	0.061
HCM Control Delay (s)	11.5	7.4	-	-	0	-	-	8.6
HCM Lane LOS	B	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0.1	0.2	-	-	0	-	-	0.2

Intersection	
Int Delay, s/veh	7.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	30	0	0	0	0	18
Future Vol, veh/h	30	0	0	0	0	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	205	-	-	-	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	35	0	0	0	0	21

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1	0	-	0	71	1
Stage 1	-	-	-	-	1	-
Stage 2	-	-	-	-	70	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1622	-	-	-	933	1084
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	953	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1622	-	-	-	912	1084
Mov Cap-2 Maneuver	-	-	-	-	912	-
Stage 1	-	-	-	-	1000	-
Stage 2	-	-	-	-	953	-

Approach	EB	WB	SB
HCM Control Delay, s	7.3	0	8.4
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1622	-	-	-	1084
HCM Lane V/C Ratio	0.022	-	-	-	0.02
HCM Control Delay (s)	7.3	-	-	-	8.4
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1

Intersection	
Intersection Delay, s/veh	9.0
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	136	604	377	309
Demand Flow Rate, veh/h	138	616	385	315
Vehicles Circulating, veh/h	435	309	120	551
Vehicles Exiting, veh/h	431	116	453	374
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	5.7	12.3	4.2	9.7
Approach LOS	A	B	A	A

Lane	Left	Left	Left	Bypass	Left
Designated Moves	LTR	LTR	LT	R	LTR
Assumed Moves	LTR	LTR	LT	R	LTR
RT Channelized				Free	
Lane Util	1.000	1.000	1.000		1.000
Follow-Up Headway, s	2.609	2.609	2.609		2.609
Critical Headway, s	4.976	4.976	4.976	80	4.976
Entry Flow, veh/h	138	616	305	1938	315
Cap Entry Lane, veh/h	885	1007	1221	0.980	787
Entry HV Adj Factor	0.983	0.980	0.981	78	0.981
Flow Entry, veh/h	136	604	299	1900	309
Cap Entry, veh/h	870	987	1197	0.041	772
V/C Ratio	0.156	0.612	0.250	0.0	0.400
Control Delay, s/veh	5.7	12.3	5.3	A	9.7
LOS	A	B	A	0	A
95th %tile Queue, veh	1	4	1		2

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	68	550	152	236	1031	95	160	131	107	121	306	138
Future Volume (vph)	68	550	152	236	1031	95	160	131	107	121	306	138
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 Effct Green (s)	58.7	52.1	52.1	15.0	62.7	62.7	29.2	17.8	17.8	25.4	15.9	15.9
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	0.35	0.20	0.55	0.56	0.11	0.62	0.24	0.30	0.40	0.66	0.41
Control Delay	12.3	21.5	3.7	52.5	19.6	2.7	43.0	43.3	4.4	35.7	53.4	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	12.3	21.5	3.7	52.5	19.6	2.7	43.0	43.3	4.4	35.7	53.4	9.5
LOS	B	C	A	D	B	A	D	D	A	D	D	A
Approach Delay		17.1			24.1			32.6			38.9	
Approach LOS		B			C			C			D	

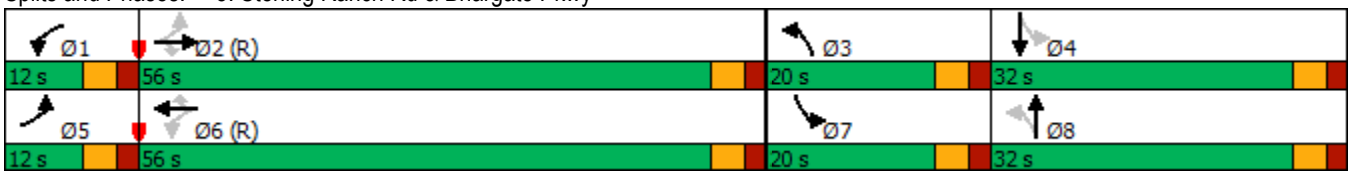
Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 114.4	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.66	
Intersection Signal Delay: 26.2	Intersection LOS: C
Intersection Capacity Utilization 66.7%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 4: Vollmer Rd & Briargate Pkwy

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	73	627	137	108	945	23	267	115	119	106	263	161
Future Volume (vph)	73	627	137	108	945	23	267	115	119	106	263	161
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	56.0	56.0	12.0	56.0	56.0	20.0	32.0		20.0	32.0	
Total Split (%)	10.0%	46.7%	46.7%	10.0%	46.7%	46.7%	16.7%	26.7%		16.7%	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 Effct Green (s)	57.8	51.1	51.1	59.0	53.4	53.4	45.8	31.5	120.0	37.7	27.3	120.0
Actuated g/C Ratio	0.48	0.43	0.43	0.49	0.44	0.44	0.38	0.26	1.00	0.31	0.23	1.00
v/c Ratio	0.33	0.44	0.19	0.33	0.63	0.03	0.79	0.25	0.08	0.25	0.65	0.11
Control Delay	18.3	25.5	4.0	9.5	18.7	0.7	44.7	37.4	0.1	25.8	50.6	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	18.3	25.5	4.0	9.5	18.7	0.7	44.7	37.4	0.1	25.8	50.6	0.1
LOS	B	C	A	A	B	A	D	D	A	C	D	A
Approach Delay		21.4			17.4			32.5			30.3	
Approach LOS		C			B			C			C	

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: 0.79	
Intersection Signal Delay: 23.4	Intersection LOS: C
Intersection Capacity Utilization 78.4%	ICU Level of Service D
Analysis Period (min) 15	

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



Intersection	
Int Delay, s/veh	23.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	133	66	131	147	0	163	0	386	110	54	246	0
Future Vol, veh/h	133	66	131	147	0	163	0	386	110	54	246	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	150	-	0	-	-	205	205	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	50	50	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	266	132	262	155	0	172	0	406	116	57	259	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	923	895	259	976	-	406	-	0	0	522	0	0
Stage 1	373	373	-	406	-	-	-	-	-	-	-	-
Stage 2	550	522	-	570	-	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	-	6.22	-	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	-	3.318	-	-	-	2.218	-	-
Pot Cap-1 Maneuver	~ 250	274	897	226	0	645	0	-	-	1044	-	0
Stage 1	716	647	-	622	0	-	0	-	-	-	-	0
Stage 2	519	531	-	533	0	-	0	-	-	-	-	0
Platoon blocked, %	1	1	1	1				-	-		-	
Mov Cap-1 Maneuver	~ 176	259	897	~ 110	-	645	-	-	-	1044	-	-
Mov Cap-2 Maneuver	267	358	-	217	-	-	-	-	-	-	-	-
Stage 1	716	611	-	622	-	-	-	-	-	-	-	-
Stage 2	381	531	-	280	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	46.9	32.5	0	1.6
HCM LOS	E	D		

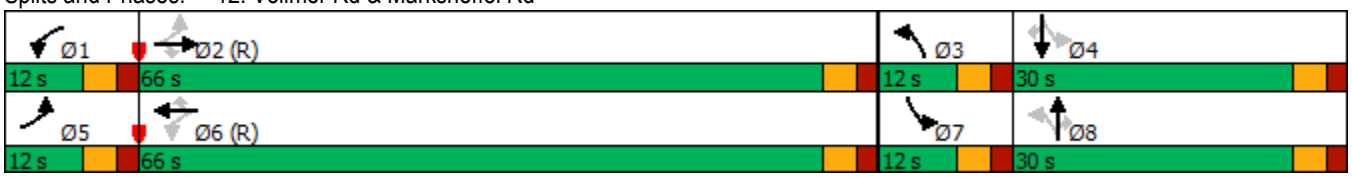
Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	267	358	897	217	645	1044	-
HCM Lane V/C Ratio	-	-	0.996	0.369	0.292	0.713	0.266	0.054	-
HCM Control Delay (s)	-	-	95.4	20.8	10.7	54.5	12.6	8.6	-
HCM Lane LOS	-	-	F	C	B	F	B	A	-
HCM 95th %tile Q(veh)	-	-	9.9	1.7	1.2	4.7	1.1	0.2	-

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	71	837	42	173	922	69	115	234	110	121	512	131
Future Volume (vph)	71	837	42	173	922	69	115	234	110	121	512	131
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	66.0	66.0	12.0	66.0	66.0	12.0	30.0	30.0	12.0	30.0	30.0
Total Split (%)	10.0%	55.0%	55.0%	10.0%	55.0%	55.0%	10.0%	25.0%	25.0%	10.0%	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	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 Effct Green (s)	67.7	61.0	61.0	69.0	63.4	63.4	32.0	25.0	25.0	32.0	25.0	25.0
Actuated g/C Ratio	0.56	0.51	0.51	0.58	0.53	0.53	0.27	0.21	0.21	0.27	0.21	0.21
v/c Ratio	0.25	0.49	0.05	0.55	0.52	0.08	0.64	0.33	0.28	0.41	0.73	0.32
Control Delay	11.8	20.5	0.1	17.9	10.8	0.3	48.6	41.9	8.9	36.2	51.1	9.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.8	20.5	0.1	17.9	10.8	0.3	48.6	41.9	8.9	36.2	51.1	9.4
LOS	B	C	A	B	B	A	D	D	A	D	D	A
Approach Delay		18.9			11.3			35.7			41.6	
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: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.73	
Intersection Signal Delay: 23.7	Intersection LOS: C
Intersection Capacity Utilization 69.9%	ICU Level of Service C
Analysis Period (min) 15	

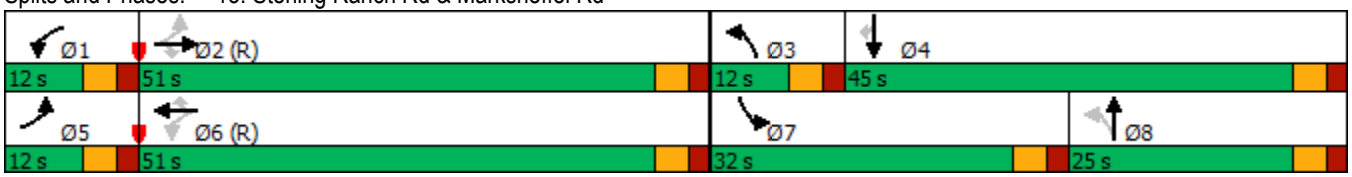
Splits and Phases: 12: Vollmer Rd & Marksheffel Rd



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	156	900	27	14	809	167	9	2	455	6	317
Future Volume (vph)	156	900	27	14	809	167	9	2	455	6	317
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 Effct Green (s)	81.3	76.6	76.6	72.3	66.2	66.2	10.2	10.0	22.7	26.3	26.3
Actuated g/C Ratio	0.68	0.64	0.64	0.60	0.55	0.55	0.08	0.08	0.19	0.22	0.22
v/c Ratio	0.41	0.42	0.04	0.06	0.44	0.19	0.10	0.16	0.75	0.02	0.59
Control Delay	16.9	11.2	0.1	10.6	19.2	3.7	35.8	28.2	53.5	33.2	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	16.9	11.2	0.1	10.6	19.2	3.7	35.8	28.2	53.5	33.2	11.6
LOS	B	B	A	B	B	A	D	C	D	C	B
Approach Delay		11.7			16.5			31.0		36.2	
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: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.75	
Intersection Signal Delay: 20.2	Intersection LOS: C
Intersection Capacity Utilization 63.2%	ICU Level of Service B
Analysis Period (min) 15	

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



Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	227	4	6	289	0	12	0	20	0	0	0
Future Vol, veh/h	0	227	4	6	289	0	12	0	20	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	205	-	-	205	-	-	-	-	-	-	-	-
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	239	4	6	304	0	13	0	21	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	304	0	0	243	0	0	557	557	241	568	559	304
Stage 1	-	-	-	-	-	-	241	241	-	316	316	-
Stage 2	-	-	-	-	-	-	316	316	-	252	243	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1257	-	-	1323	-	-	441	439	798	434	438	736
Stage 1	-	-	-	-	-	-	762	706	-	695	655	-
Stage 2	-	-	-	-	-	-	695	655	-	752	705	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1257	-	-	1323	-	-	440	437	798	421	436	736
Mov Cap-2 Maneuver	-	-	-	-	-	-	440	437	-	421	436	-
Stage 1	-	-	-	-	-	-	762	706	-	695	652	-
Stage 2	-	-	-	-	-	-	692	652	-	732	705	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.2	11.2	0
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	611	1257	-	-	1323	-	-	-
HCM Lane V/C Ratio	0.055	-	-	-	0.005	-	-	-
HCM Control Delay (s)	11.2	0	-	-	7.7	-	-	0
HCM Lane LOS	B	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	-

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	169	76	11	212	1	72	0	21	3	0	12
Future Vol, veh/h	2	169	76	11	212	1	72	0	21	3	0	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	205	-	-	205	-	-	-	-	-	-	-	-
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	2	178	80	12	223	1	76	0	22	3	0	13

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	224	0	0	258	0	0	476	470	218	481	510	224
Stage 1	-	-	-	-	-	-	222	222	-	248	248	-
Stage 2	-	-	-	-	-	-	254	248	-	233	262	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1345	-	-	1307	-	-	499	492	822	495	467	815
Stage 1	-	-	-	-	-	-	780	720	-	756	701	-
Stage 2	-	-	-	-	-	-	750	701	-	770	691	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1345	-	-	1307	-	-	487	487	822	478	462	815
Mov Cap-2 Maneuver	-	-	-	-	-	-	487	487	-	478	462	-
Stage 1	-	-	-	-	-	-	779	719	-	755	695	-
Stage 2	-	-	-	-	-	-	732	695	-	748	690	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.4	13.2	10.2
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	536	1345	-	-	1307	-	-	714
HCM Lane V/C Ratio	0.183	0.002	-	-	0.009	-	-	0.022
HCM Control Delay (s)	13.2	7.7	-	-	7.8	-	-	10.2
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.7	0	-	-	0	-	-	0.1

Intersection	
Intersection Delay, s/veh	15.0
Intersection LOS	C

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	453	393	815	417
Demand Flow Rate, veh/h	462	401	830	425
Vehicles Circulating, veh/h	547	623	591	408
Vehicles Exiting, veh/h	286	577	418	616
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	13.9	13.7	19.0	9.9
Approach LOS	B	B	C	A

Lane	Left	Left	Left	Bypass	Left
Designated Moves	LTR	LTR	LT	R	LTR
Assumed Moves	LTR	LTR	LT	R	LTR
RT Channelized				Free	
Lane Util	1.000	1.000	1.000		1.000
Follow-Up Headway, s	2.609	2.609	2.609		2.609
Critical Headway, s	4.976	4.976	4.976	221	4.976
Entry Flow, veh/h	462	401	609	1938	425
Cap Entry Lane, veh/h	790	731	755	0.980	910
Entry HV Adj Factor	0.981	0.980	0.981	217	0.980
Flow Entry, veh/h	453	393	598	1900	417
Cap Entry, veh/h	775	717	741	0.114	892
V/C Ratio	0.585	0.549	0.806	0.0	0.467
Control Delay, s/veh	13.9	13.7	25.8	A	9.9
LOS	B	B	D	0	A
95th %tile Queue, veh	4	3	8		3

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	227	998	185	205	734	74	301	414	275	109	211	118
Future Volume (vph)	227	998	185	205	734	74	301	414	275	109	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 Effct Green (s)	55.1	48.1	48.1	15.0	56.1	56.1	35.4	20.1	20.1	25.1	14.3	14.3
Actuated g/C Ratio	0.48	0.42	0.42	0.13	0.49	0.49	0.31	0.18	0.18	0.22	0.13	0.13
v/c Ratio	0.65	0.68	0.25	0.48	0.44	0.09	0.84	0.68	0.57	0.43	0.50	0.37
Control Delay	24.9	30.3	4.4	50.7	20.5	1.6	53.3	50.2	11.1	34.0	50.3	6.5
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	24.9	30.3	4.4	50.7	20.5	1.6	53.3	50.2	11.1	34.0	50.3	6.5
LOS	C	C	A	D	C	A	D	D	B	C	D	A
Approach Delay		26.0			25.2			40.1			34.5	
Approach LOS		C			C			D			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 114.1	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay: 30.4	Intersection LOS: C
Intersection Capacity Utilization 79.3%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 4: Vollmer Rd & Briargate Pkwy

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	329	921	111	148	829	105	175	190	81	87	86	133
Future Volume (vph)	329	921	111	148	829	105	175	190	81	87	86	133
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 Effct Green (s)	76.0	64.0	64.0	62.3	55.3	55.3	34.0	24.0	120.0	21.0	20.0	120.0
Actuated g/C Ratio	0.63	0.53	0.53	0.52	0.46	0.46	0.28	0.20	1.00	0.18	0.17	1.00
v/c Ratio	0.83	0.51	0.13	0.50	0.53	0.14	0.50	0.54	0.05	0.40	0.29	0.09
Control Delay	30.3	19.4	2.9	17.6	25.1	5.4	39.7	48.7	0.1	40.8	46.8	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	30.3	19.4	2.9	17.6	25.1	5.4	39.7	48.7	0.1	40.8	46.8	0.1
LOS	C	B	A	B	C	A	D	D	A	D	D	A
Approach Delay		20.7			22.2			36.3			24.8	
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: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.83	
Intersection Signal Delay: 23.8	Intersection LOS: C
Intersection Capacity Utilization 84.2%	ICU Level of Service E
Analysis Period (min) 15	

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

Intersection	
Int Delay, s/veh	3.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	38	16	32	97	0	120	0	321	116	23	283	0
Future Vol, veh/h	38	16	32	97	0	120	0	321	116	23	283	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	150	-	0	-	-	205	205	-	-
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	40	17	34	102	0	126	0	338	122	24	298	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	808	806	298	710	-	338	-	0	0	460	0	0
Stage 1	346	346	-	338	-	-	-	-	-	-	-	-
Stage 2	462	460	-	372	-	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	-	6.22	-	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	-	3.318	-	-	-	2.218	-	-
Pot Cap-1 Maneuver	312	318	867	377	0	704	0	-	-	1101	-	0
Stage 1	760	676	-	676	0	-	0	-	-	-	-	0
Stage 2	580	566	-	731	0	-	0	-	-	-	-	0
Platoon blocked, %	1	1	1	1				-	-		-	
Mov Cap-1 Maneuver	252	311	867	345	-	704	-	-	-	1101	-	-
Mov Cap-2 Maneuver	361	411	-	464	-	-	-	-	-	-	-	-
Stage 1	760	661	-	676	-	-	-	-	-	-	-	-
Stage 2	476	566	-	669	-	-	-	-	-	-	-	-

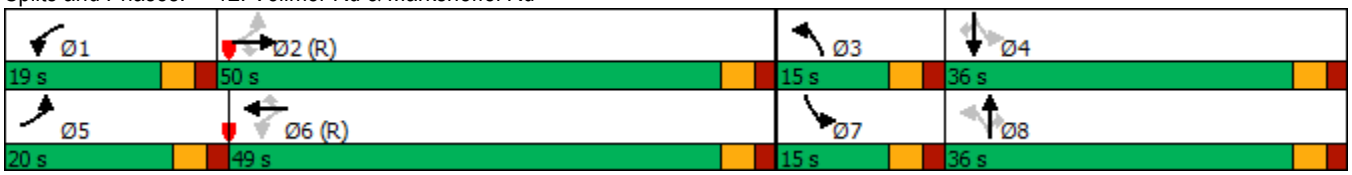
Approach	EB	WB	NB	SB
HCM Control Delay, s	13.2	12.9	0	0.6
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	361	411	867	464	704	1101	-
HCM Lane V/C Ratio	-	-	0.111	0.041	0.039	0.22	0.179	0.022	-
HCM Control Delay (s)	-	-	16.2	14.1	9.3	14.9	11.2	8.3	-
HCM Lane LOS	-	-	C	B	A	B	B	A	-
HCM 95th %tile Q(veh)	-	-	0.4	0.1	0.1	0.8	0.7	0.1	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	142	933	96	189	708	154	171	721	188	132	338	199
Future Volume (vph)	142	933	96	189	708	154	171	721	188	132	338	199
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)	20.0	50.0	50.0	19.0	49.0	49.0	15.0	36.0	36.0	15.0	36.0	36.0
Total Split (%)	16.7%	41.7%	41.7%	15.8%	40.8%	40.8%	12.5%	30.0%	30.0%	12.5%	30.0%	30.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	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 Effct Green (s)	57.6	46.9	46.9	60.4	48.3	48.3	41.2	31.4	31.4	40.8	31.2	31.2
Actuated g/C Ratio	0.48	0.39	0.39	0.50	0.40	0.40	0.34	0.26	0.26	0.34	0.26	0.26
v/c Ratio	0.43	0.71	0.15	0.71	0.52	0.22	0.50	0.82	0.38	0.68	0.39	0.37
Control Delay	18.6	34.6	4.5	52.4	22.5	5.5	31.3	50.3	13.4	42.8	38.1	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	18.6	34.6	4.5	52.4	22.5	5.5	31.3	50.3	13.4	42.8	38.1	6.7
LOS	B	C	A	D	C	A	C	D	B	D	D	A
Approach Delay		30.2			25.4			40.8			29.7	
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: 0.82	
Intersection Signal Delay: 31.8	Intersection LOS: C
Intersection Capacity Utilization 80.2%	ICU Level of Service D
Analysis Period (min) 15	

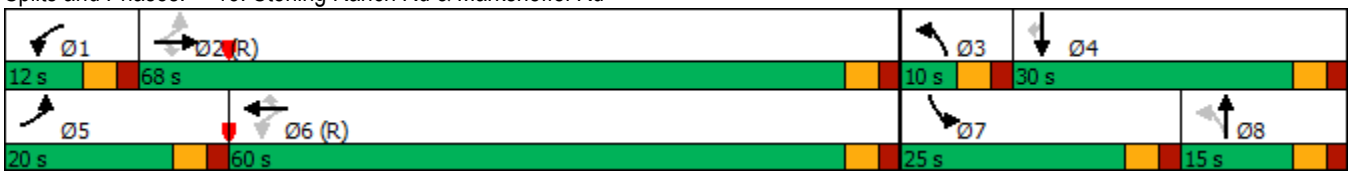
Splits and Phases: 12: Vollmer Rd & Marksheffel Rd



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	291	946	11	38	841	541	27	6	323	2	183
Future Volume (vph)	291	946	11	38	841	541	27	6	323	2	183
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 Effct Green (s)	78.0	68.5	68.5	65.9	59.3	59.3	13.0	10.0	20.0	26.0	26.0
Actuated g/C Ratio	0.65	0.57	0.57	0.55	0.49	0.49	0.11	0.08	0.17	0.22	0.22
v/c Ratio	0.76	0.50	0.02	0.19	0.51	0.54	0.25	0.36	0.60	0.01	0.39
Control Delay	42.5	10.7	0.0	11.7	23.0	3.6	38.4	27.1	51.3	38.0	8.0
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	42.5	10.7	0.0	11.7	23.0	3.6	38.4	27.1	51.3	38.0	8.0
LOS	D	B	A	B	C	A	D	C	D	D	A
Approach Delay		18.0			15.3			31.5		35.6	
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: 0.76	
Intersection Signal Delay: 19.9	Intersection LOS: B
Intersection Capacity Utilization 70.5%	ICU Level of Service C
Analysis Period (min) 15	

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



Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	138	16	24	179	0	9	0	15	0	0	0
Future Vol, veh/h	0	138	16	24	179	0	9	0	15	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	205	-	-	205	-	-	-	-	-	-	-	-
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	145	17	25	188	0	9	0	16	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	188	0	0	162	0	0	392	392	154	400	400	188
Stage 1	-	-	-	-	-	-	154	154	-	238	238	-
Stage 2	-	-	-	-	-	-	238	238	-	162	162	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1386	-	-	1417	-	-	567	544	892	560	538	854
Stage 1	-	-	-	-	-	-	848	770	-	765	708	-
Stage 2	-	-	-	-	-	-	765	708	-	840	764	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1386	-	-	1417	-	-	560	534	892	543	528	854
Mov Cap-2 Maneuver	-	-	-	-	-	-	560	534	-	543	528	-
Stage 1	-	-	-	-	-	-	848	770	-	765	695	-
Stage 2	-	-	-	-	-	-	752	695	-	825	764	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.9	10.1	0
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	730	1386	-	-	1417	-	-	-
HCM Lane V/C Ratio	0.035	-	-	-	0.018	-	-	-
HCM Control Delay (s)	10.1	0	-	-	7.6	-	-	0
HCM Lane LOS	B	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0.1	-	-	-

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	115	29	28	163	6	30	0	17	3	0	9
Future Vol, veh/h	10	115	29	28	163	6	30	0	17	3	0	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	205	-	-	205	-	-	-	-	-	-	-	-
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	11	121	31	29	172	6	32	0	18	3	0	9

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	178	0	0	152	0	0	397	395	137	401	407	175
Stage 1	-	-	-	-	-	-	159	159	-	233	233	-
Stage 2	-	-	-	-	-	-	238	236	-	168	174	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1398	-	-	1429	-	-	563	542	911	560	533	868
Stage 1	-	-	-	-	-	-	843	766	-	770	712	-
Stage 2	-	-	-	-	-	-	765	710	-	834	755	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1398	-	-	1429	-	-	545	527	911	537	518	868
Mov Cap-2 Maneuver	-	-	-	-	-	-	545	527	-	537	518	-
Stage 1	-	-	-	-	-	-	836	760	-	764	698	-
Stage 2	-	-	-	-	-	-	741	696	-	811	749	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	1.1	11.1	9.9
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	638	1398	-	-	1429	-	-	752
HCM Lane V/C Ratio	0.078	0.008	-	-	0.021	-	-	0.017
HCM Control Delay (s)	11.1	7.6	-	-	7.6	-	-	9.9
HCM Lane LOS	B	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0.3	0	-	-	0.1	-	-	0.1

Intersection	
Intersection Delay, s/veh	9.0
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	136	604	377	310
Demand Flow Rate, veh/h	138	616	385	316
Vehicles Circulating, veh/h	436	309	120	551
Vehicles Exiting, veh/h	431	116	454	374
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	5.7	12.3	4.2	9.8
Approach LOS	A	B	A	A

Lane	Left	Left	Left	Bypass	Left
Designated Moves	LTR	LTR	LT	R	LTR
Assumed Moves	LTR	LTR	LT	R	LTR
RT Channelized				Free	
Lane Util	1.000	1.000	1.000		1.000
Follow-Up Headway, s	2.609	2.609	2.609		2.609
Critical Headway, s	4.976	4.976	4.976	80	4.976
Entry Flow, veh/h	138	616	305	1938	316
Cap Entry Lane, veh/h	885	1007	1221	0.980	787
Entry HV Adj Factor	0.983	0.980	0.981	78	0.981
Flow Entry, veh/h	136	604	299	1900	310
Cap Entry, veh/h	870	987	1197	0.041	772
V/C Ratio	0.156	0.612	0.250	0.0	0.402
Control Delay, s/veh	5.7	12.3	5.3	A	9.8
LOS	A	B	A	0	A
95th %tile Queue, veh	1	4	1		2

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	68	554	152	241	1045	96	160	131	108	121	306	138
Future Volume (vph)	68	554	152	241	1045	96	160	131	108	121	306	138
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 Effct Green (s)	58.7	52.1	52.1	15.0	62.7	62.7	29.2	17.8	17.8	25.4	15.9	15.9
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	0.35	0.20	0.56	0.57	0.11	0.62	0.24	0.30	0.40	0.66	0.41
Control Delay	12.4	21.6	3.7	52.8	19.8	2.8	43.0	43.3	4.5	35.7	53.4	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	12.4	21.6	3.7	52.8	19.8	2.8	43.0	43.3	4.5	35.7	53.4	9.5
LOS	B	C	A	D	B	A	D	D	A	D	D	A
Approach Delay		17.1			24.3			32.5			38.9	
Approach LOS		B			C			C			D	

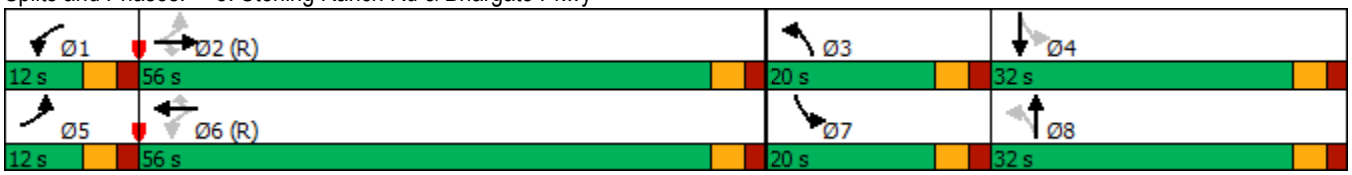
Intersection Summary		
Cycle Length: 120		
Actuated Cycle Length: 114.4		
Natural Cycle: 60		
Control Type: Actuated-Uncoordinated		
Maximum v/c Ratio: 0.66		
Intersection Signal Delay: 26.3	Intersection LOS: C	
Intersection Capacity Utilization 67.0%	ICU Level of Service C	
Analysis Period (min) 15		

Splits and Phases: 4: Vollmer Rd & Briargate Pkwy

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	73	627	143	109	945	23	288	115	121	106	263	161
Future Volume (vph)	73	627	143	109	945	23	288	115	121	106	263	161
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	56.0	56.0	12.0	56.0	56.0	20.0	32.0		20.0	32.0	
Total Split (%)	10.0%	46.7%	46.7%	10.0%	46.7%	46.7%	16.7%	26.7%		16.7%	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 Effct Green (s)	57.8	51.0	51.0	59.0	53.4	53.4	45.8	31.5	120.0	37.5	27.0	120.0
Actuated g/C Ratio	0.48	0.42	0.42	0.49	0.44	0.44	0.38	0.26	1.00	0.31	0.22	1.00
v/c Ratio	0.33	0.44	0.20	0.33	0.63	0.03	0.85	0.25	0.08	0.26	0.66	0.11
Control Delay	18.3	25.5	3.9	9.5	18.7	0.7	51.5	37.4	0.1	25.8	51.0	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	18.3	25.5	3.9	9.5	18.7	0.7	51.5	37.4	0.1	25.8	51.0	0.1
LOS	B	C	A	A	B	A	D	D	A	C	D	A
Approach Delay		21.2			17.4			36.5			30.5	
Approach LOS		C			B			D			C	

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: 0.85	
Intersection Signal Delay: 24.2	Intersection LOS: C
Intersection Capacity Utilization 79.6%	ICU Level of Service D
Analysis Period (min) 15	

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



Intersection	
Int Delay, s/veh	36.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	133	72	131	189	0	198	0	386	123	61	246	0
Future Vol, veh/h	133	72	131	189	0	198	0	386	123	61	246	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	150	-	0	-	-	205	205	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	50	50	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	266	144	262	199	0	208	0	406	129	64	259	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	962	922	259	996	-	406	-	0	0	535	0	0
Stage 1	387	387	-	406	-	-	-	-	-	-	-	-
Stage 2	575	535	-	590	-	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	-	6.22	-	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	-	3.318	-	-	-	2.218	-	-
Pot Cap-1 Maneuver	~ 232	263	897	218	0	645	0	-	-	1033	-	0
Stage 1	701	636	-	622	0	-	0	-	-	-	-	0
Stage 2	503	524	-	518	0	-	0	-	-	-	-	0
Platoon blocked, %	1	1	1	1				-	-		-	
Mov Cap-1 Maneuver	~ 150	246	897	~ 100	-	645	-	-	-	1033	-	-
Mov Cap-2 Maneuver	~ 231	346	-	204	-	-	-	-	-	-	-	-
Stage 1	701	597	-	622	-	-	-	-	-	-	-	-
Stage 2	340	524	-	261	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	68.7	58.2	0	1.7
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	231	346	897	204	645	1033	-
HCM Lane V/C Ratio	-	-	1.152	0.416	0.292	0.975	0.323	0.062	-
HCM Control Delay (s)	-	-	150.8	22.6	10.7	105.3	13.2	8.7	-
HCM Lane LOS	-	-	F	C	B	F	B	A	-
HCM 95th %tile Q(veh)	-	-	12.4	2	1.2	8.3	1.4	0.2	-

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	71	839	42	175	931	69	115	235	111	121	517	131
Future Volume (vph)	71	839	42	175	931	69	115	235	111	121	517	131
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	66.0	66.0	12.0	66.0	66.0	12.0	30.0	30.0	12.0	30.0	30.0
Total Split (%)	10.0%	55.0%	55.0%	10.0%	55.0%	55.0%	10.0%	25.0%	25.0%	10.0%	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	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 Effct Green (s)	67.7	61.0	61.0	69.0	63.4	63.4	32.0	25.0	25.0	32.0	25.0	25.0
Actuated g/C Ratio	0.56	0.51	0.51	0.58	0.53	0.53	0.27	0.21	0.21	0.27	0.21	0.21
v/c Ratio	0.25	0.49	0.05	0.56	0.52	0.08	0.65	0.34	0.28	0.41	0.74	0.32
Control Delay	11.9	20.5	0.1	17.9	9.9	0.2	49.2	41.9	8.8	36.2	51.3	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	11.9	20.5	0.1	17.9	9.9	0.2	49.2	41.9	8.8	36.2	51.3	9.6
LOS	B	C	A	B	A	A	D	D	A	D	D	A
Approach Delay		19.0			10.5			35.8			41.8	
Approach LOS		B			B			D			D	

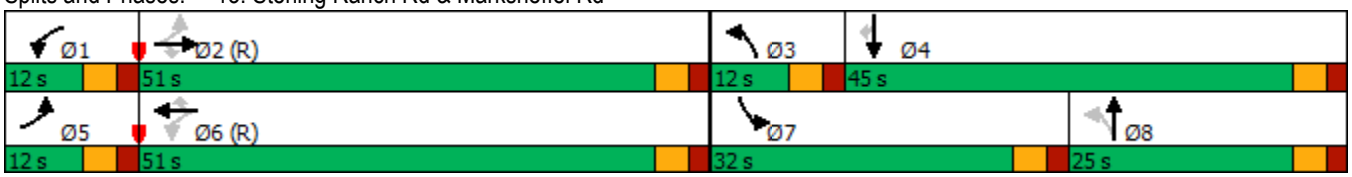
Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.74	
Intersection Signal Delay: 23.6	Intersection LOS: C
Intersection Capacity Utilization 70.2%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 12: Vollmer Rd & Marksheffel Rd

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	160	900	10	47	809	174	39	8	479	10	328
Future Volume (vph)	160	900	10	47	809	174	39	8	479	10	328
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 Effct Green (s)	73.1	63.6	63.6	66.0	58.3	58.3	15.3	10.6	23.2	26.2	26.2
Actuated g/C Ratio	0.61	0.53	0.53	0.55	0.49	0.49	0.13	0.09	0.19	0.22	0.22
v/c Ratio	0.46	0.51	0.02	0.23	0.50	0.21	0.30	0.45	0.77	0.04	0.63
Control Delay	22.3	16.5	0.0	14.5	24.3	4.1	35.4	26.0	54.1	34.6	15.8
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	22.3	16.5	0.0	14.5	24.3	4.1	35.4	26.0	54.1	34.6	15.8
LOS	C	B	A	B	C	A	D	C	D	C	B
Approach Delay		17.2			20.4			29.5		38.5	
Approach LOS		B			C			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: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.77	
Intersection Signal Delay: 24.5	Intersection LOS: C
Intersection Capacity Utilization 64.1%	ICU Level of Service C
Analysis Period (min) 15	

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



Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	22	230	4	6	299	6	12	0	20	17	0	67
Future Vol, veh/h	22	230	4	6	299	6	12	0	20	17	0	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	205	-	-	205	-	-	-	-	-	-	-	-
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	23	242	4	6	315	6	13	0	21	18	0	71

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	321	0	0	246	0	0	656	623	244	631	622	318
Stage 1	-	-	-	-	-	-	290	290	-	330	330	-
Stage 2	-	-	-	-	-	-	366	333	-	301	292	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1239	-	-	1320	-	-	379	402	795	394	403	723
Stage 1	-	-	-	-	-	-	718	672	-	683	646	-
Stage 2	-	-	-	-	-	-	653	644	-	708	671	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1239	-	-	1320	-	-	336	392	795	377	393	723
Mov Cap-2 Maneuver	-	-	-	-	-	-	336	392	-	377	393	-
Stage 1	-	-	-	-	-	-	704	659	-	670	643	-
Stage 2	-	-	-	-	-	-	587	641	-	676	658	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	0.1	12.3	11.9
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	526	1239	-	-	1320	-	-	610
HCM Lane V/C Ratio	0.064	0.019	-	-	0.005	-	-	0.145
HCM Control Delay (s)	12.3	8	-	-	7.7	-	-	11.9
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.2	0.1	-	-	0	-	-	0.5

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	5	179	83	11	215	6	75	0	21	19	0	21
Future Vol, veh/h	5	179	83	11	215	6	75	0	21	19	0	21
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	205	-	-	205	-	-	-	-	-	-	-	-
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	5	188	87	12	226	6	79	0	22	20	0	22

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	232	0	0	275	0	0	506	498	232	506	538	229
Stage 1	-	-	-	-	-	-	242	242	-	253	253	-
Stage 2	-	-	-	-	-	-	264	256	-	253	285	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1336	-	-	1288	-	-	477	474	807	477	450	810
Stage 1	-	-	-	-	-	-	762	705	-	751	698	-
Stage 2	-	-	-	-	-	-	741	696	-	751	676	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1336	-	-	1288	-	-	459	468	807	459	444	810
Mov Cap-2 Maneuver	-	-	-	-	-	-	459	468	-	459	444	-
Stage 1	-	-	-	-	-	-	759	702	-	748	692	-
Stage 2	-	-	-	-	-	-	714	690	-	728	673	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.4	13.9	11.5
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	507	1336	-	-	1288	-	-	594
HCM Lane V/C Ratio	0.199	0.004	-	-	0.009	-	-	0.071
HCM Control Delay (s)	13.9	7.7	-	-	7.8	-	-	11.5
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.7	0	-	-	0	-	-	0.2

Intersection	
Intersection Delay, s/veh	15.1
Intersection LOS	C

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	453	393	816	418
Demand Flow Rate, veh/h	462	401	832	426
Vehicles Circulating, veh/h	548	624	591	408
Vehicles Exiting, veh/h	286	577	419	617
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	13.9	13.7	19.1	9.9
Approach LOS	B	B	C	A

Lane	Left	Left	Left	Bypass	Left
Designated Moves	LTR	LTR	LT	R	LTR
Assumed Moves	LTR	LTR	LT	R	LTR
RT Channelized				Free	
Lane Util	1.000	1.000	1.000		1.000
Follow-Up Headway, s	2.609	2.609	2.609		2.609
Critical Headway, s	4.976	4.976	4.976	221	4.976
Entry Flow, veh/h	462	401	611	1938	426
Cap Entry Lane, veh/h	789	730	755	0.980	910
Entry HV Adj Factor	0.981	0.980	0.981	217	0.980
Flow Entry, veh/h	453	393	599	1900	418
Cap Entry, veh/h	774	716	741	0.114	892
V/C Ratio	0.586	0.549	0.809	0.0	0.468
Control Delay, s/veh	13.9	13.7	26.1	A	9.9
LOS	B	B	D	0	A
95th %tile Queue, veh	4	3	9		3

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	227	1017	185	210	746	75	301	414	282	110	211	118
Future Volume (vph)	227	1017	185	210	746	75	301	414	282	110	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 Effct Green (s)	55.1	48.1	48.1	15.0	56.1	56.1	35.6	20.3	20.3	25.3	14.5	14.5
Actuated g/C Ratio	0.48	0.42	0.42	0.13	0.49	0.49	0.31	0.18	0.18	0.22	0.13	0.13
v/c Ratio	0.66	0.70	0.25	0.49	0.45	0.09	0.83	0.67	0.59	0.43	0.50	0.37
Control Delay	25.6	30.9	4.7	51.1	20.7	1.7	52.9	49.9	12.3	33.9	50.1	6.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.6	30.9	4.7	51.1	20.7	1.7	52.9	49.9	12.3	33.9	50.1	6.5
LOS	C	C	A	D	C	A	D	D	B	C	D	A
Approach Delay		26.6			25.5			40.1			34.3	
Approach LOS		C			C			D			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 114.3	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.83	
Intersection Signal Delay: 30.6	Intersection LOS: C
Intersection Capacity Utilization 79.8%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 4: Vollmer Rd & Briargate Pkwy

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	329	921	139	152	829	105	192	190	83	87	86	133
Future Volume (vph)	329	921	139	152	829	105	192	190	83	87	86	133
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 Effct Green (s)	76.0	64.0	64.0	62.4	55.3	55.3	34.0	24.0	120.0	21.0	20.0	120.0
Actuated g/C Ratio	0.63	0.53	0.53	0.52	0.46	0.46	0.28	0.20	1.00	0.18	0.17	1.00
v/c Ratio	0.83	0.51	0.16	0.51	0.53	0.14	0.55	0.54	0.05	0.40	0.29	0.09
Control Delay	30.3	19.4	2.7	18.1	25.1	5.4	41.4	48.7	0.1	40.8	46.8	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	30.3	19.4	2.7	18.1	25.1	5.4	41.4	48.7	0.1	40.8	46.8	0.1
LOS	C	B	A	B	C	A	D	D	A	D	D	A
Approach Delay		20.3			22.2			37.0			24.8	
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: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.83	
Intersection Signal Delay: 23.8	Intersection LOS: C
Intersection Capacity Utilization 85.1%	ICU Level of Service E
Analysis Period (min) 15	

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

Intersection	
Int Delay, s/veh	4.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	38	18	32	127	0	140	0	321	164	54	283	0
Future Vol, veh/h	38	18	32	127	0	140	0	321	164	54	283	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	150	-	0	-	-	205	205	-	-
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	40	19	34	134	0	147	0	338	173	57	298	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	910	923	298	777	-	338	-	0	0	511	0	0
Stage 1	412	412	-	338	-	-	-	-	-	-	-	-
Stage 2	498	511	-	439	-	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	-	6.22	-	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	-	3.318	-	-	-	2.218	-	-
Pot Cap-1 Maneuver	257	262	867	332	0	704	0	-	-	1054	-	0
Stage 1	688	624	-	676	0	-	0	-	-	-	-	0
Stage 2	554	537	-	660	0	-	0	-	-	-	-	0
Platoon blocked, %	1	1	1	1				-	-		-	
Mov Cap-1 Maneuver	195	247	867	293	-	704	-	-	-	1054	-	-
Mov Cap-2 Maneuver	301	352	-	417	-	-	-	-	-	-	-	-
Stage 1	688	590	-	676	-	-	-	-	-	-	-	-
Stage 2	438	537	-	581	-	-	-	-	-	-	-	-

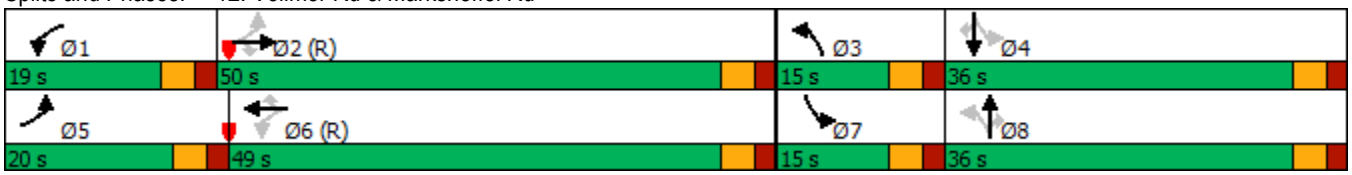
Approach	EB	WB	NB	SB
HCM Control Delay, s	14.7	14.4	0	1.4
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	301	352	867	417	704	1054	-
HCM Lane V/C Ratio	-	-	0.133	0.054	0.039	0.321	0.209	0.054	-
HCM Control Delay (s)	-	-	18.8	15.8	9.3	17.7	11.5	8.6	-
HCM Lane LOS	-	-	C	C	A	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.5	0.2	0.1	1.4	0.8	0.2	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	142	945	96	191	715	154	171	728	191	132	342	199
Future Volume (vph)	142	945	96	191	715	154	171	728	191	132	342	199
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)	20.0	50.0	50.0	19.0	49.0	49.0	15.0	36.0	36.0	15.0	36.0	36.0
Total Split (%)	16.7%	41.7%	41.7%	15.8%	40.8%	40.8%	12.5%	30.0%	30.0%	12.5%	30.0%	30.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	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 Effct Green (s)	57.4	46.7	46.7	60.6	48.3	48.3	41.2	31.4	31.4	40.8	31.2	31.2
Actuated g/C Ratio	0.48	0.39	0.39	0.50	0.40	0.40	0.34	0.26	0.26	0.34	0.26	0.26
v/c Ratio	0.43	0.72	0.15	0.73	0.53	0.22	0.50	0.83	0.39	0.68	0.39	0.37
Control Delay	18.7	35.1	4.5	54.1	22.6	5.6	31.4	50.7	13.7	43.5	38.2	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	18.7	35.1	4.5	54.1	22.6	5.6	31.4	50.7	13.7	43.5	38.2	6.7
LOS	B	D	A	D	C	A	C	D	B	D	D	A
Approach Delay		30.7			25.8			41.2			29.9	
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: 0.83	
Intersection Signal Delay: 32.1	Intersection LOS: C
Intersection Capacity Utilization 80.8%	ICU Level of Service D
Analysis Period (min) 15	

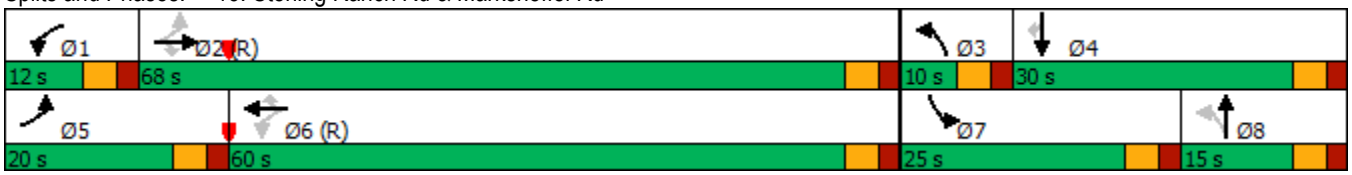
Splits and Phases: 12: Vollmer Rd & Marksheffel Rd



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	306	946	22	130	841	573	27	6	343	24	192
Future Volume (vph)	306	946	22	130	841	573	27	6	343	24	192
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 Effct Green (s)	77.6	65.9	65.9	66.1	59.0	59.0	13.0	10.0	20.0	26.0	26.0
Actuated g/C Ratio	0.65	0.55	0.55	0.55	0.49	0.49	0.11	0.08	0.17	0.22	0.22
v/c Ratio	0.80	0.52	0.03	0.65	0.51	0.56	0.26	0.35	0.64	0.09	0.41
Control Delay	45.7	11.4	0.1	28.1	23.2	3.7	38.6	27.0	52.4	39.0	8.0
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	45.7	11.4	0.1	28.1	23.2	3.7	38.6	27.0	52.4	39.0	8.0
LOS	D	B	A	C	C	A	D	C	D	D	A
Approach Delay		19.4			16.4			31.5		36.6	
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: 0.80	
Intersection Signal Delay: 21.1	Intersection LOS: C
Intersection Capacity Utilization 73.3%	ICU Level of Service D
Analysis Period (min) 15	

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



Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	70	151	16	24	187	16	9	0	15	10	0	42
Future Vol, veh/h	70	151	16	24	187	16	9	0	15	10	0	42
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	205	-	-	205	-	-	-	-	-	-	-	-
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	74	159	17	25	197	17	9	0	16	11	0	44

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	214	0	0	176	0	0	594	580	168	580	580	206
Stage 1	-	-	-	-	-	-	316	316	-	256	256	-
Stage 2	-	-	-	-	-	-	278	264	-	324	324	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1356	-	-	1400	-	-	417	426	876	426	426	835
Stage 1	-	-	-	-	-	-	695	655	-	749	696	-
Stage 2	-	-	-	-	-	-	728	690	-	688	650	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1356	-	-	1400	-	-	373	395	876	395	395	835
Mov Cap-2 Maneuver	-	-	-	-	-	-	373	395	-	395	395	-
Stage 1	-	-	-	-	-	-	657	619	-	708	683	-
Stage 2	-	-	-	-	-	-	677	678	-	639	614	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.3	0.8	11.5	10.7
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	582	1356	-	-	1400	-	-	688
HCM Lane V/C Ratio	0.043	0.054	-	-	0.018	-	-	0.08
HCM Control Delay (s)	11.5	7.8	-	-	7.6	-	-	10.7
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	0.2	-	-	0.1	-	-	0.3

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	22	124	29	28	178	28	31	0	17	16	0	17
Future Vol, veh/h	22	124	29	28	178	28	31	0	17	16	0	17
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	205	-	-	205	-	-	-	-	-	-	-	-
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	23	131	31	29	187	29	33	0	18	17	0	18

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	216	0	0	162	0	0	462	467	147	462	468	202
Stage 1	-	-	-	-	-	-	193	193	-	260	260	-
Stage 2	-	-	-	-	-	-	269	274	-	202	208	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1354	-	-	1417	-	-	510	493	900	510	493	839
Stage 1	-	-	-	-	-	-	809	741	-	745	693	-
Stage 2	-	-	-	-	-	-	737	683	-	800	730	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1354	-	-	1417	-	-	485	475	900	486	475	839
Mov Cap-2 Maneuver	-	-	-	-	-	-	485	475	-	486	475	-
Stage 1	-	-	-	-	-	-	795	728	-	732	679	-
Stage 2	-	-	-	-	-	-	707	669	-	771	718	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1	0.9	11.8	11.2
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	580	1354	-	-	1417	-	-	620
HCM Lane V/C Ratio	0.087	0.017	-	-	0.021	-	-	0.056
HCM Control Delay (s)	11.8	7.7	-	-	7.6	-	-	11.2
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.3	0.1	-	-	0.1	-	-	0.2

Appendix Table 1

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Appendix Table 1
Area Traffic Impact Studies
Villages at Sterling Ranch

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]
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
Foursquare at Sterling Ranch East Transportation Memorandum	SF2236	LSC Transportation Consultants, Inc	April 20, 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 Sketch Plan 2023 Amendment & Rezone Traffic Technical Memorandum	SKP235, P239, P2311	LSC Transportation Consultants, Inc	January 17, 2024
Sterling Ranch East - Filing 5 Rezone & Preliminary Plan Traffic Impact Study	P237 & SP235	LSC Transportation Consultants, Inc	January 15, 2024
Sterling Ranch East - Filing 7 Rezone & Sterling Ranch Sketch Plan Amendment #4 Master Traffic Impact Addendum/Technical	SKP241 & P2415	LSC Transportation Consultants, Inc	February 18, 2024
Sterling Ranch East - Filing 6 Rezone & Preliminary Plan Traffic Impact Study	P2414 & SP244	LSC Transportation Consultants, Inc	February 4, 2025
Sterling Ranch East Filing No. 3 Traffic Impact Study	SF2428	LSC Transportation Consultants, Inc	January 7, 2025
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.	5-May-17
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. *Mar-25*

MTCP Maps

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Figure 22. 2045 Roadway Functional Classifications

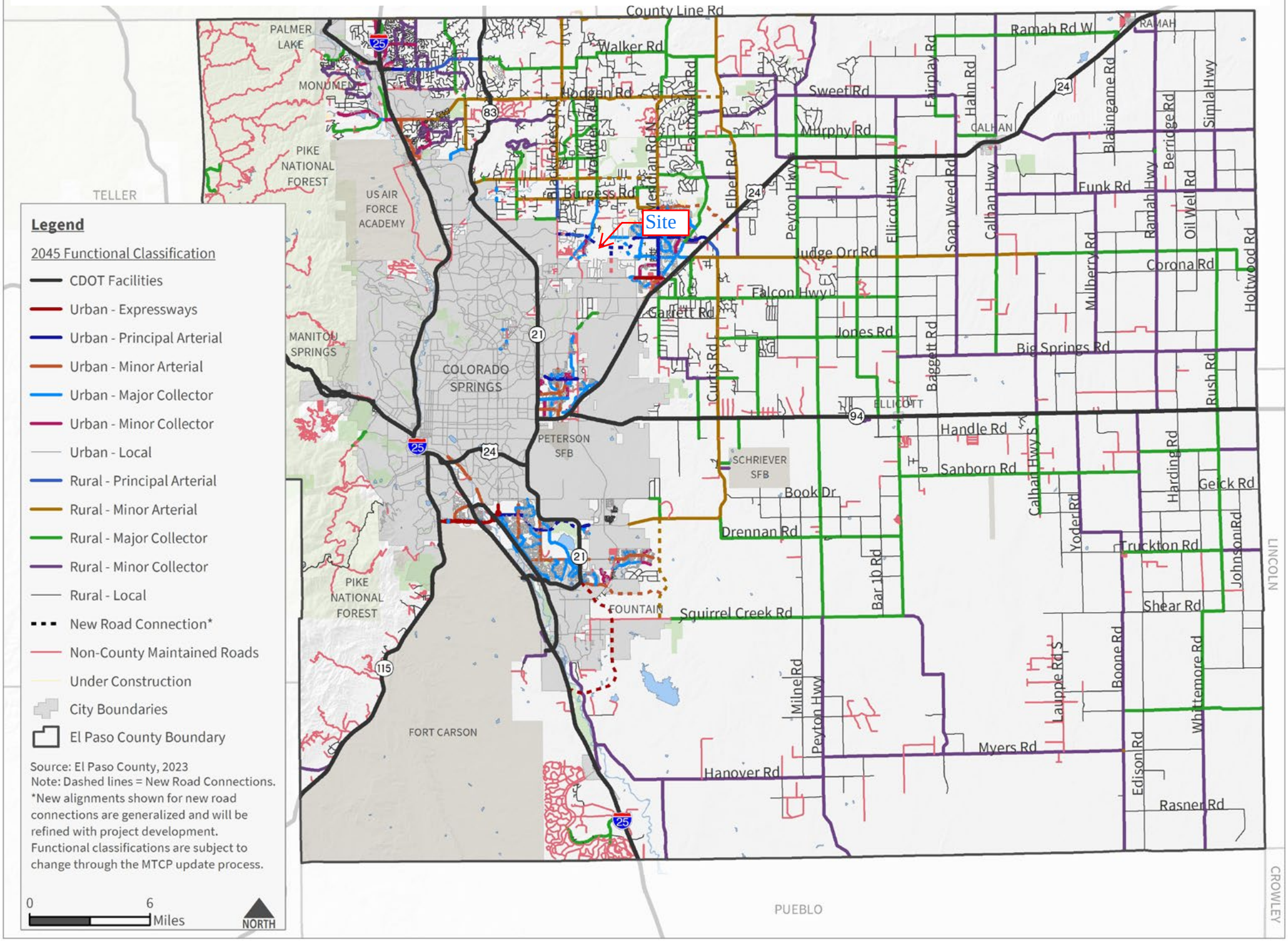
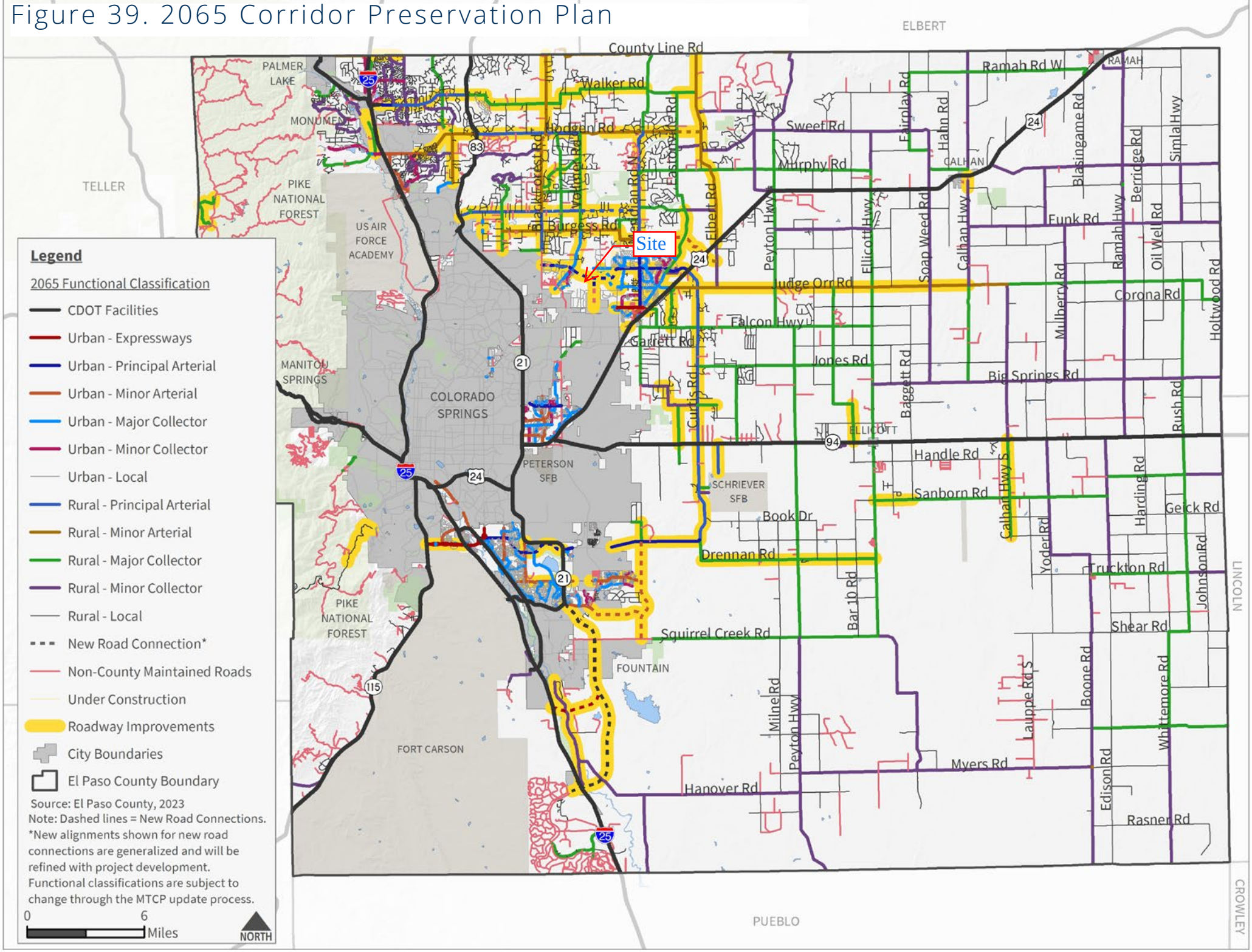


Figure 39. 2065 Corridor Preservation Plan



Crash History

TRANSPORTATION
CONSULTANTS, INC.

Colorado State Patrol

Colorado Open Records Act (CORA) Request Form

The Colorado State Patrol allows inspection or release of agency criminal justice records and public records in accordance with established statutory policy and/or guidance from the following Colorado Revised Statutes: Public Records §24-72-201, Criminal Justice Records Act §24-72-301, and Children's Code Records and Information Act §19-1-301. The first hour of staff research time related to fulfilling a record request is free to the requestor. The subsequent review, production and/or redaction of agency criminal justice records that takes more than one hour of staff time, the CSP shall charge $30.00 an hour. As permitted in §24-72-205(6)(a), C.R.S., for all staff time associated with locating and producing records, the CSP may charge an hourly rate greater than $30.00 an hour when specialized document production or specialized skills are required to locate, compile or produce records. In addition, if the Record Custodian determines that the research time will extend beyond one hour, a $50.00 deposit may be required.

The following must be complete and accurate

Requestor Information:

Name: Jeffrey C. Hodsdon

Organization represented (if any): LSC Transportation Consultants, Inc.

Address: 2504 East Pikes Peak Avenue, Suite 304

City: Colorado Springs State: Colorado Zip Code: 80909

Phone Number: (719) 633-2868 Email: jeff@lsctrans.com

Description/Name of Document(s) Requested:

Traffic accident/crash data for the past three years at the following stretches of road in

- El Paso County : **Marksheffel Road** between Vollmer Road and Keebler Road
- El Paso County : **Vollmer Road** between Marksheffel Road and Briargate Parkway

Signature _____ Today's Date: 11 March 2025

Failure to sign will result in the request not being fulfilled

*Your signature affirms that the requested information **will not** be used for solicitation of business for monetary or pecuniary gain and acknowledges that such a violation is a misdemeanor and is punishable by a fine and/or imprisonment – C.R.S. 24-72-305.5 & 24-72-309.*

Please email this form to cdps_cspcorarequests@state.co.us

Gmail

Julie Slaughter <jaslaughter@lsctrans.com>

Crash History Request - LSC #S224580

CSPCORAREQUESTS - CDPS, CDPS <cdps_cspcorarequests@state.co.us> Tue, Mar 11, 2025 at 3:43 PM
To: Julie Slaughter <julie@lsctrans.com>

Good afternoon -

We found no records responsive at those locations.

Thank you!!

[Quoted text hidden]