LSC TRANSPORTATION CONSULTANTS, INC.
2504 East Pikes Peak Avenue, Suite 304
Colorado Springs, CO 80909
(719) 633-2868
FAX (719) 633-5430
E-mail: lsc@lsctrans.com
Website: http://www.lsctrans.com

Condition:
The applicant/developer and/or property owner(s) shall be required to participate in a fair and equitable manner in the onsite and offsite transportation improvements required by the Sterling Ranch development's traffic impacts as identified in each subsequent TIS. This includes but is not limited to potential roadway and intersection upgrades to and construction of Briargate Parkway, Vollmer Road, Marksheffel Road, Woodmen Road, and Banning-Lewis Parkway. Participation shall be through construction of specified improvements and inclusion in El Paso County's Road Impact Fee program. Specific responsibilities and obligations of the development shall be determined with rezoning, preliminary plan, and final plat approvals.

ACCEPTED for FILE
Engineering Review
04/04/2023 1:30:31 PM
Elizabeth Nijkamp, PE
EPC Department of Public Works

See condition at left.

Sterling Ranch Sketch Plan Amendment
Master Traffic Impact Study
SKP-22-004
(LSC #S224440)
March 17, 2023

Traffic Engineer's Statement

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

COLORADO LICENSED
JEFFREY C. HODSDON
31684
3-17-23
PROFESSIONAL ENGINEER

Developer's Statement

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

V.P.

3/25/2023
Date

Sterling Ranch Sketch Plan Amendment

Master Traffic Impact Study

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

MARCH 17, 2023

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

LSC #S224440

PCD File No.: SKP-22-004

CONTENTS

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March 17, 2023

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

RE: Sterling Ranch
Sketch Plan Amendment
Master Traffic Impact Study
El Paso County, Colorado
PCD File No.: SKP-22-004
LSC #S224440

Dear Mr. Moreland:

LSC Transportation Consultants, Inc. has prepared this Master Traffic Impact Study for the proposed Sterling Ranch Sketch Plan Amendment. As shown in Figure 1, Sterling Ranch is located east of Vollmer Road near Lochwinnoch Lane between the future extensions of Marksheffel Road and Stapleton Drive 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;
- A summary of the proposed land use and access plan;
- The existing roadway and traffic conditions in the site's vicinity including the roadway widths, surface conditions, lane geometries, traffic controls, and posted speed limits;
- Existing traffic volume data;
- Estimates of projected long-term baseline traffic volumes;
- The projected average weekday and peak-hour vehicle trips to be generated by the proposed future development within the sketch plan area;
- The assignment of the projected sketch-plan site-generated traffic volumes to the area roadways;
- The projected long-term total traffic volumes on the area roadways;

- The projected levels of service at the key intersections within the study area;
- Master-study-level findings and recommendations for study-area roadways and intersections, including number of lanes, auxiliary turn lanes, intersection traffic control, etc.
- The recommended street classifications;

RECENT TRAFFIC REPORTS

LSC prepared a previous master traffic impact study (TIS) for the entire Sterling Ranch development dated June 5, 2008. Since 2008 LSC and SM Rocha, LLC have completed multiple studies for individual filings and phases within Sterling Ranch. Appendix Table 1 contains 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). This study accounts for the land use, trip generation, and the roadway network included in these studies.

Briargate-Stapleton Corridor Study/PPACG Model

The El Paso County Department of Public Works recently released a draft traffic report prepared by Wilson & Company (December 9, 2021) as part of Briargate-Stapleton Corridor Study. The forecast 2045 total traffic volumes in that study were developed using the PPACG 2045 fiscally constrained RTP model, as well as reference studies including the *Black Forest Widening Project Traffic Impact Study* and traffic impact studies completed for the Wolf Ranch, The Ranch, Sterling Ranch, Highland Park, and Eagle Rising developments.

Sterling Ranch is included in the PPACG model as part of traffic analysis zones (TAZs) 238 and 842. These TAZs also include the areas planned to be developed as The Ranch and Percheron. The Sterling Ranch Sketch Plan is currently capped at 5,225 dwelling units, but this report has been based on an anticipated maximum of 4,800 dwelling units. The Ranch Sketch Plan, located east of Sterling Ranch, shows the potential for up to 2,144 future dwelling units. Percheron will be capped at 2,650 dwelling units and the section north of Woodmen Road will likely be developed with a maximum of 2,200 dwelling units.

These three developments include the potential for a total of 9,144 potential dwelling units within the areas shown as TAZs 238 and 842. The 2045 PPACG model includes 8,900 households within these two TAZs. This is about 669 fewer dwelling units than could be developed within the area containing Sterling Ranch, The Ranch, and Percheron, based on the respective traffic studies. However, the maximum density may not be achieved for each of these projects and/or they may not all be fully built out by 2045.

STUDY AREA

Sketch Plan

Figure 2 shows the proposed amendment to the Sketch Plan. The 1,444-acre Sterling Ranch Sketch Plan area is partially developed and planned to ultimately include a mix of residential, commercial, and educational land uses. The 2008 TIS divided the sketch plan area into 21 traffic analysis zones (TAZs). Figure 3 from that report showed the location and boundary of each TAZ. A copy of this TAZ figure is attached for reference. Table 1 shows a comparison of the land use assumed in the 2008 TIS and the land uses proposed as part of the current Sketch Plan Amendment. Figure 3 shows the location of the current TAZs. The number of residential dwelling units for Sterling Ranch is now proposed to be capped at 4,800. Please note that although the maximum number of dwelling units for the approved Sketch Plan was 5,225, the 2008 TIS assumed 5,500 residential dwelling units within Sterling Ranch.

Study-Area Access Plan

The access plan for the current Sketch Plan is generally consistent with the access plan shown in the 2008 Master TIS.

Figure 4 shows the current access plan for **Briargate Parkway**. The figure also highlights some minor changes to the access plan depicted in the 2008 Master TIS.

The following summarizes the minor changes:

- The access to Vollmer Road for TAZ 2 shown in the 2008 TIS report has since been shifted about 885 feet south (approximately halfway between the future locations of Marksheffel Road and Lochwinnoch Lane) and restricted to right-in/right-out only. This street connection to Vollmer is part of Sterling Ranch Filing No. 2 and is a public street called Alzada Drive. The Alzada Drive/Vollmer Road intersection is right-in/right-out only.
  Note: The June 2008 TIS report showed a shared access (shared with the adjacent Barbarick Subdivision industrial development) aligning with the existing Vollmer Road/Lochwinnoch Lane intersection.
- The originally-proposed right-in/right-out access on Marksheffel Road to TAZ 2 is no longer proposed and is not shown on the existing plans.
- The Sterling Ranch access to Briargate Parkway just east of Vollmer Road (Wheatland Drive), previously shown as a right-in/right-out-only intersection for both the north and south sides of Briargate in the Sketch Plan, is now a three-quarter-movement (left-in/right-in/right-out-only) access for the south leg (the north side access will remain right-in/right-out). A deviation request for this access point was submitted and approved.

The Briargate Parkway-Stapleton Road Corridor Study Appendix D: Access Control Plan shows the access locations and intersection access restrictions along Briargate Parkway between Black

Forest Road and Meridian Road. The currently proposed Sterling Ranch Sketch Plan Amendment has several access points that are not included in the access control plan.

- The access control plan shows a right-in/right-out access to the south side of Briargate Parkway at Wheatland Drive between Vollmer Road and Sterling Ranch Road. The currently proposed Sketch Plan Amendment shows a three-quarter movement access for the south leg and a right-in/right-out access on the north leg. A deviation request for this access point has been submitted and approved.
- The access control plan shows a right-in/right-out access point north and south of Briargate Parkway between Wheatland Drive and Sterling Ranch Road. The currently proposed sketch plan shows two offset three-quarter-movement (left-in/right-in/right-out only) access points.
- The access control plan shows the intersection of Briargate Parkway/Sterling Ranch Road as a three-leg intersection. The currently proposed Sketch Plan includes a north leg at this future full-movement signal-controlled intersection.
- The currently proposed Sketch Plan Amendment shows a right-in/right-out access to the north side of Briargate Parkway about 1,230 feet east of Sterling Ranch Road that is not shown on the access control plan.
- The access control plan shows a right-in/right-out access to the south side of Briargate Parkway just west of Banning Lewis Parkway. The currently proposed Sketch Plan Amendment shows a right-in/right-out access to the north side of Briargate and a three-quarter-movement access to the south side of Briargate at approximately the same location (1,085 feet west of Banning Lewis Parkway).
- The access control plan shows the intersection of Briargate/Banning Lewis as a three-leg intersection. The currently proposed Sketch Plan includes a north leg at this future full-movement signal-controlled intersection.

Deviation Requests

Any of the future proposed intersections that do not meet the intersection spacing criteria contained in the *El Paso County Engineering Criteria Manual* (ECM) will require deviation requests to those criteria in order to be approved by El Paso County. These deviation requests (if not already submitted/approved) will be submitted with future preliminary plans and/or final plats.

EXISTING ROAD AND TRAFFIC CONDITIONS

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

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. The *2040 El Paso County Major Transportation Corridors Plan* (*MTCP*) and the prior Sterling Ranch master traffic study show Vollmer Road as a four-lane Urban Minor Arterial in the vicinity of the site.

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 intends to take ownership and maintenance of Marksheffel Road when it is constructed from Vollmer to the east and south to where it will connect to the segment constructed north of Woodmen Road in the City.

The section of Marksheffel Road adjacent to Sterling Ranch is planned to be constructed on 107 feet of right-of-way to the City's required cross section(s) and criteria. The section of Marksheffel Road between Sterling Ranch Road and Vollmer Road will be constructed in the very short-term future and the section of Marksheffel Road southeast of Sterling Ranch Road (to connect to the segment recently constructed) will be completed in the short term and will open the connection to Woodmen Road. Marksheffel will be constructed as a four-lane roadway to the previously agreed upon cross section.

Briargate Parkway is a six-lane, Principal Arterial that extends east from I-25 to Grand Lawn Circle (about one-half mile east of Powers Boulevard). Briargate Parkway is planned ultimately to extend to Towner Drive. The segment of Briargate Parkway between Vollmer Road and Sterling Ranch Road is planned to be constructed in the short term.

Sterling Ranch Road is a planned Non-Residential Collector shown extending through the Sterling Ranch development between Marksheffel Road and the north end of the Sketch Plan area (Arroya Road). The segment south of Briargate Parkway will be constructed in the short term.

Tahiti Drive is a gravel road which extends for about 750 feet north from Vollmer Road. The intersection of Vollmer/Tahiti is located just south of the future location of the intersection of Vollmer/Marksheffel. This intersection is planned to be closed with the construction of Marksheffel Road between Vollmer Road and Sterling Ranch Road. Access for the existing home using this access will be relocated north to Loch Fyne Lane.

Existing Traffic Volumes

Figures 5a and 5b show the existing average weekday and 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 and All Traffic Data Services. The date of each count is shown in Figure 5b. The average weekday traffic volumes shown in Figure 5a are

estimates by LSC, based on the manual peak-hour traffic-count data. 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 2 shows the level of service delay ranges.

Table 2: 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 signalized intersections of Vollmer/Black Forest, Woodmen/Black Forest, and Woodmen/Marksheffel have been analyzed using Synchro. The intersections Burgess/Vollmer and Dines/Vollmer have been analyzed based on the unsignalized-intersection analysis procedures from the *Highway Capacity Manual, 6th Edition* by the Transportation Research Board.

Burgess/Vollmer

The stop-sign-controlled intersection of Burgess/Vollmer is currently operating at LOS E for the eastbound approach and LOS F for the westbound approach during the afternoon peak hour.

Dines/Vollmer

All movements at the stop-sign-controlled intersection of Dines/Vollmer and currently operating at LOS B or better during the peak hours.

Vollmer/Black Forest

The signal-controlled intersection of Vollmer/Black Forest is currently operating at an overall LOS C during the morning peak hour and LOS B during the afternoon peak hour.

Woodmen/Black Forest

The signal-controlled intersection of Woodmen/Black Forest is currently operating at an overall LOS C during the morning and afternoon peak hours. The northbound, eastbound, and westbound left-turn movements are currently operating at LOS E during the peak hours.

Woodmen/Marksheffel

Based on the existing signal-timing plan, the intersection of Woodmen/Marksheffel is currently operating at an overall LOS C during the morning and afternoon peak hours. The northbound left-turn movement is currently operating at LOS F and the eastbound left-turn, westbound left-turn, and southbound through movements are currently operating at LOS E during the peak hours.

Safety and Accident Analysis

The Colorado State Patrol (CSP) provided LSC with crash history data for Vollmer Road between Tahiti Drive and Burgess Road from September 2019 through September 2022. During the reported time period, there were twelve reported crashes. Of the twelve reports, ten were single-vehicle non-intersection-related crashes on Vollmer Road. One crash involved a southbound vehicle that turned right onto Poco Road and crashed into several cars parked on Poco Road partially in the lane. The only intersection related crash occurred in June 2022. A vehicle heading northbound on Vollmer Road was slowing to turn left at Lochwinnoch Road and the vehicle behind them attempted to pass on the left side. The crash history data has been attached.

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) but assumes zero traffic generated by land uses within Sterling Ranch, including traffic generated by existing developments within Sterling Ranch.

Figure 6a shows the projected 2042 baseline daily traffic volumes on key street segments at the key area intersections and Figure 6b shows the projected 2042 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 2042 baseline traffic volumes are estimates by LSC, based on the traffic projections, the *Briargate-Stapleton Corridor Study (Draft)* by Wilson & Company dated December 9, 2021. This report indicates that the Pikes Peak Area Council of Governments' (PPACG) 2045 regional model was utilized as a basis for the projections. Previous reports completed in the area were also used to estimate the future baseline/background traffic (see Appendix Table 1).

Figure 6c shows the lane geometry, traffic control, and level of service at the key area intersections for the long-term baseline scenario, and, as applicable, based on the 2042 baseline volumes. Figure 6c includes notes about known current and future improvements that will be in place in this future baseline scenario. This includes the Black Forest Road current construction project, planned TIP and PPRTA major transportation corridor capacity improvement projects, and intersection improvements anticipated by planned developments as they develop.

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 3 shows the trip-generation estimates. The trip-generation estimate is based on the average rates for all land uses. This may result in a conservative estimate, especially at intersections well removed from the site. The average weekday trip-generation rate for Land Use 210: Single-Family Detached Housing is 9.43 trips per dwelling units. The weekday trip-generation rate based on the fitted-curve equation for a development with 4,800 dwelling units would be 7.40 trips per dwelling unit. Using the fitted rate equation for 4,800 dwelling units instead of the average rate would result in a trip-generation estimate of 9,729 fewer trips per day.

The total number of vehicle trips generated by the land uses has been reduced to account for the internal vehicle trips made within Sterling Ranch between land uses, without use of the external streets surrounding the site. Table 3 shows the number of internal trips assumed for each land use. Based on the number of residential dwelling units and the number of students at each school, about 60 percent of the school-related trips were assumed to be internal to the Sterling Ranch development. Based on the number of dwelling units and the size of the mixed-use parcels, about seven percent of the "shopping plaza" trips were assumed to be internal to the Sterling Ranch development. The residential internal trips were then balanced with the school and shopping plaza internal trips.

The total number of vehicle trips generated has also been reduced to take into account the "pass-by" phenomena. A pass-by trip is made by a motorist who would already be on the adjacent roadways regardless of the proposed development, but who stops in at the site while passing by. The motorist would then continue on his or her way to a final destination in the original direction.

The pass-by percentages shown on Table 3 are from the Trip Generation Handbook - An ITE Proposed Recommended Practice, 3rd Edition, 2017 by ITE.

The Sterling Ranch Sketch Plan is projected to generate about 51,513 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 3,448 fewer daily trips than were estimated in the 2008 Master TIS. During the morning peak hour, which generally occurs for one hour between 6:30 and 8:30 a.m., about 1,185 vehicles would enter and 2,461 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 3,189 vehicles would enter and 2.159 vehicles would exit the site.

TRIP DISTRIBUTION AND ASSIGNMENT

The directional distribution of the site-generated traffic volumes on the street and roadway system serving the site is one of the most important factors in determining the site's traffic impacts. The distribution estimates for residential related traffic and non-residential related traffic are shown in Figures 7 and 8, respectively. The directional-distribution estimates are based on the following factors: 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 Figures 7 and 8) are applied to the new, external trip-generation estimates (from Table 3), the resulting site-generated traffic volumes can be determined. The internal trips were assigned separately based on the location of the residential dwelling units and school sites within Sterling Ranch. The pass-by trips for each of the mixed-use parcels were assigned separately, based on the projected 2042 baseline traffic volumes on the adjacent Arterial roadways.

Figure 9a shows the sum of the new external, internal, and pass-by site-generated average weekday traffic volumes on key street segments within the study area. Figure 9b shows the sum of the new external, internal, and pass-by site-generated peak-hour traffic at key study-area intersections. Appendix Figure 2 show the site-generated traffic volumes at the minor (Local) Sterling Ranch access points to the adjacent Arterial roadways.

2042 TOTAL TRAFFIC

Figure 10a shows the projected 2042 total daily traffic volumes on key street segments and Figure 10b shows the projected 2042 total peak-hour traffic volumes at the key study-area intersections. These volumes are the sum of the 2042 baseline traffic volumes (from Figures 6a and 6b) and the site-generated traffic volumes (from Figures 9a and 9b).

Figure 10c shows the level of service analysis results for the key area intersections, based on the projected 2042 total volumes. The figure also shows the general intersection lane geometry and intersection traffic control used in the analysis.

LEVEL OF SERVICE ANALYSIS

The key area future signalized intersections have been analyzed to determine the projected intersection levels of service for 2042 baseline and total traffic scenarios for the morning and afternoon peak-hour periods using Synchro. The key area future stop-sign-controlled and modern-roundabout-controlled intersections have been analyzed based on the unsignalized-intersection analysis procedures from the *Highway Capacity Manual 6th Edition*. Figures 6c and 10c show the level of service analysis results. The level of service reports are attached.

Intersection #1: Vollmer/Burgess

The stop-sign-controlled intersection of Burgess/Vollmer is currently operating at LOS E for the eastbound approach and LOS F for the westbound approach during the afternoon peak hour. By 2042, it was assumed that this intersection would be reconstructed as a modern one-lane roundabout with a northbound right-turn bypass lane. As a modern roundabout it is projected to operate at LOS C or better for all approaches during the peak hours based on the projected 2042 total traffic volumes.

Intersection #2: Vollmer/Arroya

All movements at the stop-sign-controlled intersection of Vollmer/Arroya are projected to operate at LOS C or better during the peak hours based on the projected 2042 total traffic volumes.

Intersection #3: Black Forest/Briargate

The intersection of Black Forest/Briargate is projected to operate at an overall LOS D or better during the peak hours as a signalized intersection, based on the projected 2042 total traffic volumes shown in Figure 10b and the lane geometry show in Figure 10c. The northbound left-turn movement is projected to operate at LOS E during the morning peak hour, based on the projected 2042 baseline and total traffic volumes.

Intersection #4: Vollmer/Briargate

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 2042 total traffic volumes shown in Figure 10b and the lane geometry shown in Figure 10c.

Intersection #5: Sterling Ranch/Briargate

The intersection of Sterling Ranch/Briargate is projected to operate at an overall LOS C during the peak hours as a signalized intersection, based on the projected 2042 total traffic volumes shown in Figure 10b and the lane geometry shown in Figure 10c.

Intersection #6: Banning Lewis/Briargate

The intersection of Banning Lewis/Briargate is projected to operate at an overall LOS C during the peak hours as a signalized intersection, based on the projected 2042 total traffic volumes shown in Figure 10b and the lane geometry shown in Figure 10c. The northbound left-turn movement is projected to operate at LOS E during the morning peak hour and LOS D during the afternoon peak hour. The westbound left-turn movement is projected to operate at LOS E during both the morning and afternoon peak hours.

Intersection #7: Dines/Vollmer

The stop-sign-controlled intersection of Dines/Vollmer is projected to operate at LOS D or better for all movements, based on the projected 2042 total traffic volumes shown in Figure 10b and the lane geometry shown in Figure 10c. As shown in Figure 10c, this report has been revised to assume a scenario with the west leg (future with the Jaynes development) restricted to right-in/right-out only and the east leg (existing Dines Boulevard) allowed to remain as a full-movement intersection (**note:** necessary intersection, raised-curb channelization would be needed with the addition of the west leg - if the intersection is configured in this manner – to physically prevent left-turning movements to/from the west leg). If the added west leg (future) is configured as a three-quarter movement intersection, the existing east leg will most likely need to be restricted to three-quarter movement as well. If the westbound left-turn movement is restricted with a "three-quarter, both-sides" configuration, additional improvements may be needed at Intersection #5 (Sterling Ranch/Briargate) to accommodate northbound-to-southbound U-turning movements - such as a wider shoulder on the west side of Vollmer on the south side of the Vollmer/Briargate intersection.

Intersection #8: E-W Collector/Sterling Ranch

By 2042, 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 2042 total traffic volumes shown in Figure 15b and the lane geometry shown in Figure 10b, the eastbound and westbound left-turn movements are projected to operate at LOS E 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. Alternate traffic control may be needed to achieve a level of service D or better for all turning movements at this intersection. Further

analysis of this intersection should be conducted when the number of students, site layout, and proposed access plan for the future K-8 School are determined.

Intersection #9: E-W Collector/Banning Lewis

The intersection of Banning Lewis Parkway and the future east-west collector is projected to operate at an overall LOS B or better for all movements as a signal-controlled intersection, based on the projected 2042 total traffic volumes shown in Figure 10b and the lane geometry shown in Figure 10c. The northbound left-turn movement is projected to operate at LOS E during the morning peak hour.

Intersection #10: Dines/Sterling Ranch

The intersection of Dines/Sterling Ranch is projected to operate at LOS D or better for all movements during the peak hours as a stop-sign-controlled intersection, based on the projected 2042 total traffic volumes shown in Figure 10b and the lane geometry shown in Figure 10c.

Intersection #11: Black Forest/Research/Marksheffel

The intersection of Black Forest/Research/Marksheffel is projected to operate at an overall LOS D or better during the peak hours as a signalized intersection, based on the projected 2042 total traffic volumes shown in Figure 10b and the lane geometry shown in Figure 10c. The southbound left-turn movement is projected to operate at LOS E during the morning peak hour, based on the projected 2042 baseline and total traffic volumes.

Intersection #12: Vollmer/Marksheffel

The intersection of Vollmer/Marksheffel is projected to operate at an overall LOS C or better during the peak hours as a signalized intersection, based on the projected 2042 total traffic volumes shown in Figure 10b and the lane geometry shown in Figure 10c.

Intersection #13: Sterling Ranch/Marksheffel

The intersection of Sterling Ranch/Marksheffel is projected to operate at an overall LOS C or better during the peak hours as a signalized intersection, based on the projected 2042 total traffic volumes shown in Figure 10b and the lane geometry shown in Figure 10c.

Intersection #14: Vollmer/Black Forest

The intersection of Vollmer/Black Forest is projected to operate at an overall LOS C or better during the peak hours as a signalized intersection, based on the projected 2042 total traffic volumes shown in Figure 10b and the lane geometry shown in Figure 10c.

Intersection #15: Woodmen/Black Forest

The intersection of Woodmen/Black Forest is projected to operate at an overall LOS D during the peak hours as a signalized intersection, based on the projected 2042 total traffic volumes shown in Figure 10b and the lane geometry shown in Figure 10c. During the morning peak hour, all of the left-turn movements are projected to operate at LOS E. During the afternoon peak hour, the eastbound left-turn movement, eastbound through movement, northbound left-turn movement, and southbound left-turn movement are projected to operate at LOS E and the westbound left-turn movement is projected to operate at LOS F.

Intersection #16: Woodmen/Marksheffel

The intersection of Woodmen/Marksheffel is projected to operate at an overall LOS D during the peak hours as a signalized intersection, based on the projected 2042 total traffic volumes shown in Figure 10b and the lane geometry shown in Figure 10c. During the morning peak hour, the eastbound and northbound left-turn movements are projected to operate at LOS E. During the afternoon peak hour, all of the left-turn movements and the northbound through movement are projected to operate at LOS E.

Intersection #17: Woodmen/Banning Lewis

The intersection of Woodmen/Banning Lewis is projected to operate at an overall LOS D during the peak hours as a signalized intersection, based on the projected 2042 total traffic volumes shown in Figure 10band the lane geometry shown in Figure 10c. The eastbound, westbound, and southbound left-turn movements are projected to operate at LOS E during the morning and afternoon peak hours. The northbound left-turn movement is projected to operate at LOS F during the morning and afternoon peak hours.

ROADWAY FUNCTIONAL CLASSIFICATIONS AND LANEAGE

Figure 11 shows the recommended functional classifications and number of through lanes for the streets in the study area. Figure 11 also shows a comparison of the projected average weekday traffic volume (ADT) and the design ADT from the *ECM* for the key street segments in the vicinity of the site. All of the projected weekday traffic volumes are below the design ADT volumes.

MTCP ROADWAY CORRIDOR PRESERVATION

Figure 11 is consistent with the *MTCP Corridor Preservation Plan* (*CPP*). Aside from the 2040 classifications and number of lanes, the *MTCP CPP* shows Woodmen Road expansion to six lanes east of Banning Lewis Parkway and Vollmer Road expansion to four lanes north to Burgess Road. The *CPP* also shows Black Forest Road expansion to four lanes north of Briargate Parkway between 2040 and 2060.

AREA MTCP 2040 ROADWAY IMPROVEMENT PROJECTS

The *El Paso County 2016 Major Transportation Corridors Plan Update* identified the following 2040 roadway improvement projects within the study area:

- C13: Vollmer Road from Marksheffel Road to Stapleton Drive as a Rural 4-Lane Minor Arterial;
- N5 Stapleton Drive [Briargate Parkway] from Towner Road to Black Forest Road as a 4-Lane Urban Principal Arterial;
- N12: Marksheffel Road from Woodman Road to Research Parkway as a 4-Lane Urban Principal Arterial; and
- M11: Vollmer Road Bicycle & Primary Regional Trail from Marksheffel Road to Shoup Road.

INTERSECTION APPROACH LANEAGE AND TRAFFIC CONTROL

Figure 10c shows the recommended general intersection approach laneage including preliminary recommendations for left and or right auxiliary turn lanes (or dual lanes where shown). The figure also shows the anticipated traffic-control device that will likely be needed at each key intersection (i.e., stop-sign control, traffic-signal control, roundabout-intersection control, etc.). These general, master-TIS-level recommendations are based primarily on the roadway corridor number of through lanes, the auxiliary turn-lane thresholds in the *ECM*, and the 2042 capacity (LOS) analysis.

ROADWAY IMPROVEMENTS SUMMARY TABLE

A list of the roadway segment improvements is presented in Table 4. The location of each roadway segment is identified in Figure 12.

MULTI-MODAL AND TRANSPORTATION DEMAND MANAGEMENT (TDM) OPPORTUNITIES

The *El Paso County 2016 Major Transportation Corridors Plan Update* identified the following multi-modal improvement projects within the study area:

- M11: Bicycle & Primary Regional Trail along Vollmer Road between Marksheffel Road and Shoup Road.

The attached copy of the Sterling Ranch Sketch Plan Amendment shows the location of the planned major trails. This plan is consistent with the planned regional trail shown on Map 15: Bicycle and Pedestrian Network and Improvements from the 2016 *MTCP*.

Pedestrian plans will be part of preliminary plans. With urban development, sidewalks will be required on all streets. A detached sidewalk will be provided along the east side of Vollmer Road adjacent to the development and along Sterling Ranch Road, Briargate Parkway, and Marksheffel Road adjacent to the site. The county-road cross sections in the *ECM* with shoulders generally

accommodate bicycles. The section of Vollmer Road within the City of Colorado Springs (generally from Black Forest Road to Cowpoke Road) has existing bicycle lanes and future improvements on Vollmer Road should be consistent.

CONCLUSIONS AND RECOMMENDATIONS

Trip Generation

The Sterling Ranch Sketch Plan is projected to generate about 51,513 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 3,448 fewer daily trips than were estimated in the 2008 Master TIS. During the morning peak hour, which generally occurs for one hour between 6:30 and 8:30 a.m., about 1,185 vehicles would enter and 2,461 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 3,189 vehicles would enter and 2.159 vehicles would exit the site.

Level of Service

All of the intersections analyzed are projected to operate at an overall satisfactory level of service (LOS D or better) during the peak hours, based on the projected 2042 total traffic volumes shown in Figure 10b and the lane geometry and traffic control show in Figure 10c.

Some of the left-turn movements at the intersections of Black Forest/Briargate, Banning Lewis/Briargate, E-W Collector/Banning Lewis, Black Forest/Research/Marksheffel are projected to operate at LOS E during the peak hours. These movements have projected delays in the LOS E range simply because they arrive at the traffic signal at the beginning of the red phase at an intersection with many phases and a long cycle length. These movements would not be considered “failing” since their volume-to-capacity ratios are less than one. The justification is that to progress through traffic along an arterial corridor, the traffic signal offsets and left-turn phase times have been adjusted to favor the through bands, which can result in higher delay for the left-turn movements, even though there is sufficient capacity for them. Progression analyses will be addressed as appropriate in preliminary plan traffic studies and may also be included, if needed, with any deviation requests for partial-turn access points on Briargate.

Some of the left-turn movements and through movements at the intersections along Woodmen Road are projected to operate at LOS E or F during the peak hours. It may be necessary to provide additional laneage such as four through lanes on Woodmen Road or triple left-turn lanes to maintain an acceptable level of service in the future.

Recommended Improvements

Figure 10c shows the general/preliminary laneage requirements for the key study-area intersections. Table 4 shows a list of the roadway-segment improvements and Table 5 shows a list of intersection improvements. These recommendations are consistent with the recently published *Briargate-Stapleton Corridor Study (Draft)* by Wilson & Company dated December 9, 2021. Detailed lane geometry will be provided at the preliminary plan stage for individual developments. Generally, turn lanes, right-of-way, and cross sections of street segments will need to conform to *ECM* criteria. Right-of-way preservation may also be needed per the *MTCP Corridor Preservation Plan*.

* * * * *

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 1, 3, 4, and 5
Appendix Tables 1 and 2
Figures 1-12
Appendix Figures 1 and 2
MTCP Maps
Traffic Count Reports
Level of Service Reports
Crash History
Sketch Plan Amendment

Tables 1, 3, 4, and 5

TRANSPORTATION
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Table 1
Sterling Ranch Sketch Plan
Land Use Comparison

Sterling Ranch Updated Traffic Impact Analysis, June 5, 2008					*Sterling Ranch Sketch Plan Amendment Traffic Technical Memorandum,* October 30, 2018				Currently Proposed Sketch Plan Amendment						Change from 2008	
2008 Traffic Analysis Zone[1] (See Appendix Figure 1 for boundaries)	Area (Acres)	Land Use	Quantity	Unit	Area (Acres)	Land Use	Quantity	Unit	Traffic Analysis Zone[2] (See Figure 2 for boundaries)	Name	Status	Land Use	Quantity	Unit	Quantity	Unit
1	14	Shopping Center	152	KSF[3]	11	Commercial	119.79	KSF	107	Mixed Use 11 Acres (South of Marksheffel)	Future	Mixed Use	120	KSF	-32.46	KSF
2	63	Single-Family Detached Housing	234	DU[4]	26	Single-Family Detached Housing	109	DU	6	Sterling Ranch Fil 2	Approved	Residential 3-5 DU/Ac	38	DU	3	DU
									10	Sterling Ranch Fil 4 (north)	Short-Term Future		61	DU		
					19	Single-Family Detached Housing	177	DU	5	Copper Chase	Under Review	Residential 5-8 DU/Ac	138	DU		
3	12	Elementary School	500	Students	12	Elementary School	500	Students	16	Sterling Ranch Future Filing (SW Sterling Ranch/Dines)	Future	Residential 5-8 DU/Ac	82	DU	-500	Students
															82	DU
4	6	Apartment	89	DU	5	Apartment	74	DU	108	Industrial 5 Acres	Future	Industrial (Lift Station)	- - -	- - -	-89	DU
5	22	Single-Family Detached Housing	82	DU	62	Single-Family Detached Housing	259	DU	10	Sterling Ranch Fil 4 (south)	Short-Term Future	Residential 3-5 DU/Ac	98	DU	16	DU
6	17	Single-Family Detached Housing	103	DU					7&8	Sterling Ranch Fil 3	Approved	Residential 3-5 DU/Ac	63	DU	-40	DU
7	101	Single-Family Detached Housing	611	DU	101	Single-Family Detached Housing	422	DU	1	Branding Iron Fil No. 1	Existing	Residential 3-5 DU/Ac	51	DU	-309	DU
									2	Homestead Fil No. 1		Residential 3-5 DU/Ac	72	DU		
									4	Branding Iron Fil No. 2		Residential 3-5 DU/Ac	75	DU		
									3	Homestead Fil No. 2		Residential 3-5 DU/Ac	104	DU		
8	17	Shopping Center	185	KSF	14	Shopping Center	152.46	KSF	105	Mixed Use 14 Ac (SE Briargate/Vollmer)	Future	Mixed Use	51	KSF	-134.13	KSF
													233	DU	233	DU
9	35	Middle School/Junior High School	1000	students	- - -				103	Sterling Ranch East Phase 1	Under Review	K-8 School	1100	students	100	Students
10	94	Single-Family Detached Housing	350	DU	- - -				22 & 26			Residential 3-5 DU/Ac	294	DU	-56	DU
11	68	Single-Family Detached Housing	253	DU	- - -				17, 23 & 24			Residential 3-5 DU/Ac	168	DU	-66	DU
									38			Residential 2 DU/Ac	19	DU		
									102			Elementary School	600	students	600	Students
12	46	Single-Family Detached Housing	171	DU	- - -				25, 27, 28, 29, 31, & 32	Sterling Ranch East Future Filings	Future	Residential 3-5 DU/Ac	603	DU	-78	DU
13	70	Single-Family Detached Housing	260	DU	- - -				39	Sterling Ranch East Future Filings	Future	Residential 2 DU/Ac	18	DU		
17	72	Single-Family Detached Housing	268	DU	- - -											
14	10	Elementary School	500	Students	- - -				104	Future Elementary School	Future	Elementary School	600	students	100	Students
15	32	Residential Condominium/Townhouse	298	DU	- - -				14, 15, 20 & 21	Village at Sterling Ranch East	Under Review	Midtown & ADU	100	DU	-52	DU
												Tonwhomes & Duplexes	146	DU		
16	35	Apartment	521	DU	- - -				33	Sterling Ranch East Future Filings	Future	Residential 3-5 DU/Ac	106	DU	-415	DU
18	25	Shopping Center	272	KSF	- - -				106	Mixed Use 22 Ac (SW Briargate/Banning Lewis)	Future	Mixed Use	80	KSF	-192	KSF
													367	DU	367	DU
19	91	Single-Family Detached Housing	34	DU	- - -				101	Sterling Ranch East Future Filings	Future	Residential 0.2 -5 DU/Ac	431	DU	-193	DU
20	314	Active Adult Residential	1,899	DU	- - -				18 & 37	Sterling Ranch East Phase 1	Under Review	Residential 3-5 DU/Ac	280	DU		
									19	Four Square at Sterling Ranch	Under Review	Residential 5-8 DU/Ac	158	DU		
									30, 34, 35 & 36		Future	Residential 3-5 DU/Ac	871	DU		
21	88	Single-Family Detached Housing	327	DU	- - -				9	Homestead North Fil 1	Approved	Residential 3-5 DU/Ac	73	DU	-103	DU
									11	Homestead North Fil 2			74	DU		
									12	Homestead North Fil 3		Residential 2 DU/Ac	77	DU		
TOTAL												**TOTAL**				
Residential			5,500	DU								Residential	4,800	DU	-700	DU
Commercial			610	KSF								Commercial	251	KSF	-359	KSF
School			2,000	Students								School	2,300	Students	300	Students

Notes:

(1) See Appendix Figure 1 for 2008 Traffic Analysis Zones boundareis
(2) See Figure 2 for Traffic Analysis Zone boundaries
(2) KSF = thousand square feet of floor area
(3) DU = dwelling unit

Source: LSC Transportation Consultants, Inc.

Dec-22

Table 3
Sterling Ranch Sketch Plan
Trip Generation Summary[1]

ITE Code	ITE Land Use	Quantity	Unit	Trip Generation Rates[2] Daily	AM Peak Hour In	AM Peak Hour Out	PM Peak Hour In	PM Peak Hour Out	Raw ITE Trip Generation (Individual Driveway Trips) Daily	AM Peak Hour In	AM Peak Hour Out	PM Peak Hour In	PM Peak Hour Out
Trip Generation Estimate Based on the Currently Proposed Sterling Ranch Sketch Plan Amendment													
Non-Residential Land Uses													
821	Shopping Plaza[4]	251	KSF[5]	67.52	1.07	0.66	2.54	2.65	16,948	269	165	638	664
520	Elementary School	1,800	Students	2.27	0.40	0.34	0.07	0.09	4,086	719	613	132	156
521	Middle School/Junior High	500	Students	2.10	0.36	0.31	0.07	0.08	1,050	181	154	36	39
							Total Non-Residential Land Uses		22,084	1,169	932	807	859
Residential Land Uses													
210	Single-Family Detached Housing	4,052	DU[6]	9.43	0.18	0.52	0.59	0.35	38,210	737	2,099	2,400	1,409
215	Single Family Attached Housing	146	DU	7.20	0.15	0.33	0.32	0.25	1,051	22	48	47	36
220	Multifamily Housing (Low-Rise)	600	DU	6.74	0.10	0.30	0.32	0.19	4,044	58	182	193	113
		4,798	**DU**				Total Residential Land Uses		43,306	817	2,330	2,640	1,558
							Total		**65,389**	**1,986**	**3,262**	**3,447**	**2,417**
							Trip Generation Estimate From the *Sterling Ranch Updated Traffic Impact Analysis, June 5, 2008*		**70,399**	**1,680**	**3,100**	**3,714**	**2,728**
							Change in the Trip Generation Estimate		**-5,010**	**306**	**162**	**-267**	**-311**

ITE Code	Internal Trips (%) Daily	AM In	AM Out	PM In	PM Out	Total Internal Trips Generated Daily	AM Peak Hour In	AM Peak Hour Out	PM Peak Hour In	PM Peak Hour Out	Total External Trips Generated Daily	AM Peak Hour In	AM Peak Hour Out	PM Peak Hour In	PM Peak Hour Out	New External Trips Generated Passby[3] (%)	Daily
Trip Generation Estimate Based on the Currently Proposed Sterling Ranch Sketch Plan Amendment																	
Non-Residential Land Uses																	
821	7%	7%	7%	7%	7%	1,186	19	12	45	47	15,762	250	153	593	617	34%	10,403
520	60%	60%	30%	30%	60%	2,452	432	184	40	93	1,634	287	429	92	63	0%	1,634
521	60%	60%	30%	30%	60%	630	109	46	11	23	420	72	108	25	16	0%	420
						4,268	560	242	96	163	17,816	609	690	711	696		12,457
Residential Land Uses																	
210	10%	30%	24%	6%	6%	3,765	219	504	148	87	34,445	518	1,595	2,252	1,322	0%	34,445
215	10%	28%	25%	6%	6%	104	6	12	3	2	947	16	36	44	34	0%	947
220	10%	30%	24%	6%	6%	399	17	44	12	7	3,645	41	138	181	106	0%	3,645
						4,268	242	560	163	96	17,816	690	609	696	711		39,038
						8,536	**802**	**802**	**259**	**259**	**56,853**	**1,184**	**2,460**	**3,188**	**2,158**		**51,494**
											63,241	**1,191**	**2,361**	**3,427**	**2,502**		**54,961**
											-6,388	**-7**	**99**	**-239**	**-344**		**-3,467**

Notes:

(1) See Appendix Table 2 for detailed trip generation estimate by traffic analysis zone

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

(3) Source: "Trip Generation Handbook - An ITE Proposed Recommended Practice 3rd Edition, September 2017" by ITE

(4) Rates based on a shopping plaza with no supermarket

(5) KSF = thousand square feet of floor area

(6) DU = Dwelling Unit

Source: LSC Transportation Consultants, Inc.

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1Table 4

(Page 1 of 2)

Sterling Ranch Sketch Plan Amendment

Roadway Segment Improvements

Segment ID[1] (See Figure 12 for map)	Improvement Description	Timing	Design ADT (vpd)	Projected 2042 ADT (vpd)	Responsibility
V1 northbound	Per the City of Colorado Springs, an outside paved shoulder will need to be added along the east side of Vollmer Road from Dry Needle Place up to the south end of segment V2 improvements.	With Sterling Ranch Filing No. 4 but potentially complete concurrently with the construction of the right-turn lane at Pioneer Landscape Center access for the Sterling Ranch Recycling Facility (PCD No. PPR2241)	5,500 (Directional northbound)	16,275	Sterling Ranch
V1 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]	The need driven by anticipated traffic from each development impacting this section of Vollmer Road.	20,000		Sterling Ranch, if necessary, prior to construction by others.
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]	Short-Term Future (With Sterling Ranch Fil No. 2 Or Sterling Ranch Phase 2)	20,000 (Note: Existing Capacity 8,000[3])	17,475	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 plus a 6' paved, striped outside shoulder in each direction. [2]	Short-Term Future (With Homestead North)	11,000 (Note: Existing Capacity 8,000)	17,380	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]	Long-Term Future	20,000		Sterling Ranch with potential County assistance with ROW acquisition - 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]	**Short-Term Future-– May 2024**Updated 10/15/2022 - Sections V4, V5, V6 to be constructed by **May 2024** (prior note: With Homestead North Filing 1)	20,000	16,445	Sterling Ranch
V5	Improve Vollmer Road from Briargate Parkway to Jane Kirkham Drive to a standard 4-Lane Urban Minor Arterial Cross Section. [2]	**Short-Term Future– May 2024** Updated 10/15/2022 - Sections V4, V5, V6 to be constructed by **May 2024** (prior note: prior note: With Homestead North Filing 1)	20,000	11,690	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]	**Short-Term Future– May 2024** Updated 10/15/2022 - Sections V4, V5, V6 to be constructed by **May 2024** (prior note: prior note: With Homestead North Filing 2)	20,000	11,425	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.	**Short-Term Future – May 2024** Updated 10/15/2022 - Sections V4, V5, V6 to be constructed by **May 2024** (prior note: With Homestead North Filing 3)	20,000	10,030	Sterling Ranch
V8	Improve Vollmer Road from Poco Road to Shoup Road to a Rural 2-Lane Arterial Cross Section. [2]	Long-Term Future	10,000	11,790	El Paso County Project ID U-12

Part 1/2 of this table (see Part 2 on next page)

Notes:

(1) See Figure 10

(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. (February 10, 2023)

Table 4

(Page 2 of 2)

Sterling Ranch Sketch Plan Amendment

Roadway Segment Improvements

Segment ID[(1)] (See Figure 12 for map)	Improvement Description	Timing	Design ADT (vpd)	Projected 2042 ADT (vpd)	Responsibility
SR1	Construct Sterling Ranch Road as an Urban Non-Residential Collector from Marksheffel Road to Dines Boulevard.	Short Term - with Sterling Ranch Fil No. 2	20,000	14,840	Sterling Ranch
SR2	Construct Sterling Ranch Road as an Urban Non-Residential Collector from Dines Boulevard to Briargate Parkway.	Short-Term	20,000	10,275	Sterling Ranch
SR3	Construct Sterling Ranch Road as an Urban Collector from Briargate Parkway to Vancouver Street.	Short Term	10,000	9,300	Sterling Ranch
SR4	Construct Sterling Ranch Road from Vancouver Street north to Arroya (or ultimate north terminus).	Long-Term Future	10,000	4,260	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.	Updated 10/15/2022: to be completed **by the end of 2022** (prior note: With Sterling Ranch Fil No. 2	40,000	23,370	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. **10/16/2022 NOTE: With the completion of M2 in 2023, the connection between Vollmer and Woodmen Road (via M3) will be completed.**	Short Term Updated 10/15/2022: to be completed **in 2023** (prior note: With Sterling Ranch Phase 2)	40,000	29,600	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). **10/16/2022 NOTE: With the completion of M2 in 2023, the connection between Vollmer and Woodmen Road (via M3) will be completed.**	Updated 10/15/2022**: <u>Completed</u>** (by Others)	40,000	24,525	Others (Completed)
M4	Construct Marksheffel Road between Black Forest Road and Vollmer Road.	Long-Term Future	40,000	27,910	Others
B1	Construct the south half section of Briargate Pkwy (4-Lane Principal Arterial) between Vollmer Road and Wheatland Drive **[now full section by 2023]**.	Short-Term Future Updated 10/15/2022: **Full section** to be completed **in 2023** with Homestead at Sterling Ranch Filing No. 1 (prior note: With Homestead at Sterling Ranch Fil 2)	20,000	24,745	Sterling Ranch
	Construct the north half section of Briargate Pkwy (4-Lane Principal Arterial) between Vollmer Road and Wheatland Drive **[now full section by 2023]**.	Short-Term Future Updated 10/15/2022: **Full section** to be completed **in 2023** with Homestead at Sterling Ranch Filing No. 1 (prior note: Long-Term Future)	40,000		Sterling Ranch
B2	Construct Briargate Pkwy **(full section)** as a 4-Lane Principal Arterial between Wheatland Dr and Sterling Ranch Road.	Short-Term Future Updated 10/15/2022: **Full section** to be completed **in 2023 or Spring 2024** (prior note: Long-Term Future)	40,000	26,375	Sterling Ranch
B3	Construct Briargate Pkwy as a 4-Lane Principal Arterial between Sterling Ranch Road and Banning Lewis Parkway.	Intermediate Term	40,000	22.365	Sterling Ranch
B4	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	17,945	Others
B5	Construct Briargate Pkwy as a 4-Lane Principal Arterial between Black Forest Road and Vollmer Road.	Long-Term Future	40,000	24,340	Others; PPRTA A List Project
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	Financial assurances for half-section, Sterling Ranch half-section or full-section w/ cost recovery
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	PPRTA A-List Project; City of Colorado Springs ConnectCOS Index No.476
B1	Widen Black Forest Road between Woodmen Road to just north of Research Road to two northbound and southbound through lanes.	Black Forest Widening Project	40,000	28,420	City of Colorado Springs
B2	Widen Black Forest Road from just north of Research Road to Briargate Parkway.	Long-Term Future	40,000	25,145	Others/City of Colorado Springs
B3	Widen Black Forest Rd from Briargate Pkwy to Old Ranch Rd as a 4-lane Principal Arterial with bike and pedestrian facilities.	Long-Term Future	40,000	19,135	PPRTA B List Project ConnectCOS Index No. 479

Part 2/2 of this table

Notes:

(1) See Figure 10

(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. (February 10, 2023)

Table 5
Intersection Improvements
Sterling Ranch Sketch Plan

Item #	Improvement	Trigger	Timing	Responsibility
	1) Burgess Road/Vollmer Road			
1	Reconstruct as a modern one-lane roundabout	When the LOS degrades below LOS F	Existing deficiency	This intersection may be eligible intersection under the fee impact program
	2) Arroya Ln/Vollmer Road			
2	No Improvements are anticipated to be required beyond those to be constructed by the Retreat at TimberRidge			
	3) Black Forest Road/Briargate Parkway			
3	Future intersection/auxiliary lane Improvements at this intersection are depicted on Figure 10c (See the Black Forest Widening Project Traffic Impact Study by AECOM dated November 22, 2019) Black Forest Road: Two through lanes northbound and southbound at intersections 11,14,15.Widen Black Forest Rd from Briargate Pkwy to Old Ranch Rd as a 4-lane principal arterial with bike and pedestrian facilities PPRTA B List Project ConnectCOS Index No. 479 Briargate Parkway: Two through lanes eastbound and westbound at intersection Nos.3 and 4; ConnectCOS TIP Index No. 325; Construct new roadway connection, drainage, upgrade traffic signal, and multimodal features. PPRTA A List Project			
4	Improvents on Briargate Parkway as shown on Figure 10c are consistent with the improvements shown in the *Briargate-Stapleton Corridor Study (DRAFT)* by Wilson & Company dated December 9, 2021. These improvements will likely be completed with the extension of Briargate Parkway west of Vollmer Road.			
	4) Briargate Parkway/Vollmer Road			
5	Briargate Parkway is planned to be constructed to its final cross section between Vollmer Road and Sterling Ranch. For the planned improvements on the north, south and east legs see the improvements plans associated with the Homestead North development.			
6	Briargate Parkway: Two through lanes eastbound and westbound at intersection Nos..3 and 4; ConnectCOS TIP Index No. 325; Construct new roadway connection, drainage, upgrade traffic signal, and multimodal features. PPRTA A List Project. Improvents on Briargate Parkway west of Vollmer Road as shown on Figure 10c are consistent with the improvements shown in the *Briargate-Stapleton Corridor Study (DRAFT)* by Wilson & Company dated December 9, 2021. These improvements will likely be completed with the extension of Briargate Parkway west of Vollmer Road and/or with development of the Jaynes property located east of Vollmer Road.			
	5) Briargate Parkway/Sterling Ranch Road			
7	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 Phase 1 Preliminary Plan **or** Foursquare at Sterling Ranch	Sterling Ranch
8	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	Long Term With development of the K-8 School Parcel (Tract M)	Sterling Ranch
9	Construct a northbound to eastbound right-turn acceleration lane on Briargate Parkway at Sterling Ranch Road. The lane should be 580' long plus a 180' taper.	northbound right-turn volume > 50 vph	Long Term With development of the K-8 School Parcel (Tract M)	Sterling Ranch
10	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	Long Term	Sterling Ranch
11	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	Long Term	Sterling Ranch
12	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 Phase 1 Preliminary Plan	Sterling Ranch
	6) Banning Lewis Parkway/Briargate Parkway			
13	Improvents on as shown on Figure 10c are consistent with the improvements shown in the *Briargate-Stapleton Corridor Study (DRAFT)* by Wilson & Company dated December 9, 2021. Detailed recommendations are anticipated to be proivded with future preliminary plan and/or final plat submittals.			
	7) Vollmer/Dines			
14	Additional improvements may be needed as part of the Jaynes property development (PCD No. SKP225). If the east leg is allowed to operate as a three-quarter movement access (left-in/right-in/right-out only) the west leg may need be restricted to three-quarter movement.			
	8) Sterling Ranch Road/Oak Park Place			
15	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	With Future Filings (Villages at Sterling Ranch East)	Sterling Ranch
16	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	With Future Filings (Villages at Sterling Ranch East)	Sterling Ranch
	9) Banning Lewis Parkway/Oak Park Place			
17	Construct a northbound left-turn lane on Banning Lewis Parkway approaching Oak Park Place. Detailed auxiliary turn lane lengths to be determined with future Preliminary Plan and/or Final Plat submittals.	northbound left-turn volume > 10 vph	With Future Filings	Sterling Ranch
18	Construct a southbound left-turn lane on Banning Lewis Parkway approaching Oak Park Place. Detailed auxiliary turn lane lengths to be determined with future Preliminary Plan and/or Final Plat submittals.	southbound right-turn volume > 25 vph	With Future Filings	Sterling Ranch
	10) Sterling Ranch Road/Dines Boulvard			
19	No additional improvements are anticipated to be required			
	11) Black Forest Road/Research Parkway			
20	Two through lanes northbound and southbound at intersections 11,14,15. Improvements on Black Forest as shown on Figure 10c are currently being constructed as part of a project by the City of Colorado Springs (See the *Black Forest Widening Project Traffic Impact Study* by AECOM dated November 22, 2019)			
	12) Marksheffel Road/Vollmer Road			
21	Signalization of the intersection	Once warrants are met. The decision on timing of traffic signal installation rests with El Paso County Public Works.	Anticipated by buildout of Sterling Ranch East Phase 1 Preliminary Plan	This intersection may be eligible intersection under the fee impact program
	13) Sterling Ranch Road/Marksheffel Road			
22	A westbound left-turn lane and eastbound right-turn lane may be required with development of the Rhetoric Parcel. See PCD No. PP2216			
23	Signalization of the intersection	Once warrants are met. The decision on timing of traffic signal installation rests with The City of Colorado Springs.	Anticipated by buildout of Sterling Ranch East Phase 1 Preliminary Plan	SRMD#3
	14) Black Forest Road & Vollmer Road			
23	Two through lanes northbound and southbound at intersections 11,14,15. Improvements on Black Forest as shown on Figures **6c and** 10c are currently being constructed as part of a project by the City of Colorado Springs (See the *Black Forest Widening Project Traffic Impact Study* by AECOM dated November 22, 2019)			
	15) Black Forest Road/Woodmen Road			
24	Three through lanes eastbound and westbound at intersections 15, 16, 17 with Woodmen Road widening - PPRTA A List project; Improvements on Black Forest in the southbound direction as shown on Figures **6c and** 10c are shown as as part of a project by the City of Colorado Springs (See the *Black Forest Widening Project Traffic Impact Study* by AECOM dated November 22, 2019)			
	16) Marksheffel Road/Woodmen Road			
25	Three through lanes eastbound and westbound at intersections 15, 16, 17 with Woodmen Road widening - PPRTA A List project; Dual lefts likely to be needed with and added by commercial development on all four corners. The northbound left-turn lane may be added sooner with the Marksheffel upgrade south of Woodmen Road to its ultimate cross section. Widening of Woodmen Road is shown as a 2040 Roadway Improvement (Project ID C8) in the *El Paso County* 2016 Major Transportation Corridors Plan Update			
	17) Banning Lewis Parkway/Woodmen Road			
26	Three through lanes eastbound and westbound at intersections 15, 16, 17 with Woodmen Road widening - PPRTA A List project; Intersection improvements (auxiliary turn lanes, traffic signal, phasing to dual lefts) are likely with nearby developments including Percheron (PCD No. OAR2173) and Banning Lewis Ranch as development occurs.			

Source: LSC Transportation Consultants, Inc. (February 28, 2023)

Appendix Tables 1 and 2

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Appendix Table 1
Area Traffic Impact Studies
Sterling Ranch Sketch Plan Amendment

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
Copper Chase at Sterling Ranch Transportation Memorandum	PUDSP222	LSC Transportation Consultants, Inc	December 14, 2021
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
Foursquare at Sterling Ranch East Preliminary Plan/Traffic Generation Analysis	PUDSP227	LSC Transportation Consultants, Inc	November 22, 2022
The Villages at Sterling Ranch East Preliminary Plan/Traffic Generation Analysis	PUDSP226	SM Rocha, LLC	July 1, 2022
Sterling Ranch East - Phase 1 Rezoning & Preliminary Plan Traffic Impact Study	SP-22-004, P-22-012, P-22-013	LSC Transportation Consultants, Inc	February 10, 2023
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		LSC Transportation Consultants, Inc	July 1, 2022
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
Traffic Impact Study for Rhetoric Site	P2216	SM Rocha, LLC	June, 2022
Briargate-Stapleton Corridor Study (DRAFT)	briargate-stapleton.com	Wilson & Company	December 9, 2021

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. *Feb-23*

Appendix Table 2

Sterling Ranch Sketch Plan

Trip Generation Estimate by Traffic Analysis Zone

Traffic Analsis Zone (See Figure 2 for boundaries)	Name	Land Use Code	Land Use Description	Trip Generation Units Quantity Unit	Trip Generation Rates [1] Average Weekday Traffic	Morning Peak Hour In	Morning Peak Hour Out	Afternoon Peak Hour In	Afternoon Peak Hour Out	Total Trips Average Weekday Traffic	Morning Peak Hour In	Morning Peak Hour Out	Afternoon Peak Hour In	Afternoon Peak Hour Out
Approved/Existing Sterling Ranch Phase 1														
1	Branding Iron Fil No. 1	210	Single Family Detached Housing	51 DU[2]	9.43	0.18	0.52	0.59	0.35	481	9	26	30	18
2	Homestead Fil 1	210	Single Family Detached Housing	72 DU	9.43	0.18	0.52	0.59	0.35	679	13	37	43	25
3	Homestead Fil 2	210	Single Family Detached Housing	104 DU	9.43	0.18	0.52	0.59	0.35	981	19	54	62	36
4	Branding Iron Fil No. 2	210	Single Family Detached Housing	75 DU	9.43	0.18	0.52	0.59	0.35	707	14	39	44	26
6	Sterling Ranch Filing 2	210	Single Family Detached Housing	38 DU	9.43	0.18	0.52	0.59	0.35	358	7	20	23	13
108	Existing Lift Station	- - -	Lift Station	1 station	0.00	0.00	0.00	0.00	0.00	0	0	0	0	0
Future Sterling Ranch Phase 1														
16	Sterling Ranch Future Filing	210	Single Family Detached Housing	82 DU	9.43	0.18	0.52	0.59	0.35	773	15	42	49	29
105	Mixed Use 14 Ac (SE Briargate/Vollmer)	821	Shopping Plaza	51 KSF[3]	67.52	1.07	0.66	2.54	2.65	3,444	55	34	130	135
		220	Multifamily Housing Low-Rise	233 DU	6.74	0.10	0.30	0.32	0.19	1,570	22	71	75	44
107	Mixed Use 11 Acres (South of Marksheffel)	821	Shopping Plaza	120 KSF	67.52	1.07	0.66	2.54	2.65	8,102	129	79	305	318
Sterling Ranch Phase 2														
10	Sterling Ranch Fil 4 (north)	210	Single Family Detached Housing	61 DU	9.43	0.18	0.52	0.59	0.35	575	11	32	36	21
	Sterling Ranch Fil 4 (south)	210	Single Family Detached Housing	98 DU	9.43	0.18	0.52	0.59	0.35	924	18	51	58	34
7&8	Sterling Ranch Fil 3	210	Single Family Detached Housing	63 DU	9.43	0.18	0.52	0.59	0.35	594	11	33	37	22
5	Copper Chase	210	Single Family Detached Housing	138 DU	9.43	0.18	0.52	0.59	0.35	1,301	25	71	82	48
Homestead North														
9	Homestead North Fil 1	210	Single Family Detached Housing	73 DU	9.43	0.18	0.52	0.59	0.35	688	13	38	43	25
11	Homestead North Fil 2	210	Single Family Detached Housing	74 DU	9.43	0.18	0.52	0.59	0.35	698	13	38	44	26
12	Homestead North Fil 3	210	Single Family Detached Housing	77 DU	9.43	0.18	0.52	0.59	0.35	726	14	40	46	27
Sterling Ranch East Phase 1														
22 & 26	Sterling Ranch East Fil 1	210	Single Family Detached Housing	294 DU	9.43	0.18	0.52	0.59	0.35	2,772	54	152	174	102
18	Sterling Ranch East Fil 2	210	Single Family Detached Housing	42 DU	9.43	0.18	0.52	0.59	0.35	396	8	22	25	15
17, 23, 24 & 38	Sterling Ranch East Future Filings	210	Single Family Detached Housing	187 DU	9.43	0.18	0.52	0.59	0.35	1,763	34	97	111	65
37	Sterling Ranch East Future Filings	210	Single Family Detached Housing	238 DU	9.43	0.18	0.52	0.59	0.35	2,244	43	123	141	83
103	K-8 School	520	Elementary School	600 Students	2.27	0.40	0.34	0.07	0.09	1,362	240	204	44	52
		522	Middle School/Junior High School	500 Students	2.10	0.36	0.31	0.07	0.08	1,050	181	154	36	39
102	Elementary School	520	Elementary School	600 Students	2.27	0.40	0.34	0.07	0.09	1,362	240	204	44	52
Future Sterling Ranch East South of Briargate														
14, 15, 20 & 21	Village at Sterling Ranch East	210	Single Family Detached Housing	100 DU	9.43	0.18	0.52	0.59	0.35	943	18	52	59	35
		220	Single Family Attached Housing	146 DU	7.20	0.15	0.33	0.32	0.25	1,051	22	48	47	36
33		210	Single Family Detached Housing	106 DU	9.43	0.18	0.52	0.59	0.35	1,000	19	55	63	37
25, 27, 28, 29, 31, & 32	Sterling Ranch East Future Filings	210	Single Family Detached Housing	603 DU	9.43	0.18	0.52	0.59	0.35	5,686	110	312	357	210
39		210	Single Family Detached Housing	18 DU	9.43	0.18	0.52	0.59	0.35	170	3	9	11	6
104	Future Elementary School	520	Elementary School	600 Students	2.27	0.40	0.34	0.07	0.09	1,362	240	204	44	52
105	Mixed Use 14 Ac(SE Briargate/Vollme	821	Shopping Plaza	80 KSF	67.52	1.07	0.66	2.54	2.65	5,402	86	53	203	212
		220	Multifamily Housing Low-Rise	367 DU	6.74	0.10	0.30	0.32	0.19	2,474	35	112	118	69
Future Sterling Ranch East North of Briargate														
19	Four Square at Sterling Ranch	210	Single Family Detached Housing	158 DU	9.43	0.18	0.52	0.59	0.35	1,490	29	82	94	55
30, 34,35 & 36	Future Sterling Ranch East Filings	210	Single Family Detached Housing	871 DU	9.43	0.18	0.52	0.59	0.35	8,214	159	451	516	303
Future Sterling Ranch East East of TimberRidge														
101	Future Sterling Ranch East Filings	210	Single Family Detached Housing	431 DU	9.43	0.18	0.52	0.59	0.35	4,064	78	223	255	150
								Sterling Ranch		**65,406**	**1,987**	**3,262**	**3,449**	**2,420**

Notes:

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

(2) DU = dwelling unit

(3) KSF = 1000 square feet of floor space

Source: LSC Transportation Consultants, Inc. *Feb-23*

Figures 1-12

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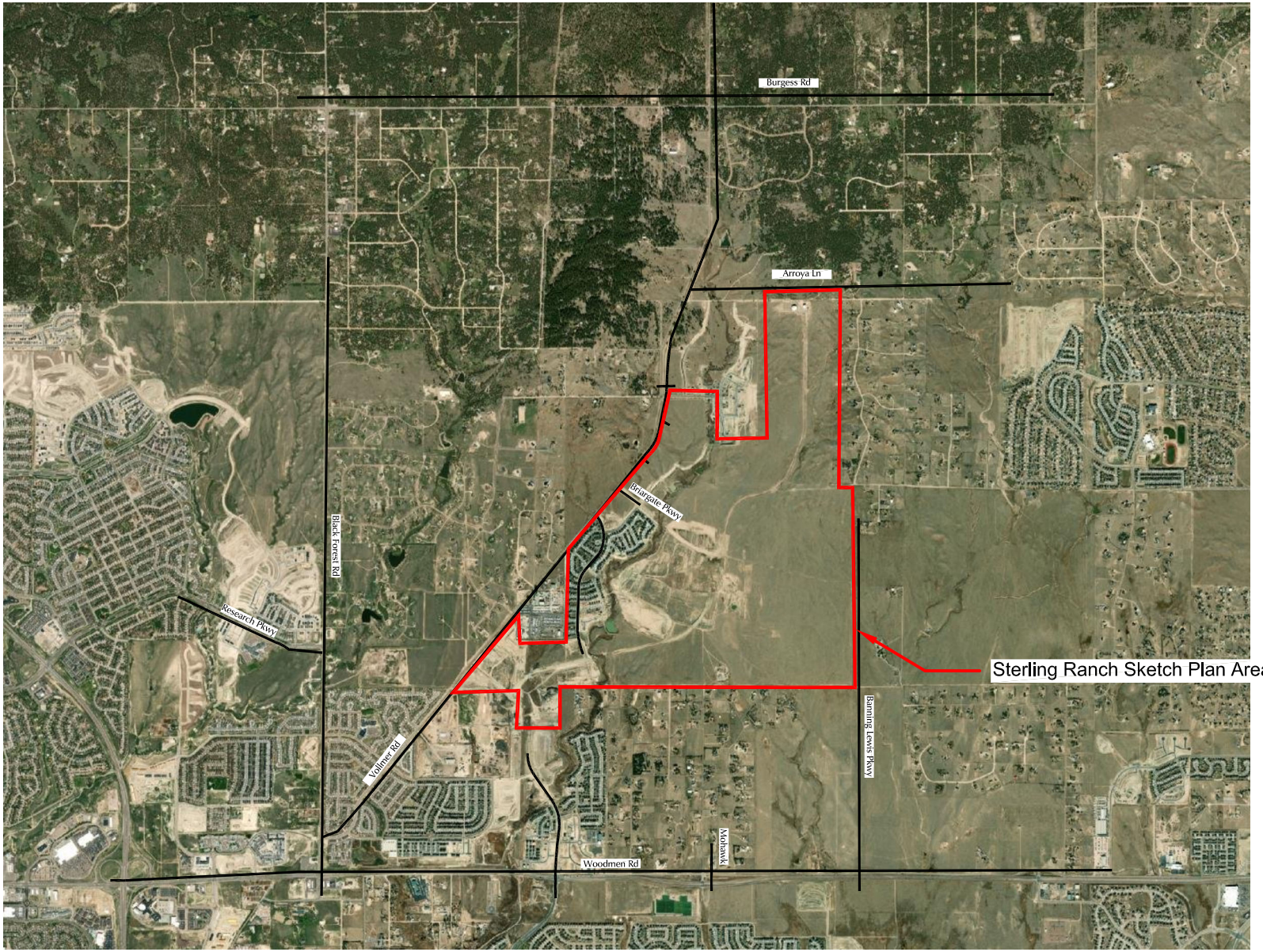

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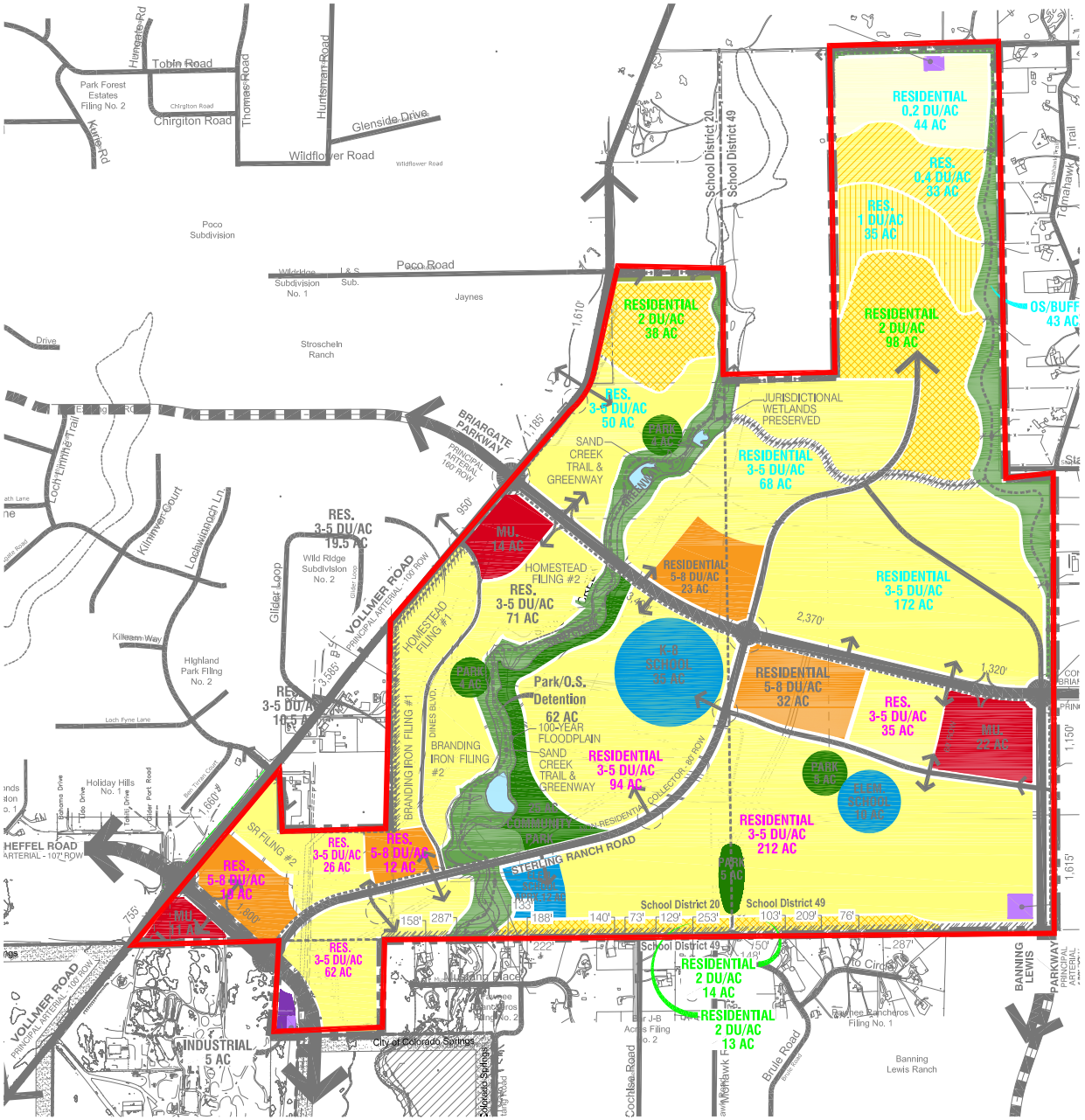
Figure 1

Vicinity

Sterling Ranch East Rezoning and Preliminary Plan (LSC# S224440)



Approximate
Scale:
1" = 2,000'

Figure 2

Sketch Plan

Sterling Ranch East Rezoning and Preliminary Plan (LSC# S224440)

TRANSPORTATION CONSULTANTS, INC.

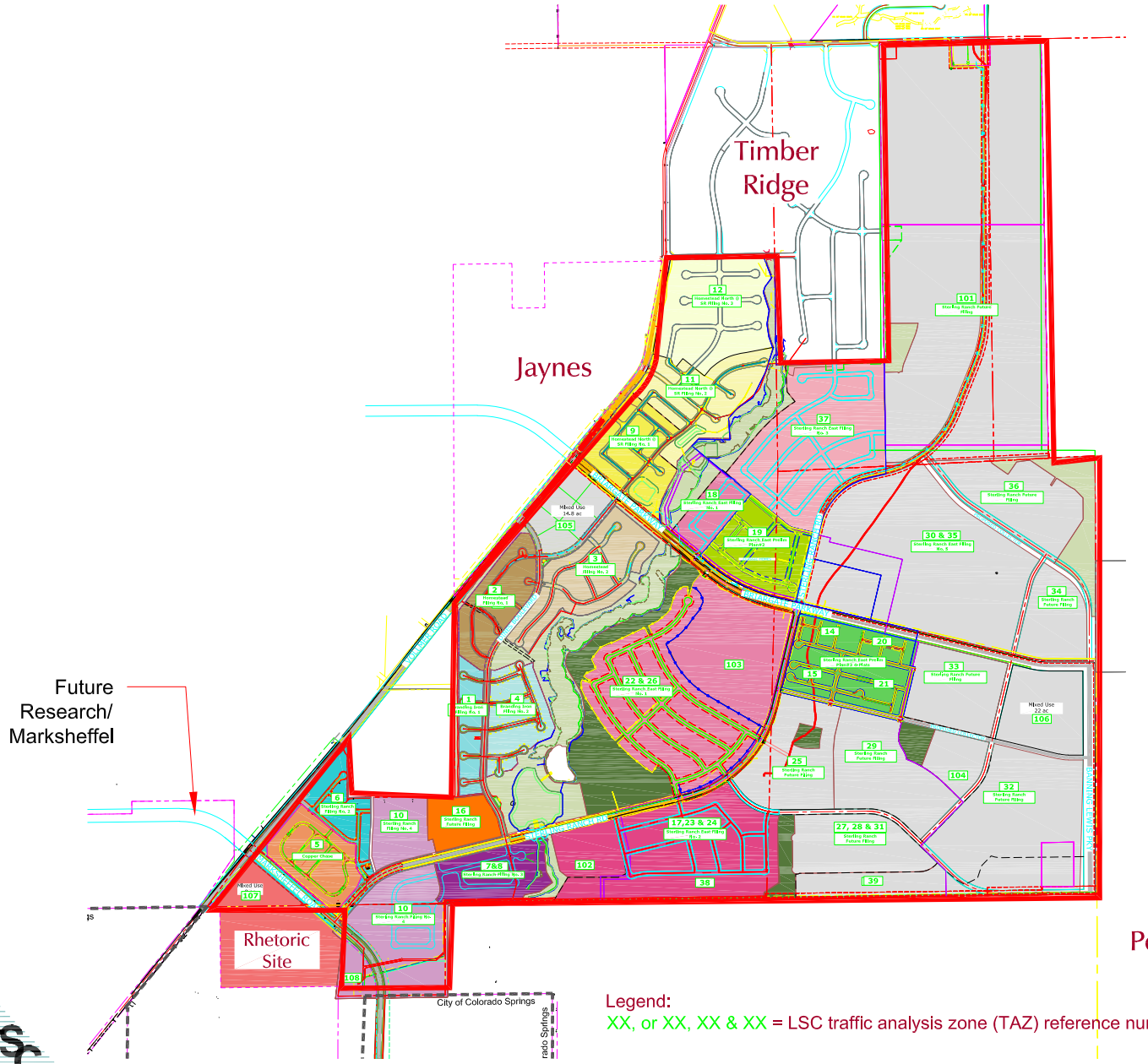


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Figure 3

TAZ Map

Sterling Ranch East Rezoning and Preliminary Plan (LSC# S224440)

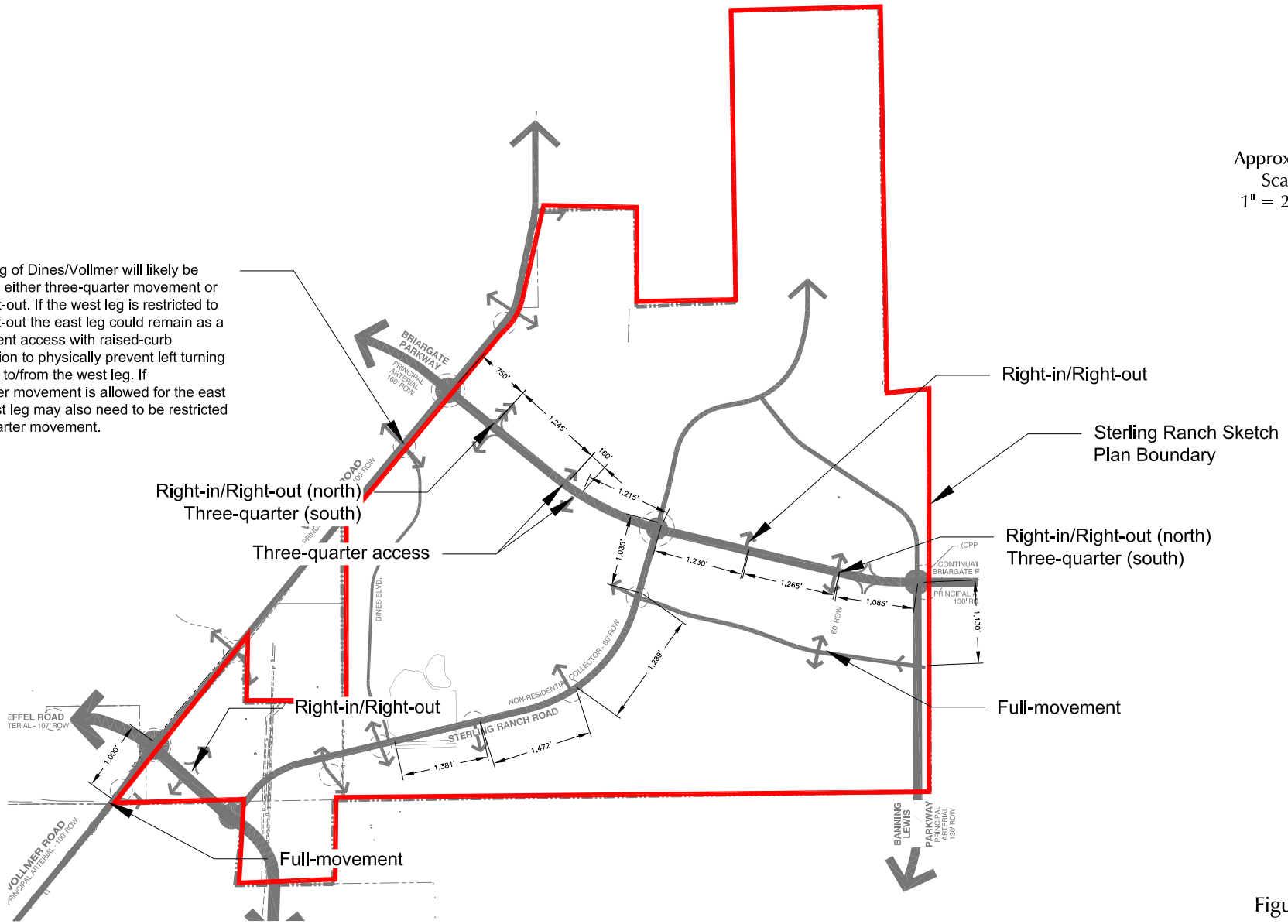


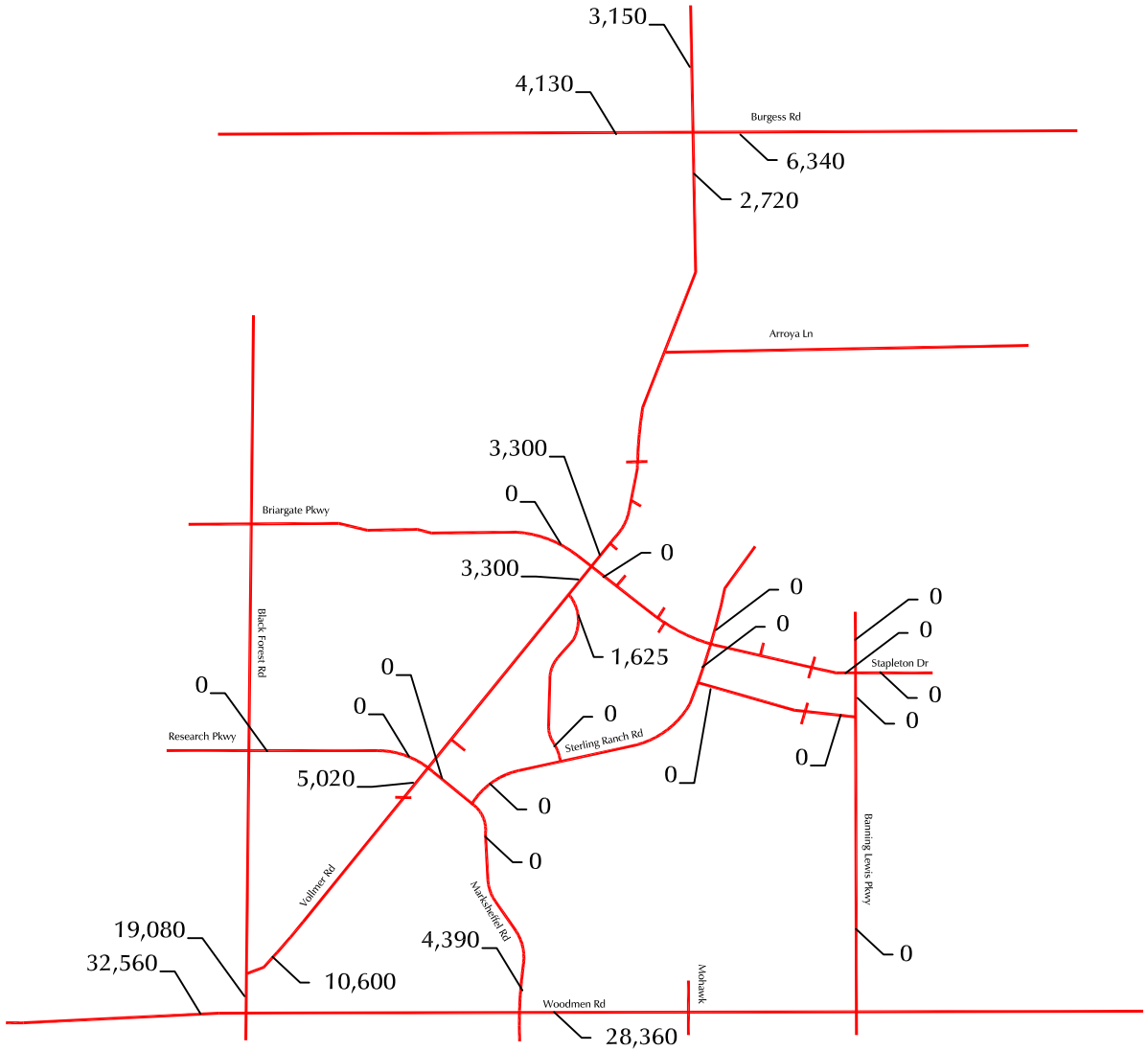
Figure 4

Conceptual Intersection Spacings

Sterling Ranch East Rezoning and Preliminary Plan (LSC# S224440)

Deviations would need to be approved for any intersections not meeting criteria.

LSC TRANSPORTATION CONSULTANTS, INC.



Not to scale

LEGEND:

XXX = Average Weekday Traffic (vehicles per day)

Counts are estimates by LSC based on factored turning movement count data shown on Figure 5b

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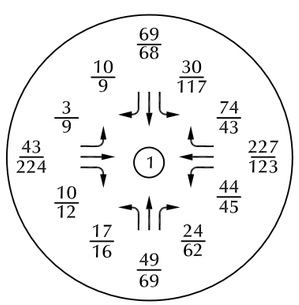
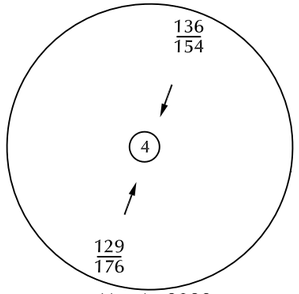
Figure 5a

Existing ADTs

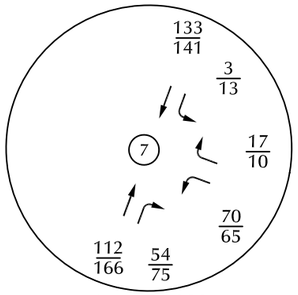
Sterling Ranch East Rezoning and Preliminary Plan (LSC# S224440)



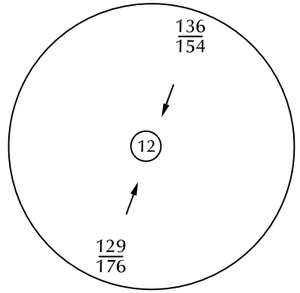
July 2022

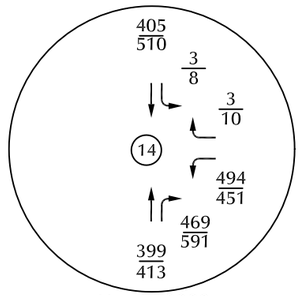


March 2022

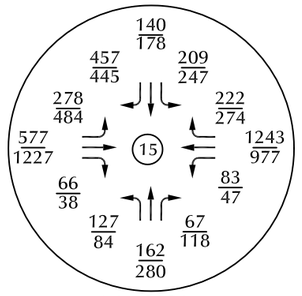


March 2022

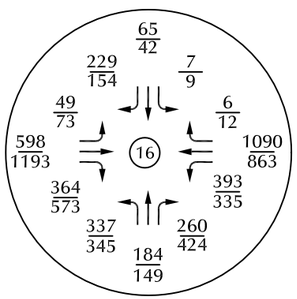




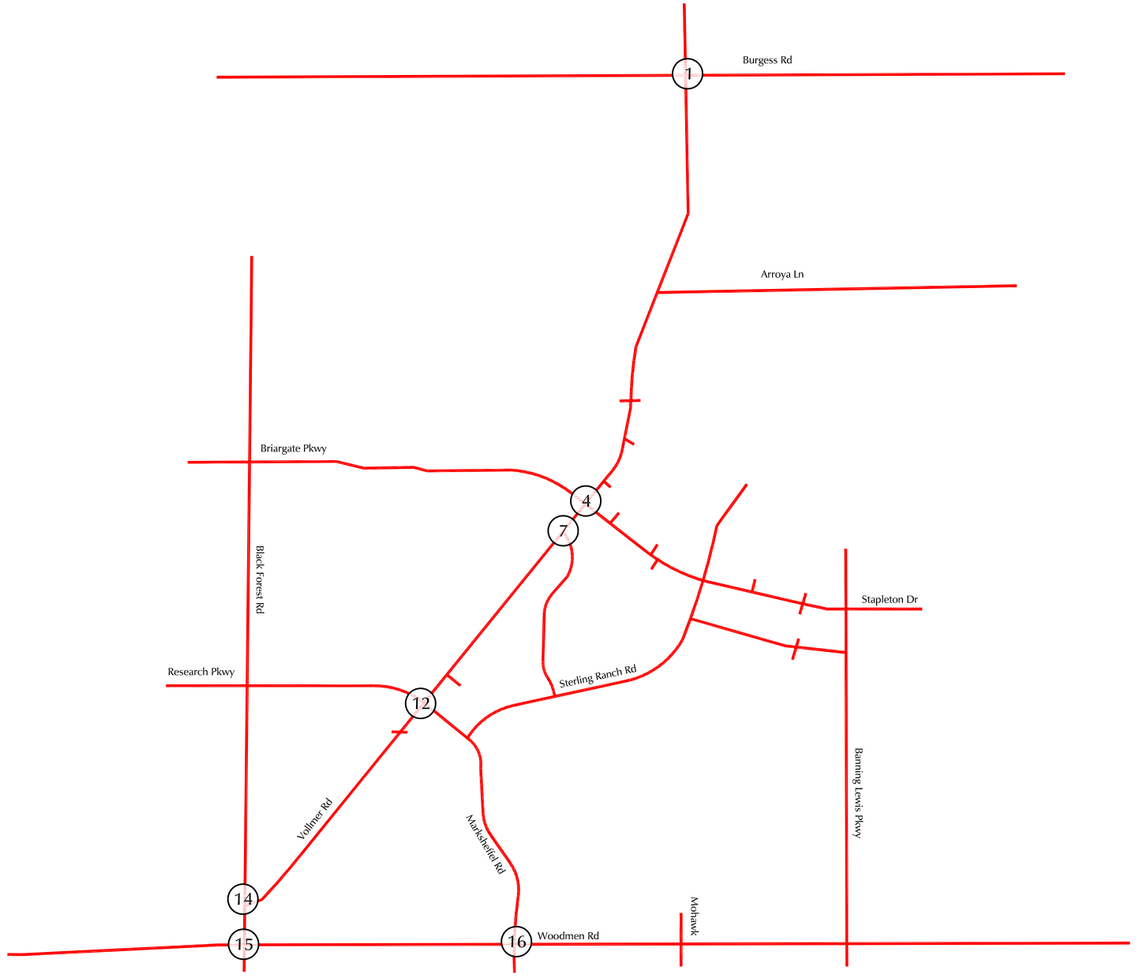
March 2022



July 2021



August 2021



Not to scale

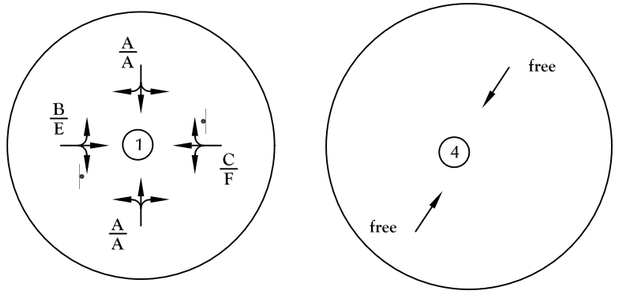
LEGEND: $\frac{XX}{XX} = \frac{\text{AM Peak-Hour Traffic (veh/hr)}}{\text{PM Peak-Hour Traffic (veh/hr)}}$

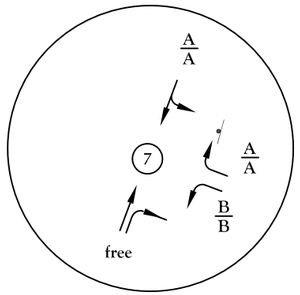
TRANSPORTATION CONSULTANTS, INC.

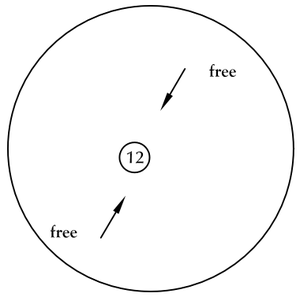
Figure 5b

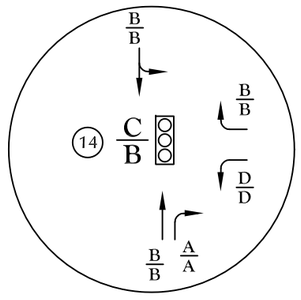
Existing Peak-Hour Traffic

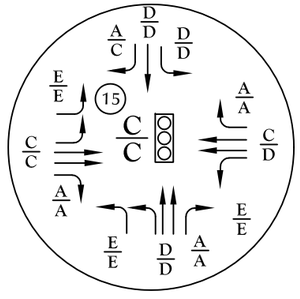
Sterling Ranch East Rezoning and Preliminary Plan (LSC# S224440)

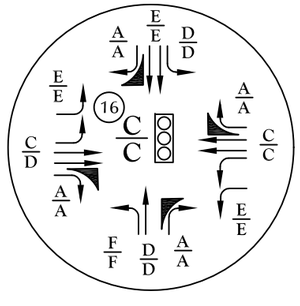


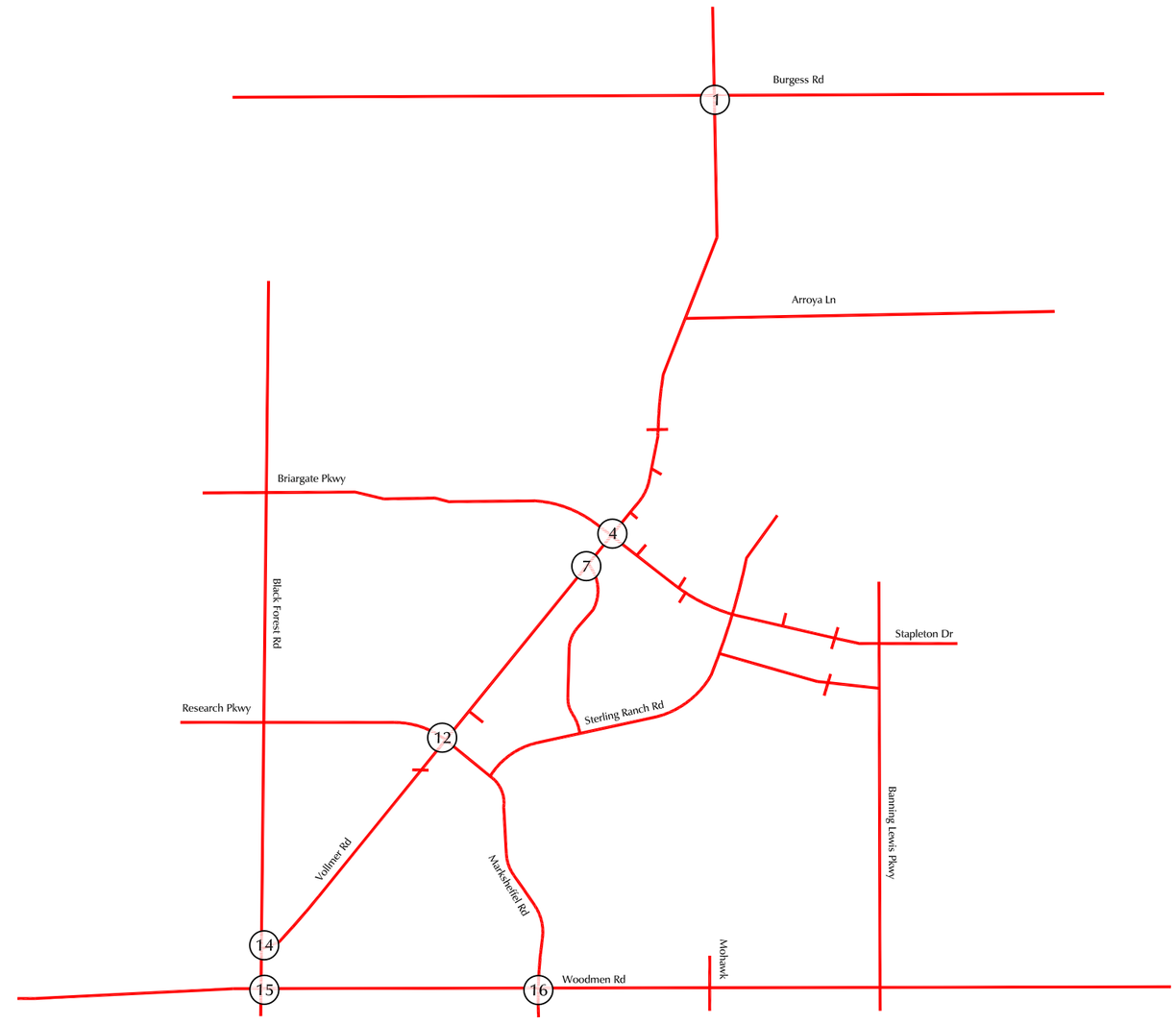












Not to scale

LEGEND:

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

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

= Stop Sign

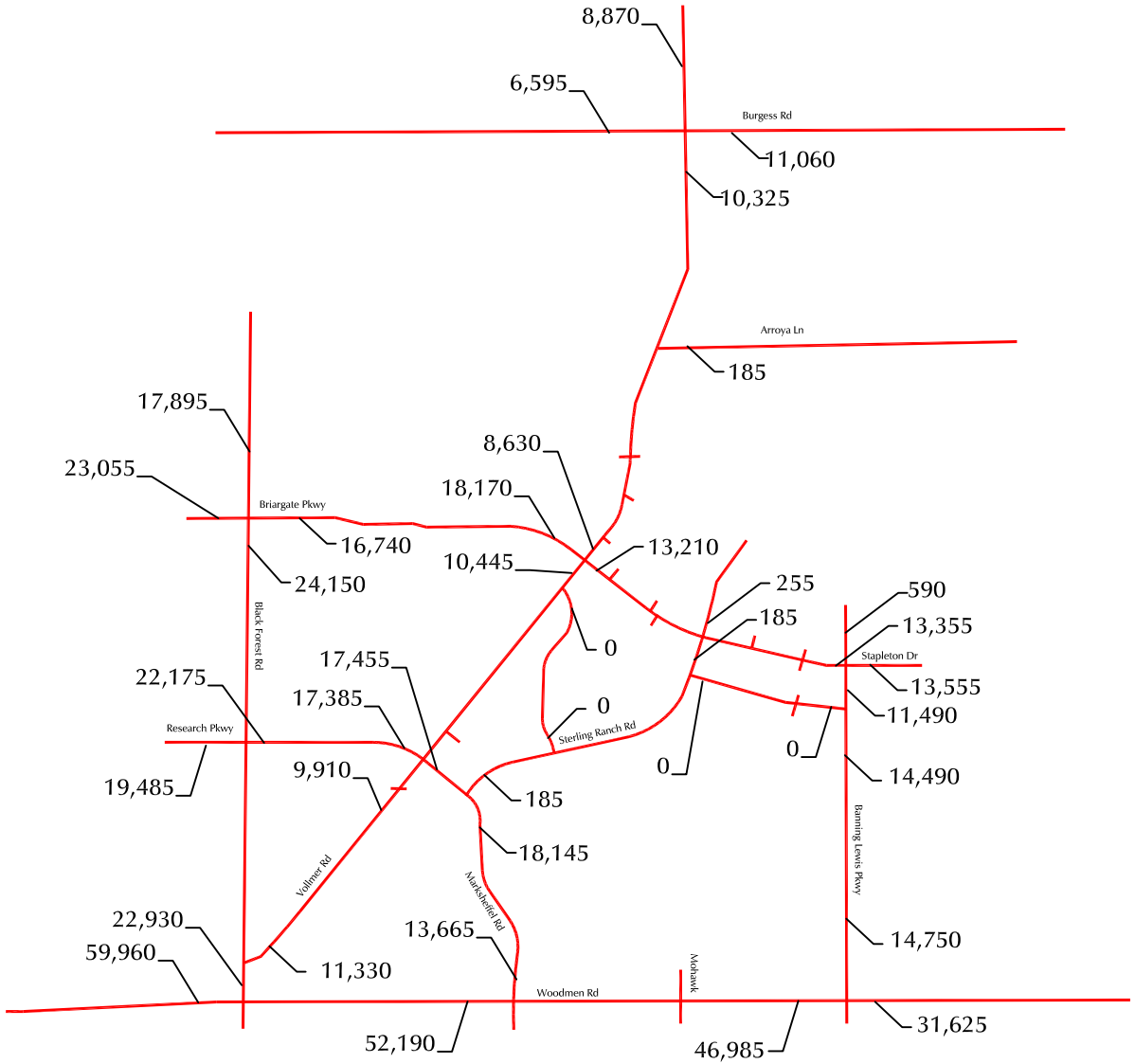
= Traffic Signal

LSC TRANSPORTATION CONSULTANTS, INC.

Figure 5c

Existing Lane Geometry, Traffic Control, and Level of Service

Sterling Ranch East Rezoning and Preliminary Plan (LSC# S224440)



Not to scale

LEGEND:

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

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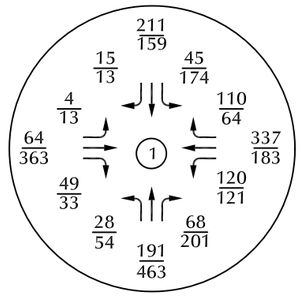
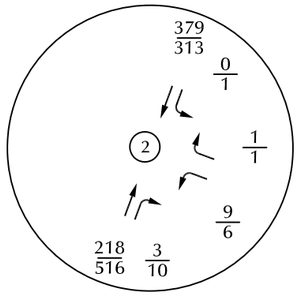
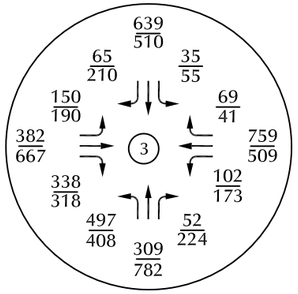
Figure 6a

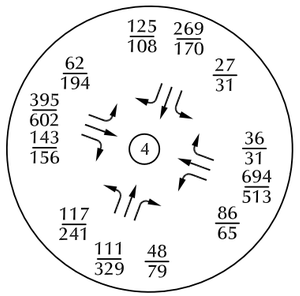
2042 Baseline Average Weekday Traffic

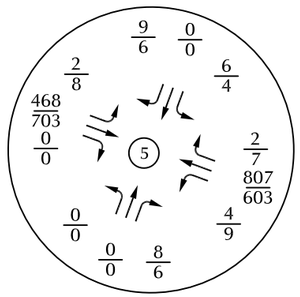
Sterling Ranch East Rezoning and Preliminary Plan (LSC# S224440)

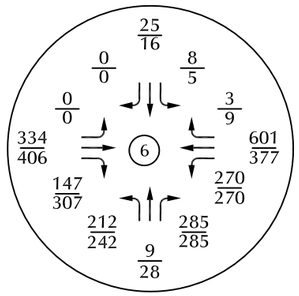


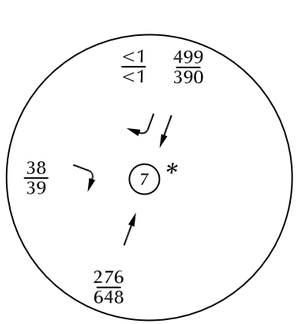


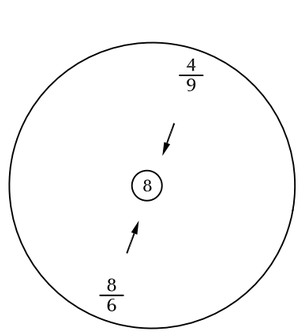


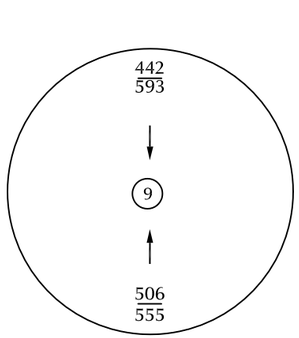


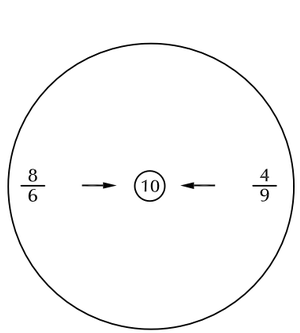


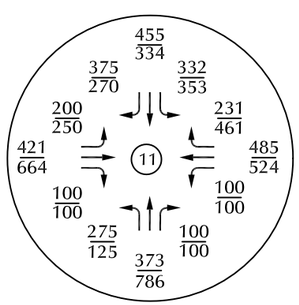


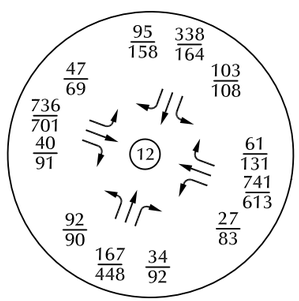


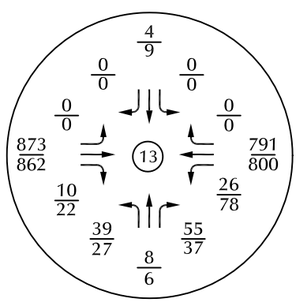


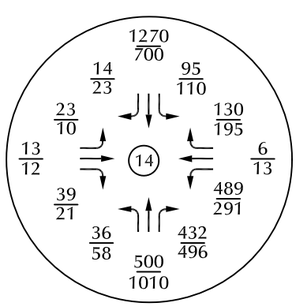


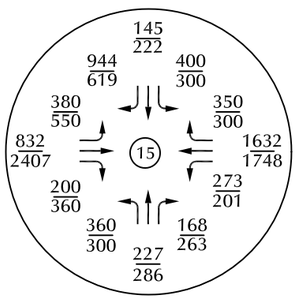


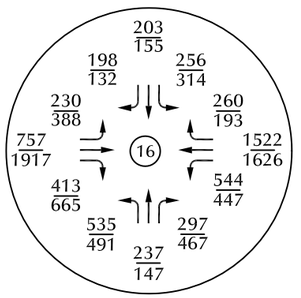


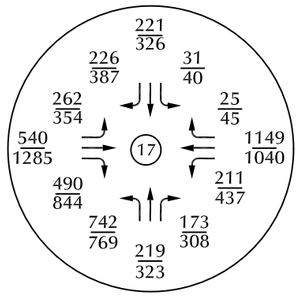


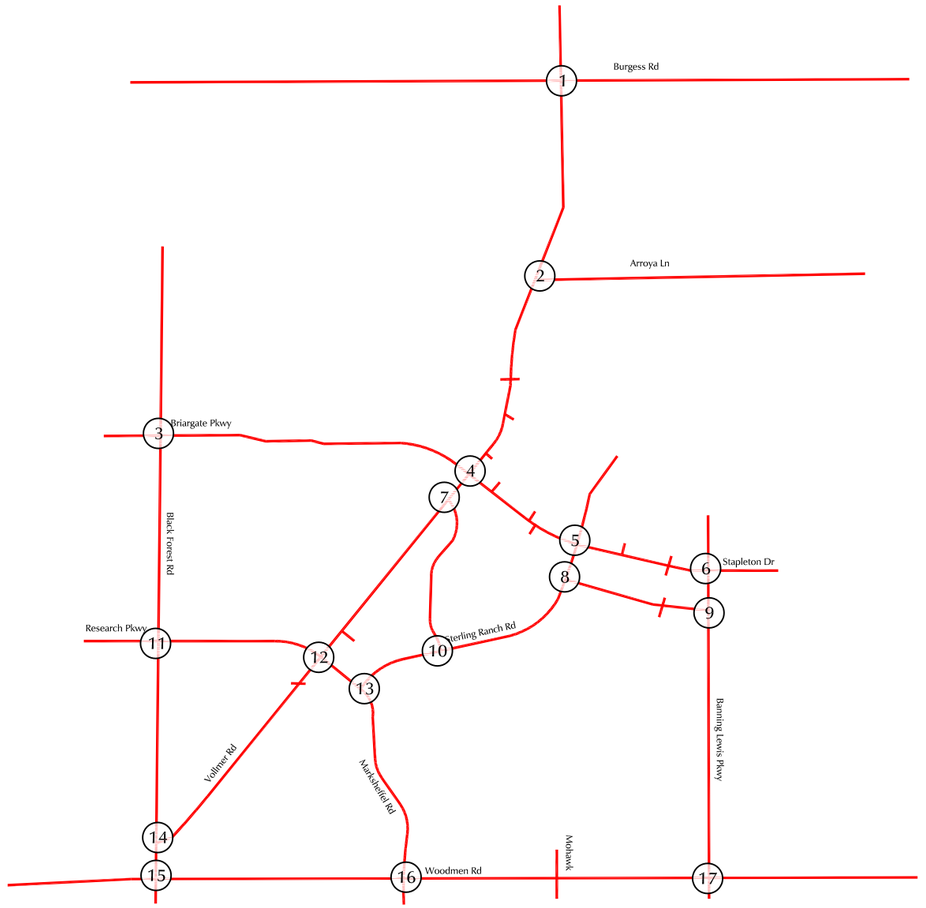












Not to scale

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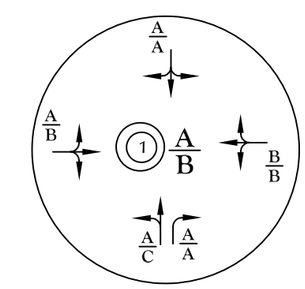
LEGEND: $\frac{XX}{XX} = \frac{\text{AM Peak-Hour Traffic (veh/hr)}}{\text{PM Peak-Hour Traffic (veh/hr)}}$

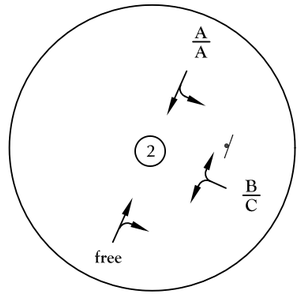
**Potential three-quarter movement access*

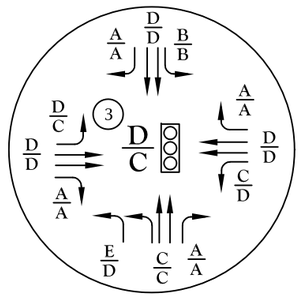
Figure 6b

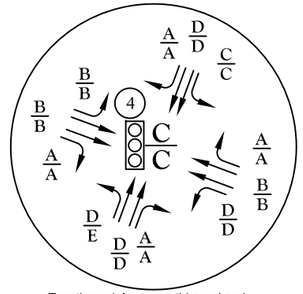
2042 Baseline Peak-Hour Traffic

Sterling Ranch East Rezoning and Preliminary Plan (LSC# S224440)

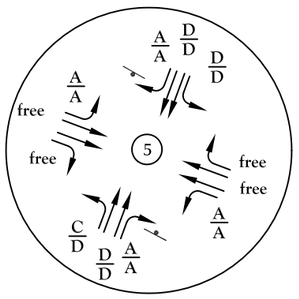


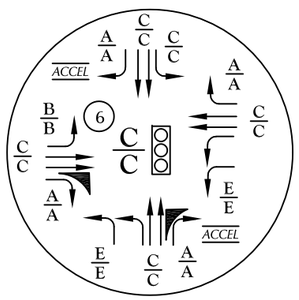


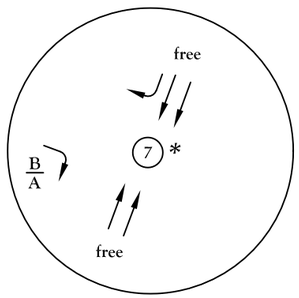




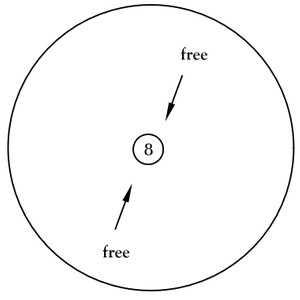
Two through lanes northbound and southbound at intersection No. 3
Widen Black Forest Rd. from Briargate Pkwy to Old Ranch Rd as a 4-lane principal arterial with bike and pedestrian facilities
ConnectCOS TIP Index No. 479
PPRTA B List Project

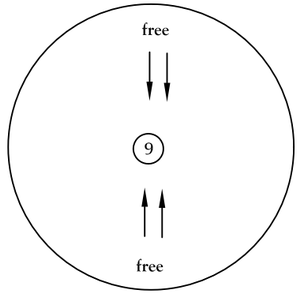


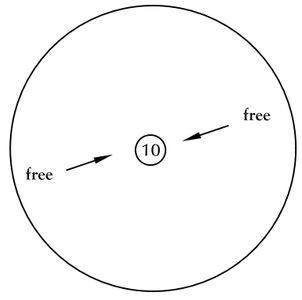


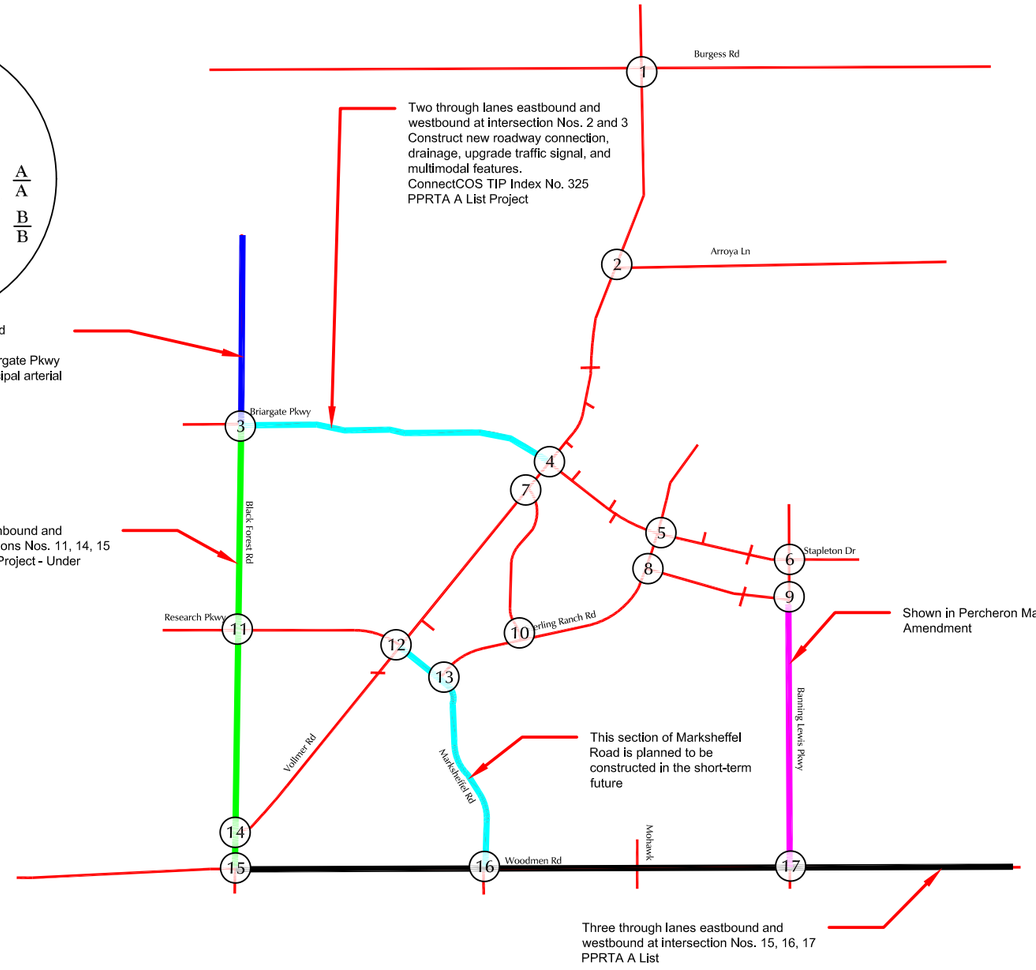


Two through lanes northbound and southbound at intersections Nos. 11, 14, 15
Black Forest Widening Project - Under Construction

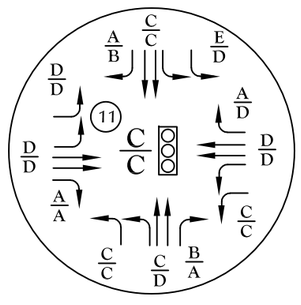


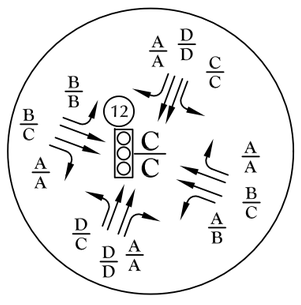


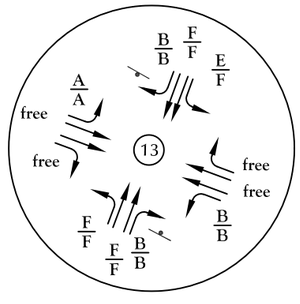


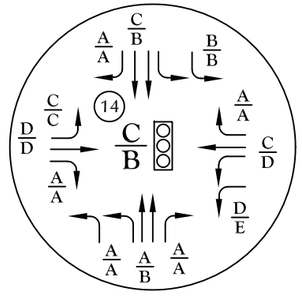


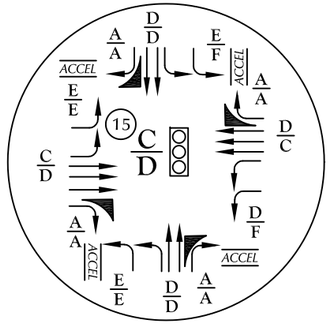
Not to scale

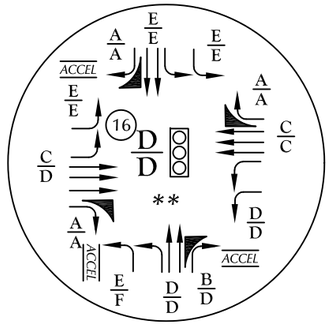


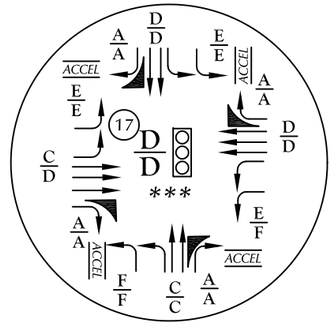












LEGEND:

$\frac{A}{B}$ = 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

= Roundabout

* Potential three-quarter movement access
** Dual lefts likely added as needed with commercial development on all four corners. The northbound lef-turn lane may be added sooner with the Marksheffel upgrade south of Woodmen Road to its ultimate cross section
*** Intersection improvements (auxiliary turn lanes, traffic signal, phasing to dual lefts) are likely with nearby developments as development occurs

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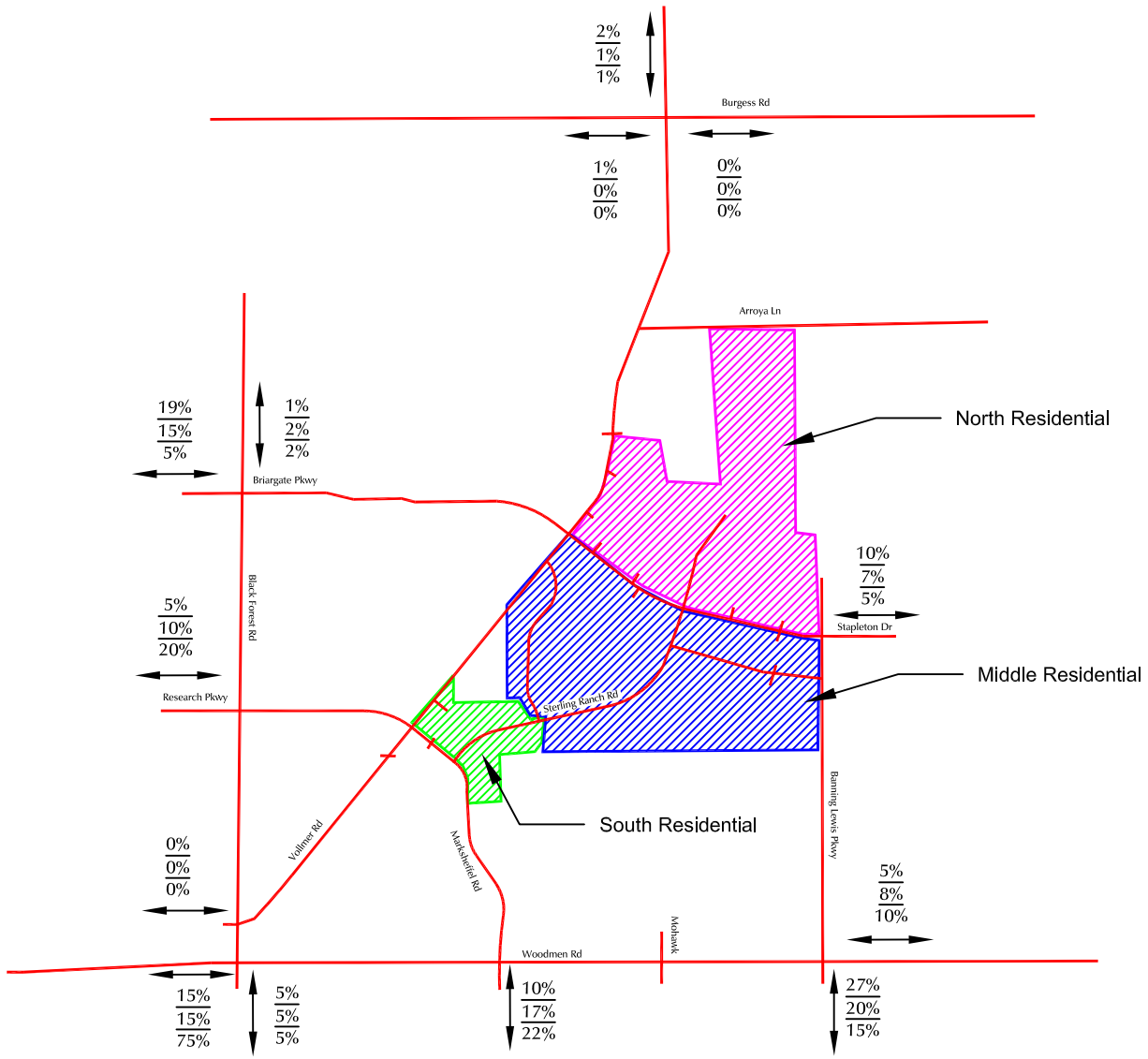
Figure 6c

2042 Baseline Lane Geometry, Traffic Control, and Level of Service

Sterling Ranch East Rezoning and Preliminary Plan (LSC# S224440)



Not to scale

LEGEND: $\frac{XX\%}{XX\%}{XX\%}$ = $\frac{\text{Percent of North-Residential Trips}}{\text{Percent of Middle-Residential Trips}}{\text{Percent of South-Residential Trips}}$

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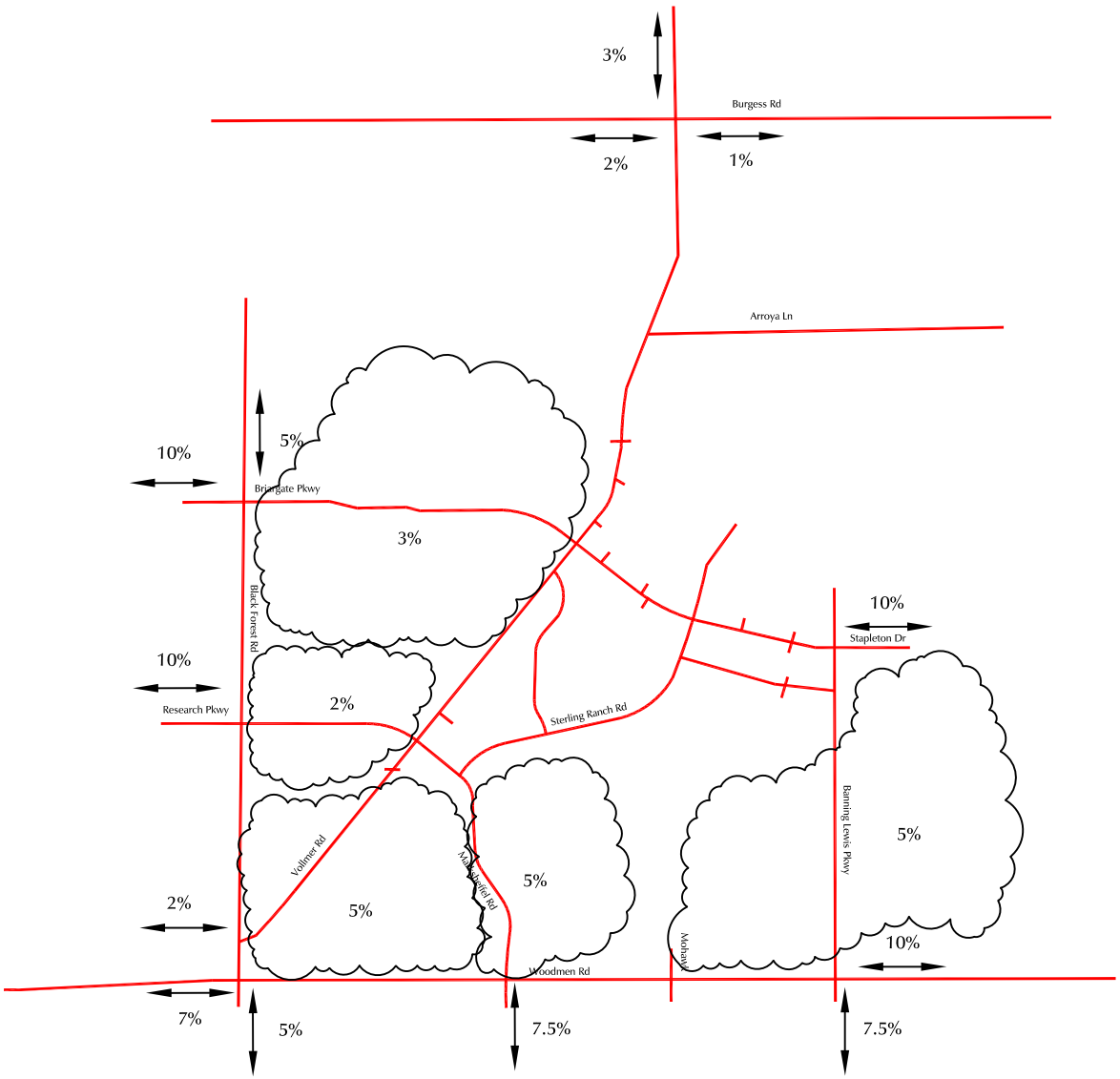
Figure 7

Buildout Long-Term Directional Distribution of Residential-Generated Traffic

Sterling Ranch East Rezoning and Preliminary Plan (LSC# S224440)



Not to scale

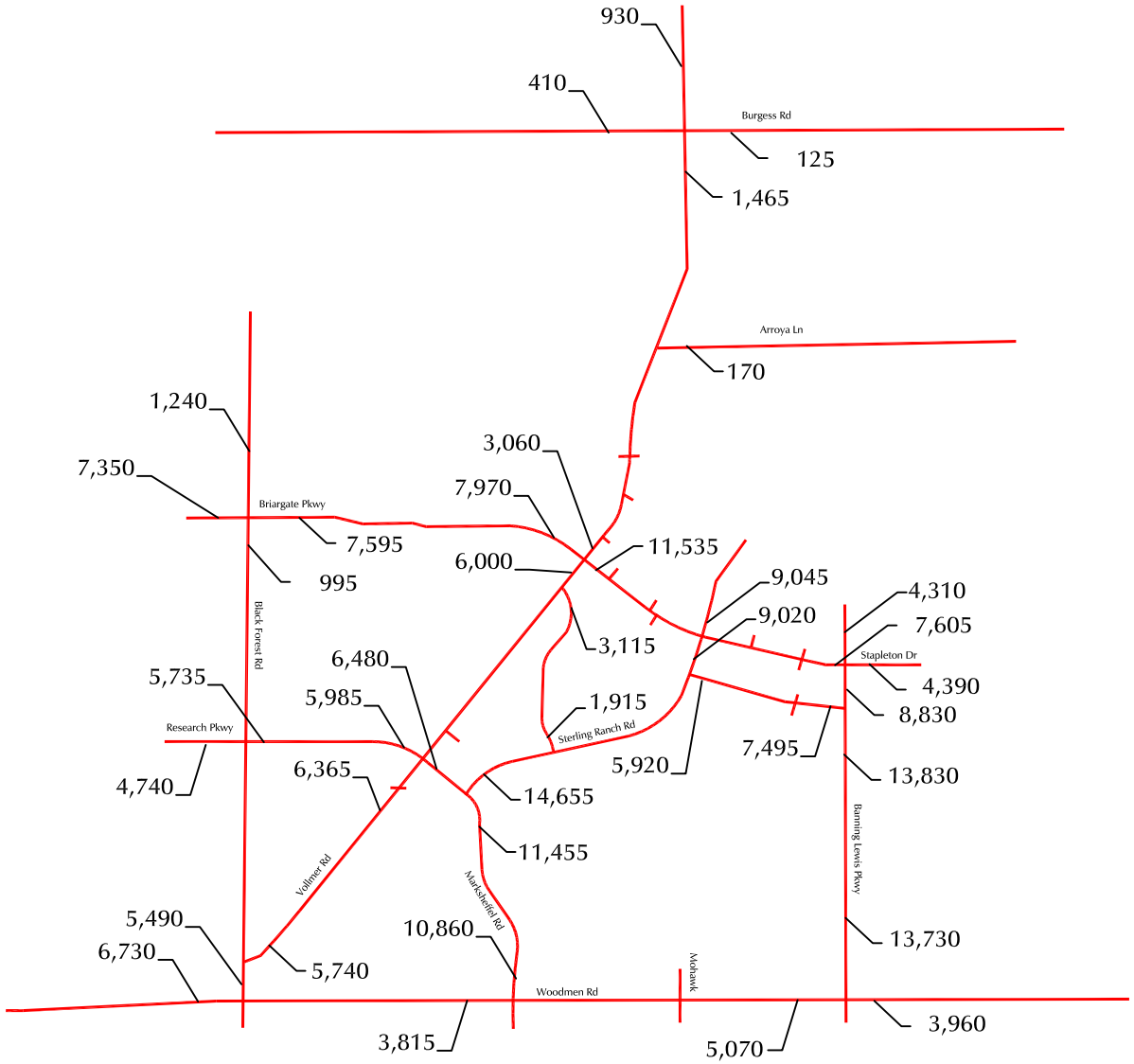
LEGEND: ⟷ XX% = Percent of Non-Residential Trips

Figure 8

Buildout Long-Term Directional Distribution of Non-Residential-Generated Traffic

Sterling Ranch East Rezoning and Preliminary Plan (LSC# S224440)

LSC TRANSPORTATION CONSULTANTS, INC.



Not to scale

LEGEND:

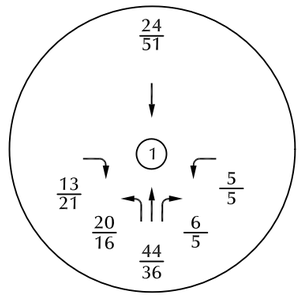
XXX = Average Weekday Traffic (AWT)(vehicles per day)

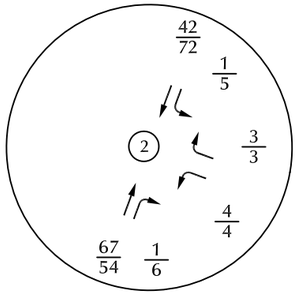
TRANSPORTATION CONSULTANTS, INC.

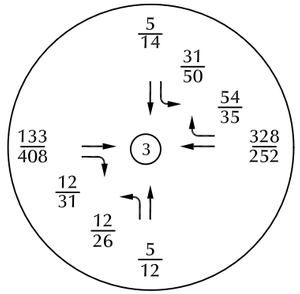
Figure 9a

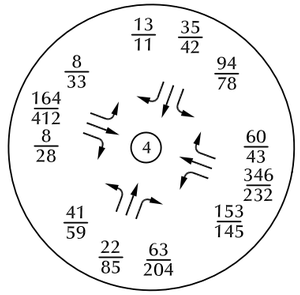
Site-Generated Average Weekday Traffic

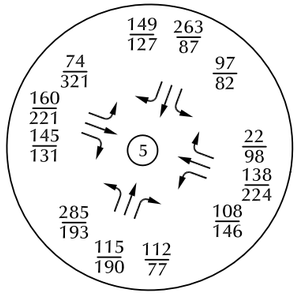
Sterling Ranch East Rezoning and Preliminary Plan (LSC# S224440)

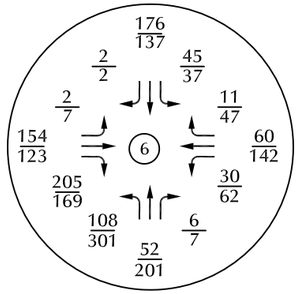


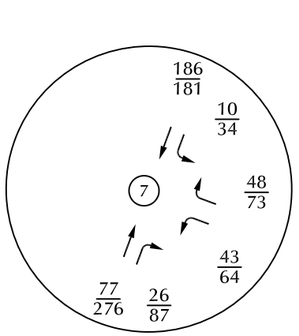


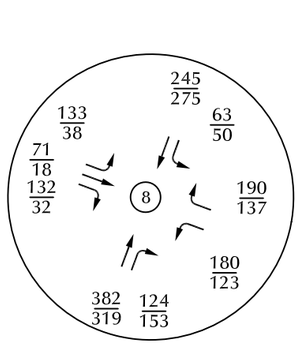


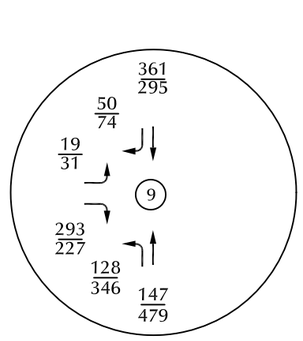


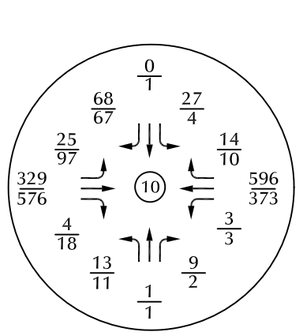


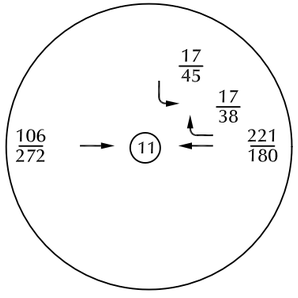


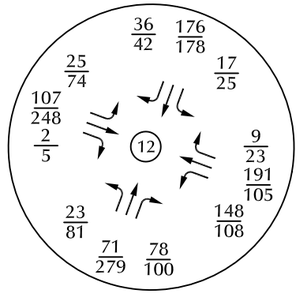


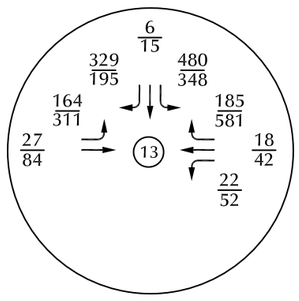


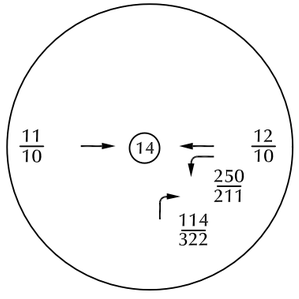


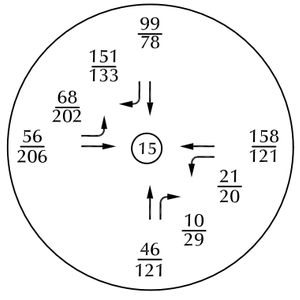


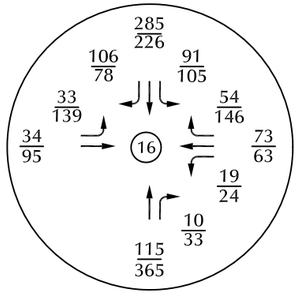


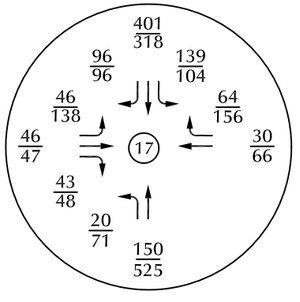


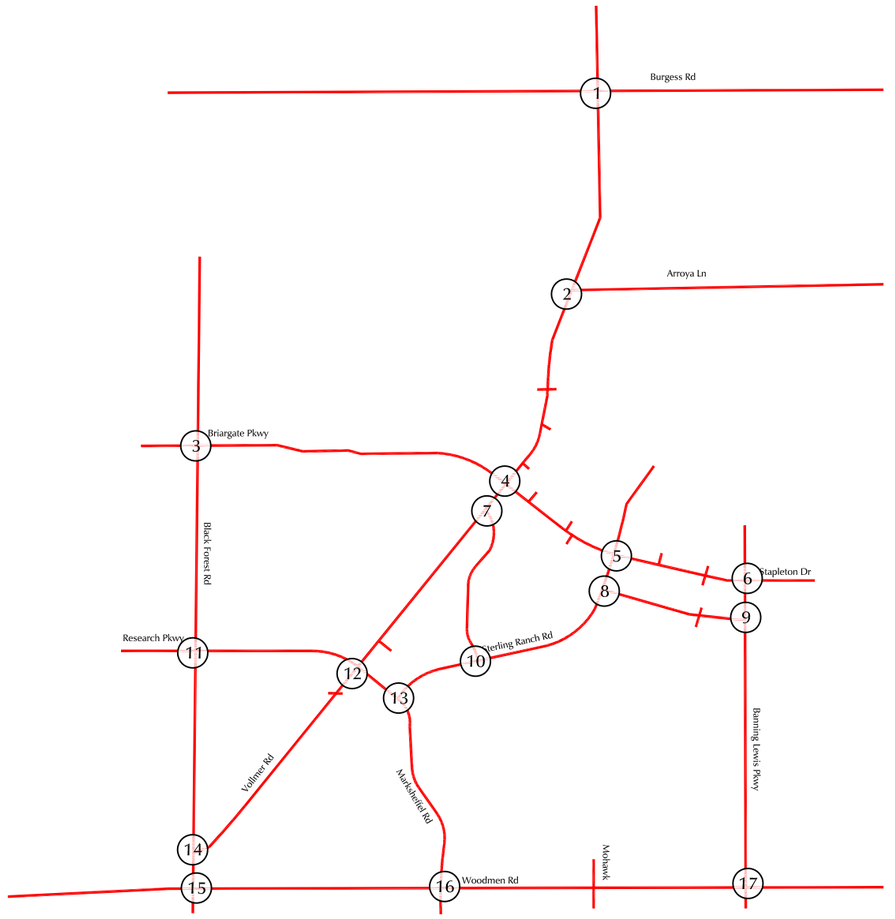












LEGEND: $\frac{XX}{XX} = \frac{\text{AM Peak-Hour Traffic (veh/hr)}}{\text{PM Peak-Hour Traffic (veh/hr)}}$

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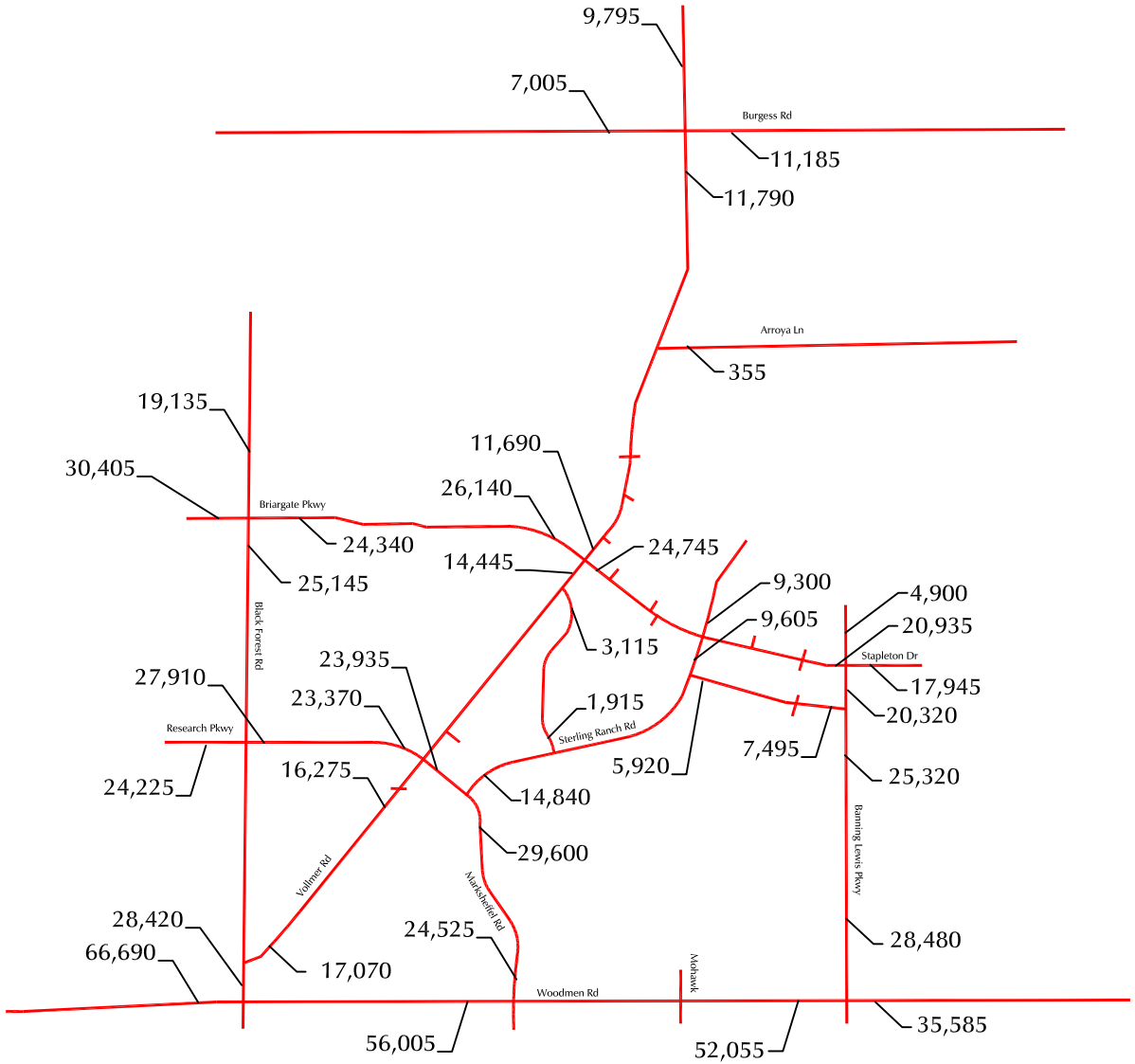
Figure 9b

Site-Generated Peak-Hour Traffic

Sterling Ranch Sketch Plan - 2022 Amendment (LSC# S224440)



Not to scale

LEGEND:

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

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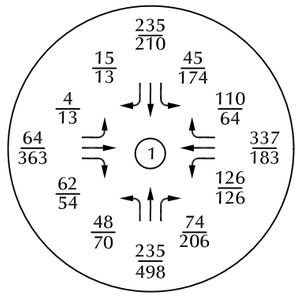
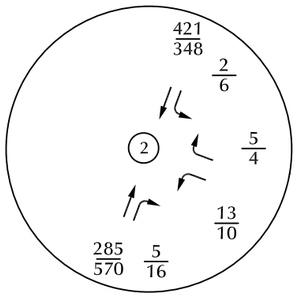
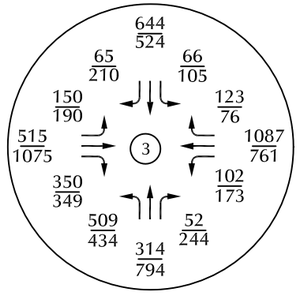
Figure 10a

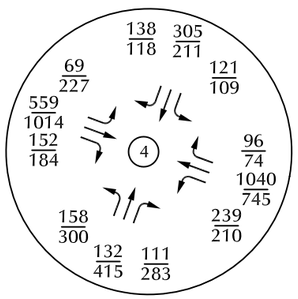
2042 Total Average Weekday Traffic

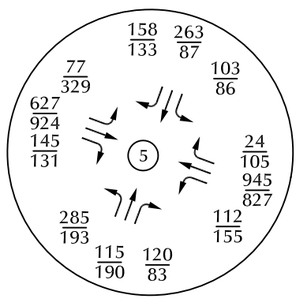
Sterling Ranch East Rezoning and Preliminary Plan (LSC# S224440)

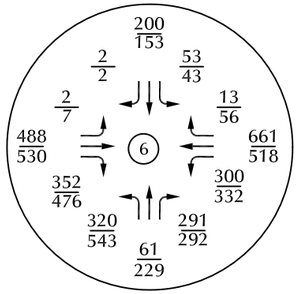


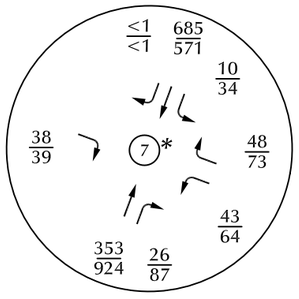


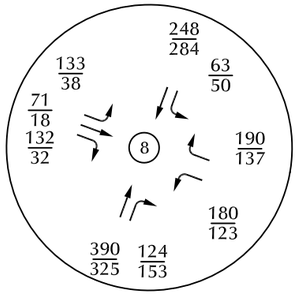


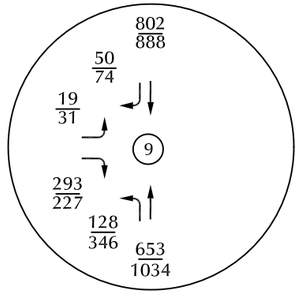


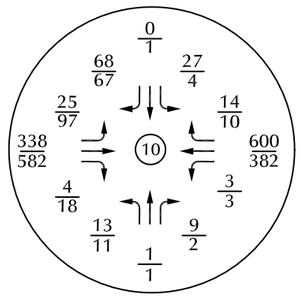


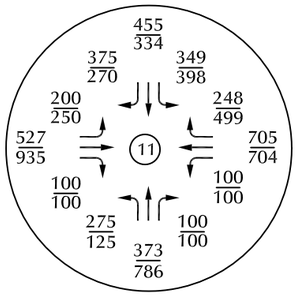


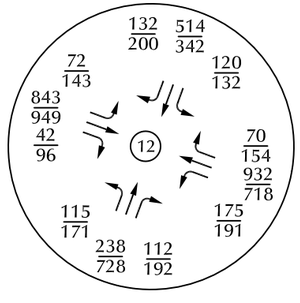


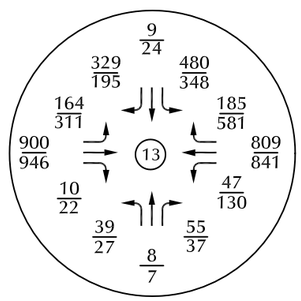


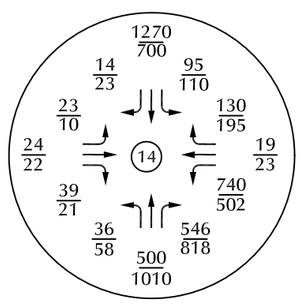


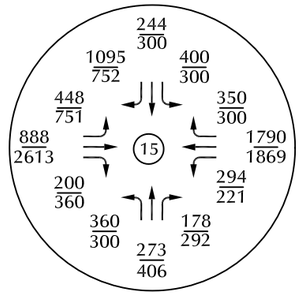


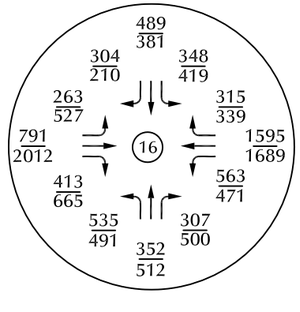


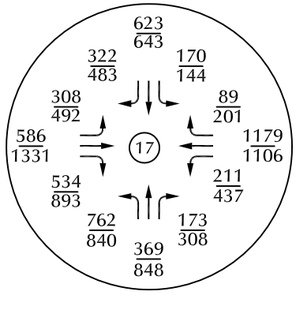


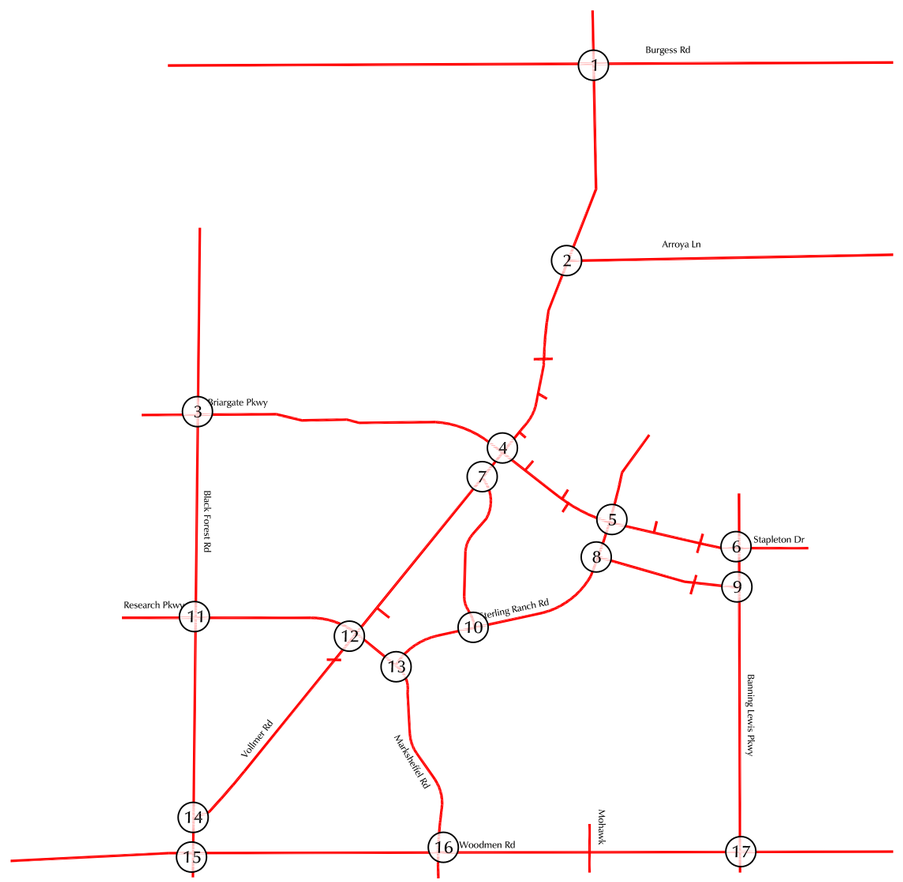












LEGEND: $\frac{XX}{XX}$ = $\frac{\text{AM Peak-Hour Traffic (veh/hr)}}{\text{PM Peak-Hour Traffic (veh/hr)}}$

*Note: if the west leg is allowed three-quarter movement access the east leg may also be restricted to three-quarter movement access.

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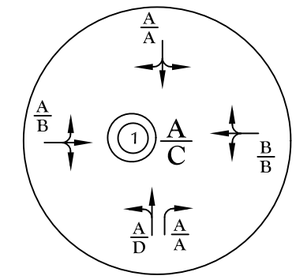
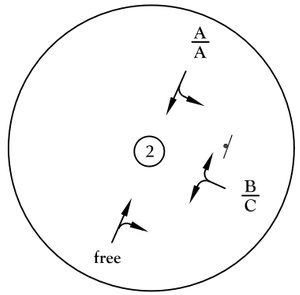
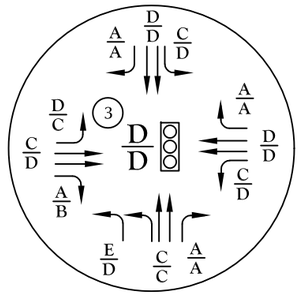
Figure 10b

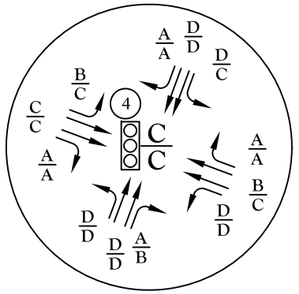
2042 Total Peak-Hour Traffic

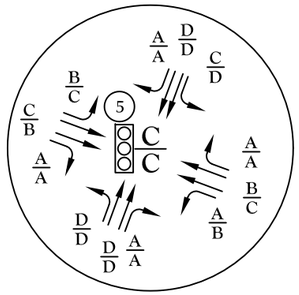
Sterling Ranch Sketch Plan - 2022 Amendment (LSC# S224440)

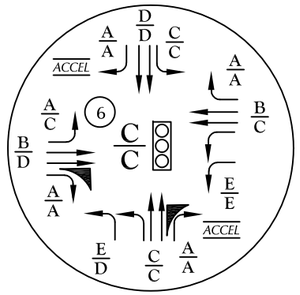


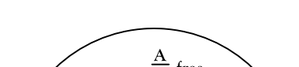


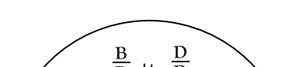


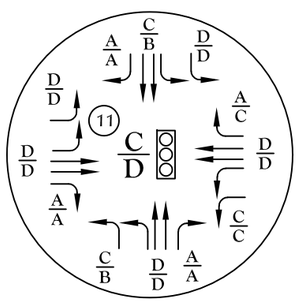


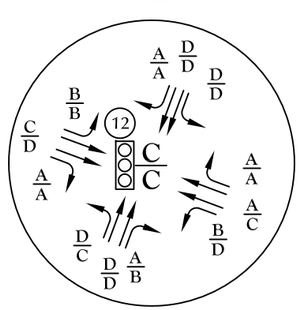


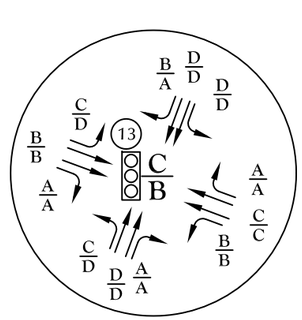


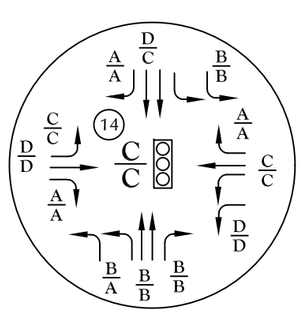


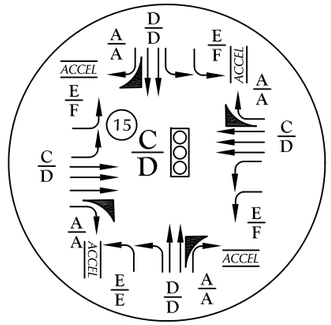


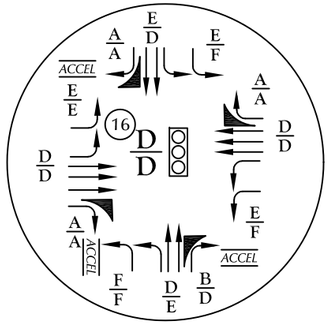


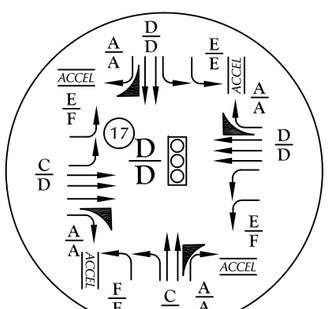


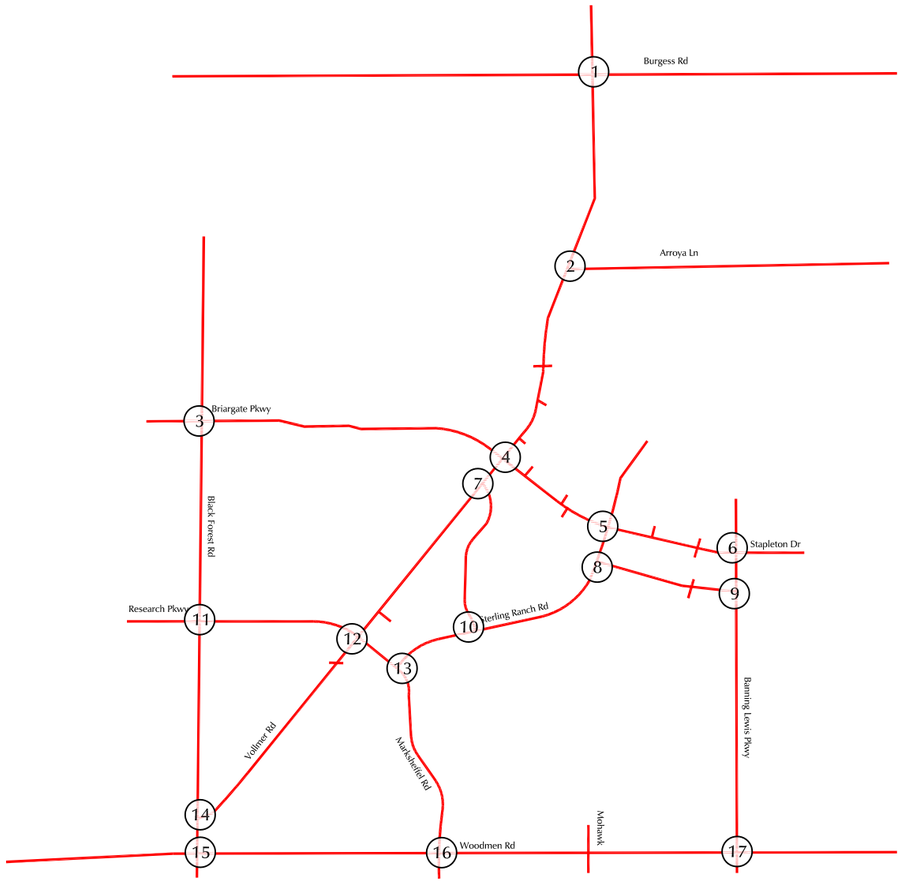












Not to scale

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

= Roundabout

*Note: if the west leg is allowed three-quarter movement access the east leg may also be restricted to three-quarter movement access.

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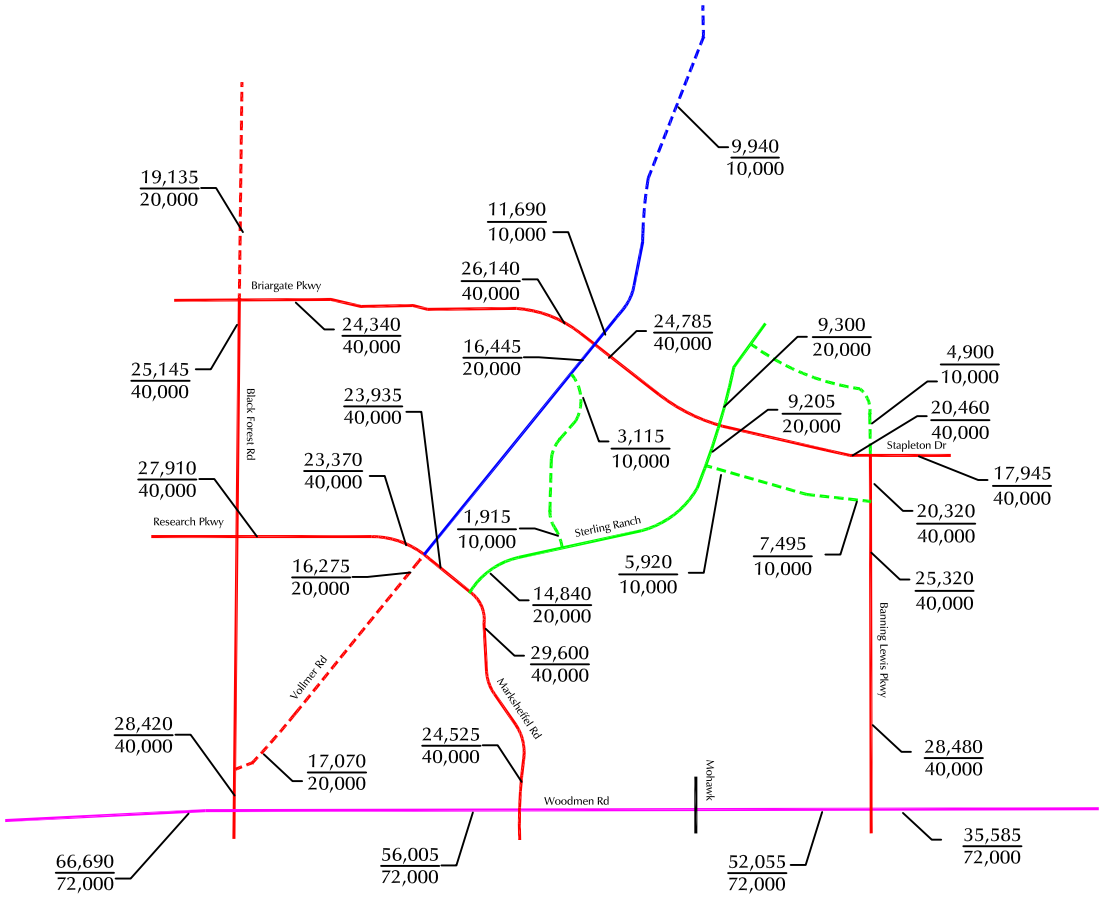
Figure 10c

2042 Total Lane Geometry, Traffic Control, and Level of Service



Not to scale

LEGEND:

$\frac{XX,XXX}{XX,XXX}$ = $\frac{\text{Projected Average Daily Traffic}}{\text{Design Average Daily Traffic}}$

- 6-Lane Urban Expressway
- 4-Lane Urban Principal Arterial
- 4-Lane Principal Arterial (City of Colorado Springs Connect COS Plan)
- 4-Lane Urban Minor Arterial (El Paso County MTCP)
- 2-Lane Rural Minor Arterial
- Urban Non-residential Collector
- Urban Residential Collector

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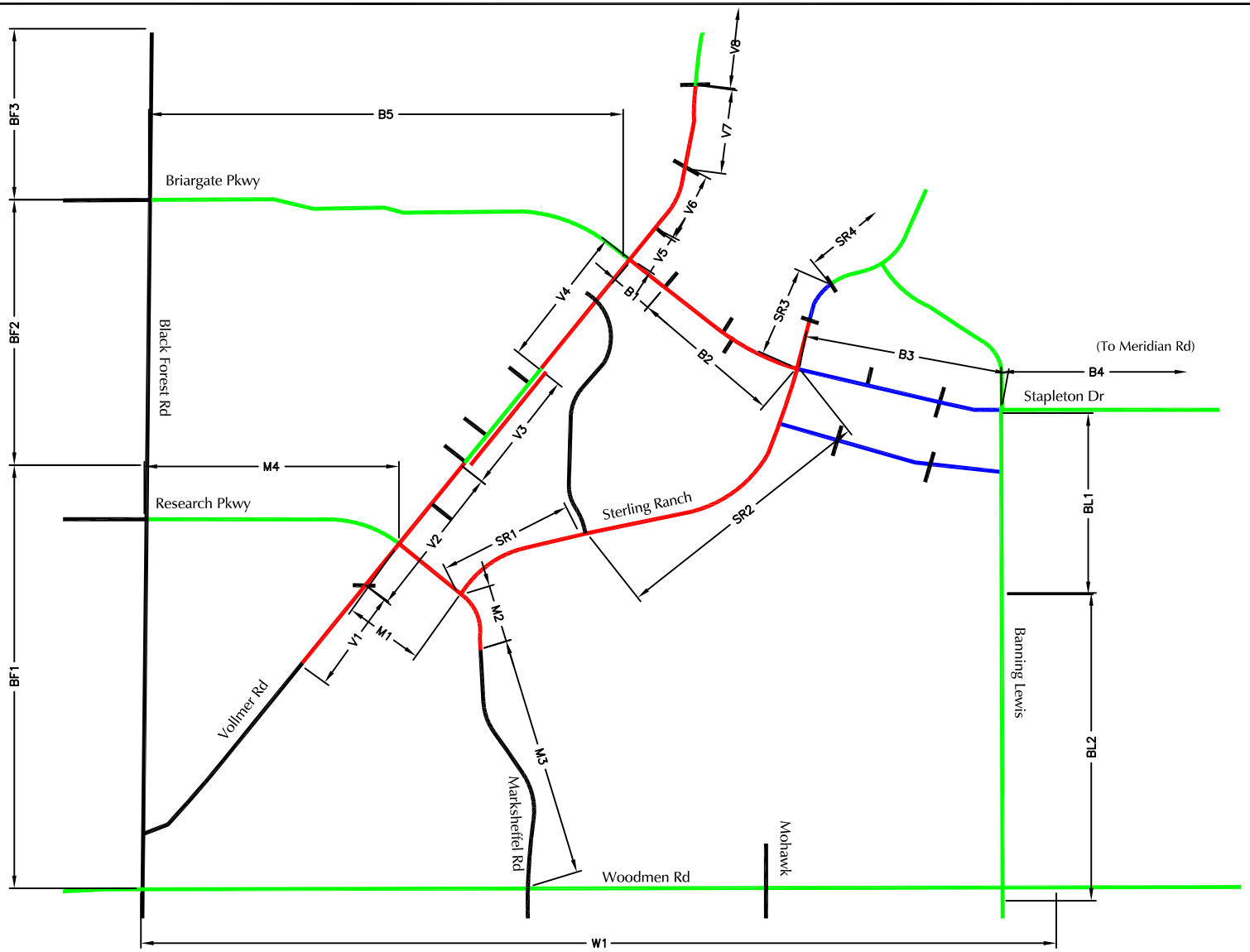
Figure 11

Proposed Roadway Functional Classification

Sterling Ranch East Rezoning and Preliminary Plan (LSC# S224440)



V1, B4, SR3, etc - Segment Identifier*

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

*See Table 4 for recommended roadway segment improvements for each segment.

Figure 12

Roadway Improvement Segments*

Sterling Ranch East Rezoning and Preliminary Plan (LSC# S224440)

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Appendix Figures 1 and 2

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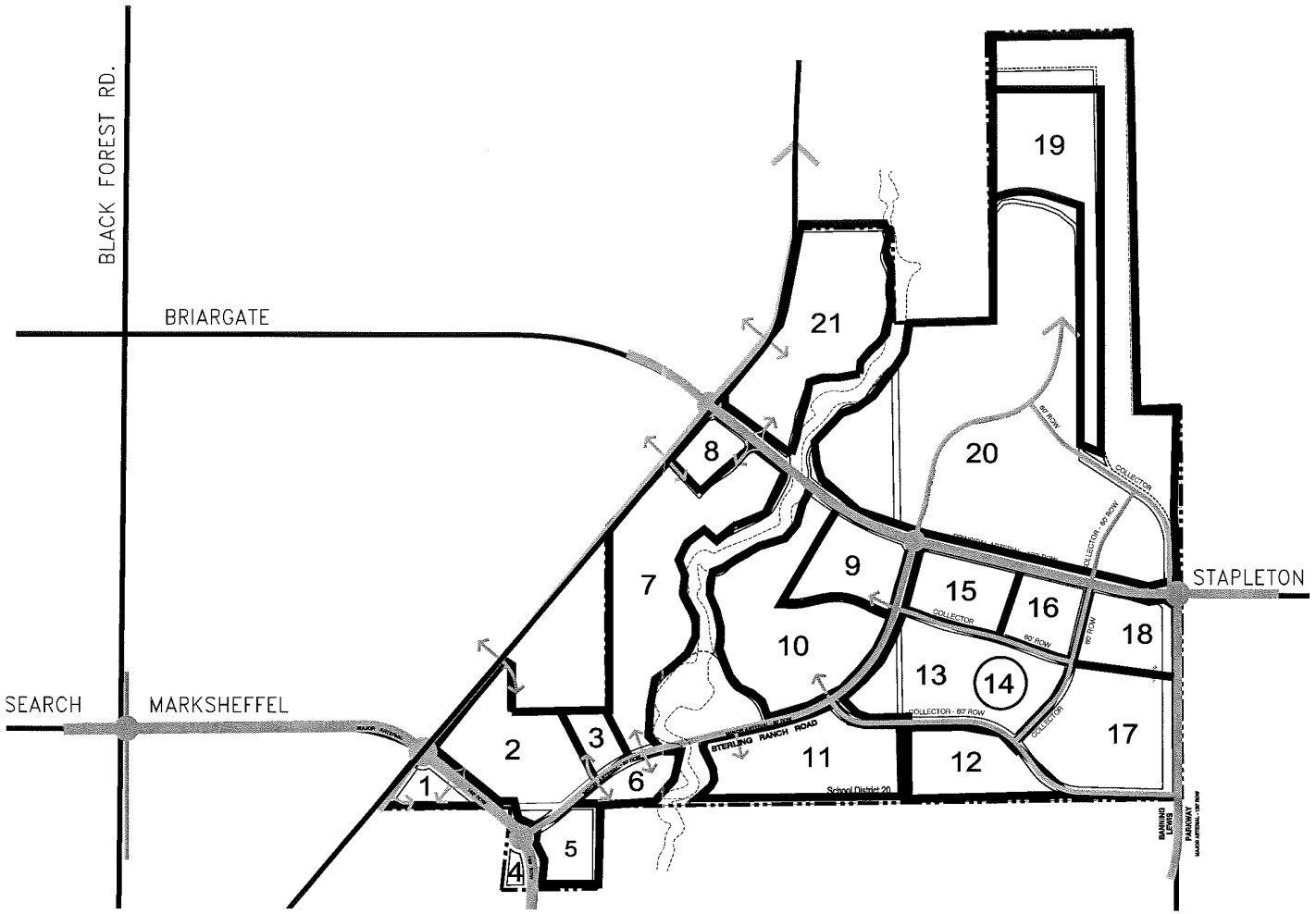

Traffic Analysis Zones
Sterling Ranch

Figure 3
LSC # 074230

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Appendix Table 2
Sterling Ranch Sketch Plan
Trip Generation Estimate by Traffic Analysis Zone

Traffic Analsis Zone (See Figure 2 for boundaries)	Name	Land Use Code	Land Use Description	Trip Generation Units Quantity Unit	Trip Generation Rates [1] Average Weekday Traffic	Morning Peak Hour In	Morning Peak Hour Out	Afternoon Peak Hour In	Afternoon Peak Hour Out	Total Trips Average Weekday Traffic	Morning Peak Hour In	Morning Peak Hour Out	Afternoon Peak Hour In	Afternoon Peak Hour Out
Approved/Existing Sterling Ranch Phase 1														
1	Branding Iron Fil No. 1	210	Single Family Detached Housing	51 DU[2]	9.43	0.18	0.52	0.59	0.35	481	9	26	30	18
2	Homestead Fil 1	210	Single Family Detached Housing	72 DU	9.43	0.18	0.52	0.59	0.35	679	13	37	43	25
3	Homestead Fil 2	210	Single Family Detached Housing	104 DU	9.43	0.18	0.52	0.59	0.35	981	19	54	62	36
4	Branding Iron Fil No. 2	210	Single Family Detached Housing	75 DU	9.43	0.18	0.52	0.59	0.35	707	14	39	44	26
6	Sterling Ranch Filing 2	210	Single Family Detached Housing	38 DU	9.43	0.18	0.52	0.59	0.35	358	7	20	23	13
108	Existing Lift Station	- - -	Lift Station	1 station	0.00	0.00	0.00	0.00	0.00	0	0	0	0	0
Future Sterling Ranch Phase 1														
16	Sterling Ranch Future Filing	210	Single Family Detached Housing	82 DU	9.43	0.18	0.52	0.59	0.35	773	15	42	49	29
105	Mixed Use 14 Ac (SE Briargate/Vollmer)	821	Shopping Plaza	51 KSF[3]	67.52	1.07	0.66	2.54	2.65	3,444	55	34	130	135
		220	Multifamily Housing Low-Rise	233 DU	6.74	0.10	0.30	0.32	0.19	1,570	22	71	75	44
107	Mixed Use 11 Acres (South of Marksheffel)	821	Shopping Plaza	120 KSF	67.52	1.07	0.66	2.54	2.65	8,102	129	79	305	318
Sterling Ranch Phase 2														
10	Sterling Ranch Fil 4 (north)	210	Single Family Detached Housing	61 DU	9.43	0.18	0.52	0.59	0.35	575	11	32	36	21
	Sterling Ranch Fil 4 (south)	210	Single Family Detached Housing	98 DU	9.43	0.18	0.52	0.59	0.35	924	18	51	58	34
7&8	Sterling Ranch Fil 3	210	Single Family Detached Housing	63 DU	9.43	0.18	0.52	0.59	0.35	594	11	33	37	22
5	Copper Chase	210	Single Family Detached Housing	138 DU	9.43	0.18	0.52	0.59	0.35	1,301	25	71	82	48
Homestead North														
9	Homestead North Fil 1	210	Single Family Detached Housing	73 DU	9.43	0.18	0.52	0.59	0.35	688	13	38	43	25
11	Homestead North Fil 2	210	Single Family Detached Housing	74 DU	9.43	0.18	0.52	0.59	0.35	698	13	38	44	26
12	Homestead North Fil 3	210	Single Family Detached Housing	77 DU	9.43	0.18	0.52	0.59	0.35	726	14	40	46	27
Sterling Ranch East Phase 1														
22 & 26	Sterling Ranch East Fil 1	210	Single Family Detached Housing	294 DU	9.43	0.18	0.52	0.59	0.35	2,772	54	152	174	102
18	Sterling Ranch East Fil 2	210	Single Family Detached Housing	42 DU	9.43	0.18	0.52	0.59	0.35	396	8	22	25	15
17, 23, 24 & 38	Sterling Ranch East Future Filings	210	Single Family Detached Housing	187 DU	9.43	0.18	0.52	0.59	0.35	1,763	34	97	111	65
37	Sterling Ranch East Future Filings	210	Single Family Detached Housing	238 DU	9.43	0.18	0.52	0.59	0.35	2,244	43	123	141	83
103	K-8 School	520	Elementary School	600 Students	2.27	0.40	0.34	0.07	0.09	1,362	240	204	44	52
		522	Middle School/Junior High School	500 Students	2.10	0.36	0.31	0.07	0.08	1,050	181	154	36	39
102	Elementary School	520	Elementary School	600 Students	2.27	0.40	0.34	0.07	0.09	1,362	240	204	44	52
Future Sterling Ranch East South of Briargate														
14, 15, 20 & 21	Village at Sterling Ranch East	210	Single Family Detached Housing	100 DU	9.43	0.18	0.52	0.59	0.35	943	18	52	59	35
		220	Single Family Attached Housing	146 DU	7.20	0.15	0.33	0.32	0.25	1,051	22	48	47	36
33		210	Single Family Detached Housing	106 DU	9.43	0.18	0.52	0.59	0.35	1,000	19	55	63	37
25, 27, 28, 29, 31, & 32	Sterling Ranch East Future Filings	210	Single Family Detached Housing	603 DU	9.43	0.18	0.52	0.59	0.35	5,686	110	312	357	210
39		210	Single Family Detached Housing	18 DU	9.43	0.18	0.52	0.59	0.35	170	3	9	11	6
104	Future Elementary School	520	Elementary School	600 Students	2.27	0.40	0.34	0.07	0.09	1,362	240	204	44	52
105	Mixed Use 14 Ac(SE Briargate/Vollmer)	821	Shopping Plaza	80 KSF	67.52	1.07	0.66	2.54	2.65	5,402	86	53	203	212
		220	Multifamily Housing Low-Rise	367 DU	6.74	0.10	0.30	0.32	0.19	2,474	35	112	118	69
Future Sterling Ranch East North of Briargate														
19	Four Square at Sterling Ranch	210	Single Family Detached Housing	158 DU	9.43	0.18	0.52	0.59	0.35	1,490	29	82	94	55
30, 34,35 & 36	Future Sterling Ranch East Filings	210	Single Family Detached Housing	871 DU	9.43	0.18	0.52	0.59	0.35	8,214	159	451	516	303
Future Sterling Ranch East East of TimberRidge														
101	Future Sterling Ranch East Filings	210	Single Family Detached Housing	431 DU	9.43	0.18	0.52	0.59	0.35	4,064	78	223	255	150
								Sterling Ranch		**65,406**	**1,987**	**3,262**	**3,449**	**2,420**

Notes:
(1) Source: "*Trip Generation, 11th Edition, 2021*" by the Institute of Transportation Engineers (ITE)
(2) DU = dwelling unit
(3) KSF = 1000 square feet of floor space

Source: LSC Transportation Consultants, Inc. *Feb-23*

MTCP Maps

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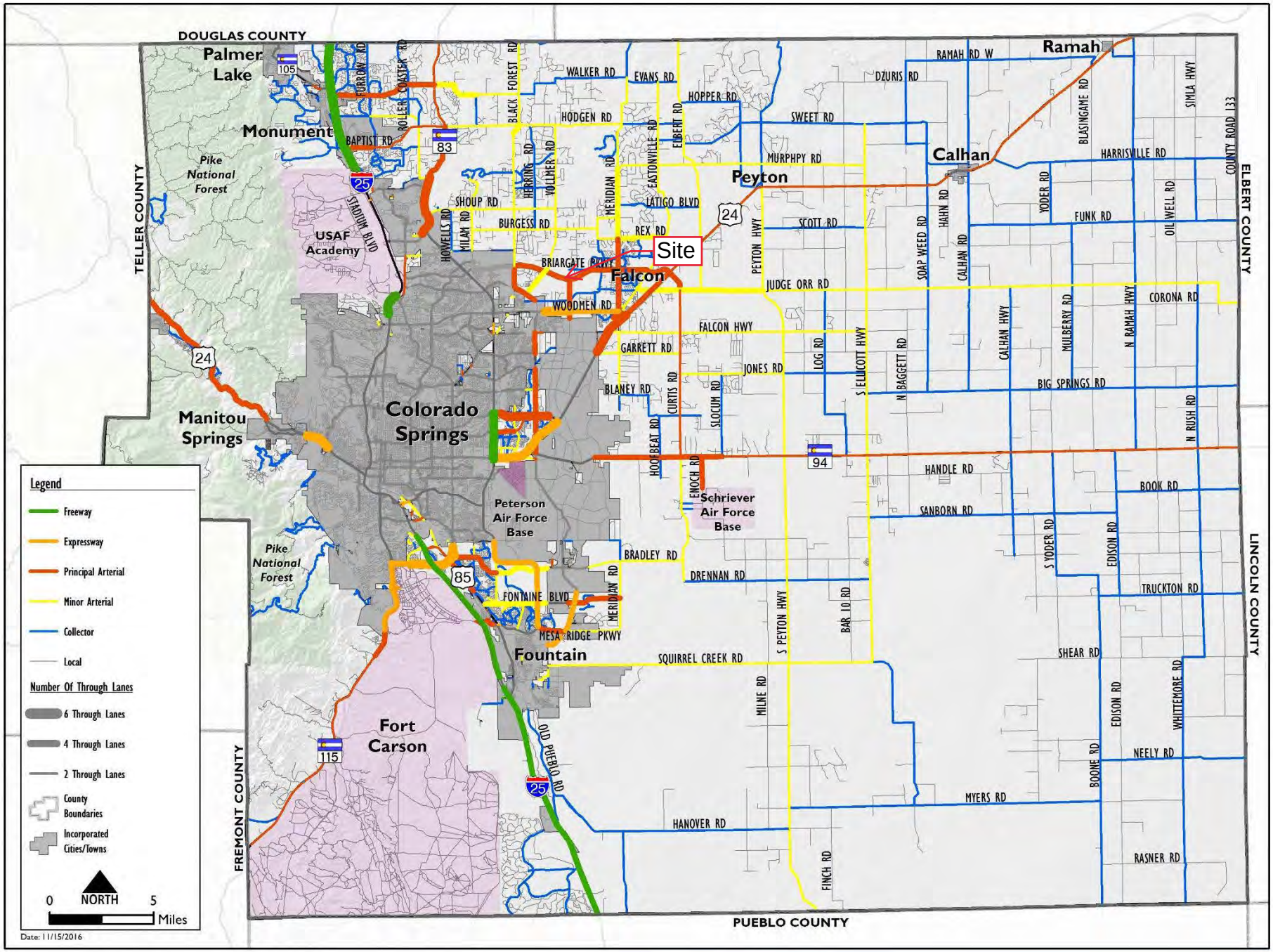
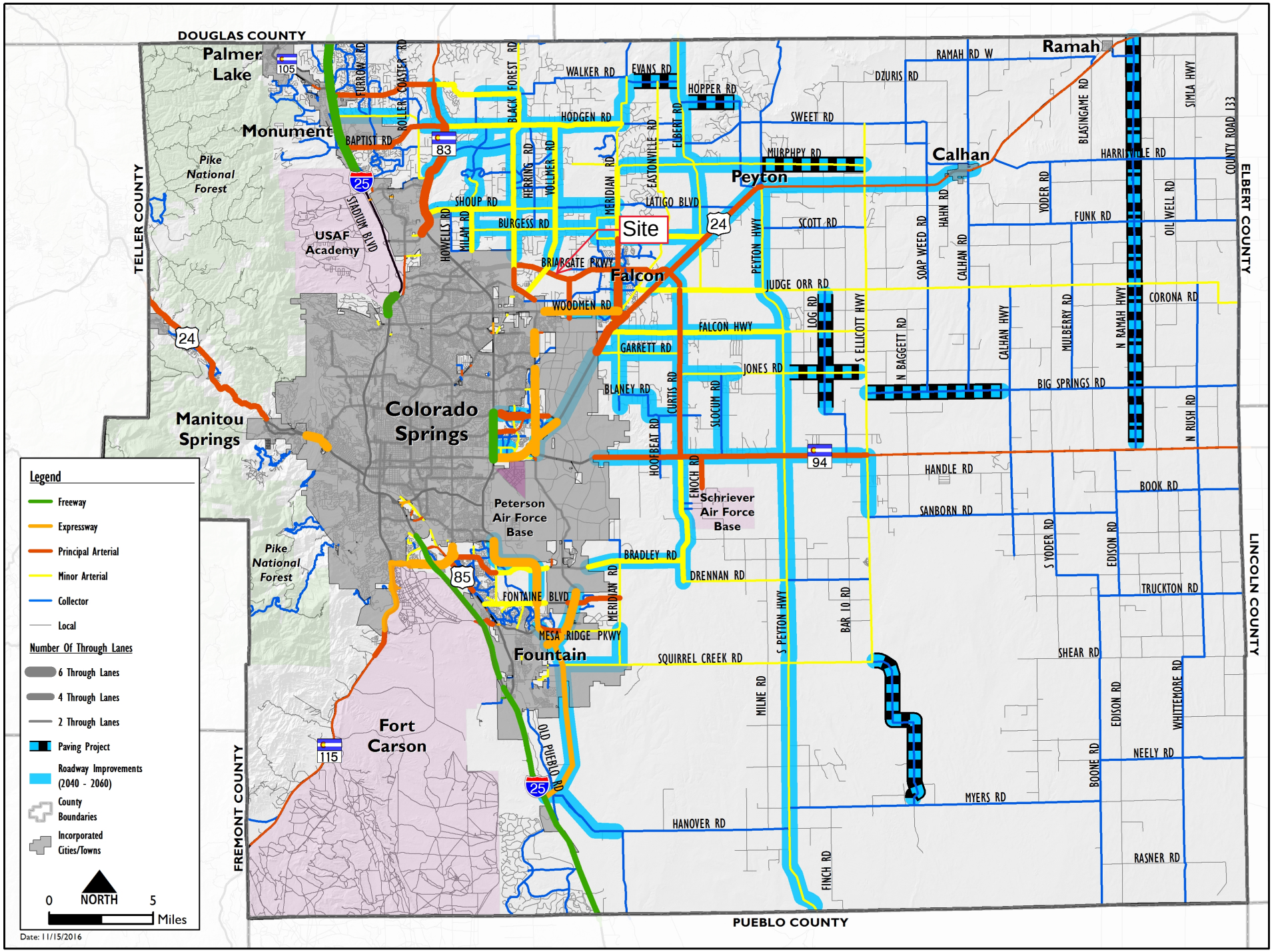
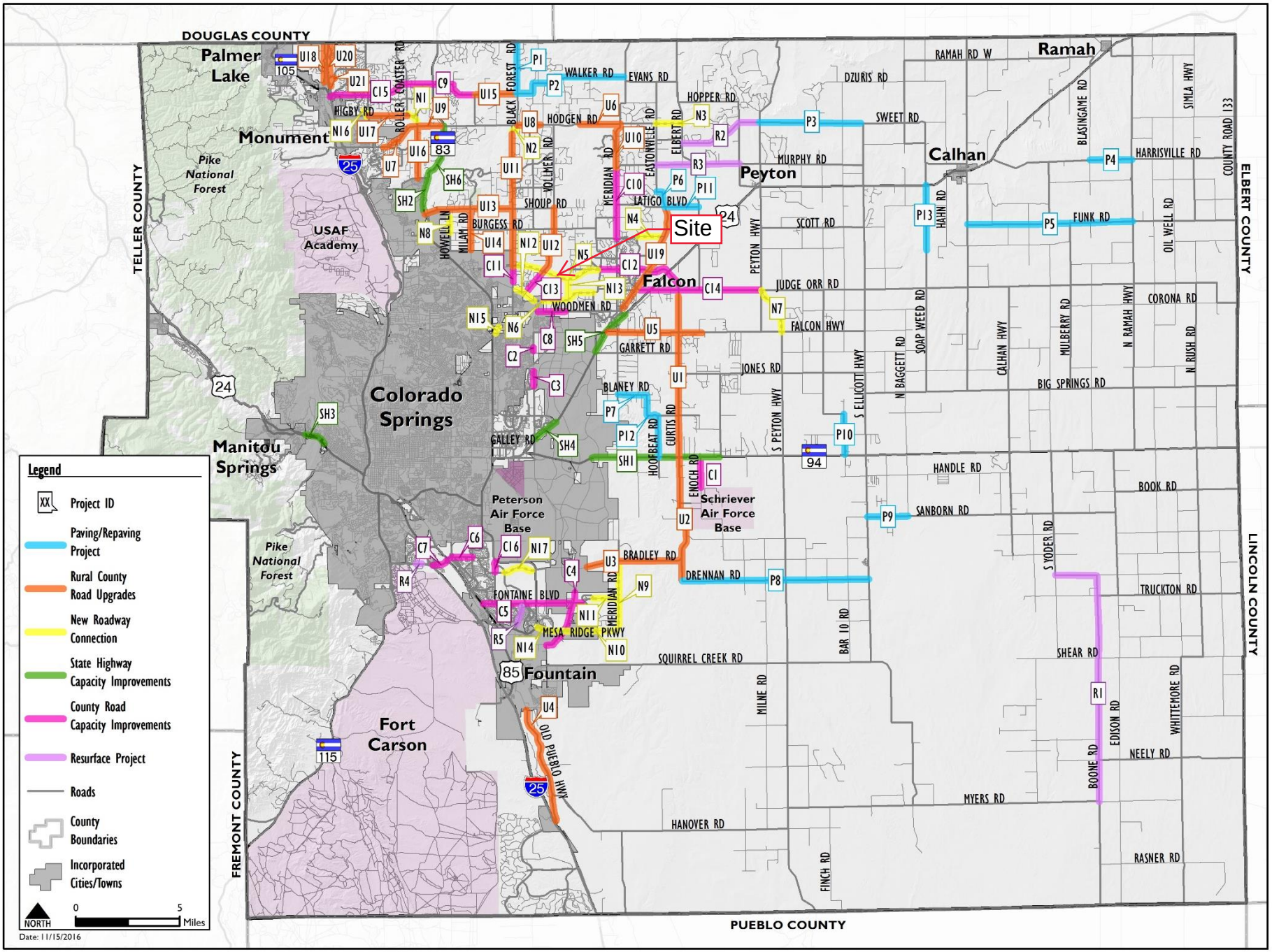


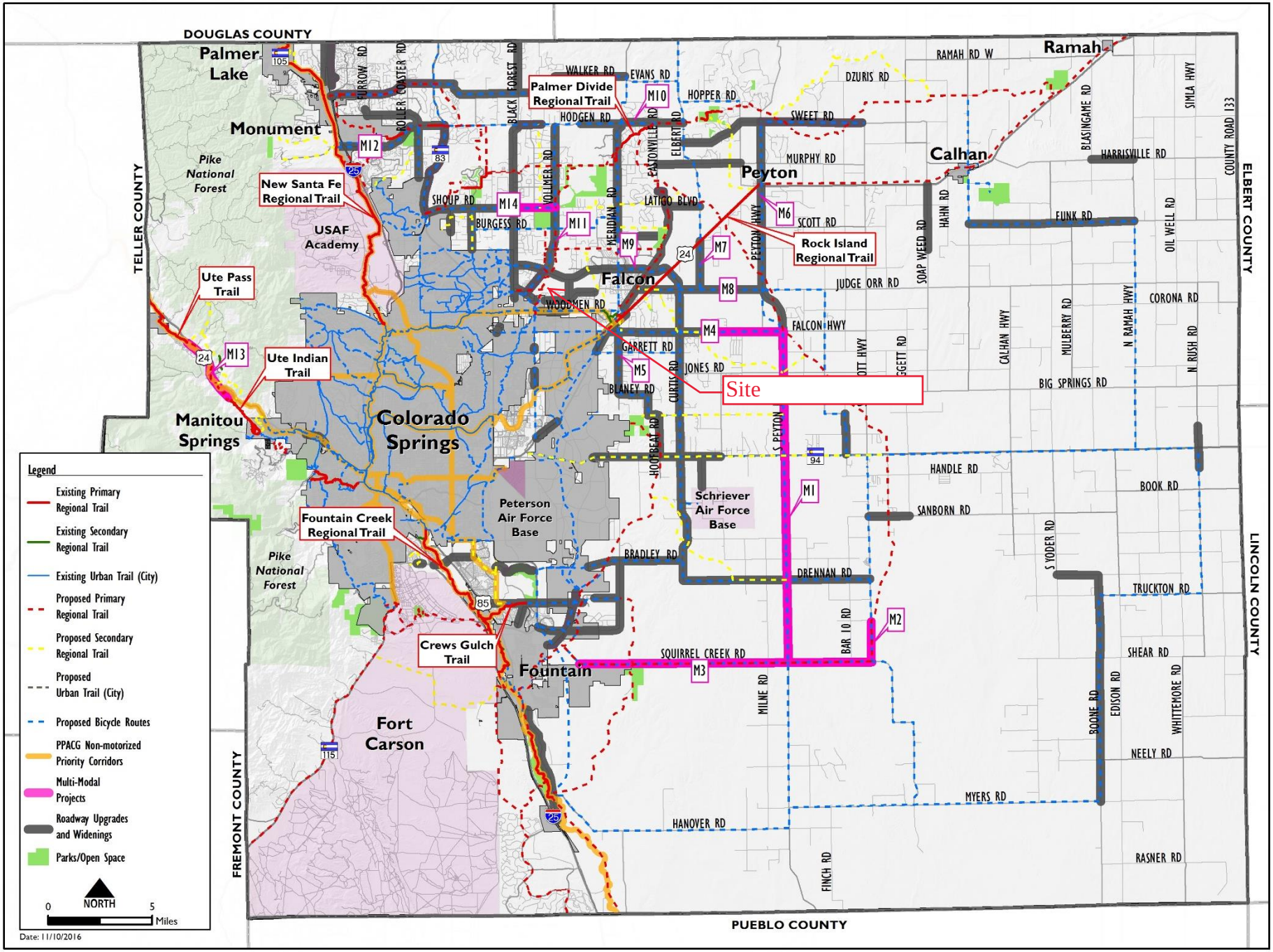
Map 14: 2040 Roadway Plan (Classification and Lanes)

Map 17: 2060 Corridor Preservation





Map 13: Roadway Improvement Projects



Map 15: Bicycle and Pedestrian Network and Improvements

Traffic Counts

TRANSPORTATION
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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
Site Code : S224440
Start Date : 7/28/2022
Page No : 1

Groups Printed- Unshifted

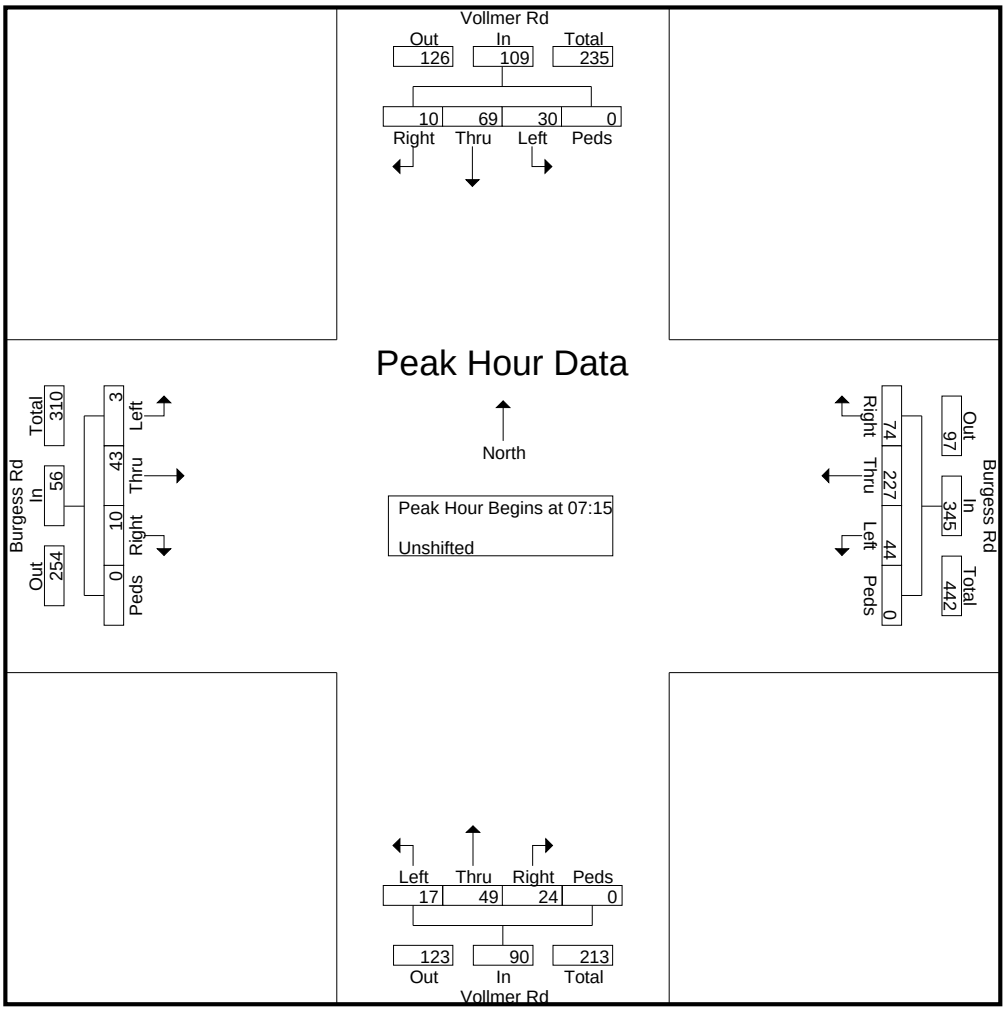
	Vollmer Rd Southbound					Burgess Rd Westbound					Vollmer Rd Northbound					Burgess Rd Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
06:30	0	15	5	0	20	19	47	10	0	76	4	5	1	0	10	0	6	0	0	6	112
06:45	1	15	4	0	20	17	35	13	0	65	5	5	1	0	11	3	6	1	0	10	106
Total	1	30	9	0	40	36	82	23	0	141	9	10	2	0	21	3	12	1	0	16	218
07:00	2	20	9	0	31	15	51	14	0	80	6	9	1	0	16	2	10	0	0	12	139
07:15	2	14	8	0	24	21	57	12	0	90	4	11	5	0	20	1	8	0	0	9	143
07:30	2	17	7	0	26	19	58	12	0	89	4	19	5	0	28	3	13	1	0	17	160
07:45	3	16	10	0	29	17	51	8	0	76	9	11	3	0	23	0	8	2	0	10	138
Total	9	67	34	0	110	72	217	46	0	335	23	50	14	0	87	6	39	3	0	48	580
08:00	3	22	5	0	30	17	61	12	0	90	7	8	4	0	19	6	14	0	0	20	159
08:15	2	16	6	0	24	7	36	15	0	58	13	16	3	0	32	3	9	1	0	13	127
Grand Total	15	135	54	0	204	132	396	96	0	624	52	84	23	0	159	18	74	5	0	97	1084
Apprch %	7.4	66.2	26.5	0		21.2	63.5	15.4	0		32.7	52.8	14.5	0		18.6	76.3	5.2	0		
Total %	1.4	12.5	5	0	18.8	12.2	36.5	8.9	0	57.6	4.8	7.7	2.1	0	14.7	1.7	6.8	0.5	0	8.9	

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
Site Code : S224440
Start Date : 7/28/2022
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 6:30:00 AM to 8:15:00 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 7:15:00 AM																					
7:15:00 AM	2	14	8	0	24	**21**	57	**12**	0	**90**	4	11	**5**	0	20	1	8	0	0	9	143
7:30:00 AM	2	17	7	0	26	19	58	12	0	89	4	**19**	5	0	**28**	3	13	1	0	17	**160**
7:45:00 AM	**3**	16	**10**	0	29	17	51	8	0	76	**9**	11	3	0	23	0	8	**2**	0	10	138
8:00:00 AM	3	**22**	5	0	**30**	17	**61**	12	0	90	7	8	4	0	19	**6**	**14**	0	0	**20**	159
Total Volume	10	69	30	0	109	74	227	44	0	345	24	49	17	0	90	10	43	3	0	56	600
% App. Total	9.2	63.3	27.5	0		21.4	65.8	12.8	0		26.7	54.4	18.9	0		17.9	76.8	5.4	0		
PHF	.833	.784	.750	.000	.908	.881	.930	.917	.000	.958	.667	.645	.850	.000	.804	.417	.768	.375	.000	.700	.938



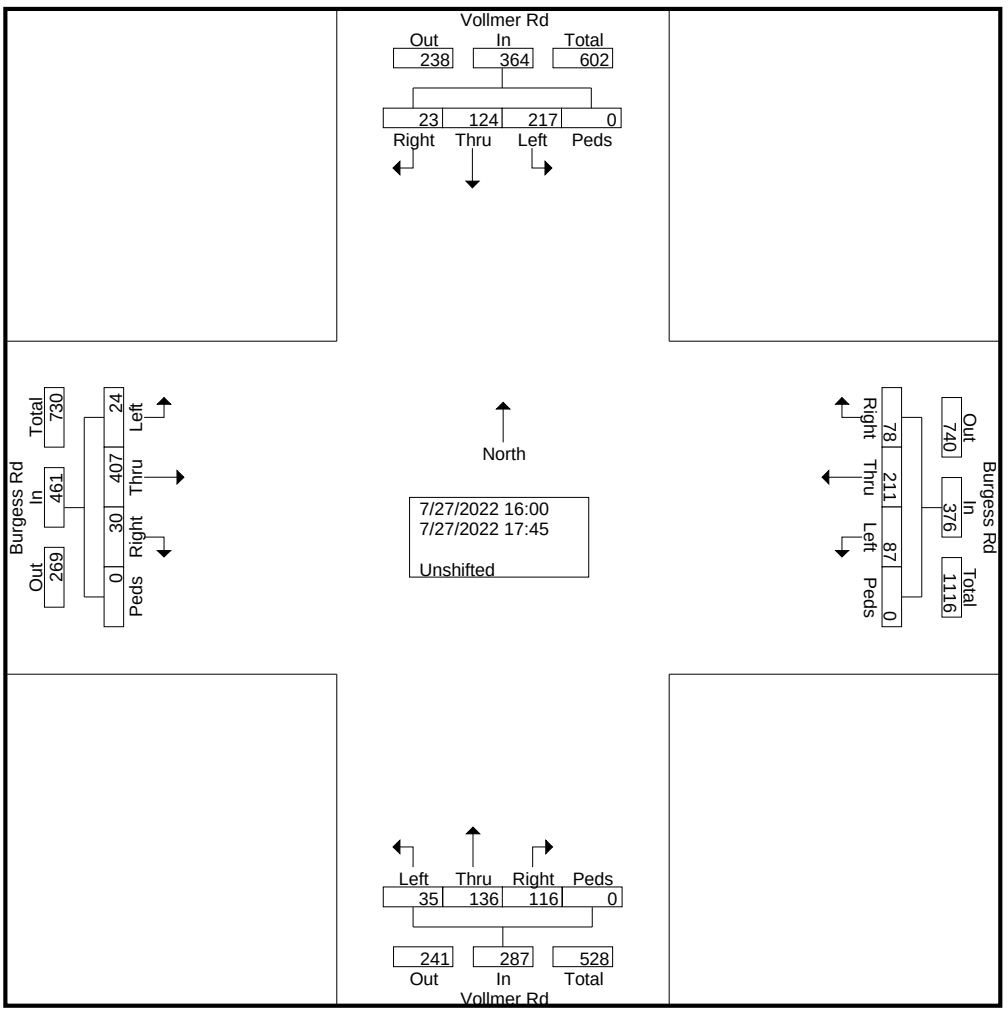
LSC Transportation Consultants, Inc.

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

File Name : Vollmer Rd - Burgess Rd PM
Site Code : S224440
Start Date : 7/27/2022
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	2	19	22	0	43	7	21	7	0	35	9	17	6	0	32	3	37	3	0	43	153
16:15	5	13	29	0	47	6	23	11	0	40	18	11	8	0	37	4	37	5	0	46	170
16:30	2	19	31	0	52	10	30	9	0	49	12	19	4	0	35	5	46	3	0	54	190
16:45	1	8	20	0	29	8	33	17	0	58	16	14	5	0	35	1	65	0	0	66	188
Total	10	59	102	0	171	31	107	44	0	182	55	61	23	0	139	13	185	11	0	209	701
17:00	5	16	28	0	49	14	29	9	0	52	16	18	3	0	37	1	56	3	0	60	198
17:15	1	25	38	0	64	11	31	10	0	52	18	18	4	0	40	5	77	3	0	85	241
17:30	1	10	30	0	41	11	21	19	0	51	13	23	4	0	40	5	46	1	0	52	184
17:45	6	14	19	0	39	11	23	5	0	39	14	16	1	0	31	6	43	6	0	55	164
Total	13	65	115	0	193	47	104	43	0	194	61	75	12	0	148	17	222	13	0	252	787
Grand Total	23	124	217	0	364	78	211	87	0	376	116	136	35	0	287	30	407	24	0	461	1488
Apprch %	6.3	34.1	59.6	0		20.7	56.1	23.1	0		40.4	47.4	12.2	0		6.5	88.3	5.2	0		
Total %	1.5	8.3	14.6	0	24.5	5.2	14.2	5.8	0	25.3	7.8	9.1	2.4	0	19.3	2	27.4	1.6	0	31	

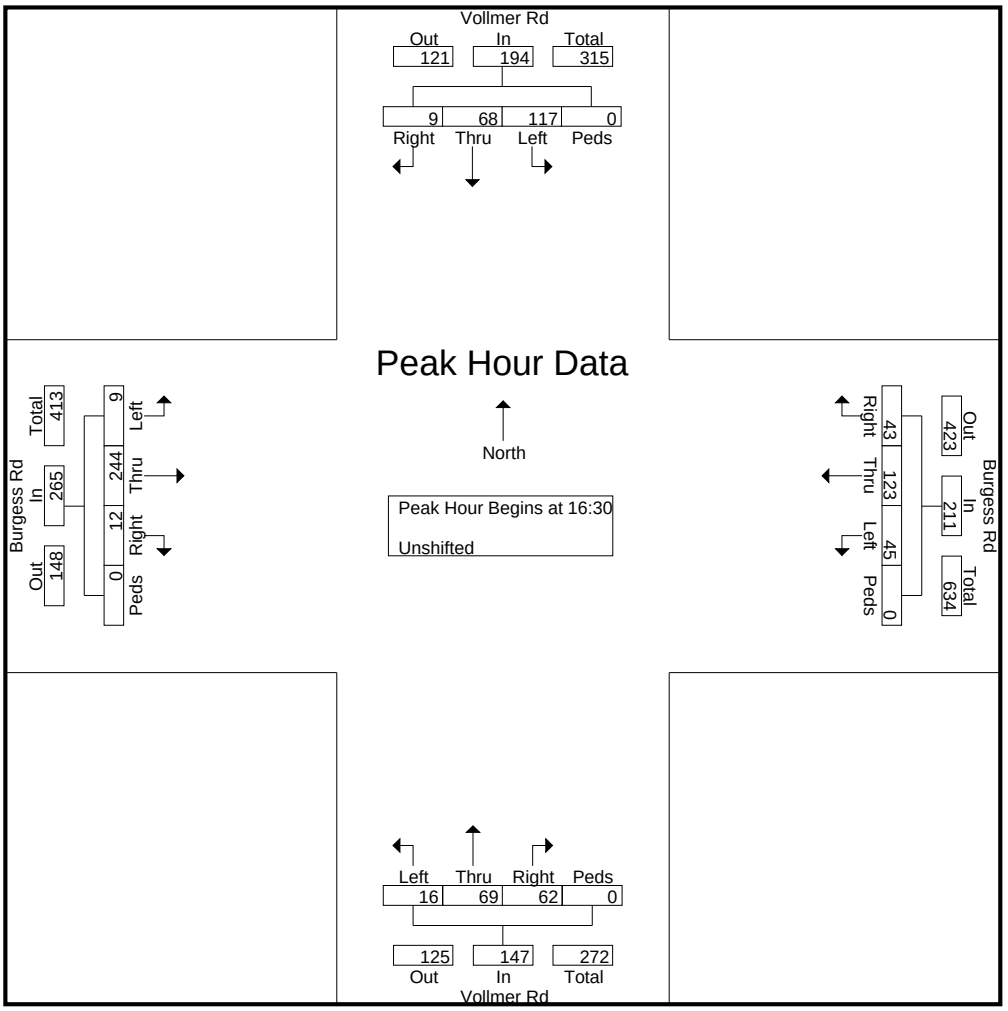


LSC Transportation Consultants, Inc.

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

File Name : Vollmer Rd - Burgess Rd PM
Site Code : S224440
Start Date : 7/27/2022
Page No : 2

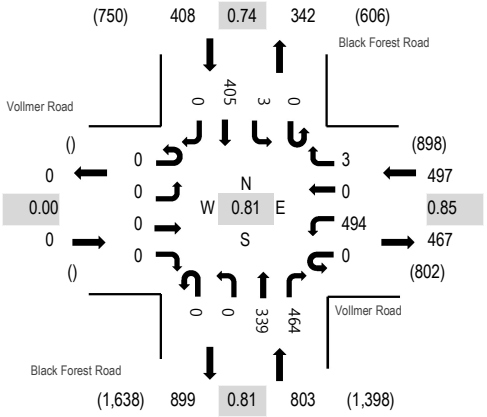
	Vollmer Rd Southbound					Burgess Rd Westbound					Vollmer Rd Northbound					Burgess Rd Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 4:00:00 PM to 5:45:00 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 4:30:00 PM																					
4:30:00 PM	2	19	31	0	52	10	30	9	0	49	12	**19**	4	0	35	**5**	46	**3**	0	54	190
4:45:00 PM	1	8	20	0	29	8	**33**	**17**	0	**58**	16	14	**5**	0	35	1	65	0	0	66	188
5:00:00 PM	**5**	16	28	0	49	**14**	29	9	0	52	16	18	3	0	37	1	56	3	0	60	198
5:15:00 PM	1	**25**	**38**	0	**64**	11	31	10	0	52	**18**	18	4	0	**40**	5	**77**	3	0	**85**	**241**
Total Volume	9	68	117	0	194	43	123	45	0	211	62	69	16	0	147	12	244	9	0	265	817
% App. Total	4.6	35.1	60.3	0		20.4	58.3	21.3	0		42.2	46.9	10.9	0		4.5	92.1	3.4	0		
PHF	.450	.680	.770	.000	.758	.768	.932	.662	.000	.909	.861	.908	.800	.000	.919	.600	.792	.750	.000	.779	.848



ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

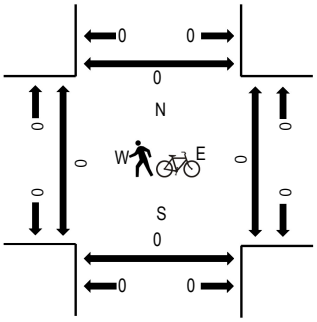
Location: 1 Black Forest Road & Vollmer Road AM
Date: Thursday, March 24, 2022
Peak Hour: 07:15 AM - 08:15 AM
Peak 15-Minutes: 07:45 AM - 08:00 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



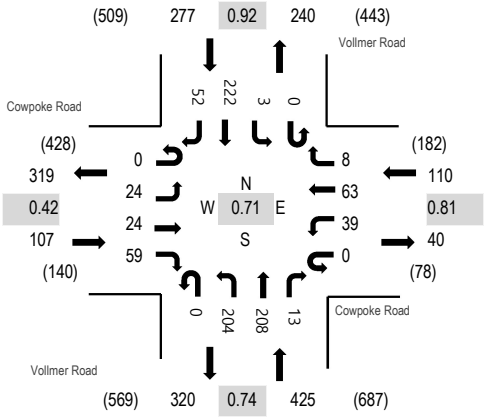
Traffic Counts

Interval Start Time	Vollmer Road Eastbound				Vollmer Road Westbound				Black Forest Road Northbound				Black Forest Road Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	0	0	0	0	88	0	0	0	0	46	75	0	2	85	0	296	1,630	0	0	0	0
7:15 AM	0	0	0	0	0	88	0	2	0	0	77	92	0	0	77	0	336	1,708	0	0	0	0
7:30 AM	0	0	0	0	0	118	0	0	0	0	86	162	0	0	104	0	470	1,708	0	0	0	0
7:45 AM	0	0	0	0	0	149	0	1	0	0	98	140	0	2	138	0	528	1,587	0	0	0	0
8:00 AM	0	0	0	0	0	139	0	0	0	0	78	70	0	1	86	0	374	1,416	0	0	0	0
8:15 AM	0	0	0	0	0	105	0	0	0	0	71	78	0	1	81	0	336		0	0	0	0
8:30 AM	0	0	0	0	0	111	0	0	0	0	63	81	0	0	94	0	349		0	0	0	0
8:45 AM	0	0	0	0	0	97	0	0	0	0	84	97	0	1	78	0	357		0	0	0	0
Count Total	0	0	0	0	0	895	0	3	0	0	603	795	0	7	743	0	3,046		0	0	0	0
Peak Hour	0	0	0	0	0	494	0	3	0	0	339	464	0	3	405	0	1,708		0	0	0	0

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

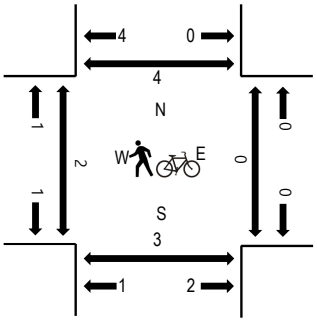
Location: 2 Vollmer Road & Cowpoke Road AM
Date: Thursday, March 24, 2022
Peak Hour: 07:15 AM - 08:15 AM
Peak 15-Minutes: 07:45 AM - 08:00 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	Cowpoke Road Eastbound				Cowpoke Road Westbound				Vollmer Road Northbound				Vollmer Road Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	1	1	0	0	6	7	1	0	5	52	5	0	0	36	6	120	851	0	0	0	0
7:15 AM	0	0	2	2	0	8	16	0	0	33	47	5	0	0	46	9	168	919	0	0	1	0
7:30 AM	0	3	5	5	0	11	15	1	0	73	57	2	0	0	50	16	238	907	0	0	0	1
7:45 AM	0	15	14	41	0	8	21	5	0	78	62	3	0	1	60	17	325	823	1	0	1	3
8:00 AM	0	6	3	11	0	12	11	2	0	20	42	3	0	2	66	10	188	667	0	0	0	0
8:15 AM	0	5	2	8	0	7	10	0	0	19	34	8	0	2	54	7	156		0	0	0	0
8:30 AM	0	3	4	1	0	13	6	1	0	3	51	5	0	2	59	6	154		1	0	1	0
8:45 AM	0	4	1	3	0	14	6	1	0	23	50	7	0	1	48	11	169		0	0	0	0
Count Total	0	37	32	71	0	79	92	11	0	254	395	38	0	8	419	82	1,518		2	0	3	4
Peak Hour	0	24	24	59	0	39	63	8	0	204	208	13	0	3	222	52	919		1	0	2	4

ALL TRAFFIC DATA SERVICES
(303) 216-2439
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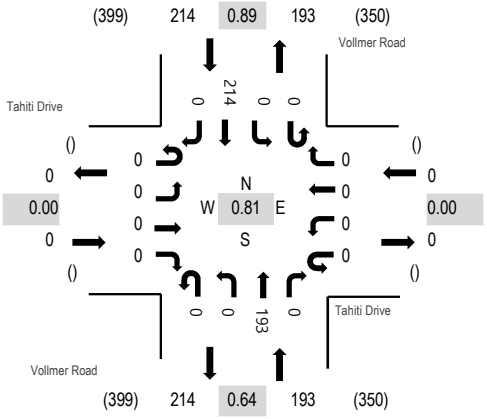
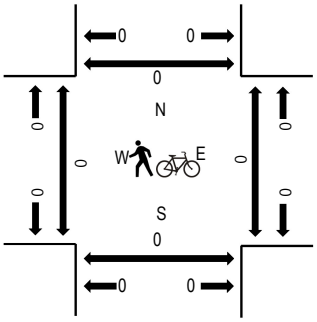
Location: 3 Vollmer Road & Tahiti Drive AM
Date: Thursday, March 24, 2022
Peak Hour: 07:45 AM - 08:45 AM
Peak 15-Minutes: 07:45 AM - 08:00 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	Tahiti Drive Eastbound				Tahiti Drive Westbound				Vollmer Road Northbound				Vollmer Road Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	0	0	0	0	0	0	0	0	0	42	0	0	0	30	0	72	374	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	33	0	0	0	47	0	80	400	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	41	0	0	0	55	0	96	400	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	75	0	0	0	51	0	126	407	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	37	0	0	0	61	0	98	375	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	34	0	0	0	46	0	80		0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	47	0	0	0	56	0	103		0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	41	0	0	0	53	0	94		0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	350	0	0	0	399	0	749		0	0	0	0
Peak Hour	0	0	0	0	0	0	0	0	0	0	193	0	0	0	214	0	407		0	0	0	0

ALL TRAFFIC DATA SERVICES
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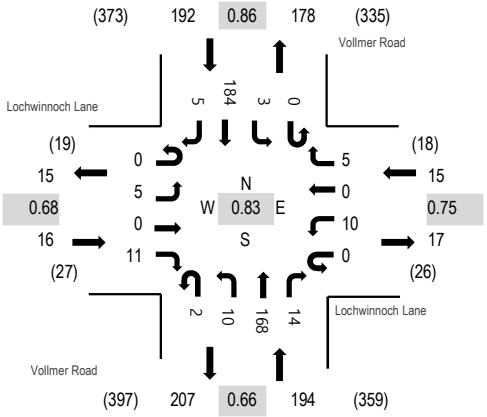
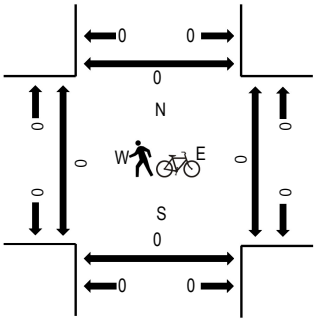
Location: 4 Vollmer Road & Lochwinnoch Lane AM
Date: Thursday, March 24, 2022
Peak Hour: 07:45 AM - 08:45 AM
Peak 15-Minutes: 07:45 AM - 08:00 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



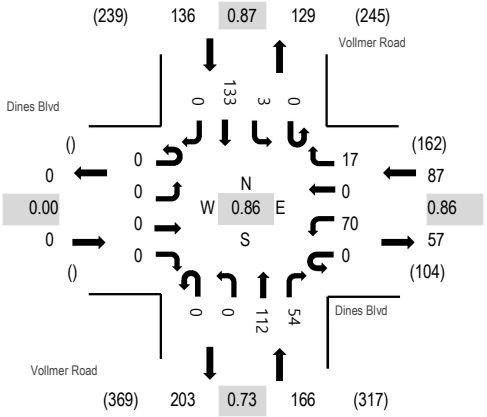
Traffic Counts

Interval Start Time	Lochwinnoch Lane Eastbound				Lochwinnoch Lane Westbound				Vollmer Road Northbound				Vollmer Road Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	0	0	2	0	1	0	0	0	0	43	0	0	0	28	0	74	389	0	0	0	0
7:15 AM	0	0	0	3	0	0	0	0	0	1	33	2	0	1	43	1	84	413	0	0	0	0
7:30 AM	0	0	0	1	0	2	0	0	0	1	40	3	0	1	57	1	106	416	0	0	0	0
7:45 AM	0	0	0	2	0	2	0	1	0	0	68	7	0	1	44	0	125	417	0	0	0	0
8:00 AM	0	1	0	1	0	4	0	0	2	1	33	3	0	0	52	1	98	388	0	0	0	0
8:15 AM	0	2	0	3	0	1	0	2	0	5	26	3	0	1	42	2	87		0	0	0	0
8:30 AM	0	2	0	5	0	3	0	2	0	4	41	1	0	1	46	2	107		0	0	0	0
8:45 AM	0	0	0	5	0	0	0	0	0	0	41	1	0	1	48	0	96		0	0	0	0
Count Total	0	5	0	22	0	13	0	5	2	12	325	20	0	6	360	7	777		0	0	0	0
Peak Hour	0	5	0	11	0	10	0	5	2	10	168	14	0	3	184	5	417		0	0	0	0

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

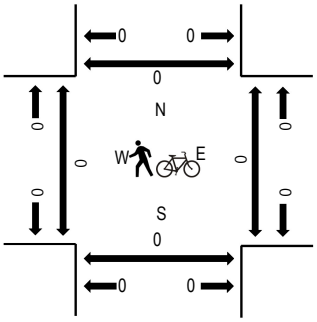
Location: 5 Vollmer Road & Dines Blvd AM
Date: Thursday, March 24, 2022
Peak Hour: 07:15 AM - 08:15 AM
Peak 15-Minutes: 07:45 AM - 08:00 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	Dines Blvd Eastbound				Dines Blvd Westbound				Vollmer Road Northbound				Vollmer Road Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	0	0	0	0	11	0	1	0	0	25	14	0	2	16	0	69	370	0	0	0	0
7:15 AM	0	0	0	0	0	15	0	3	0	0	22	13	0	1	29	0	83	389	0	0	0	0
7:30 AM	0	0	0	0	0	21	0	5	0	0	27	13	0	0	39	0	105	381	0	0	0	0
7:45 AM	0	0	0	0	0	11	0	6	0	0	38	21	0	1	36	0	113	375	0	0	0	0
8:00 AM	0	0	0	0	0	23	0	3	0	0	25	7	0	1	29	0	88	348	0	0	0	0
8:15 AM	0	0	0	0	0	18	0	2	0	0	23	8	0	0	24	0	75		0	0	0	0
8:30 AM	0	0	0	0	0	23	0	1	1	0	28	13	1	2	30	0	99		0	0	0	0
8:45 AM	0	0	0	0	0	15	0	4	0	0	31	8	0	0	28	0	86		0	0	0	0
Count Total	0	0	0	0	0	137	0	25	1	0	219	97	1	7	231	0	718		0	0	0	0
Peak Hour	0	0	0	0	0	70	0	17	0	0	112	54	0	3	133	0	389		0	0	0	0

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(303) 216-2439
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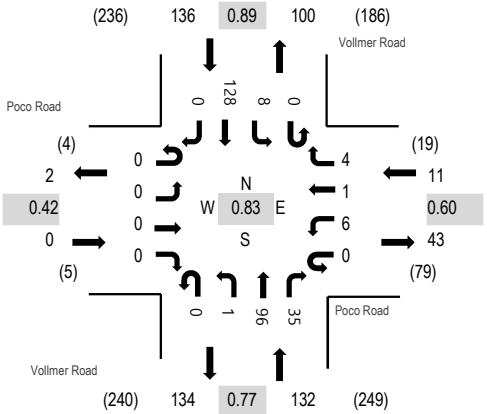
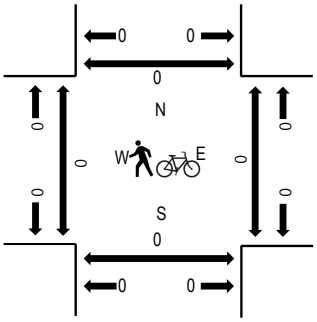
Location: 6 Vollmer Road & Poco Road AM
Date: Thursday, March 24, 2022
Peak Hour: 07:15 AM - 08:15 AM
Peak 15-Minutes: 07:45 AM - 08:00 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	Poco Road Eastbound				Poco Road Westbound				Vollmer Road Northbound				Vollmer Road Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	0	0	0	0	0	0	0	0	0	10	15	0	1	20	0	46	264	0	0	0	0
7:15 AM	0	0	0	0	0	1	0	2	0	0	18	8	0	2	27	0	58	279	0	0	0	0
7:30 AM	0	0	0	0	0	1	0	2	0	1	26	8	0	2	36	0	76	273	0	0	0	0
7:45 AM	0	0	0	0	0	4	0	0	0	0	34	9	0	4	33	0	84	265	0	0	0	0
8:00 AM	0	0	0	0	0	0	1	0	0	0	18	10	0	0	32	0	61	245	0	0	0	0
8:15 AM	0	0	0	0	0	1	0	1	0	0	24	3	0	0	23	0	52		0	0	0	0
8:30 AM	0	0	0	2	0	3	0	2	0	1	24	6	0	1	29	0	68		0	0	0	0
8:45 AM	0	2	0	1	0	1	0	0	0	1	23	10	0	0	26	0	64		0	0	0	0
Count Total	0	2	0	3	0	11	1	7	0	3	177	69	0	10	226	0	509		0	0	0	0
Peak Hour	0	0	0	0	0	6	1	4	0	1	96	35	0	8	128	0	279		0	0	0	0

ALL TRAFFIC DATA SERVICES
(303) 216-2439
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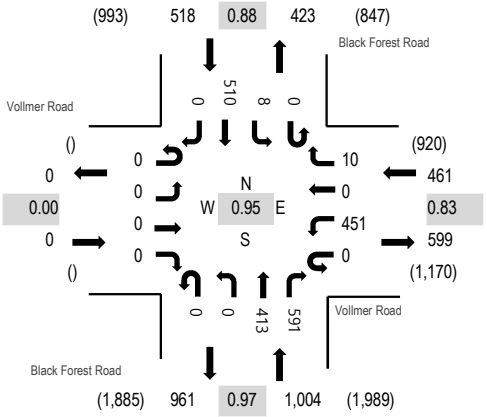
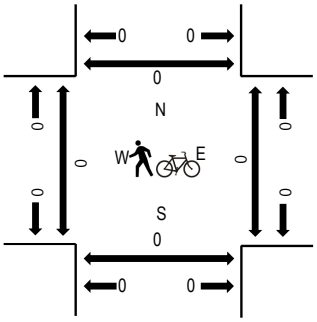
Location: 1 Black Forest Road & Vollmer Road PM
Date: Thursday, March 24, 2022
Peak Hour: 04:45 PM - 05:45 PM
Peak 15-Minutes: 05:30 PM - 05:45 PM

Peak Hour - All Vehicles



Peak Hour - Pedestrians/Bicycles on Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	Vollmer Road Eastbound				Vollmer Road Westbound				Black Forest Road Northbound				Black Forest Road Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	0	0	0	0	120	0	0	0	0	102	140	0	1	140	0	503	1,927	0	0	0	0
4:15 PM	0	0	0	0	0	104	0	2	0	0	100	147	0	2	107	0	462	1,904	0	0	0	0
4:30 PM	0	0	0	0	0	139	0	2	0	0	100	135	0	1	116	0	493	1,955	0	0	0	0
4:45 PM	0	0	0	0	0	94	0	5	0	0	105	152	0	2	111	0	469	1,983	0	0	0	0
5:00 PM	0	0	0	0	0	113	0	1	0	0	108	137	0	1	120	0	480	1,975	0	0	0	0
5:15 PM	0	0	0	0	0	108	0	1	0	0	103	154	0	3	144	0	513		0	0	0	0
5:30 PM	0	0	0	0	0	136	0	3	0	0	97	148	0	2	135	0	521		0	0	0	0
5:45 PM	0	0	0	0	0	92	0	0	0	0	118	143	0	2	106	0	461		0	0	0	0
Count Total	0	0	0	0	0	906	0	14	0	0	833	1,156	0	14	979	0	3,902		0	0	0	0
Peak Hour	0	0	0	0	0	451	0	10	0	0	413	591	0	8	510	0	1,983		0	0	0	0

ALL TRAFFIC DATA SERVICES
(303) 216-2439
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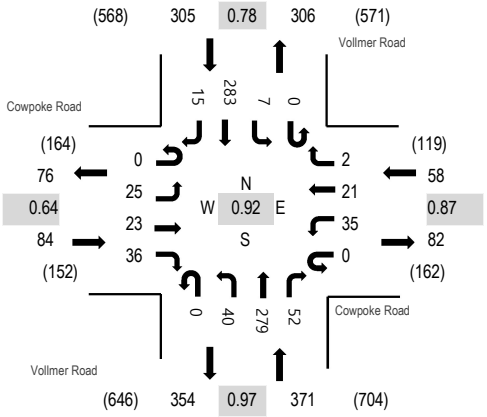
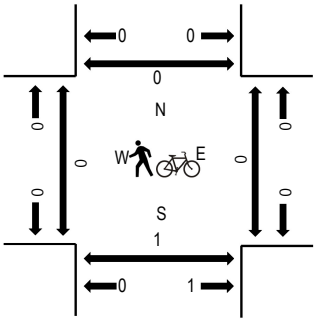
Location: 2 Vollmer Road & Cowpoke Road PM
Date: Thursday, March 24, 2022
Peak Hour: 04:00 PM - 05:00 PM
Peak 15-Minutes: 04:00 PM - 04:15 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	Cowpoke Road Eastbound				Cowpoke Road Westbound				Vollmer Road Northbound				Vollmer Road Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	8	1	7	0	7	5	1	0	12	64	20	0	3	91	4	223	818	0	0	0	0
4:15 PM	0	6	4	6	0	9	5	1	0	11	70	15	0	2	51	5	185	783	0	0	0	0
4:30 PM	0	4	7	8	0	5	6	0	0	4	74	10	0	0	76	2	196	762	0	0	0	0
4:45 PM	0	7	11	15	0	14	5	0	0	13	71	7	0	2	65	4	214	771	0	0	0	0
5:00 PM	0	5	8	3	0	9	4	1	0	12	61	14	0	2	63	6	188	725	0	0	3	0
5:15 PM	0	5	4	4	0	11	4	1	0	8	59	7	0	3	53	5	164		0	0	0	0
5:30 PM	0	5	9	9	0	11	6	0	0	16	62	10	0	1	68	8	205		0	0	0	0
5:45 PM	0	7	5	4	0	8	5	1	0	9	58	17	0	0	49	5	168		0	0	0	0
Count Total	0	47	49	56	0	74	40	5	0	85	519	100	0	13	516	39	1,543		0	0	3	0
Peak Hour	0	25	23	36	0	35	21	2	0	40	279	52	0	7	283	15	818		0	0	0	0

ALL TRAFFIC DATA SERVICES
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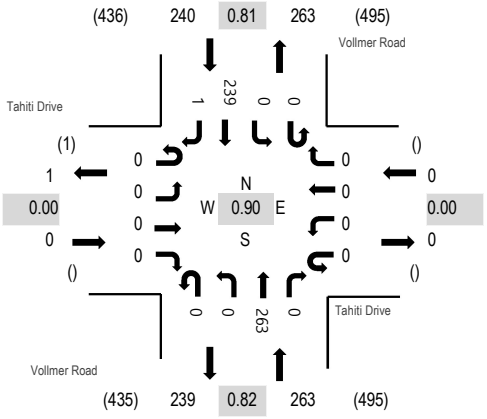
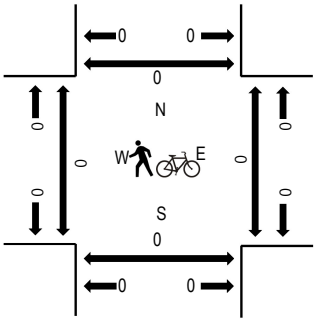
Location: 3 Vollmer Road & Tahiti Drive PM
Date: Thursday, March 24, 2022
Peak Hour: 04:00 PM - 05:00 PM
Peak 15-Minutes: 04:00 PM - 04:15 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	Tahiti Drive Eastbound				Tahiti Drive Westbound				Vollmer Road Northbound				Vollmer Road Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	0	0	0	0	0	0	0	0	0	66	0	0	0	73	1	140	503	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	68	0	0	0	52	0	120	467	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	49	0	0	0	63	0	112	463	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	80	0	0	0	51	0	131	453	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	55	0	0	0	49	0	104	428	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	62	0	0	0	54	0	116		0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	54	0	0	0	48	0	102		0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	61	0	0	0	45	0	106		0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	495	0	0	0	435	1	931		0	0	0	0
Peak Hour	0	0	0	0	0	0	0	0	0	0	263	0	0	0	239	1	503		0	0	0	0

ALL TRAFFIC DATA SERVICES
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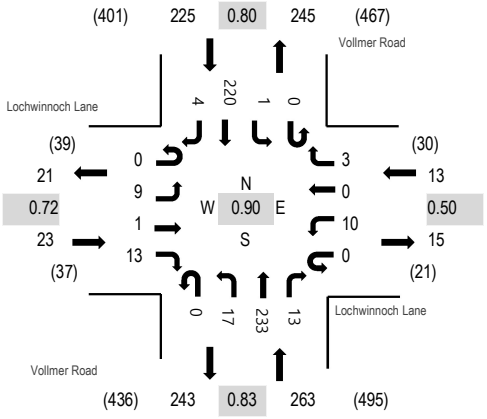
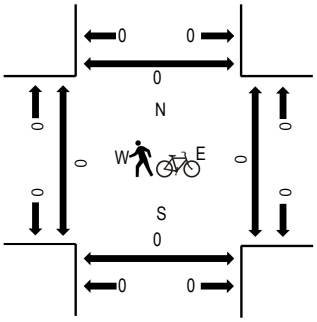
Location: 4 Vollmer Road & Lochwinnoch Lane PM
Date: Thursday, March 24, 2022
Peak Hour: 04:00 PM - 05:00 PM
Peak 15-Minutes: 04:00 PM - 04:15 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	Lochwinnoch Lane Eastbound				Lochwinnoch Lane Westbound				Vollmer Road Northbound				Vollmer Road Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	4	0	4	0	2	0	0	0	6	56	4	0	0	70	0	146	524	0	0	0	0
4:15 PM	0	1	0	3	0	2	0	0	0	3	64	1	0	1	49	0	124	489	0	0	0	0
4:30 PM	0	1	0	2	0	5	0	1	0	3	45	2	0	0	55	2	116	484	0	0	0	0
4:45 PM	0	3	1	4	0	1	0	2	0	5	68	6	0	0	46	2	138	475	0	0	0	0
5:00 PM	0	2	0	3	0	8	1	2	0	2	52	2	0	2	37	0	111	439	0	0	0	0
5:15 PM	0	1	0	1	0	0	0	1	0	5	58	1	0	0	51	1	119		0	0	0	0
5:30 PM	0	0	0	4	0	4	0	0	0	2	53	0	0	1	42	1	107		0	0	0	0
5:45 PM	0	1	0	2	0	0	0	1	0	6	51	0	0	0	41	0	102		0	0	0	0
Count Total	0	13	1	23	0	22	1	7	0	32	447	16	0	4	391	6	963		0	0	0	0
Peak Hour	0	9	1	13	0	10	0	3	0	17	233	13	0	1	220	4	524		0	0	0	0

ALL TRAFFIC DATA SERVICES
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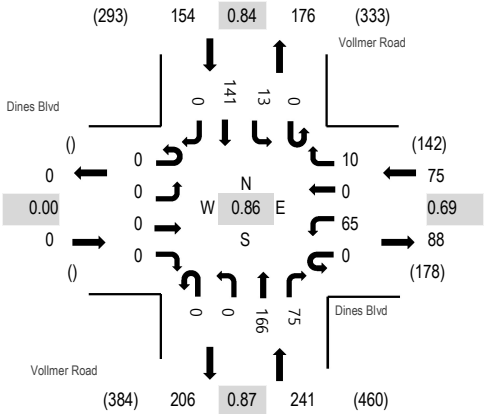
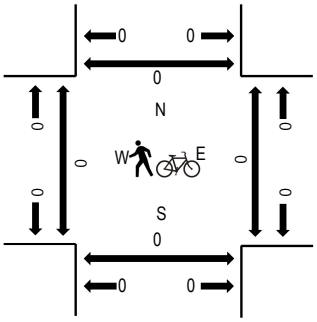
Location: 5 Vollmer Road & Dines Blvd PM
Date: Thursday, March 24, 2022
Peak Hour: 04:00 PM - 05:00 PM
Peak 15-Minutes: 04:00 PM - 04:15 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	Dines Blvd Eastbound				Dines Blvd Westbound				Vollmer Road Northbound				Vollmer Road Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	0	0	0	0	24	0	3	0	0	46	18	0	2	44	0	137	470	0	0	0	0
4:15 PM	0	0	0	0	0	13	0	5	0	0	36	25	0	5	37	0	121	441	0	0	0	0
4:30 PM	0	0	0	0	0	12	0	2	0	0	35	11	0	3	30	0	93	436	0	0	0	0
4:45 PM	0	0	0	0	0	16	0	0	0	0	49	21	0	3	30	0	119	452	0	0	0	0
5:00 PM	0	0	0	0	0	14	0	5	0	0	42	18	0	2	27	0	108	425	0	0	0	0
5:15 PM	0	0	0	0	0	17	0	3	0	0	39	17	0	4	36	0	116		0	0	0	0
5:30 PM	0	0	0	0	0	12	0	1	0	0	36	21	0	8	31	0	109		0	0	0	0
5:45 PM	0	0	0	0	0	14	0	1	0	0	30	16	0	4	27	0	92		0	0	0	0
Count Total	0	0	0	0	0	122	0	20	0	0	313	147	0	31	262	0	895		0	0	0	0
Peak Hour	0	0	0	0	0	65	0	10	0	0	166	75	0	13	141	0	470		0	0	0	0

ALL TRAFFIC DATA SERVICES
(303) 216-2439
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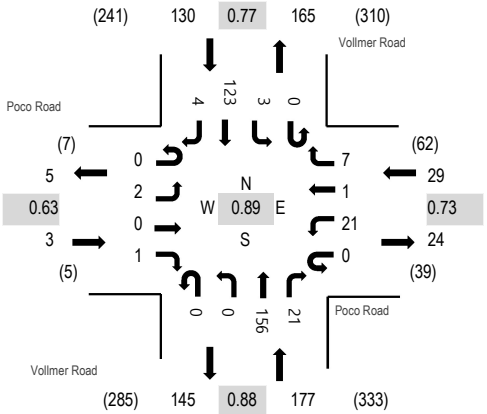
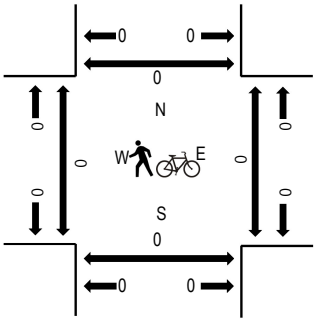
Location: 6 Vollmer Road & Poco Road PM
Date: Thursday, March 24, 2022
Peak Hour: 04:00 PM - 05:00 PM
Peak 15-Minutes: 04:15 PM - 04:30 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	Poco Road Eastbound				Poco Road Westbound				Vollmer Road Northbound				Vollmer Road Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	0	0	0	0	8	1	4	0	0	41	4	0	1	29	2	90	339	0	0	0	0
4:15 PM	0	1	0	0	0	4	0	2	0	0	40	6	0	1	39	2	95	325	0	0	0	0
4:30 PM	0	0	0	0	0	2	0	0	0	0	32	3	0	1	28	0	66	313	0	0	0	0
4:45 PM	0	1	0	1	0	7	0	1	0	0	43	8	0	0	27	0	88	321	0	0	0	0
5:00 PM	0	0	0	2	0	6	0	1	0	0	44	3	0	0	20	0	76	302	0	0	0	0
5:15 PM	0	0	0	0	0	12	0	0	0	0	37	4	0	0	29	1	83		0	0	0	0
5:30 PM	0	0	0	0	0	6	0	2	0	0	33	3	0	1	29	0	74		0	0	0	0
5:45 PM	0	0	0	0	0	5	0	1	0	1	27	4	0	0	31	0	69		0	0	0	0
Count Total	0	2	0	3	0	50	1	11	0	1	297	35	0	4	232	5	641		0	0	0	0
Peak Hour	0	2	0	1	0	21	1	7	0	0	156	21	0	3	123	4	339		0	0	0	0

LSC Transportation Consultants, Inc.

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

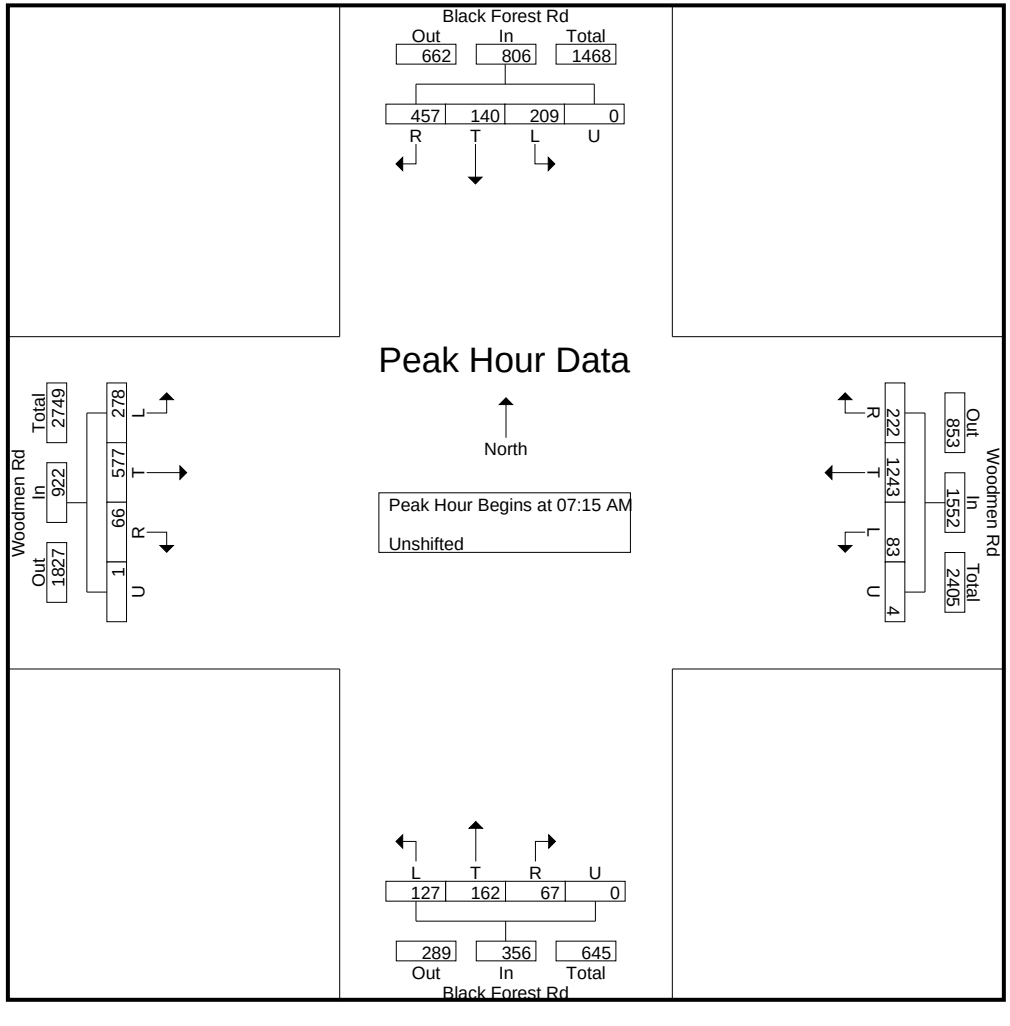
File Name : Blackforest Rd - Woodmen Rd AM
Site Code : S214590
Start Date : 7/6/2021
Page No : 1

Groups Printed- Unshifted

	Black Forest Rd Southbound					Woodmen Rd Westbound					Black Forest Rd Northbound					Woodmen Rd Eastbound					
Start Time	**L**	**T**	**R**	**U**	**App. Total**	**L**	**T**	**R**	**U**	**App. Total**	**L**	**T**	**R**	**U**	**App. Total**	**L**	**T**	**R**	**U**	**App. Total**	**Int. Total**
06:30 AM	45	28	96	0	169	9	306	35	0	350	14	14	10	0	38	45	87	17	0	149	706
06:45 AM	51	33	98	0	182	24	256	46	1	327	10	23	19	0	52	47	117	31	0	195	756
Total	96	61	194	0	351	33	562	81	1	677	24	37	29	0	90	92	204	48	0	344	1462
07:00 AM	55	23	99	1	178	23	283	50	0	356	31	21	12	0	64	70	101	8	0	179	777
07:15 AM	57	29	136	0	222	21	310	65	0	396	37	48	14	0	99	60	125	12	0	197	914
07:30 AM	56	31	115	0	202	25	350	50	1	426	29	30	18	0	77	95	150	17	1	263	968
07:45 AM	56	46	108	0	210	21	299	49	1	370	36	45	18	0	99	62	145	25	0	232	911
Total	224	129	458	1	812	90	1242	214	2	1548	133	144	62	0	339	287	521	62	1	871	3570
08:00 AM	40	34	98	0	172	16	284	58	2	360	25	39	17	0	81	61	157	12	0	230	843
08:15 AM	59	30	128	0	217	13	256	46	2	317	23	35	20	0	78	67	124	5	0	196	808
Grand Total	419	254	878	1	1552	152	2344	399	7	2902	205	255	128	0	588	507	1006	127	1	1641	6683
Apprch %	27	16.4	56.6	0.1		5.2	80.8	13.7	0.2		34.9	43.4	21.8	0		30.9	61.3	7.7	0.1		
Total %	6.3	3.8	13.1	0	23.2	2.3	35.1	6	0.1	43.4	3.1	3.8	1.9	0	8.8	7.6	15.1	1.9	0	24.6	

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

File Name : Blackforest Rd - Woodmen Rd AM
Site Code : S214590
Start Date : 7/6/2021
Page No : 3



LSC Transportation Consultants, Inc.

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

File Name : Blackforest Rd - Woodmen Rd PM
Site Code : S214590
Start Date : 7/6/2021
Page No : 1

Groups Printed- Unshifted

	Black Forest Rd Southbound					Woodmen Rd Westbound					Black Forest Rd Northbound					Woodmen Rd Eastbound					
Start Time	**L**	**T**	**R**	**U**	**App. Total**	**L**	**T**	**R**	**U**	**App. Total**	**L**	**T**	**R**	**U**	**App. Total**	**L**	**T**	**R**	**U**	**App. Total**	**Int. Total**
04:00 PM	54	29	105	0	188	16	231	54	1	302	26	62	35	0	123	125	241	10	0	376	989
04:15 PM	63	40	95	0	198	11	252	62	1	326	26	51	39	0	116	96	297	17	1	411	1051
04:30 PM	53	45	95	0	193	11	250	69	1	331	28	59	24	0	111	127	309	9	1	446	1081
04:45 PM	60	36	114	0	210	13	253	61	3	330	22	77	26	0	125	108	285	16	1	410	1075
Total	230	150	409	0	789	51	986	246	6	1289	102	249	124	0	475	456	1132	52	3	1643	4196
05:00 PM	67	50	134	0	251	10	249	76	0	335	17	68	43	0	128	149	286	8	0	443	1157
05:15 PM	67	47	102	0	216	13	225	68	1	307	18	76	25	0	119	100	347	5	0	452	1094
05:30 PM	50	37	103	0	190	15	227	59	2	303	15	68	37	0	120	130	324	14	0	468	1081
05:45 PM	66	38	113	0	217	17	188	47	2	254	18	69	30	0	117	116	295	13	1	425	1013
Total	250	172	452	0	874	55	889	250	5	1199	68	281	135	0	484	495	1252	40	1	1788	4345
Grand Total	480	322	861	0	1663	106	1875	496	11	2488	170	530	259	0	959	951	2384	92	4	3431	8541
Apprch %	28.9	19.4	51.8	0		4.3	75.4	19.9	0.4		17.7	55.3	27	0		27.7	69.5	2.7	0.1		
Total %	5.6	3.8	10.1	0	19.5	1.2	22	5.8	0.1	29.1	2	6.2	3	0	11.2	11.1	27.9	1.1	0	40.2	

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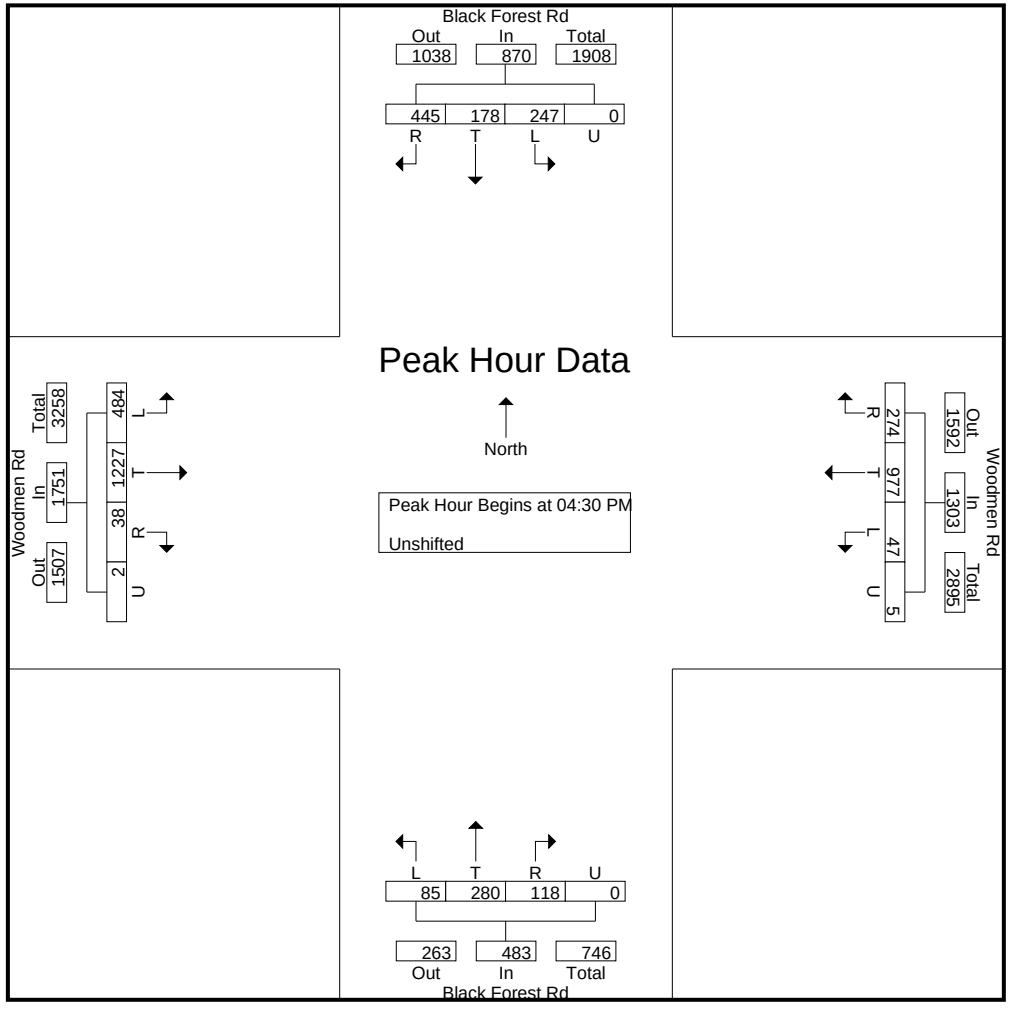
719-633-2868

File Name : Blackforest Rd - Woodmen Rd PM
Site Code : S214590
Start Date : 7/6/2021
Page No : 3



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File Name : Marksheffel Rd - Woodmen Rd AM 8-21 AM
Site Code : S214630
Start Date : 8/3/2021
Page No : 1

Groups Printed- Unshifted

	Marksheffel Rd Southbound					Woodmen Rd Westbound					Marksheffel Rd Northbound					Woodmen Rd Eastbound					
Start Time	**L**	**T**	**R**	**U**	**App. Total**	**L**	**T**	**R**	**U**	**App. Total**	**L**	**T**	**R**	**U**	**App. Total**	**L**	**T**	**R**	**U**	**App. Total**	**Int. Total**
06:30 AM	1	12	14	0	27	52	251	0	0	303	90	6	34	0	130	2	109	86	2	199	659
06:45 AM	2	9	15	0	26	65	213	3	0	281	124	11	56	0	191	10	148	81	1	240	738
Total	3	21	29	0	53	117	464	3	0	584	214	17	90	0	321	12	257	167	3	439	1397
07:00 AM	2	16	14	0	32	88	269	4	0	361	106	5	54	0	165	2	121	93	1	217	775
07:15 AM	4	28	15	1	48	119	302	4	0	425	114	11	76	0	201	7	125	90	0	222	896
07:30 AM	1	17	25	0	43	135	334	1	0	470	119	13	69	1	202	7	154	98	2	261	976
07:45 AM	4	15	37	0	56	125	228	2	0	355	131	21	70	0	222	12	144	88	4	248	881
Total	11	76	91	1	179	467	1133	11	0	1611	470	50	269	1	790	28	544	369	7	948	3528
08:00 AM	0	7	23	0	30	54	238	3	0	295	120	13	70	0	203	8	140	78	1	227	755
08:15 AM	2	3	19	0	24	79	213	1	0	293	115	20	56	0	191	9	112	65	2	188	696
Grand Total	16	107	162	1	286	717	2048	18	0	2783	919	100	485	1	1505	57	1053	679	13	1802	6376
Apprch %	5.6	37.4	56.6	0.3		25.8	73.6	0.6	0		61.1	6.6	32.2	0.1		3.2	58.4	37.7	0.7		
Total %	0.3	1.7	2.5	0	4.5	11.2	32.1	0.3	0	43.6	14.4	1.6	7.6	0	23.6	0.9	16.5	10.6	0.2	28.3	

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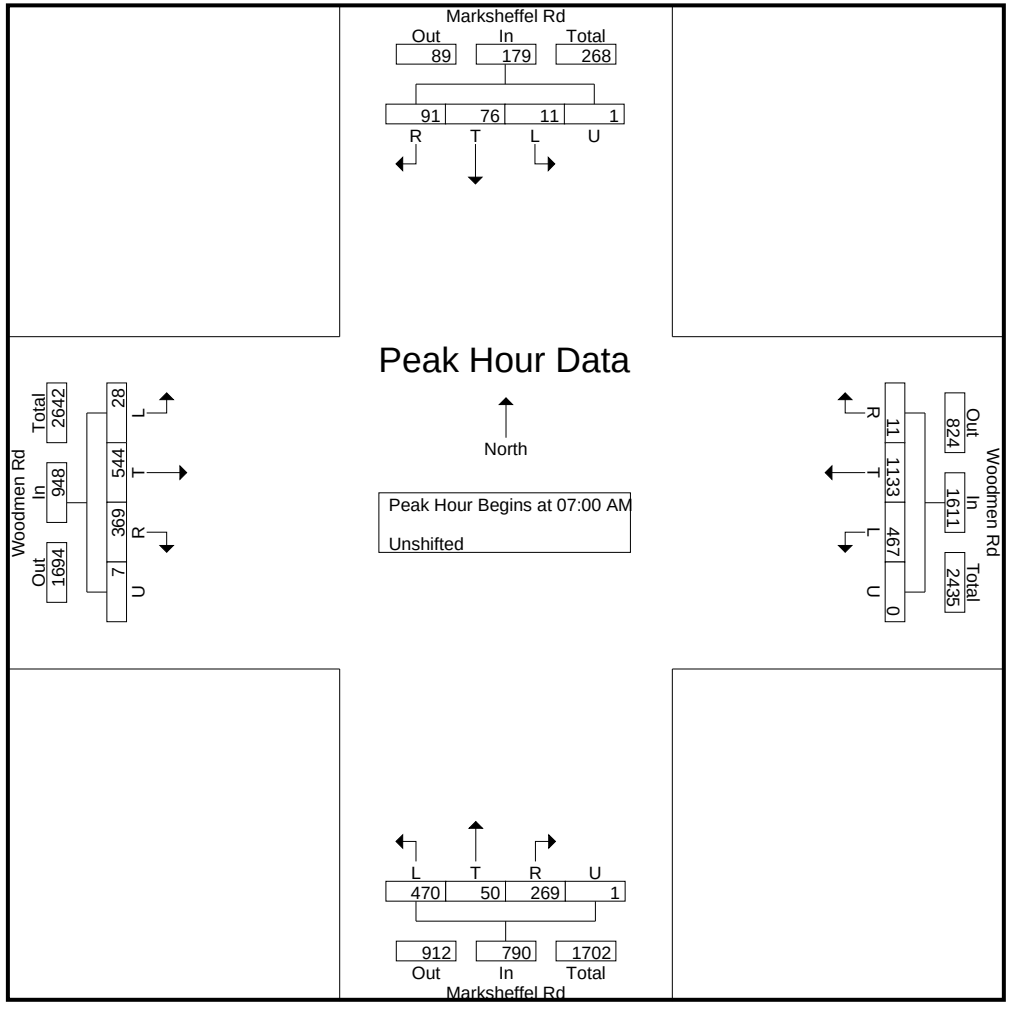
File Name : Marksheffel Rd - Woodmen Rd AM 8-21 AM
Site Code : S214630
Start Date : 8/3/2021
Page No : 3



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545 E Pikes Peak Ave, Suite 210
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File Name : Marksheffel Rd - Woodmen Rd AM 8-21 PM
Site Code : S214630
Start Date : 8/3/2021
Page No : 1

Groups Printed- Unshifted

	Marksheffel Rd Southbound					Woodmen Rd Westbound					Marksheffel Rd Northbound					Woodmen Rd Eastbound					
Start Time	**L**	**T**	**R**	**U**	**App. Total**	**L**	**T**	**R**	**U**	**App. Total**	**L**	**T**	**R**	**U**	**App. Total**	**L**	**T**	**R**	**U**	**App. Total**	**Int. Total**
04:00 PM	3	9	20	0	32	64	231	3	1	299	111	16	108	4	239	14	244	98	1	357	927
04:15 PM	3	11	12	0	26	92	208	1	0	301	124	9	104	0	237	15	295	114	0	424	988
04:30 PM	2	2	10	0	14	135	206	0	0	341	94	22	89	0	205	10	308	111	0	429	989
04:45 PM	2	10	17	0	29	65	179	3	0	247	143	17	141	0	301	16	278	94	2	390	967
Total	10	32	59	0	101	356	824	7	1	1188	472	64	442	4	982	55	1125	417	3	1600	3871
05:00 PM	1	7	14	0	22	126	191	3	0	320	110	11	100	0	221	27	265	133	2	427	990
05:15 PM	3	14	14	0	31	76	184	2	0	262	135	14	135	0	284	27	303	117	2	449	1026
05:30 PM	3	3	14	0	20	52	236	2	0	290	93	9	135	0	237	28	348	121	1	498	1045
05:45 PM	2	7	19	0	28	56	167	1	0	224	104	10	155	2	271	20	301	117	5	443	966
Total	9	31	61	0	101	310	778	8	0	1096	442	44	525	2	1013	102	1217	488	10	1817	4027
Grand Total	19	63	120	0	202	666	1602	15	1	2284	914	108	967	6	1995	157	2342	905	13	3417	7898
Apprch %	9.4	31.2	59.4	0		29.2	70.1	0.7	0		45.8	5.4	48.5	0.3		4.6	68.5	26.5	0.4		
Total %	0.2	0.8	1.5	0	2.6	8.4	20.3	0.2	0	28.9	11.6	1.4	12.2	0.1	25.3	2	29.7	11.5	0.2	43.3	

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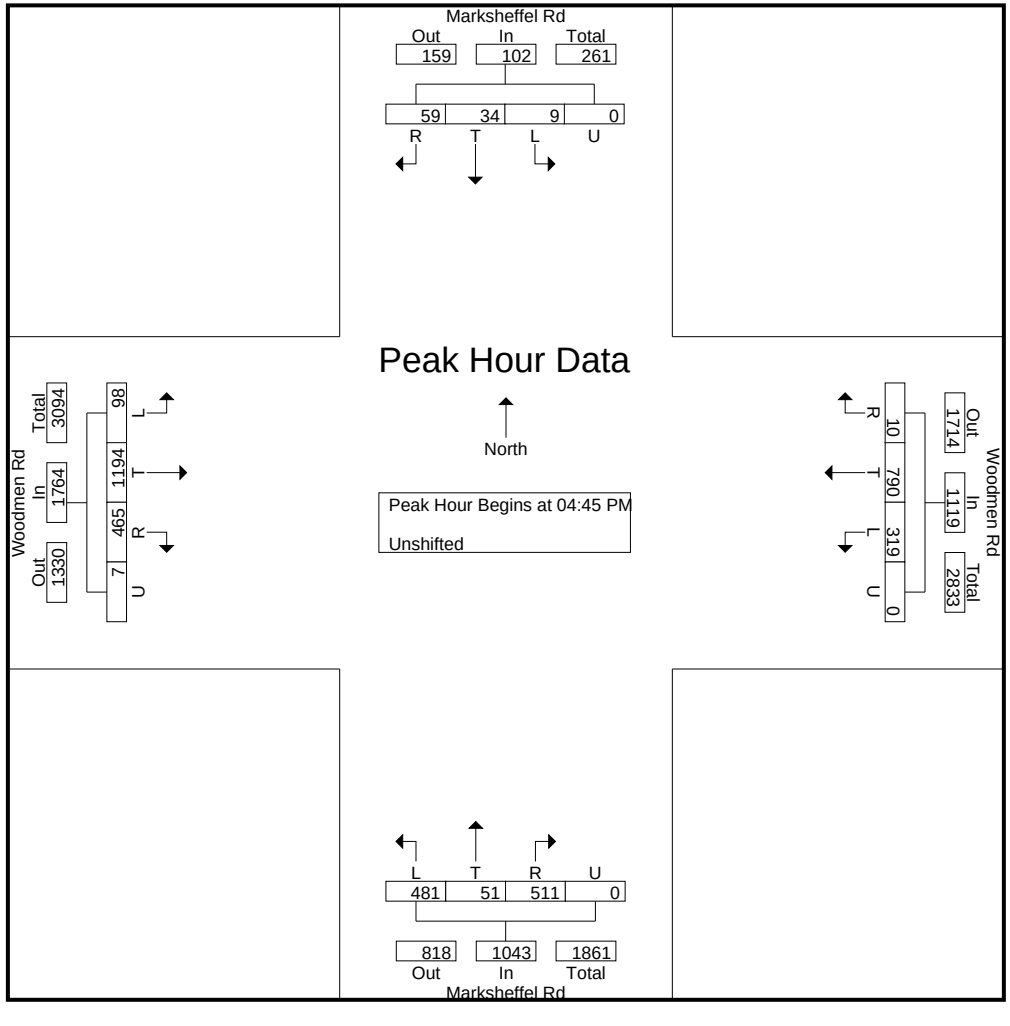
File Name : Marksheffel Rd - Woodmen Rd AM 8-21 PM
Site Code : S214630
Start Date : 8/3/2021
Page No : 3



Levels of Service

TRANSPORTATION
CONSULTANTS, INC.

Intersection	
Int Delay, s/veh	12.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	43	10	44	227	74	17	49	24	30	69	10
Future Vol, veh/h	3	43	10	44	227	74	17	49	24	30	69	10
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	-	-	Free	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	87	87	87	80	80	80	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	55	13	51	261	85	21	61	30	36	83	12

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	437	264	89	298	270	61	95	0	-	61	0	0
Stage 1	161	161	-	103	103	-	-	-	-	-	-	-
Stage 2	276	103	-	195	167	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	530	641	969	654	636	1004	1499	-	0	1542	-	-
Stage 1	841	765	-	903	810	-	-	-	0	-	-	-
Stage 2	730	810	-	807	760	-	-	-	0	-	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver	314	615	969	583	611	1004	1499	-	-	1542	-	-
Mov Cap-2 Maneuver	314	615	-	583	611	-	-	-	-	-	-	-
Stage 1	828	746	-	889	798	-	-	-	-	-	-	-
Stage 2	443	798	-	719	741	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.5	18.2	1.9	2
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1499	-	624	663	1542	-	-
HCM Lane V/C Ratio	0.014	-	0.115	0.598	0.023	-	-
HCM Control Delay (s)	7.4	0	11.5	18.2	7.4	0	-
HCM Lane LOS	A	A	B	C	A	A	-
HCM 95th %tile Q(veh)	0	-	0.4	4	0.1	-	-

Intersection	
Int Delay, s/veh	2.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	70	17	112	54	3	133
Future Vol, veh/h	70	17	112	54	3	133
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	155	205	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	78	78	70	70	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	90	22	160	77	4	160

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	248	160	0	0	237	0
Stage 1	160	-	-	-	-	-
Stage 2	88	-	-	-	-	-
Critical Hdwy	6.63	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.83	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	-	-	2.219	-
Pot Cap-1 Maneuver	730	884	-	-	1329	-
Stage 1	868	-	-	-	-	-
Stage 2	926	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	728	884	-	-	1329	-
Mov Cap-2 Maneuver	728	-	-	-	-	-
Stage 1	868	-	-	-	-	-
Stage 2	923	-	-	-	-	-

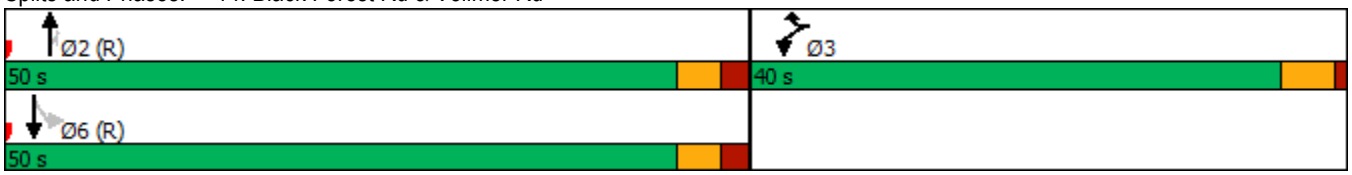
Approach	WB	NB	SB
HCM Control Delay, s	10.3	0	0.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	728	884	1329	-
HCM Lane V/C Ratio	-	-	0.123	0.025	0.003	-
HCM Control Delay (s)	-	-	10.6	9.2	7.7	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	0.4	0.1	0	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	494	3	339	469	3	405
Future Volume (vph)	494	3	339	469	3	405
Turn Type	Prot	Prot	NA	Perm	Perm	NA
Protected Phases	3	3	2			6
Permitted Phases				2	6	
Detector Phase	3	3	2	2	6	6
Switch Phase						
Minimum Initial (s)	15.0	15.0	15.0	15.0	15.0	15.0
Minimum Split (s)	19.5	19.5	20.0	20.0	20.0	20.0
Total Split (s)	40.0	40.0	50.0	50.0	50.0	50.0
Total Split (%)	44.4%	44.4%	55.6%	55.6%	55.6%	55.6%
Yellow Time (s)	3.5	3.5	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	4.5	4.5	5.0	5.0		5.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	33.2	33.2	47.3	47.3		47.3
Actuated g/C Ratio	0.37	0.37	0.53	0.53		0.53
v/c Ratio	0.91	0.01	0.44	0.54		0.57
Control Delay	46.7	11.0	15.7	3.1		18.1
Queue Delay	0.0	0.0	0.0	0.0		0.0
Total Delay	46.7	11.0	15.7	3.1		18.1
LOS	D	B	B	A		B
Approach Delay	46.4		8.4			18.1
Approach LOS	D		A			B

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay: 21.3	Intersection LOS: C
Intersection Capacity Utilization 59.0%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 14: Black Forest Rd & Vollmer Rd



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	278	577	66	83	1243	222	127	162	67	209	140	457
Future Volume (vph)	278	577	66	83	1243	222	127	162	67	209	140	457
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8	4		4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	8.0	15.0	15.0	8.0	15.0	15.0	8.0	10.0	10.0	8.0	10.0	10.0
Minimum Split (s)	13.0	20.0	20.0	13.0	20.0	20.0	13.0	15.0	15.0	13.0	15.0	15.0
Total Split (s)	25.0	55.0	55.0	25.0	55.0	55.0	15.0	25.0	25.0	15.0	25.0	25.0
Total Split (%)	20.8%	45.8%	45.8%	20.8%	45.8%	45.8%	12.5%	20.8%	20.8%	12.5%	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	C-Max	C-Max	None	C-Max	C-Max	None	Max	Max	None	Max	Max
Act Effct Green (s)	15.2	61.3	61.3	11.3	54.8	54.8	9.3	20.0	20.0	30.7	20.7	20.7
Actuated g/C Ratio	0.13	0.51	0.51	0.09	0.46	0.46	0.08	0.17	0.17	0.26	0.17	0.17
v/c Ratio	0.66	0.33	0.08	0.51	0.78	0.27	0.49	0.28	0.19	0.61	0.45	0.89
Control Delay	57.1	19.0	1.0	61.7	32.4	3.5	59.3	45.2	3.3	44.3	49.9	38.1
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	57.1	19.0	1.0	61.7	32.4	3.5	59.3	45.2	3.3	44.3	49.9	38.1
LOS	E	B	A	E	C	A	E	D	A	D	D	D
Approach Delay		29.2			29.9			42.4			41.8	
Approach LOS		C			C			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay: 33.6	Intersection LOS: C
Intersection Capacity Utilization 81.8%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 15: Black Forest Rd & Woodmen Rd

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	598	364	393	1090	6	337	184	260	7	65	229
Future Volume (vph)	49	598	364	393	1090	6	337	184	260	7	65	229
Turn Type	Prot	NA	Perm	Prot	NA	Free	pm+pt	NA	Free	pm+pt	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			Free	8		Free	4		Free
Detector Phase	5	2	2	1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	4.0	25.0	25.0	4.0	25.0		4.0	10.0		4.0	10.0	
Minimum Split (s)	9.0	32.5	32.5	9.0	32.5		9.0	17.5		9.0	17.5	
Total Split (s)	20.0	63.0	63.0	25.0	68.0		25.0	25.0		25.0	25.0	
Total Split (%)	14.5%	45.7%	45.7%	18.1%	49.3%		18.1%	18.1%		18.1%	18.1%	
Yellow Time (s)	3.0	5.5	5.5	3.0	5.5		3.0	5.5		3.0	5.5	
All-Red Time (s)	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	
Total Lost Time (s)	5.0	7.5	7.5	5.0	7.5		5.0	7.5		5.0	7.5	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max		None	None		None	None	
Act Effct Green (s)	6.6	60.1	60.1	26.0	81.5	138.0	34.3	29.6	138.0	15.4	10.3	138.0
Actuated g/C Ratio	0.05	0.44	0.44	0.19	0.59	1.00	0.25	0.21	1.00	0.11	0.07	1.00
v/c Ratio	0.33	0.42	0.43	0.77	0.66	0.01	1.05	0.50	0.18	0.05	0.28	0.17
Control Delay	68.4	29.0	4.0	61.9	22.8	0.0	108.1	52.2	0.2	38.4	63.1	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.4	29.0	4.0	61.9	22.8	0.0	108.1	52.2	0.2	38.4	63.1	0.2
LOS	E	C	A	E	C	A	F	D	A	D	E	A
Approach Delay		21.9			33.0			59.0			14.7	
Approach LOS		C			C			E			B	

Intersection Summary	
Cycle Length: 138	
Actuated Cycle Length: 138	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.05	
Intersection Signal Delay: 33.9	Intersection LOS: C
Intersection Capacity Utilization 75.5%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 16: Marksheffel Rd & Woodmen Rd

Intersection	
Int Delay, s/veh	31.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	9	244	12	45	123	43	16	69	62	117	68	9
Future Vol, veh/h	9	244	12	45	123	43	16	69	62	117	68	9
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	-	-	Free	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	87	87	87	92	92	92	76	76	76
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	313	15	52	141	49	17	75	67	154	89	12

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	607	512	95	676	518	75	101	0	-	75	0	0
Stage 1	403	403	-	109	109	-	-	-	-	-	-	-
Stage 2	204	109	-	567	409	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	408	465	962	367	462	986	1491	-	0	1524	-	-
Stage 1	624	600	-	896	805	-	-	-	0	-	-	-
Stage 2	798	805	-	508	596	-	-	-	0	-	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver	259	410	962	125	407	986	1491	-	-	1524	-	-
Mov Cap-2 Maneuver	259	410	-	125	407	-	-	-	-	-	-	-
Stage 1	617	536	-	885	795	-	-	-	-	-	-	-
Stage 2	616	795	-	186	532	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	43.2	53.3	1.4	4.6
HCM LOS	E	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1491	-	413	299	1524	-	-
HCM Lane V/C Ratio	0.012	-	0.823	0.811	0.101	-	-
HCM Control Delay (s)	7.4	0	43.2	53.3	7.6	0	-
HCM Lane LOS	A	A	E	F	A	A	-
HCM 95th %tile Q(veh)	0	-	7.6	6.6	0.3	-	-

Intersection	
Int Delay, s/veh	2.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	65	10	166	75	13	141
Future Vol, veh/h	65	10	166	75	13	141
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	155	205	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	69	69	87	87	84	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	94	14	191	86	15	168

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	305	191	0	0	277	0
Stage 1	191	-	-	-	-	-
Stage 2	114	-	-	-	-	-
Critical Hdwy	6.63	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.83	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	-	-	2.219	-
Pot Cap-1 Maneuver	675	850	-	-	1284	-
Stage 1	841	-	-	-	-	-
Stage 2	899	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	667	850	-	-	1284	-
Mov Cap-2 Maneuver	667	-	-	-	-	-
Stage 1	841	-	-	-	-	-
Stage 2	888	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11	0	0.7
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	667	850	1284	-
HCM Lane V/C Ratio	-	-	0.141	0.017	0.012	-
HCM Control Delay (s)	-	-	11.3	9.3	7.8	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	0.5	0.1	0	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	451	10	413	591	8	510
Future Volume (vph)	451	10	413	591	8	510
Turn Type	Prot	Prot	NA	Perm	Perm	NA
Protected Phases	3	3	2			6
Permitted Phases				2	6	
Detector Phase	3	3	2	2	6	6
Switch Phase						
Minimum Initial (s)	15.0	15.0	15.0	15.0	15.0	15.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	35.0	35.0	55.0	55.0	55.0	55.0
Total Split (%)	38.9%	38.9%	61.1%	61.1%	61.1%	61.1%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0		5.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	27.5	27.5	52.5	52.5		52.5
Actuated g/C Ratio	0.31	0.31	0.58	0.58		0.58
v/c Ratio	0.88	0.02	0.40	0.53		0.50
Control Delay	48.4	10.9	12.2	2.7		13.7
Queue Delay	0.0	0.0	0.0	0.0		0.0
Total Delay	48.4	10.9	12.2	2.7		13.7
LOS	D	B	B	A		B
Approach Delay	47.5		6.6			13.7
Approach LOS	D		A			B

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 80 (89%), Referenced to phase 2:NBT and 6:SBTL, Start of Green	
Natural Cycle: 50	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay: 18.0	Intersection LOS: B
Intersection Capacity Utilization 72.2%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 14: Black Forest Rd & Vollmer Rd

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	484	1227	38	47	977	274	85	280	118	247	178	445
Future Volume (vph)	484	1227	38	47	977	274	85	280	118	247	178	445
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			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	5.0	15.0	15.0	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)	25.0	63.0	63.0	12.0	50.0	50.0	15.0	30.0	30.0	15.0	30.0	30.0
Total Split (%)	20.8%	52.5%	52.5%	10.0%	41.7%	41.7%	12.5%	25.0%	25.0%	12.5%	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)	19.5	60.4	60.4	6.7	45.5	45.5	8.3	25.0	25.0	36.7	26.7	26.7
Actuated g/C Ratio	0.16	0.50	0.50	0.06	0.38	0.38	0.07	0.21	0.21	0.31	0.22	0.22
v/c Ratio	0.88	0.70	0.05	0.48	0.74	0.36	0.37	0.39	0.27	0.75	0.44	0.78
Control Delay	67.5	26.3	0.1	71.6	36.5	4.3	57.4	42.8	4.1	48.3	44.6	26.1
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	67.5	26.3	0.1	71.6	36.5	4.3	57.4	42.8	4.1	48.3	44.6	26.1
LOS	E	C	A	E	D	A	E	D	A	D	D	C
Approach Delay		37.1			31.0			35.9			36.2	
Approach LOS		D			C			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay: 35.0	Intersection LOS: C
Intersection Capacity Utilization 79.5%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 15: Black Forest Rd & Woodmen Rd

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	73	1193	573	335	863	12	345	149	424	9	42	154
Future Volume (vph)	73	1193	573	335	863	12	345	149	424	9	42	154
Turn Type	Prot	NA	Perm	Prot	NA	Free	pm+pt	NA	Free	pm+pt	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			Free	8		Free	4		Free
Detector Phase	5	2	2	1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	4.0	25.0	25.0	4.0	25.0		4.0	10.0		4.0	10.0	
Minimum Split (s)	9.0	32.5	32.5	9.0	32.5		9.0	17.5		9.0	17.5	
Total Split (s)	20.0	63.0	63.0	25.0	68.0		25.0	25.0		25.0	25.0	
Total Split (%)	14.5%	45.7%	45.7%	18.1%	49.3%		18.1%	18.1%		18.1%	18.1%	
Yellow Time (s)	3.0	5.5	5.5	3.0	5.5		3.0	5.5		3.0	5.5	
All-Red Time (s)	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	
Total Lost Time (s)	5.0	7.5	7.5	5.0	7.5		5.0	7.5		5.0	7.5	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max		None	None		None	None	
Act Effct Green (s)	7.5	63.8	63.8	22.7	79.0	138.0	34.0	29.3	138.0	15.2	10.0	138.0
Actuated g/C Ratio	0.05	0.46	0.46	0.16	0.57	1.00	0.25	0.21	1.00	0.11	0.07	1.00
v/c Ratio	0.42	0.78	0.58	0.78	0.56	0.01	1.07	0.41	0.29	0.06	0.19	0.11
Control Delay	69.5	37.3	4.4	65.2	21.0	0.0	115.8	50.3	0.5	39.2	62.1	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	69.5	37.3	4.4	65.2	21.0	0.0	115.8	50.3	0.5	39.2	62.1	0.1
LOS	E	D	A	E	C	A	F	D	A	D	E	A
Approach Delay		28.3			33.1			51.9			14.5	
Approach LOS		C			C			D			B	

Intersection Summary	
Cycle Length: 138	
Actuated Cycle Length: 138	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.07	
Intersection Signal Delay: 34.1	Intersection LOS: C
Intersection Capacity Utilization 85.0%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 16: Marksheffel Rd & Woodmen Rd

Intersection	
Intersection Delay, s/veh	8.0
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	123	597	302	285
Demand Flow Rate, veh/h	125	609	308	290
Vehicles Circulating, veh/h	403	239	120	521
Vehicles Exiting, veh/h	408	116	408	327
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	5.3	10.5	3.6	8.8
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	73	4.976
Entry Flow, veh/h	125	609	235	1938	290
Cap Entry Lane, veh/h	915	1081	1221	0.980	811
Entry HV Adj Factor	0.981	0.980	0.979	72	0.981
Flow Entry, veh/h	123	597	230	1900	285
Cap Entry, veh/h	898	1060	1195	0.038	796
V/C Ratio	0.137	0.563	0.192	0.0	0.358
Control Delay, s/veh	5.3	10.5	4.7	A	8.8
LOS	A	B	A	0	A
95th %tile Queue, veh	0	4	1		2

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	9	1	218	3	0	379
Future Vol, veh/h	9	1	218	3	0	379
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	1	229	3	0	399

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	630	231	0	0	232	0
Stage 1	231	-	-	-	-	-
Stage 2	399	-	-	-	-	-
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	446	808	-	-	1336	-
Stage 1	807	-	-	-	-	-
Stage 2	678	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	446	808	-	-	1336	-
Mov Cap-2 Maneuver	446	-	-	-	-	-
Stage 1	807	-	-	-	-	-
Stage 2	678	-	-	-	-	-

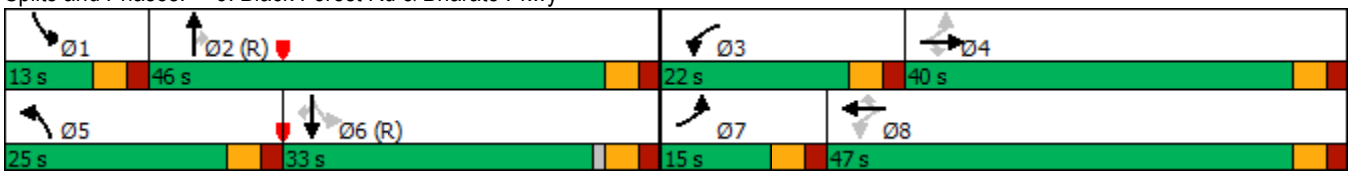
Approach	WB	NB	SB
HCM Control Delay, s	12.9	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	467	1336	-
HCM Lane V/C Ratio	-	-	0.023	-	-
HCM Control Delay (s)	-	-	12.9	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	150	382	338	102	759	69	497	309	52	35	639	65
Future Volume (vph)	150	382	338	102	759	69	497	309	52	35	639	65
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8			2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	8.0	15.0	15.0	8.0	15.0	15.0	8.0	15.0	15.0	8.0	15.0	15.0
Minimum Split (s)	13.0	23.0	23.0	13.0	23.0	23.0	15.0	23.0	23.0	13.0	23.0	23.0
Total Split (s)	15.0	40.0	40.0	22.0	47.0	47.0	25.0	46.0	46.0	13.0	33.0	33.0
Total Split (%)	12.4%	33.1%	33.1%	18.2%	38.8%	38.8%	20.7%	38.0%	38.0%	10.7%	27.3%	27.3%
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	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	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	42.6	32.7	32.7	43.6	33.2	33.2	23.0	55.0	55.0	43.0	34.9	34.9
Actuated g/C Ratio	0.35	0.27	0.27	0.36	0.27	0.27	0.19	0.45	0.45	0.36	0.29	0.29
v/c Ratio	0.77	0.42	0.52	0.30	0.82	0.13	0.80	0.20	0.07	0.09	0.66	0.11
Control Delay	50.8	37.3	6.2	24.5	48.5	0.5	56.9	22.6	0.2	18.6	43.0	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.8	37.3	6.2	24.5	48.5	0.5	56.9	22.6	0.2	18.6	43.0	0.4
LOS	D	D	A	C	D	A	E	C	A	B	D	A
Approach Delay		27.6			42.3			41.1			38.1	
Approach LOS		C			D			D			D	

Intersection Summary	
Cycle Length: 121	
Actuated Cycle Length: 121	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.82	
Intersection Signal Delay: 37.3	Intersection LOS: D
Intersection Capacity Utilization 77.8%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 3: Black Forest Rd & Briarate Pkwy



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	62	395	143	86	694	36	117	111	48	27	269	125
Future Volume (vph)	62	395	143	86	694	36	117	111	48	27	269	125
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)	59.6	54.3	54.3	15.1	60.6	60.6	29.4	22.6	22.6	21.2	14.3	14.3
Actuated g/C Ratio	0.54	0.50	0.50	0.14	0.55	0.55	0.27	0.21	0.21	0.19	0.13	0.13
v/c Ratio	0.15	0.23	0.18	0.19	0.37	0.04	0.44	0.15	0.11	0.10	0.61	0.39
Control Delay	10.1	18.2	3.4	45.5	15.8	0.1	36.8	39.0	0.5	31.0	51.7	7.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.1	18.2	3.4	45.5	15.8	0.1	36.8	39.0	0.5	31.0	51.7	7.9
LOS	B	B	A	D	B	A	D	D	A	C	D	A
Approach Delay		13.8			18.2			31.2			37.4	
Approach LOS		B			B			C			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 109.6	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.61	
Intersection Signal Delay: 22.5	Intersection LOS: C
Intersection Capacity Utilization 55.6%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 4: Vollmer Rd & Briargate Pkwy

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	468	0	4	807	2	1	1	8	6	1	9
Future Vol, veh/h	2	468	0	4	807	2	1	1	8	6	1	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	-	-	Free	-	-	Free
Storage Length	535	-	0	310	-	0	410	-	155	235	-	155
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	493	0	4	849	2	1	1	8	6	1	9

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	851	0	0	493	0	0	930	1356	-	1108	1354	-
Stage 1	-	-	-	-	-	-	497	497	-	857	857	-
Stage 2	-	-	-	-	-	-	433	859	-	251	497	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	-	7.54	6.54	-
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	-	3.52	4.02	-
Pot Cap-1 Maneuver	783	-	-	1067	-	-	222	148	0	164	148	0
Stage 1	-	-	-	-	-	-	523	543	0	318	372	0
Stage 2	-	-	-	-	-	-	571	371	0	731	543	0
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	783	-	-	1067	-	-	220	147	-	162	147	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	220	147	-	162	147	-
Stage 1	-	-	-	-	-	-	521	541	-	317	371	-
Stage 2	-	-	-	-	-	-	567	370	-	728	541	-

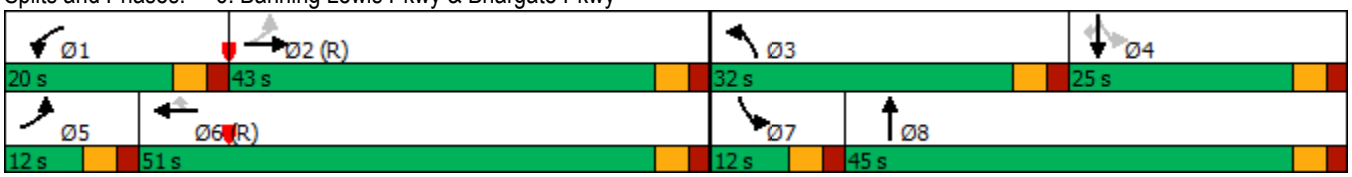
Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	25.5	28.3
HCM LOS			D	D

Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	220	147	-	783	-	-	1067	-	-	162	147	-
HCM Lane V/C Ratio	0.005	0.007	-	0.003	-	-	0.004	-	-	0.039	0.007	-
HCM Control Delay (s)	21.4	29.7	0	9.6	-	-	8.4	-	-	28.1	29.7	0
HCM Lane LOS	C	D	A	A	-	-	A	-	-	D	D	A
HCM 95th %tile Q(veh)	0	0	-	0	-	-	0	-	-	0.1	0	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	334	147	270	601	3	212	9	285	8	25	1
Future Volume (vph)	1	334	147	270	601	3	212	9	285	8	25	1
Turn Type	pm+pt	NA	Free	Prot	NA	Perm	Prot	NA	Free	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		Free			6			Free	4		4
Detector Phase	5	2		1	6	6	3	8		7	4	4
Switch Phase												
Minimum Initial (s)	8.0	15.0		8.0	15.0	15.0	8.0	10.0		8.0	10.0	10.0
Minimum Split (s)	15.0	20.0		20.0	20.0	20.0	13.0	15.0		13.0	15.0	15.0
Total Split (s)	12.0	43.0		20.0	51.0	51.0	32.0	45.0		12.0	25.0	25.0
Total Split (%)	10.0%	35.8%		16.7%	42.5%	42.5%	26.7%	37.5%		10.0%	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
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	C-Max		None	C-Max	C-Max	None	Max		None	Max	Max
Act Effct Green (s)	46.1	39.1	120.0	13.9	55.6	55.6	13.1	49.6	120.0	40.9	33.9	33.9
Actuated g/C Ratio	0.38	0.33	1.00	0.12	0.46	0.46	0.11	0.41	1.00	0.34	0.28	0.28
v/c Ratio	0.00	0.31	0.10	0.71	0.39	0.00	0.59	0.01	0.19	0.02	0.03	0.00
Control Delay	17.0	31.5	0.1	61.5	22.6	0.0	57.3	23.3	0.3	20.4	32.8	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.0	31.5	0.1	61.5	22.6	0.0	57.3	23.3	0.3	20.4	32.8	0.0
LOS	B	C	A	E	C	A	E	C	A	C	C	A
Approach Delay		21.9			34.6			24.5			29.0	
Approach LOS		C			C			C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Green	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.71	
Intersection Signal Delay: 28.6	Intersection LOS: C
Intersection Capacity Utilization 48.5%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 6: Banning Lewis Pkwy & Briargate Pkwy



Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	38	0	276	499	0
Future Vol, veh/h	0	38	0	276	499	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	155
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	40	0	291	525	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	263	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	735	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	735	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

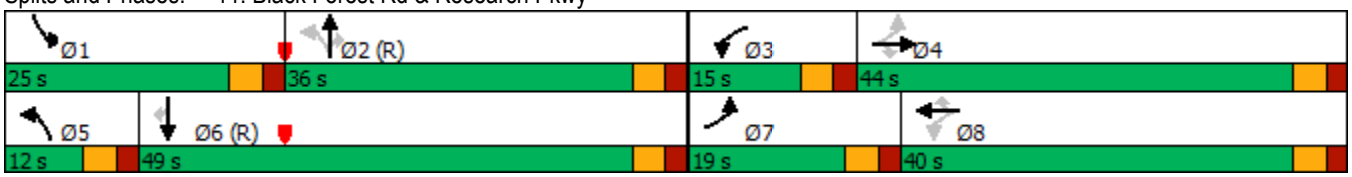
Approach	EB	NB	SB
HCM Control Delay, s	10.2	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	735	-	-
HCM Lane V/C Ratio	-	0.054	-	-
HCM Control Delay (s)	-	10.2	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0.2	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	200	421	100	100	485	231	275	373	100	332	455	375
Future Volume (vph)	200	421	100	100	485	231	275	373	100	332	455	375
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	15.0	5.0	15.0	15.0	8.0	15.0	15.0
Minimum Split (s)	10.0	23.0	23.0	10.0	23.0	23.0	10.0	23.0	23.0	15.0	23.0	23.0
Total Split (s)	19.0	44.0	44.0	15.0	40.0	40.0	12.0	36.0	36.0	25.0	49.0	49.0
Total Split (%)	15.8%	36.7%	36.7%	12.5%	33.3%	33.3%	10.0%	30.0%	30.0%	20.8%	40.8%	40.8%
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	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	40.7	27.2	27.2	32.3	23.0	23.0	61.0	46.1	46.1	17.4	48.6	48.6
Actuated g/C Ratio	0.34	0.23	0.23	0.27	0.19	0.19	0.51	0.38	0.38	0.14	0.40	0.40
v/c Ratio	0.76	0.55	0.22	0.38	0.75	0.49	0.54	0.29	0.15	0.70	0.33	0.48
Control Delay	46.6	43.2	2.4	30.4	53.0	8.2	22.6	33.3	13.0	56.6	26.4	9.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.6	43.2	2.4	30.4	53.0	8.2	22.6	33.3	13.0	56.6	26.4	9.3
LOS	D	D	A	C	D	A	C	C	B	E	C	A
Approach Delay		38.5			37.5			26.6			29.5	
Approach LOS		D			D			C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.76	
Intersection Signal Delay: 32.7	Intersection LOS: C
Intersection Capacity Utilization 69.0%	ICU Level of Service C
Analysis Period (min) 15	

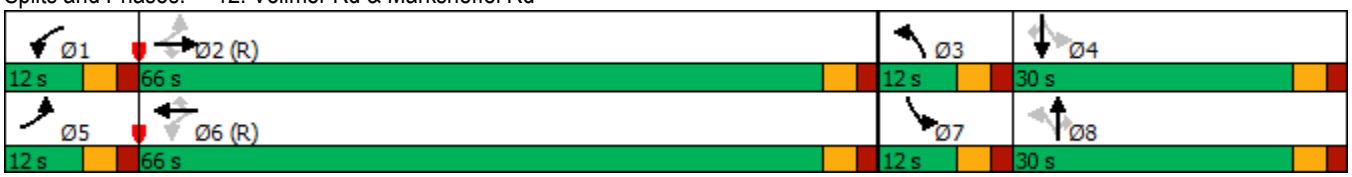
Splits and Phases: 11: Black Forest Rd & Research Pkwy



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	47	736	40	27	741	61	92	167	34	103	338	95
Future Volume (vph)	47	736	40	27	741	61	92	167	34	103	338	95
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)	70.2	66.0	66.0	68.7	63.6	63.6	32.0	25.0	25.0	32.0	25.0	25.0
Actuated g/C Ratio	0.58	0.55	0.55	0.57	0.53	0.53	0.27	0.21	0.21	0.27	0.21	0.21
v/c Ratio	0.13	0.40	0.05	0.07	0.42	0.07	0.37	0.24	0.09	0.31	0.48	0.24
Control Delay	10.4	17.1	0.1	9.9	18.4	0.7	35.3	40.6	0.4	33.8	44.4	7.7
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	10.4	17.1	0.1	9.9	18.4	0.7	35.3	40.6	0.4	33.8	44.4	7.7
LOS	B	B	A	A	B	A	D	D	A	C	D	A
Approach Delay		15.9			16.8			34.2			35.8	
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: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.48	
Intersection Signal Delay: 22.7	Intersection LOS: C
Intersection Capacity Utilization 55.8%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 12: Vollmer Rd & Marksheffel Rd



Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	873	10	26	791	1	39	8	55	1	4	1
Future Vol, veh/h	1	873	10	26	791	1	39	8	55	1	4	1
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	-	0	0	-	205	0	-	0	155	-	0
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	1	919	11	27	833	1	41	8	58	1	4	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	834	0	0	930	0	0	1394	1809	460	1353	1819	417
Stage 1	-	-	-	-	-	-	921	921	-	887	887	-
Stage 2	-	-	-	-	-	-	473	888	-	466	932	-
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	795	-	-	731	-	-	101	78	548	108	77	585
Stage 1	-	-	-	-	-	-	291	347	-	305	360	-
Stage 2	-	-	-	-	-	-	541	360	-	546	343	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	795	-	-	731	-	-	94	75	548	86	74	585
Mov Cap-2 Maneuver	-	-	-	-	-	-	94	75	-	86	74	-
Stage 1	-	-	-	-	-	-	291	347	-	305	347	-
Stage 2	-	-	-	-	-	-	514	347	-	476	343	-

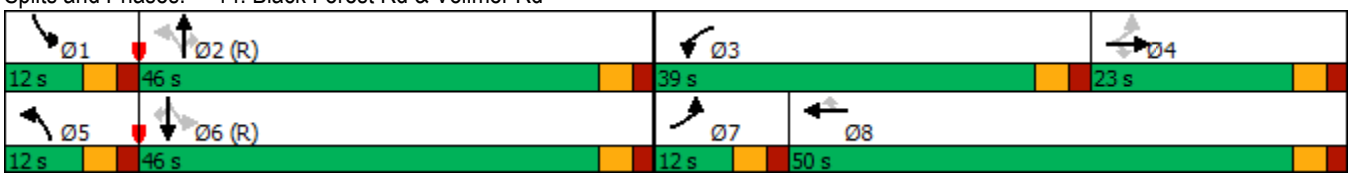
Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.3	38.1	47.5
HCM LOS			E	E

Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	94	75	548	795	-	-	731	-	-	86	74	585
HCM Lane V/C Ratio	0.437	0.112	0.106	0.001	-	-	0.037	-	-	0.012	0.057	0.002
HCM Control Delay (s)	70.1	59	12.3	9.5	-	-	10.1	-	-	47.4	56.6	11.2
HCM Lane LOS	F	F	B	A	-	-	B	-	-	E	F	B
HCM 95th %tile Q(veh)	1.8	0.4	0.4	0	-	-	0.1	-	-	0	0.2	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	13	39	489	6	130	36	500	432	95	1270	14
Future Volume (vph)	23	13	39	489	6	130	36	500	432	95	1270	14
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4			8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	15.0	15.0	5.0	15.0	15.0
Minimum Split (s)	10.0	15.0	15.0	10.0	15.0	15.0	10.0	20.0	20.0	10.0	20.0	20.0
Total Split (s)	12.0	23.0	23.0	39.0	50.0	50.0	12.0	46.0	46.0	12.0	46.0	46.0
Total Split (%)	10.0%	19.2%	19.2%	32.5%	41.7%	41.7%	10.0%	38.3%	38.3%	10.0%	38.3%	38.3%
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	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	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	14.4	10.0	10.0	23.3	28.2	28.2	67.9	61.2	61.2	73.1	67.4	67.4
Actuated g/C Ratio	0.12	0.08	0.08	0.19	0.24	0.24	0.57	0.51	0.51	0.61	0.56	0.56
v/c Ratio	0.13	0.09	0.15	0.77	0.01	0.29	0.19	0.29	0.44	0.20	0.67	0.02
Control Delay	30.4	52.4	1.2	53.9	34.0	7.4	5.2	7.5	6.5	13.3	28.8	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.4	52.4	1.2	53.9	34.0	7.4	5.2	7.5	6.5	13.3	28.8	0.0
LOS	C	D	A	D	C	A	A	A	A	B	C	A
Approach Delay		19.1			44.0			7.0			27.4	
Approach LOS		B			D			A			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.77	
Intersection Signal Delay: 24.1	Intersection LOS: C
Intersection Capacity Utilization 72.4%	ICU Level of Service C
Analysis Period (min) 15	

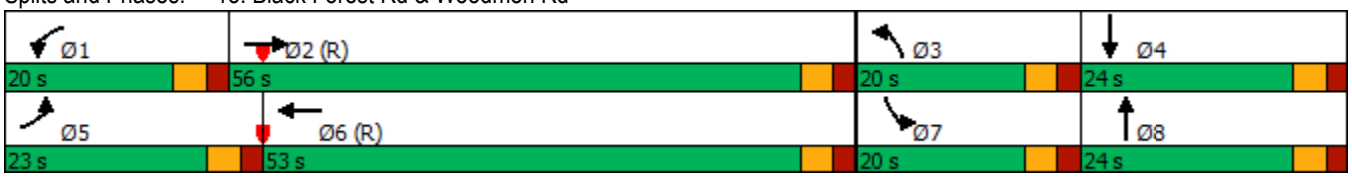
Splits and Phases: 14: Black Forest Rd & Vollmer Rd



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	380	832	200	273	1632	350	360	227	168	400	145	944
Future Volume (vph)	380	832	200	273	1632	350	360	227	168	400	145	944
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0		5.0	10.0		5.0	10.0	
Minimum Split (s)	10.0	23.0		10.0	23.0		10.0	23.0		10.0	23.0	
Total Split (s)	23.0	56.0		20.0	53.0		20.0	24.0		20.0	24.0	
Total Split (%)	19.2%	46.7%		16.7%	44.2%		16.7%	20.0%		16.7%	20.0%	
Yellow Time (s)	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	
Lost Time Adjust (s)	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	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max		None	C-Max		None	Max		None	Max	
Act Effct Green (s)	16.9	52.1	120.0	13.9	49.1	120.0	14.8	19.0	120.0	15.0	19.2	120.0
Actuated g/C Ratio	0.14	0.43	1.00	0.12	0.41	1.00	0.12	0.16	1.00	0.12	0.16	1.00
v/c Ratio	0.80	0.38	0.13	0.70	0.80	0.23	0.87	0.41	0.11	0.95	0.18	0.61
Control Delay	62.6	23.8	0.2	48.4	36.2	0.2	72.4	48.0	0.1	77.4	40.6	4.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.6	23.8	0.2	48.4	36.2	0.2	72.4	48.0	0.1	77.4	40.6	4.3
LOS	E	C	A	D	D	A	E	D	A	E	D	A
Approach Delay		30.9			32.1			49.0			27.5	
Approach LOS		C			C			D			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.95	
Intersection Signal Delay: 32.8	Intersection LOS: C
Intersection Capacity Utilization 78.8%	ICU Level of Service D
Analysis Period (min) 15	

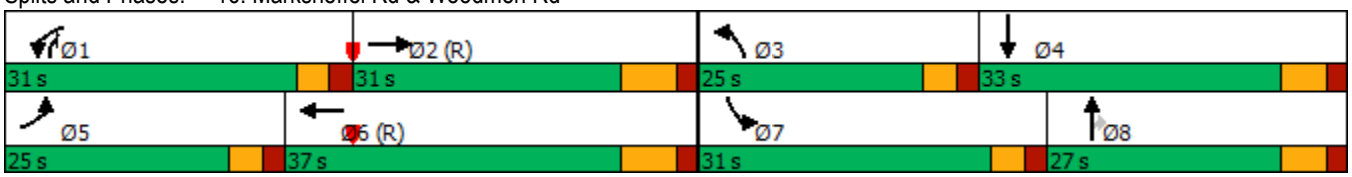
Splits and Phases: 15: Black Forest Rd & Woodmen Rd



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	230	757	413	544	1522	260	535	237	297	256	203	198
Future Volume (vph)	230	757	413	544	1522	260	535	237	297	256	203	198
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	pm+ov	Prot	NA	Free
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases			Free			Free			8			Free
Detector Phase	5	2		1	6		3	8	1	7	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	9.0	11.0		9.0	11.0		9.0	10.0	9.0	9.0	10.0	
Total Split (s)	25.0	31.0		31.0	37.0		25.0	27.0	31.0	31.0	33.0	
Total Split (%)	20.8%	25.8%		25.8%	30.8%		20.8%	22.5%	25.8%	25.8%	27.5%	
Yellow Time (s)	3.0	5.0		3.0	5.0		3.0	4.0	3.0	3.0	4.0	
All-Red Time (s)	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	
Total Lost Time (s)	5.0	7.0		5.0	7.0		5.0	6.0	5.0	5.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lead	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max		None	C-Max		None	None	None	None	None	
Act Effct Green (s)	13.5	39.8	120.0	24.8	51.1	120.0	20.0	18.0	48.8	14.4	12.4	120.0
Actuated g/C Ratio	0.11	0.33	1.00	0.21	0.43	1.00	0.17	0.15	0.41	0.12	0.10	1.00
v/c Ratio	0.61	0.46	0.27	0.78	0.72	0.17	0.95	0.46	0.42	0.64	0.57	0.13
Control Delay	76.3	32.2	0.5	53.0	31.6	0.2	77.8	49.8	15.5	57.1	57.2	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	76.3	32.2	0.5	53.0	31.6	0.2	77.8	49.8	15.5	57.1	57.2	0.2
LOS	E	C	A	D	C	A	E	D	B	E	E	A
Approach Delay		30.1			33.1			54.3			40.0	
Approach LOS		C			C			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green, Master Intersection	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.95	
Intersection Signal Delay: 37.3	Intersection LOS: D
Intersection Capacity Utilization 76.0%	ICU Level of Service D
Analysis Period (min) 15	

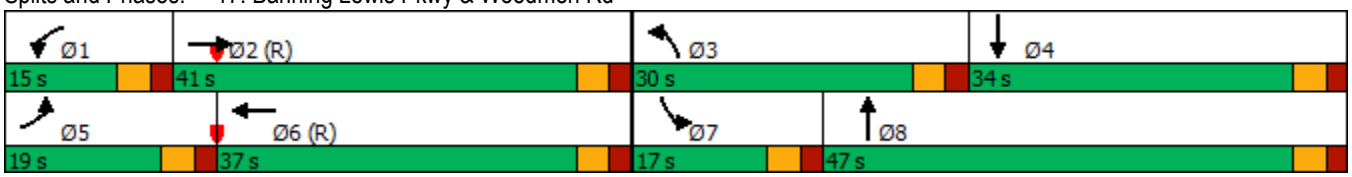
Splits and Phases: 16: Marksheffel Rd & Woodmen Rd



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	262	540	490	211	1149	25	742	219	173	31	221	226
Future Volume (vph)	262	540	490	211	1149	25	742	219	173	31	221	226
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0		5.0	10.0		5.0	10.0	
Minimum Split (s)	10.0	20.0		10.0	20.0		10.0	15.0		10.0	15.0	
Total Split (s)	19.0	41.0		15.0	37.0		30.0	47.0		17.0	34.0	
Total Split (%)	15.8%	34.2%		12.5%	30.8%		25.0%	39.2%		14.2%	28.3%	
Yellow Time (s)	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	
Lost Time Adjust (s)	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	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max		None	C-Max		None	Max		None	Max	
Act Effct Green (s)	13.2	36.0	120.0	10.0	32.8	120.0	25.0	51.7	120.0	6.6	29.0	120.0
Actuated g/C Ratio	0.11	0.30	1.00	0.08	0.27	1.00	0.21	0.43	1.00	0.06	0.24	1.00
v/c Ratio	0.73	0.37	0.33	0.78	0.87	0.02	1.09	0.15	0.11	0.17	0.27	0.15
Control Delay	63.6	33.9	0.5	73.1	49.7	0.0	106.1	22.4	0.2	55.7	38.0	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.6	33.9	0.5	73.1	49.7	0.0	106.1	22.4	0.2	55.7	38.0	0.2
LOS	E	C	A	E	D	A	F	C	A	E	D	A
Approach Delay		27.3			52.4			73.8			21.3	
Approach LOS		C			D			E			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.09	
Intersection Signal Delay: 47.0	Intersection LOS: D
Intersection Capacity Utilization 75.8%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 17: Banning Lewis Pkwy & Woodmen Rd



Intersection	
Intersection Delay, s/veh	12.5
Intersection LOS	B

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	431	387	756	364
Demand Flow Rate, veh/h	440	395	771	371
Vehicles Circulating, veh/h	487	569	591	385
Vehicles Exiting, veh/h	269	577	336	579
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	11.7	12.2	14.9	8.5
Approach LOS	B	B	B	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	216	4.976
Entry Flow, veh/h	440	395	555	1938	371
Cap Entry Lane, veh/h	840	772	755	0.980	932
Entry HV Adj Factor	0.980	0.980	0.981	212	0.980
Flow Entry, veh/h	431	387	544	1900	364
Cap Entry, veh/h	823	757	741	0.112	913
V/C Ratio	0.524	0.511	0.735	0.0	0.398
Control Delay, s/veh	11.7	12.2	20.8	A	8.5
LOS	B	B	C	0	A
95th %tile Queue, veh	3	3	7		2

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	6	1	516	10	1	313
Future Vol, veh/h	6	1	516	10	1	313
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	6	1	543	11	1	329

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	880	549	0	0	554	0
Stage 1	549	-	-	-	-	-
Stage 2	331	-	-	-	-	-
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	318	535	-	-	1016	-
Stage 1	579	-	-	-	-	-
Stage 2	728	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	318	535	-	-	1016	-
Mov Cap-2 Maneuver	318	-	-	-	-	-
Stage 1	579	-	-	-	-	-
Stage 2	727	-	-	-	-	-

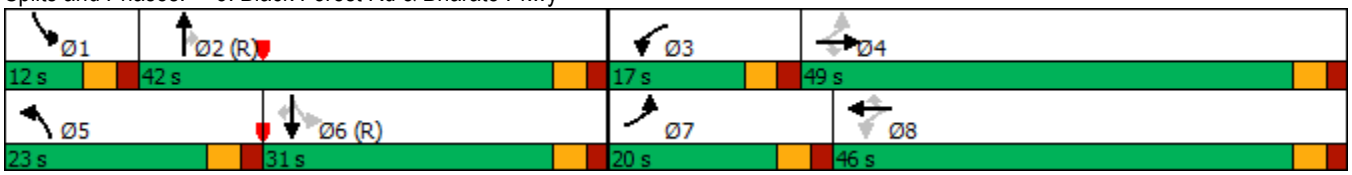
Approach	WB	NB	SB
HCM Control Delay, s	15.9	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	338	1016	-
HCM Lane V/C Ratio	-	-	0.022	0.001	-
HCM Control Delay (s)	-	-	15.9	8.5	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	190	667	318	173	509	41	408	782	224	55	510	210
Future Volume (vph)	190	667	318	173	509	41	408	782	224	55	510	210
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8			2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	8.0	15.0	15.0	8.0	15.0	15.0	5.0	15.0	15.0	5.0	15.0	15.0
Minimum Split (s)	13.0	23.0	23.0	13.0	23.0	23.0	10.0	23.0	23.0	10.0	23.0	23.0
Total Split (s)	20.0	49.0	49.0	17.0	46.0	46.0	23.0	42.0	42.0	12.0	31.0	31.0
Total Split (%)	16.7%	40.8%	40.8%	14.2%	38.3%	38.3%	19.2%	35.0%	35.0%	10.0%	25.8%	25.8%
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	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	44.0	30.4	30.4	40.0	28.4	28.4	20.4	52.6	52.6	45.1	37.6	37.6
Actuated g/C Ratio	0.37	0.25	0.25	0.33	0.24	0.24	0.17	0.44	0.44	0.38	0.31	0.31
v/c Ratio	0.63	0.78	0.51	0.75	0.64	0.09	0.74	0.53	0.29	0.20	0.49	0.34
Control Delay	33.5	48.0	6.4	44.2	44.5	0.3	39.0	24.6	4.7	19.3	37.2	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	33.5	48.0	6.4	44.2	44.5	0.3	39.0	24.6	4.7	19.3	37.2	6.5
LOS	C	D	A	D	D	A	D	C	A	B	D	A
Approach Delay		34.4			41.9			25.6			27.6	
Approach LOS		C			D			C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.78	
Intersection Signal Delay: 31.4	Intersection LOS: C
Intersection Capacity Utilization 70.5%	ICU Level of Service C
Analysis Period (min) 15	

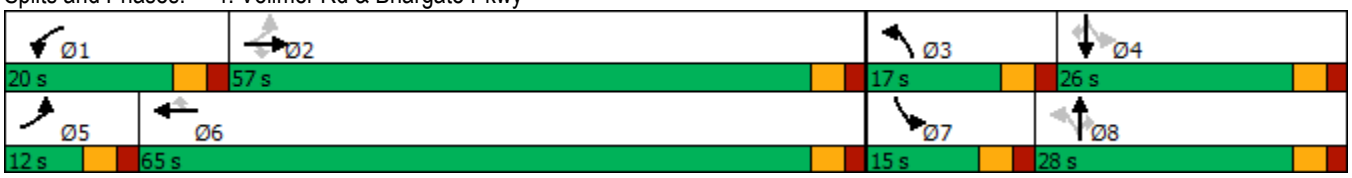
Splits and Phases: 3: Black Forest Rd & Briarate Pkwy



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	194	602	156	65	513	31	241	329	79	31	170	108
Future Volume (vph)	194	602	156	65	513	31	241	329	79	31	170	108
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)	61.8	56.2	56.2	15.0	60.1	60.1	28.4	21.3	21.3	19.1	12.0	12.0
Actuated g/C Ratio	0.56	0.51	0.51	0.14	0.54	0.54	0.26	0.19	0.19	0.17	0.11	0.11
v/c Ratio	0.39	0.34	0.19	0.15	0.28	0.04	0.81	0.49	0.19	0.15	0.47	0.37
Control Delay	12.2	18.8	3.4	44.5	14.7	0.1	56.3	44.2	1.0	32.2	50.4	6.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.2	18.8	3.4	44.5	14.7	0.1	56.3	44.2	1.0	32.2	50.4	6.0
LOS	B	B	A	D	B	A	E	D	A	C	D	A
Approach Delay		14.9			17.1			43.5			33.0	
Approach LOS		B			B			D			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 111.1	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay: 25.0	Intersection LOS: C
Intersection Capacity Utilization 63.9%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 4: Vollmer Rd & Briargate Pkwy



Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	703	1	9	603	7	1	1	6	4	1	6
Future Vol, veh/h	8	703	1	9	603	7	1	1	6	4	1	6
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	-	-	Free	-	-	Free
Storage Length	535	-	0	310	-	0	410	-	155	235	-	155
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	740	1	9	635	7	1	1	6	4	1	6

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	642	0	0	741	0	0	1092	1416	-	1040	1410	-
Stage 1	-	-	-	-	-	-	756	756	-	653	653	-
Stage 2	-	-	-	-	-	-	336	660	-	387	757	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	-	7.54	6.54	-
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	-	3.52	4.02	-
Pot Cap-1 Maneuver	939	-	-	862	-	-	169	136	0	185	137	0
Stage 1	-	-	-	-	-	-	366	414	0	423	462	0
Stage 2	-	-	-	-	-	-	652	458	0	608	414	0
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	939	-	-	862	-	-	166	133	-	181	134	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	166	133	-	181	134	-
Stage 1	-	-	-	-	-	-	363	410	-	419	457	-
Stage 2	-	-	-	-	-	-	644	453	-	601	410	-

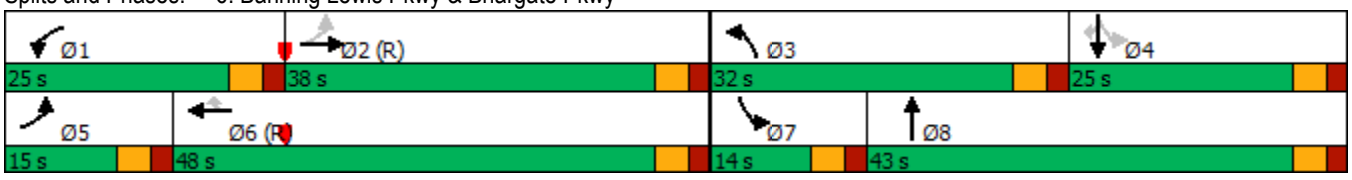
Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.1	29.6	26.7
HCM LOS			D	D

Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	166	133	-	939	-	-	862	-	-	181	134	-
HCM Lane V/C Ratio	0.006	0.008	-	0.009	-	-	0.011	-	-	0.023	0.008	-
HCM Control Delay (s)	26.8	32.3	0	8.9	-	-	9.2	-	-	25.4	32.1	0
HCM Lane LOS	D	D	A	A	-	-	A	-	-	D	D	A
HCM 95th %tile Q(veh)	0	0	-	0	-	-	0	-	-	0.1	0	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	406	307	270	377	9	242	28	285	5	16	1
Future Volume (vph)	1	406	307	270	377	9	242	28	285	5	16	1
Turn Type	pm+pt	NA	Free	Prot	NA	Perm	Prot	NA	Free	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		Free			6			Free	4		4
Detector Phase	5	2		1	6	6	3	8		7	4	4
Switch Phase												
Minimum Initial (s)	8.0	15.0		8.0	15.0	15.0	8.0	10.0		8.0	10.0	10.0
Minimum Split (s)	15.0	20.0		20.0	20.0	20.0	13.0	15.0		13.0	15.0	15.0
Total Split (s)	15.0	38.0		25.0	48.0	48.0	32.0	43.0		14.0	25.0	25.0
Total Split (%)	12.5%	31.7%		20.8%	40.0%	40.0%	26.7%	35.8%		11.7%	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
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	C-Max		None	C-Max	C-Max	None	Max		None	Max	Max
Act Effct Green (s)	45.8	37.8	120.0	15.2	55.4	55.4	14.2	49.4	120.0	40.8	32.8	32.8
Actuated g/C Ratio	0.38	0.32	1.00	0.13	0.46	0.46	0.12	0.41	1.00	0.34	0.27	0.27
v/c Ratio	0.00	0.38	0.20	0.66	0.24	0.01	0.63	0.02	0.19	0.01	0.02	0.00
Control Delay	17.0	33.8	0.3	57.1	20.9	0.0	57.1	23.1	0.3	20.4	33.7	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.0	33.8	0.3	57.1	20.9	0.0	57.1	23.1	0.3	20.4	33.7	0.0
LOS	B	C	A	E	C	A	E	C	A	C	C	A
Approach Delay		19.4			35.5			26.2			29.3	
Approach LOS		B			D			C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Green	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.66	
Intersection Signal Delay: 26.9	Intersection LOS: C
Intersection Capacity Utilization 46.3%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 6: Banning Lewis Pkwy & Briargate Pkwy



Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	39	0	648	390	0
Future Vol, veh/h	0	39	0	648	390	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	155
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	41	0	682	411	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	206	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	800	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	800	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

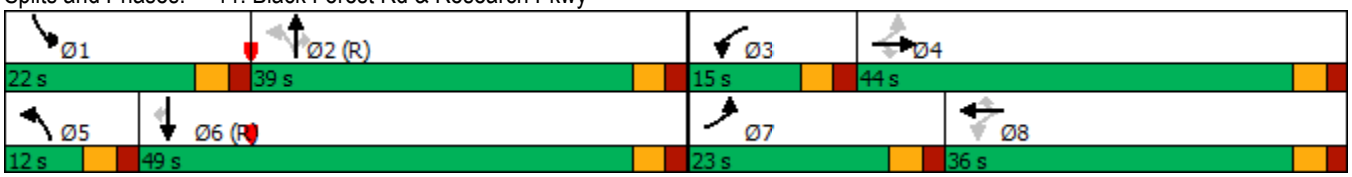
Approach	EB	NB	SB
HCM Control Delay, s	9.7	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	800	-	-
HCM Lane V/C Ratio	-	0.051	-	-
HCM Control Delay (s)	-	9.7	-	-
HCM Lane LOS	-	A	-	-
HCM 95th %tile Q(veh)	-	0.2	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	250	664	100	100	524	461	125	786	100	353	334	270
Future Volume (vph)	250	664	100	100	524	461	125	786	100	353	334	270
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	15.0	5.0	15.0	15.0	5.0	15.0	15.0
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)	23.0	44.0	44.0	15.0	36.0	36.0	12.0	39.0	39.0	22.0	49.0	49.0
Total Split (%)	19.2%	36.7%	36.7%	12.5%	30.0%	30.0%	10.0%	32.5%	32.5%	18.3%	40.8%	40.8%
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	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	47.3	33.1	33.1	34.8	25.6	25.6	49.1	41.2	41.2	16.5	49.7	49.7
Actuated g/C Ratio	0.39	0.28	0.28	0.29	0.21	0.21	0.41	0.34	0.34	0.14	0.41	0.41
v/c Ratio	0.79	0.72	0.19	0.45	0.73	0.87	0.29	0.68	0.16	0.79	0.24	0.35
Control Delay	43.1	43.1	1.9	29.2	49.7	35.8	22.4	48.4	9.8	52.8	21.8	10.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.1	43.1	1.9	29.2	49.7	35.8	22.4	48.4	9.8	52.8	21.8	10.2
LOS	D	D	A	C	D	D	C	D	A	D	C	B
Approach Delay		39.1			41.9			41.3			30.0	
Approach LOS		D			D			D			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay: 38.3	Intersection LOS: D
Intersection Capacity Utilization 76.8%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 11: Black Forest Rd & Research Pkwy



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	69	701	91	83	613	131	90	448	92	108	164	158
Future Volume (vph)	69	701	91	83	613	131	90	448	92	108	164	158
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	56.0	56.0	19.0	55.0	55.0	15.0	30.0	30.0	15.0	30.0	30.0
Total Split (%)	16.7%	46.7%	46.7%	15.8%	45.8%	45.8%	12.5%	25.0%	25.0%	12.5%	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)	64.6	56.9	56.9	66.4	59.5	59.5	34.7	25.7	25.7	35.3	25.9	25.9
Actuated g/C Ratio	0.54	0.47	0.47	0.55	0.50	0.50	0.29	0.21	0.21	0.29	0.22	0.22
v/c Ratio	0.17	0.44	0.12	0.23	0.37	0.16	0.24	0.62	0.23	0.45	0.23	0.35
Control Delay	12.0	22.2	3.0	12.7	20.1	3.4	30.2	47.2	7.1	34.7	40.1	8.1
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	12.0	22.2	3.0	12.7	20.1	3.4	30.2	47.2	7.1	34.7	40.1	8.1
LOS	B	C	A	B	C	A	C	D	A	C	D	A
Approach Delay		19.3			16.7			38.9			27.0	
Approach LOS		B			B			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: 0.62	
Intersection Signal Delay: 24.2	Intersection LOS: C
Intersection Capacity Utilization 59.0%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 12: Vollmer Rd & Marksheffel Rd

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	1	862	22	78	800	1	27	6	37	1	9	1
Future Vol, veh/h	1	862	22	78	800	1	27	6	37	1	9	1
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	-	0	0	-	205	0	-	0	155	-	0
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	1	907	23	82	842	1	28	6	39	1	9	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	843	0	0	930	0	0	1499	1916	454	1465	1938	421
Stage 1	-	-	-	-	-	-	909	909	-	1006	1006	-
Stage 2	-	-	-	-	-	-	590	1007	-	459	932	-
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	789	-	-	731	-	-	84	67	553	89	65	581
Stage 1	-	-	-	-	-	-	296	352	-	258	317	-
Stage 2	-	-	-	-	-	-	461	317	-	551	343	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	789	-	-	731	-	-	67	59	553	70	58	581
Mov Cap-2 Maneuver	-	-	-	-	-	-	67	59	-	70	58	-
Stage 1	-	-	-	-	-	-	296	352	-	258	281	-
Stage 2	-	-	-	-	-	-	395	281	-	502	343	-

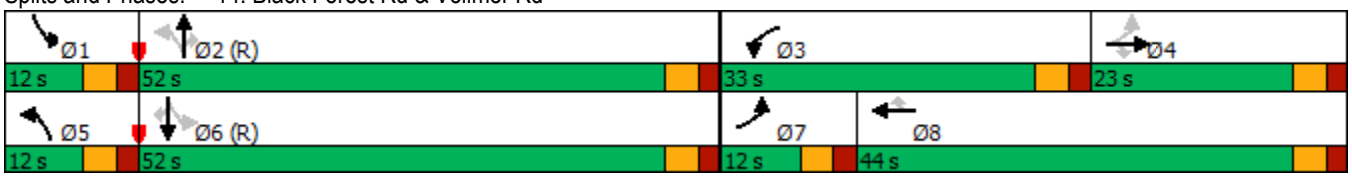
Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.9	48.7	70.7
HCM LOS			E	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	67	59	553	789	-	-	731	-	-	70	58	581
HCM Lane V/C Ratio	0.424	0.107	0.07	0.001	-	-	0.112	-	-	0.015	0.163	0.002
HCM Control Delay (s)	93.6	73.2	12	9.6	-	-	10.5	-	-	57.2	78.8	11.2
HCM Lane LOS	F	F	B	A	-	-	B	-	-	F	F	B
HCM 95th %tile Q(veh)	1.6	0.3	0.2	0	-	-	0.4	-	-	0	0.5	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	12	21	291	13	195	58	1010	496	110	700	23
Future Volume (vph)	10	12	21	291	13	195	58	1010	496	110	700	23
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4			8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	15.0	15.0	5.0	15.0	15.0
Minimum Split (s)	10.0	15.0	15.0	10.0	15.0	15.0	10.0	20.0	20.0	10.0	20.0	20.0
Total Split (s)	12.0	23.0	23.0	33.0	44.0	44.0	12.0	52.0	52.0	12.0	52.0	52.0
Total Split (%)	10.0%	19.2%	19.2%	27.5%	36.7%	36.7%	10.0%	43.3%	43.3%	10.0%	43.3%	43.3%
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	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	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	12.1	10.0	10.0	16.0	22.6	22.6	78.1	71.2	71.2	82.8	75.2	75.2
Actuated g/C Ratio	0.10	0.08	0.08	0.13	0.19	0.19	0.65	0.59	0.59	0.69	0.63	0.63
v/c Ratio	0.07	0.08	0.08	0.67	0.04	0.44	0.13	0.51	0.46	0.34	0.33	0.02
Control Delay	33.9	52.2	0.6	56.7	36.8	8.5	5.2	14.7	3.9	12.1	18.7	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.9	52.2	0.6	56.7	36.8	8.5	5.2	14.7	3.9	12.1	18.7	0.4
LOS	C	D	A	E	D	A	A	B	A	B	B	A
Approach Delay		23.1			37.3			10.9			17.4	
Approach LOS		C			D			B			B	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.67	
Intersection Signal Delay: 17.4	Intersection LOS: B
Intersection Capacity Utilization 61.5%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 14: Black Forest Rd & Vollmer Rd



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	550	2407	360	201	1748	300	300	286	263	300	222	619
Future Volume (vph)	550	2407	360	201	1748	300	300	286	263	300	222	619
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	8.0	15.0		8.0	15.0		8.0	10.0		8.0	10.0	
Minimum Split (s)	13.0	20.0		13.0	20.0		13.0	15.0		13.0	15.0	
Total Split (s)	31.0	66.0		14.0	49.0		19.0	25.0		15.0	21.0	
Total Split (%)	25.8%	55.0%		11.7%	40.8%		15.8%	20.8%		12.5%	17.5%	
Yellow Time (s)	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	
Lost Time Adjust (s)	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	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max		None	C-Max		None	Max		None	Max	
Act Effct Green (s)	23.5	61.0	120.0	9.0	46.5	120.0	13.6	20.0	120.0	10.0	16.4	120.0
Actuated g/C Ratio	0.20	0.51	1.00	0.08	0.39	1.00	0.11	0.17	1.00	0.08	0.14	1.00
v/c Ratio	0.83	0.94	0.23	0.80	0.91	0.19	0.79	0.50	0.17	1.07	0.33	0.40
Control Delay	57.4	36.6	0.3	87.1	24.8	0.2	66.9	48.7	0.2	129.3	43.9	2.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.4	36.6	0.3	87.1	24.8	0.2	66.9	48.7	0.2	129.3	43.9	2.3
LOS	E	D	A	F	C	A	E	D	A	F	D	A
Approach Delay		36.1			27.1			40.1			43.8	
Approach LOS		D			C			D			D	

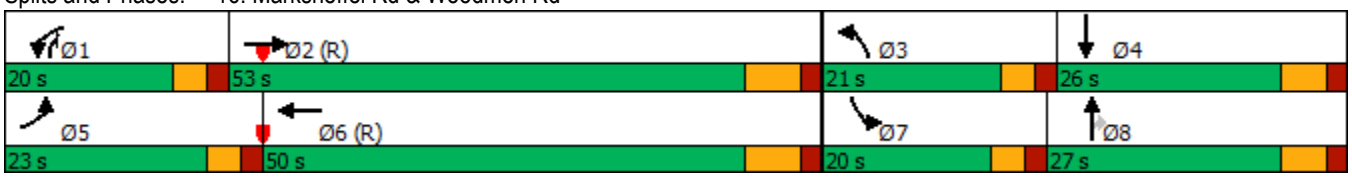
Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.07	
Intersection Signal Delay: 35.0	Intersection LOS: D
Intersection Capacity Utilization 86.7%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 15: Black Forest Rd & Woodmen Rd

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	388	1917	665	447	1626	193	491	147	467	314	155	132
Future Volume (vph)	388	1917	665	447	1626	193	491	147	467	314	155	132
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	pm+ov	Prot	NA	Free
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases			Free			Free			8			Free
Detector Phase	5	2		1	6		3	8	1	7	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	9.0	11.0		9.0	11.0		9.0	10.0	9.0	9.0	10.0	
Total Split (s)	23.0	53.0		20.0	50.0		21.0	27.0	20.0	20.0	26.0	
Total Split (%)	19.2%	44.2%		16.7%	41.7%		17.5%	22.5%	16.7%	16.7%	21.7%	
Yellow Time (s)	3.0	5.0		3.0	5.0		3.0	4.0	3.0	3.0	4.0	
All-Red Time (s)	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	
Total Lost Time (s)	5.0	7.0		5.0	7.0		5.0	6.0	5.0	5.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lead	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max		None	C-Max		None	None	None	None	None	
Act Effct Green (s)	19.0	46.8	120.0	23.5	51.3	120.0	16.0	12.3	41.8	14.4	10.7	120.0
Actuated g/C Ratio	0.16	0.39	1.00	0.20	0.43	1.00	0.13	0.10	0.35	0.12	0.09	1.00
v/c Ratio	0.73	0.99	0.43	0.68	0.76	0.12	1.10	0.41	0.79	0.78	0.50	0.09
Control Delay	56.0	36.6	0.4	50.9	33.0	0.2	118.9	53.8	39.7	64.8	57.3	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.0	36.6	0.4	50.9	33.0	0.2	118.9	53.8	39.7	64.8	57.3	0.1
LOS	E	D	A	D	C	A	F	D	D	E	E	A
Approach Delay		31.0			33.7			76.7			48.6	
Approach LOS		C			C			E			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green, Master Intersection	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.10	
Intersection Signal Delay: 40.7	Intersection LOS: D
Intersection Capacity Utilization 89.1%	ICU Level of Service E
Analysis Period (min) 15	

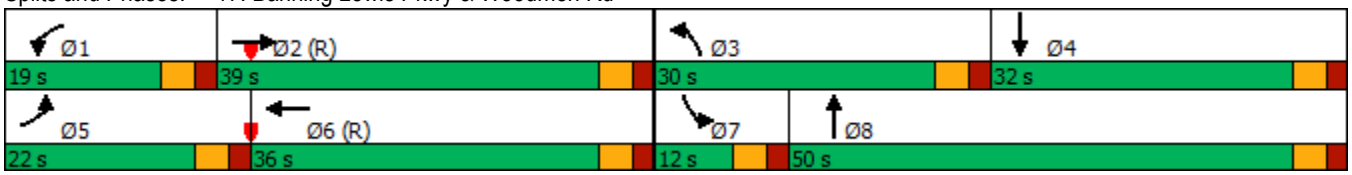
Splits and Phases: 16: Marksheffel Rd & Woodmen Rd



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	354	1285	844	437	1040	45	769	323	308	40	326	387
Future Volume (vph)	354	1285	844	437	1040	45	769	323	308	40	326	387
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0		5.0	10.0		5.0	10.0	
Minimum Split (s)	10.0	20.0		10.0	20.0		10.0	15.0		10.0	15.0	
Total Split (s)	22.0	39.0		19.0	36.0		30.0	50.0		12.0	32.0	
Total Split (%)	18.3%	32.5%		15.8%	30.0%		25.0%	41.7%		10.0%	26.7%	
Yellow Time (s)	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	
Lost Time Adjust (s)	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	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max		None	C-Max		None	Max		None	Max	
Act Effct Green (s)	16.1	34.0	120.0	14.0	31.9	120.0	25.0	47.6	120.0	6.5	27.0	120.0
Actuated g/C Ratio	0.13	0.28	1.00	0.12	0.27	1.00	0.21	0.40	1.00	0.05	0.22	1.00
v/c Ratio	0.79	0.91	0.54	1.11	0.78	0.03	1.10	0.24	0.20	0.22	0.42	0.25
Control Delay	63.1	51.9	1.3	128.2	45.9	0.0	107.9	25.4	0.3	57.0	41.7	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.1	51.9	1.3	128.2	45.9	0.0	107.9	25.4	0.3	57.0	41.7	0.4
LOS	E	D	A	F	D	A	F	C	A	E	D	A
Approach Delay		36.3			68.2			65.2			21.3	
Approach LOS		D			E			E			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.11	
Intersection Signal Delay: 48.9	Intersection LOS: D
Intersection Capacity Utilization 84.9%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 17: Banning Lewis Pkwy & Woodmen Rd



Intersection	
Intersection Delay, s/veh	8.9
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	376	310
Demand Flow Rate, veh/h	138	616	384	316
Vehicles Circulating, veh/h	436	308	120	550
Vehicles Exiting, veh/h	430	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	304	1938	316
Cap Entry Lane, veh/h	885	1008	1221	0.980	787
Entry HV Adj Factor	0.983	0.980	0.980	78	0.981
Flow Entry, veh/h	136	604	298	1900	310
Cap Entry, veh/h	870	988	1197	0.041	773
V/C Ratio	0.156	0.611	0.249	0.0	0.401
Control Delay, s/veh	5.7	12.3	5.2	A	9.8
LOS	A	B	A	0	A
95th %tile Queue, veh	1	4	1		2

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	13	5	285	5	2	421
Future Vol, veh/h	13	5	285	5	2	421
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	14	5	300	5	2	443

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	750	303	0	0	305	0
Stage 1	303	-	-	-	-	-
Stage 2	447	-	-	-	-	-
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	379	737	-	-	1256	-
Stage 1	749	-	-	-	-	-
Stage 2	644	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	378	737	-	-	1256	-
Mov Cap-2 Maneuver	378	-	-	-	-	-
Stage 1	749	-	-	-	-	-
Stage 2	643	-	-	-	-	-

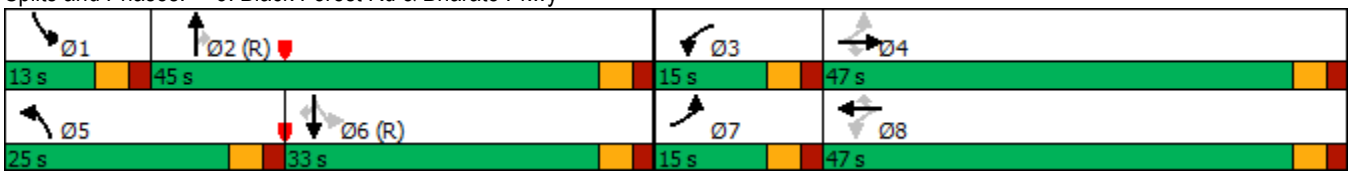
Approach	WB	NB	SB
HCM Control Delay, s	13.6	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	437	1256	-
HCM Lane V/C Ratio	-	-	0.043	0.002	-
HCM Control Delay (s)	-	-	13.6	7.9	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	150	515	350	102	1087	123	509	314	52	66	644	65
Future Volume (vph)	150	515	350	102	1087	123	509	314	52	66	644	65
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8			2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	8.0	15.0	15.0	8.0	15.0	15.0	8.0	15.0	15.0	8.0	15.0	15.0
Minimum Split (s)	13.0	23.0	23.0	13.0	23.0	23.0	15.0	23.0	23.0	13.0	23.0	23.0
Total Split (s)	15.0	47.0	47.0	15.0	47.0	47.0	25.0	45.0	45.0	13.0	33.0	33.0
Total Split (%)	12.5%	39.2%	39.2%	12.5%	39.2%	39.2%	20.8%	37.5%	37.5%	10.8%	27.5%	27.5%
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	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	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	52.1	42.1	42.1	50.4	41.3	41.3	20.1	43.4	43.4	36.7	28.7	28.7
Actuated g/C Ratio	0.43	0.35	0.35	0.42	0.34	0.34	0.17	0.36	0.36	0.31	0.24	0.24
v/c Ratio	0.76	0.44	0.46	0.30	0.94	0.20	0.93	0.26	0.09	0.19	0.80	0.14
Control Delay	47.4	31.2	4.8	20.2	53.4	3.2	71.1	23.8	4.6	22.1	51.5	0.6
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	47.4	31.2	4.8	20.2	53.4	3.2	71.1	23.8	4.6	22.1	51.5	0.6
LOS	D	C	A	C	D	A	E	C	A	C	D	A
Approach Delay		24.5			46.1			50.2			44.8	
Approach LOS		C			D			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.94	
Intersection Signal Delay: 41.2	Intersection LOS: D
Intersection Capacity Utilization 87.3%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 3: Black Forest Rd & Briarate Pkwy



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	69	559	152	239	1040	96	158	132	111	121	305	138
Future Volume (vph)	69	559	152	239	1040	96	158	132	111	121	305	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	29.1	17.7	17.7	25.4	15.9	15.9
Actuated g/C Ratio	0.51	0.46	0.46	0.13	0.55	0.55	0.25	0.15	0.15	0.22	0.14	0.14
v/c Ratio	0.26	0.35	0.20	0.56	0.56	0.11	0.61	0.25	0.31	0.40	0.65	0.41
Control Delay	12.3	21.6	3.7	52.7	19.7	2.8	42.6	43.3	4.8	35.7	53.3	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	21.6	3.7	52.7	19.7	2.8	42.6	43.3	4.8	35.7	53.3	9.5
LOS	B	C	A	D	B	A	D	D	A	D	D	A
Approach Delay		17.2			24.2			32.3			38.8	
Approach LOS		B			C			C			D	

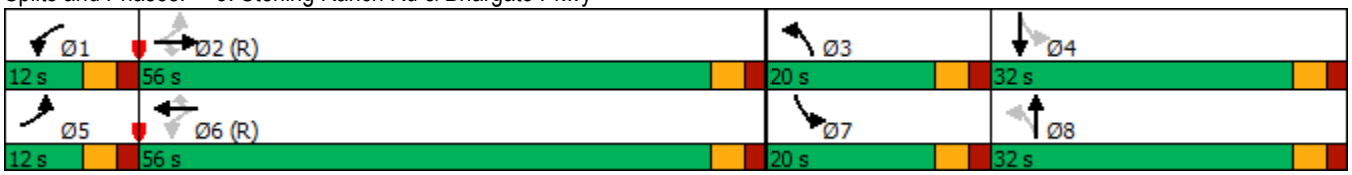
Intersection Summary		
Cycle Length: 120		
Actuated Cycle Length: 114.4		
Natural Cycle: 60		
Control Type: Actuated-Uncoordinated		
Maximum v/c Ratio: 0.65		
Intersection Signal Delay: 26.2	Intersection LOS: C	
Intersection Capacity Utilization 66.8%	ICU Level of Service C	
Analysis Period (min) 15		

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)	77	627	145	112	945	24	285	115	120	103	263	158
Future Volume (vph)	77	627	145	112	945	24	285	115	120	103	263	158
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	45.9	31.7	120.0	37.3	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	0.35	0.44	0.20	0.34	0.63	0.03	0.85	0.25	0.08	0.25	0.66	0.10
Control Delay	18.6	25.5	4.0	9.6	18.6	0.8	50.5	37.3	0.1	25.7	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	18.6	25.5	4.0	9.6	18.6	0.8	50.5	37.3	0.1	25.7	51.0	0.1
LOS	B	C	A	A	B	A	D	D	A	C	D	A
Approach Delay		21.2			17.3			36.0			30.7	
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: 24.0	Intersection LOS: C
Intersection Capacity Utilization 79.5%	ICU Level of Service D
Analysis Period (min) 15	

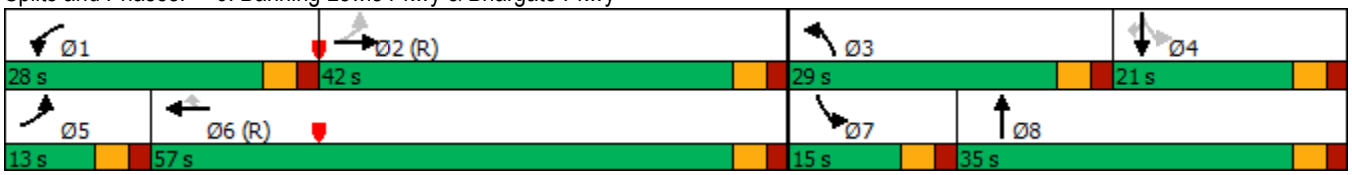
Splits and Phases: 5: Sterling Ranch Rd & Briargate Pkwy



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	488	352	300	661	13	320	61	291	53	200	2
Future Volume (vph)	2	488	352	300	661	13	320	61	291	53	200	2
Turn Type	pm+pt	NA	Free	Prot	NA	Perm	Prot	NA	Free	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		Free			6			Free	4		4
Detector Phase	5	2		1	6	6	3	8		7	4	4
Switch Phase												
Minimum Initial (s)	8.0	15.0		8.0	15.0	15.0	8.0	10.0		8.0	10.0	10.0
Minimum Split (s)	13.0	20.0		20.0	20.0	20.0	13.0	15.0		13.0	15.0	15.0
Total Split (s)	13.0	42.0		28.0	57.0	57.0	29.0	35.0		15.0	21.0	21.0
Total Split (%)	10.8%	35.0%		23.3%	47.5%	47.5%	24.2%	29.2%		12.5%	17.5%	17.5%
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	C-Max		None	C-Max	C-Max	None	Max		None	Max	Max
Act Effct Green (s)	51.7	43.7	120.0	16.3	62.4	62.4	17.0	34.0	120.0	31.6	23.0	23.0
Actuated g/C Ratio	0.43	0.36	1.00	0.14	0.52	0.52	0.14	0.28	1.00	0.26	0.19	0.19
v/c Ratio	0.01	0.40	0.23	0.68	0.38	0.02	0.69	0.06	0.19	0.15	0.31	0.00
Control Delay	10.0	17.8	0.3	56.8	18.7	0.0	55.6	34.0	0.3	26.3	44.1	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.0	17.8	0.3	56.8	18.7	0.0	55.6	34.0	0.3	26.3	44.1	0.0
LOS	A	B	A	E	B	A	E	C	A	C	D	A
Approach Delay		10.5			30.2			29.7			40.1	
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:WBT, Start of Green	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.69	
Intersection Signal Delay: 24.9	Intersection LOS: C
Intersection Capacity Utilization 59.1%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 6: Banning Lewis Pkwy & Briargate Pkwy



Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	39	43	0	48	0	353	26	10	685	0
Future Vol, veh/h	0	0	39	43	0	48	0	353	26	10	685	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	0	-	0	-	-	155	205	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	41	45	0	51	0	372	27	11	721	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	361	755	-	186	-	0	0	399	0	0
Stage 1	-	-	-	372	-	-	-	-	-	-	-	-
Stage 2	-	-	-	383	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	7.54	-	6.94	-	-	-	4.14	-	-
Critical Hdwy Stg 1	-	-	-	6.54	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	6.54	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	3.52	-	3.32	-	-	-	2.22	-	-
Pot Cap-1 Maneuver	0	0	636	298	0	824	0	-	-	1156	-	-
Stage 1	0	0	-	621	0	-	0	-	-	-	-	-
Stage 2	0	0	-	611	0	-	0	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	636	277	-	824	-	-	-	1156	-	-
Mov Cap-2 Maneuver	-	-	-	396	-	-	-	-	-	-	-	-
Stage 1	-	-	-	621	-	-	-	-	-	-	-	-
Stage 2	-	-	-	566	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.1	12.3	0	0.1
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	-	-	636	396	824	1156	-	-
HCM Lane V/C Ratio	-	-	0.065	0.114	0.061	0.009	-	-
HCM Control Delay (s)	-	-	11.1	15.3	9.7	8.1	-	-
HCM Lane LOS	-	-	B	C	A	A	-	-
HCM 95th %tile Q(veh)	-	-	0.2	0.4	0.2	0	-	-

Intersection	
Int Delay, s/veh	11.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	133	71	132	180	0	190	0	390	124	63	248	0
Future Vol, veh/h	133	71	132	180	0	190	0	390	124	63	248	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	0	0	-	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	140	75	139	189	0	200	0	411	131	66	261	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	970	935	261	911	-	411	-	0	0	542	0	0
Stage 1	393	393	-	411	-	-	-	-	-	-	-	-
Stage 2	577	542	-	500	-	-	-	-	-	-	-	-
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	229	258	894	255	0	641	0	-	-	1027	-	0
Stage 1	694	632	-	618	0	-	0	-	-	-	-	0
Stage 2	502	520	-	592	0	-	0	-	-	-	-	0
Platoon blocked, %	1	1	1	1				-	-		-	
Mov Cap-1 Maneuver	150	241	894	~ 171	-	641	-	-	-	1027	-	-
Mov Cap-2 Maneuver	232	341	-	298	-	-	-	-	-	-	-	-
Stage 1	694	592	-	618	-	-	-	-	-	-	-	-
Stage 2	345	520	-	409	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	24.2	24.2	0	1.8
HCM LOS	C	C		

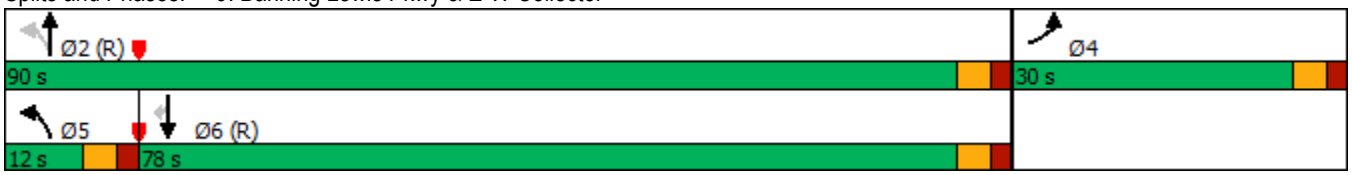
Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	232	341	894	298	641	1027	-
HCM Lane V/C Ratio	-	-	0.603	0.219	0.155	0.636	0.312	0.065	-
HCM Control Delay (s)	-	-	41.6	18.5	9.8	36	13.1	8.7	-
HCM Lane LOS	-	-	E	C	A	E	B	A	-
HCM 95th %tile Q(veh)	-	-	3.5	0.8	0.5	4	1.3	0.2	-

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

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	19	293	128	653	802	50
Future Volume (vph)	19	293	128	653	802	50
Turn Type	Prot	Free	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		Free	2			6
Detector Phase	4		5	2	6	6
Switch Phase						
Minimum Initial (s)	15.0		8.0	15.0	15.0	15.0
Minimum Split (s)	20.0		13.0	20.0	20.0	20.0
Total Split (s)	30.0		12.0	90.0	78.0	78.0
Total Split (%)	25.0%		10.0%	75.0%	65.0%	65.0%
Yellow Time (s)	3.0		3.0	3.0	3.0	3.0
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0		5.0	5.0	5.0	5.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None		None	C-Max	C-Max	C-Max
Act Effct Green (s)	15.0	120.0	107.0	110.0	93.8	93.8
Actuated g/C Ratio	0.12	1.00	0.89	0.92	0.78	0.78
v/c Ratio	0.09	0.19	0.23	0.21	0.31	0.04
Control Delay	47.7	0.3	2.6	1.8	8.9	4.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.7	0.3	2.6	1.8	8.9	4.1
LOS	D	A	A	A	A	A
Approach Delay	3.2			1.9	8.6	
Approach LOS	A			A	A	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.31	
Intersection Signal Delay: 5.0	Intersection LOS: A
Intersection Capacity Utilization 54.3%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 9: Banning Lewis Pkwy & E-W Collector



Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	25	338	4	3	600	14	13	1	9	27	0	68
Future Vol, veh/h	25	338	4	3	600	14	13	1	9	27	0	68
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	205	-	155	205	-	-	-	-	-	-	-	155
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	26	356	4	3	632	15	14	1	9	28	0	72

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	647	0	0	360	0	0	1090	1061	356	1061	1058	640
Stage 1	-	-	-	-	-	-	408	408	-	646	646	-
Stage 2	-	-	-	-	-	-	682	653	-	415	412	-
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	939	-	-	1199	-	-	193	224	688	202	225	475
Stage 1	-	-	-	-	-	-	620	597	-	460	467	-
Stage 2	-	-	-	-	-	-	440	464	-	615	594	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	939	-	-	1199	-	-	160	217	688	194	218	475
Mov Cap-2 Maneuver	-	-	-	-	-	-	160	217	-	194	218	-
Stage 1	-	-	-	-	-	-	603	580	-	447	466	-
Stage 2	-	-	-	-	-	-	373	463	-	589	577	-

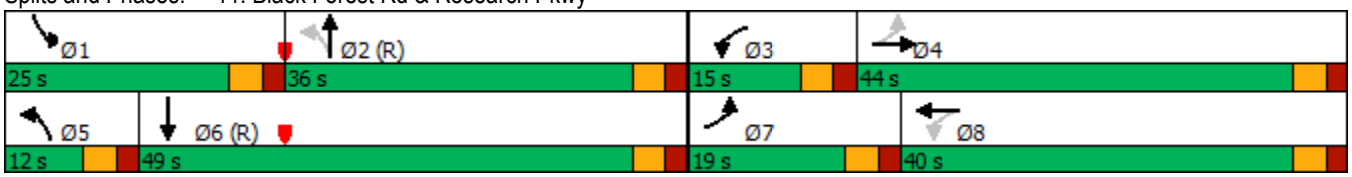
Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0	22.3	17.5
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	232	939	-	-	1199	-	-	194	475
HCM Lane V/C Ratio	0.104	0.028	-	-	0.003	-	-	0.147	0.151
HCM Control Delay (s)	22.3	8.9	-	-	8	-	-	26.7	13.9
HCM Lane LOS	C	A	-	-	A	-	-	D	B
HCM 95th %tile Q(veh)	0.3	0.1	-	-	0	-	-	0.5	0.5

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	200	527	100	100	705	248	275	373	100	349	455	375
Future Volume (vph)	200	527	100	100	705	248	275	373	100	349	455	375
Turn Type	pm+pt	NA	Free	pm+pt	NA	Free	pm+pt	NA	Free	Prot	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		Free	8		Free	2		Free			Free
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0		5.0	15.0		8.0	15.0	
Minimum Split (s)	10.0	23.0		10.0	23.0		10.0	23.0		15.0	23.0	
Total Split (s)	19.0	44.0		15.0	40.0		12.0	36.0		25.0	49.0	
Total Split (%)	15.8%	36.7%		12.5%	33.3%		10.0%	30.0%		20.8%	40.8%	
Yellow Time (s)	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	
Lost Time Adjust (s)	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	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Act Effct Green (s)	47.8	34.3	120.0	39.2	30.0	120.0	50.0	39.0	120.0	17.5	45.5	120.0
Actuated g/C Ratio	0.40	0.29	1.00	0.33	0.25	1.00	0.42	0.32	1.00	0.15	0.38	1.00
v/c Ratio	0.81	0.55	0.07	0.36	0.84	0.16	0.65	0.34	0.07	0.74	0.36	0.25
Control Delay	50.8	38.1	0.1	25.5	51.8	0.2	33.6	36.3	0.1	38.0	22.0	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.8	38.1	0.1	25.5	51.8	0.2	33.6	36.3	0.1	38.0	22.0	0.3
LOS	D	D	A	C	D	A	C	D	A	D	C	A
Approach Delay		36.6			37.2			30.5			19.8	
Approach LOS		D			D			C			B	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay: 30.4	Intersection LOS: C
Intersection Capacity Utilization 75.0%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 11: Black Forest Rd & Research Pkwy



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	72	843	42	175	932	70	115	238	112	120	514	132
Future Volume (vph)	72	843	42	175	932	70	115	238	112	120	514	132
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	0.64	0.34	0.28	0.41	0.73	0.32
Control Delay	11.9	20.5	0.1	18.0	9.9	0.2	48.9	42.0	8.8	36.2	51.2	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	18.0	9.9	0.2	48.9	42.0	8.8	36.2	51.2	9.6
LOS	B	C	A	B	A	A	D	D	A	D	D	A
Approach Delay		19.0			10.6			35.7			41.7	
Approach LOS		B			B			D			D	

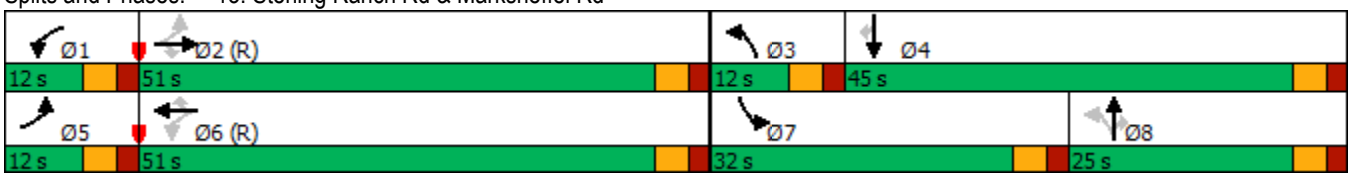
Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.73	
Intersection Signal Delay: 23.5	Intersection LOS: C
Intersection Capacity Utilization 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	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	164	900	10	47	809	185	39	8	55	480	9	329
Future Volume (vph)	164	900	10	47	809	185	39	8	55	480	9	329
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8			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	5.0	15.0	15.0	5.0	10.0	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	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	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%	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	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	None	None	None	None	None
Act Effct Green (s)	74.5	65.1	65.1	65.7	58.8	58.8	14.6	10.0	10.0	23.1	25.5	25.5
Actuated g/C Ratio	0.62	0.54	0.54	0.55	0.49	0.49	0.12	0.08	0.08	0.19	0.21	0.21
v/c Ratio	0.45	0.49	0.01	0.15	0.49	0.22	0.21	0.05	0.21	0.77	0.02	0.63
Control Delay	21.9	15.6	0.0	12.3	23.6	3.7	32.6	51.6	1.8	54.0	35.2	15.7
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	21.9	15.6	0.0	12.3	23.6	3.7	32.6	51.6	1.8	54.0	35.2	15.7
LOS	C	B	A	B	C	A	C	D	A	D	D	B
Approach Delay		16.4			19.5			17.3			38.4	
Approach LOS		B			B			B			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: 23.4	Intersection LOS: C
Intersection Capacity Utilization 64.3%	ICU Level of Service C
Analysis Period (min) 15	

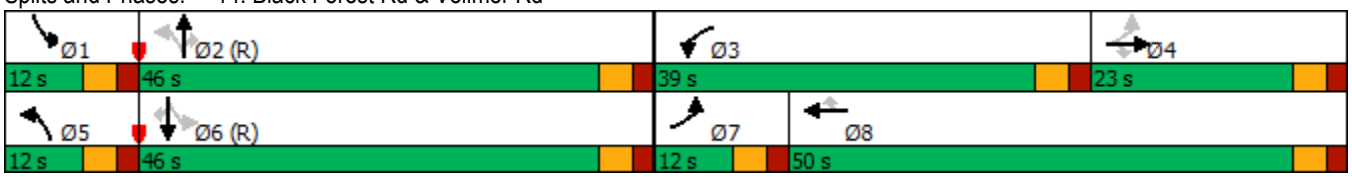
Splits and Phases: 13: Sterling Ranch Rd & Marksheffel Rd



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	24	39	740	19	130	36	500	546	95	1270	14
Future Volume (vph)	23	24	39	740	19	130	36	500	546	95	1270	14
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4			8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	15.0	15.0	5.0	15.0	15.0
Minimum Split (s)	10.0	15.0	15.0	10.0	15.0	15.0	10.0	20.0	20.0	10.0	20.0	20.0
Total Split (s)	12.0	23.0	23.0	39.0	50.0	50.0	12.0	46.0	46.0	12.0	46.0	46.0
Total Split (%)	10.0%	19.2%	19.2%	32.5%	41.7%	41.7%	10.0%	38.3%	38.3%	10.0%	38.3%	38.3%
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	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	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	14.4	10.0	10.0	31.1	36.0	36.0	59.8	53.0	53.0	65.6	59.4	59.4
Actuated g/C Ratio	0.12	0.08	0.08	0.26	0.30	0.30	0.50	0.44	0.44	0.55	0.50	0.50
v/c Ratio	0.13	0.16	0.15	0.88	0.04	0.24	0.23	0.34	0.56	0.22	0.76	0.02
Control Delay	27.6	53.8	1.2	54.3	29.2	6.1	12.8	12.0	10.2	18.2	36.9	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.6	53.8	1.2	54.3	29.2	6.1	12.8	12.0	10.2	18.2	36.9	0.1
LOS	C	D	A	D	C	A	B	B	B	B	D	A
Approach Delay		22.8			46.7			11.1			35.3	
Approach LOS		C			D			B			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay: 30.3	Intersection LOS: C
Intersection Capacity Utilization 79.6%	ICU Level of Service D
Analysis Period (min) 15	

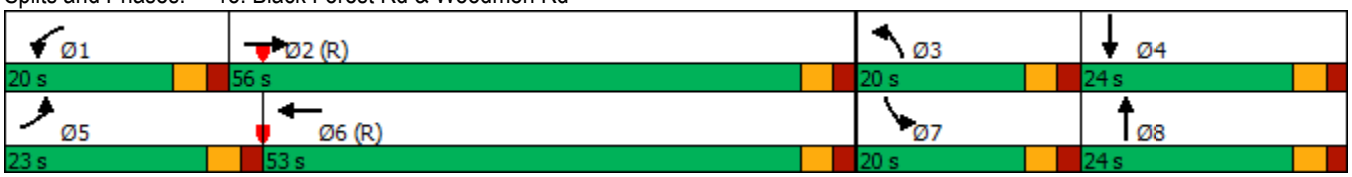
Splits and Phases: 14: Black Forest Rd & Vollmer Rd



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	448	888	200	294	1790	350	360	273	178	400	244	1095
Future Volume (vph)	448	888	200	294	1790	350	360	273	178	400	244	1095
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0		5.0	10.0		5.0	10.0	
Minimum Split (s)	10.0	23.0		10.0	23.0		10.0	23.0		10.0	23.0	
Total Split (s)	23.0	56.0		20.0	53.0		20.0	24.0		20.0	24.0	
Total Split (%)	19.2%	46.7%		16.7%	44.2%		16.7%	20.0%		16.7%	20.0%	
Yellow Time (s)	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	
Lost Time Adjust (s)	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	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max		None	C-Max		None	Max		None	Max	
Act Effct Green (s)	17.8	51.9	120.0	14.1	48.2	120.0	14.8	19.0	120.0	15.0	19.2	120.0
Actuated g/C Ratio	0.15	0.43	1.00	0.12	0.40	1.00	0.12	0.16	1.00	0.12	0.16	1.00
v/c Ratio	0.90	0.41	0.13	0.74	0.89	0.23	0.87	0.50	0.11	0.95	0.31	0.71
Control Delay	71.7	24.4	0.2	55.4	31.5	0.2	72.4	49.6	0.1	75.4	35.9	6.4
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	71.7	24.4	0.2	55.4	31.5	0.2	72.4	49.6	0.1	75.4	35.9	6.4
LOS	E	C	A	E	C	A	E	D	A	E	D	A
Approach Delay		35.0			29.9			48.8			26.4	
Approach LOS		D			C			D			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.95	
Intersection Signal Delay: 32.5	Intersection LOS: C
Intersection Capacity Utilization 83.8%	ICU Level of Service E
Analysis Period (min) 15	

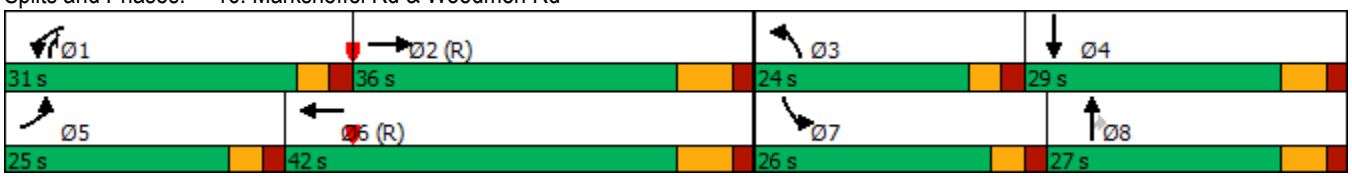
Splits and Phases: 15: Black Forest Rd & Woodmen Rd



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	263	791	413	563	1595	315	535	352	307	348	489	304
Future Volume (vph)	263	791	413	563	1595	315	535	352	307	348	489	304
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	pm+ov	Prot	NA	Free
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases			Free			Free			8			Free
Detector Phase	5	2		1	6		3	8	1	7	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	9.0	11.0		9.0	11.0		9.0	10.0	9.0	9.0	10.0	
Total Split (s)	25.0	36.0		31.0	42.0		24.0	27.0	31.0	26.0	29.0	
Total Split (%)	20.8%	30.0%		25.8%	35.0%		20.0%	22.5%	25.8%	21.7%	24.2%	
Yellow Time (s)	3.0	5.0		3.0	5.0		3.0	4.0	3.0	3.0	4.0	
All-Red Time (s)	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	
Total Lost Time (s)	5.0	7.0		5.0	7.0		5.0	6.0	5.0	5.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lead	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max		None	C-Max		None	None	None	None	None	
Act Effct Green (s)	14.6	33.0	120.0	24.0	42.5	120.0	19.0	22.6	52.6	17.4	20.9	120.0
Actuated g/C Ratio	0.12	0.28	1.00	0.20	0.35	1.00	0.16	0.19	0.44	0.14	0.17	1.00
v/c Ratio	0.64	0.58	0.27	0.84	0.90	0.20	1.01	0.54	0.42	0.71	0.81	0.20
Control Delay	66.5	39.9	0.4	57.6	45.8	0.3	90.4	47.6	18.4	57.1	58.4	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.5	39.9	0.4	57.6	45.8	0.3	90.4	47.6	18.4	57.1	58.4	0.3
LOS	E	D	A	E	D	A	F	D	B	E	E	A
Approach Delay		33.6			42.7			59.3			42.6	
Approach LOS		C			D			E			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green, Master Intersection	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.01	
Intersection Signal Delay: 43.7	Intersection LOS: D
Intersection Capacity Utilization 86.3%	ICU Level of Service E
Analysis Period (min) 15	

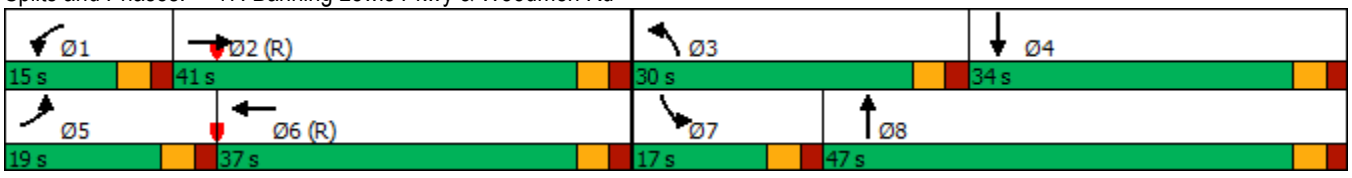
Splits and Phases: 16: Marksheffel Rd & Woodmen Rd



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	308	586	534	211	1179	89	762	369	173	170	623	322
Future Volume (vph)	308	586	534	211	1179	89	762	369	173	170	623	322
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0		5.0	10.0		5.0	10.0	
Minimum Split (s)	10.0	20.0		10.0	20.0		10.0	15.0		10.0	15.0	
Total Split (s)	19.0	41.0		15.0	37.0		30.0	47.0		17.0	34.0	
Total Split (%)	15.8%	34.2%		12.5%	30.8%		25.0%	39.2%		14.2%	28.3%	
Yellow Time (s)	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	
Lost Time Adjust (s)	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	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max		None	C-Max		None	Max		None	Max	
Act Effct Green (s)	13.7	36.0	120.0	10.0	32.3	120.0	25.0	43.2	120.0	10.8	29.0	120.0
Actuated g/C Ratio	0.11	0.30	1.00	0.08	0.27	1.00	0.21	0.36	1.00	0.09	0.24	1.00
v/c Ratio	0.83	0.40	0.36	0.78	0.91	0.06	1.12	0.31	0.11	0.58	0.77	0.21
Control Delay	70.0	34.4	0.6	73.1	53.1	0.1	115.9	28.7	0.2	59.9	49.3	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	70.0	34.4	0.6	73.1	53.1	0.1	115.9	28.7	0.2	59.9	49.3	0.3
LOS	E	C	A	E	D	A	F	C	A	E	D	A
Approach Delay		29.5			52.7			75.9			36.8	
Approach LOS		C			D			E			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.12	
Intersection Signal Delay: 48.8	Intersection LOS: D
Intersection Capacity Utilization 87.2%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 17: Banning Lewis Pkwy & Woodmen Rd



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	418
Demand Flow Rate, veh/h	462	401	830	426
Vehicles Circulating, veh/h	548	623	591	408
Vehicles Exiting, veh/h	286	577	419	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	426
Cap Entry Lane, veh/h	789	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	418
Cap Entry, veh/h	774	717	741	0.114	892
V/C Ratio	0.586	0.549	0.806	0.0	0.468
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

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	4	570	16	6	384
Future Vol, veh/h	10	4	570	16	6	384
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	4	600	17	6	404

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1025	609	0	0	617	0
Stage 1	609	-	-	-	-	-
Stage 2	416	-	-	-	-	-
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	260	495	-	-	963	-
Stage 1	543	-	-	-	-	-
Stage 2	666	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	258	495	-	-	963	-
Mov Cap-2 Maneuver	258	-	-	-	-	-
Stage 1	543	-	-	-	-	-
Stage 2	661	-	-	-	-	-

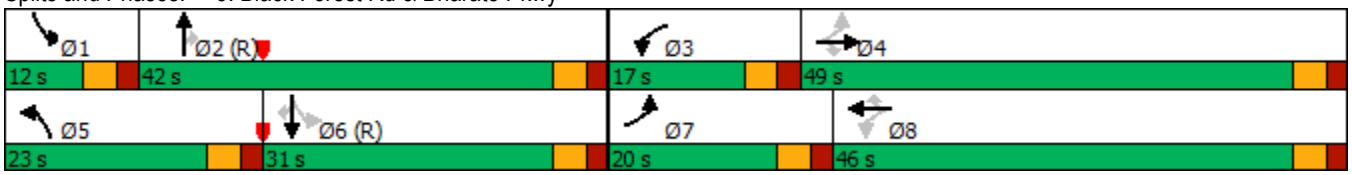
Approach	WB	NB	SB
HCM Control Delay, s	17.7	0	0.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	299	963	-
HCM Lane V/C Ratio	-	-	0.049	0.007	-
HCM Control Delay (s)	-	-	17.7	8.8	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	190	1075	349	173	761	76	434	794	224	105	524	210
Future Volume (vph)	190	1075	349	173	761	76	434	794	224	105	524	210
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8			2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	8.0	15.0	15.0	8.0	15.0	15.0	5.0	15.0	15.0	5.0	15.0	15.0
Minimum Split (s)	13.0	23.0	23.0	13.0	23.0	23.0	10.0	23.0	23.0	10.0	23.0	23.0
Total Split (s)	20.0	49.0	49.0	17.0	46.0	46.0	23.0	42.0	42.0	12.0	31.0	31.0
Total Split (%)	16.7%	40.8%	40.8%	14.2%	38.3%	38.3%	19.2%	35.0%	35.0%	10.0%	25.8%	25.8%
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	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	55.0	42.3	42.3	52.5	41.0	41.0	18.2	38.9	38.9	35.3	28.0	28.0
Actuated g/C Ratio	0.46	0.35	0.35	0.44	0.34	0.34	0.15	0.32	0.32	0.29	0.23	0.23
v/c Ratio	0.65	0.91	0.50	0.78	0.66	0.12	0.88	0.73	0.36	0.56	0.67	0.41
Control Delay	27.9	48.3	10.9	49.9	36.7	0.4	51.1	34.8	7.5	35.5	47.1	7.5
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	27.9	48.3	10.9	49.9	36.7	0.4	51.1	34.8	7.5	35.5	47.1	7.5
LOS	C	D	B	D	D	A	D	C	A	D	D	A
Approach Delay		37.8			36.2			35.5			35.8	
Approach LOS		D			D			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay: 36.4	Intersection LOS: D
Intersection Capacity Utilization 83.7%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 3: Black Forest Rd & Briarate Pkwy



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	227	1014	184	210	745	74	300	415	283	109	211	118
Future Volume (vph)	227	1014	184	210	745	74	300	415	283	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	35.6	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	30.8	4.7	51.1	20.7	1.6	52.7	50.0	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	30.8	4.7	51.1	20.7	1.6	52.7	50.0	12.3	33.9	50.1	6.5
LOS	C	C	A	D	C	A	D	D	B	C	D	A
Approach Delay		26.5			25.5			40.0			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 79.6%	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	924	131	155	827	105	193	190	83	86	87	133
Future Volume (vph)	329	924	131	155	827	105	193	190	83	86	87	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)	75.0	63.0	63.0	61.2	54.2	54.2	35.0	25.0	120.0	25.0	20.0	120.0
Actuated g/C Ratio	0.62	0.52	0.52	0.51	0.45	0.45	0.29	0.21	1.00	0.21	0.17	1.00
v/c Ratio	0.83	0.52	0.15	0.53	0.55	0.14	0.57	0.52	0.05	0.36	0.30	0.09
Control Delay	30.8	20.0	2.8	18.9	25.8	5.4	41.3	47.6	0.1	38.3	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	30.8	20.0	2.8	18.9	25.8	5.4	41.3	47.6	0.1	38.3	46.8	0.1
LOS	C	B	A	B	C	A	D	D	A	D	D	A
Approach Delay		20.9			22.8			36.6			24.2	
Approach LOS		C			C			D			C	

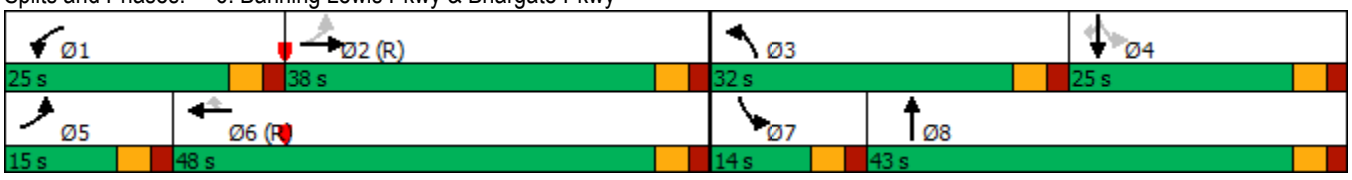
Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.83	
Intersection Signal Delay: 24.1	Intersection LOS: C
Intersection Capacity Utilization 85.1%	ICU Level of Service E
Analysis Period (min) 15	

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	530	476	332	518	56	543	229	292	43	153	2
Future Volume (vph)	7	530	476	332	518	56	543	229	292	43	153	2
Turn Type	pm+pt	NA	Free	Prot	NA	Perm	Prot	NA	Free	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		Free			6			Free	4		4
Detector Phase	5	2		1	6	6	3	8		7	4	4
Switch Phase												
Minimum Initial (s)	8.0	15.0		8.0	15.0	15.0	8.0	10.0		8.0	10.0	10.0
Minimum Split (s)	15.0	20.0		20.0	20.0	20.0	13.0	15.0		13.0	15.0	15.0
Total Split (s)	15.0	38.0		25.0	48.0	48.0	32.0	43.0		14.0	25.0	25.0
Total Split (%)	12.5%	31.7%		20.8%	40.0%	40.0%	26.7%	35.8%		11.7%	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
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	C-Max		None	C-Max	C-Max	None	Max		None	Max	Max
Act Effct Green (s)	44.0	36.0	120.0	17.0	55.4	55.4	24.2	41.4	120.0	31.0	22.8	22.8
Actuated g/C Ratio	0.37	0.30	1.00	0.14	0.46	0.46	0.20	0.34	1.00	0.26	0.19	0.19
v/c Ratio	0.02	0.53	0.32	0.72	0.33	0.07	0.83	0.20	0.19	0.14	0.24	0.00
Control Delay	25.3	54.1	0.6	57.8	22.0	0.2	54.5	32.9	0.3	23.1	43.3	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.3	54.1	0.6	57.8	22.0	0.2	54.5	32.9	0.3	23.1	43.3	0.0
LOS	C	D	A	E	C	A	D	C	A	C	D	A
Approach Delay		28.7			33.8			35.0			38.5	
Approach LOS		C			C			C			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Green	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.83	
Intersection Signal Delay: 32.9	Intersection LOS: C
Intersection Capacity Utilization 64.6%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 6: Banning Lewis Pkwy & Briargate Pkwy



Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	39	64	0	73	0	924	87	34	571	0
Future Vol, veh/h	0	0	39	64	0	73	0	924	87	34	571	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	0	-	0	-	-	155	205	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	41	67	0	77	0	973	92	36	601	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	301	1346	-	487	-	0	0	1065	0	0
Stage 1	-	-	-	973	-	-	-	-	-	-	-	-
Stage 2	-	-	-	373	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	7.54	-	6.94	-	-	-	4.14	-	-
Critical Hdwy Stg 1	-	-	-	6.54	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	6.54	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	3.52	-	3.32	-	-	-	2.22	-	-
Pot Cap-1 Maneuver	0	0	695	110	0	526	0	-	-	650	-	-
Stage 1	0	0	-	271	0	-	0	-	-	-	-	-
Stage 2	0	0	-	620	0	-	0	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	695	99	-	526	-	-	-	650	-	-
Mov Cap-2 Maneuver	-	-	-	204	-	-	-	-	-	-	-	-
Stage 1	-	-	-	271	-	-	-	-	-	-	-	-
Stage 2	-	-	-	551	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.5	21.5	0	0.6
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	-	-	695	204	526	650	-	-
HCM Lane V/C Ratio	-	-	0.059	0.33	0.146	0.055	-	-
HCM Control Delay (s)	-	-	10.5	31.1	13	10.9	-	-
HCM Lane LOS	-	-	B	D	B	B	-	-
HCM 95th %tile Q(veh)	-	-	0.2	1.4	0.5	0.2	-	-

Intersection	
Int Delay, s/veh	4.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	38	18	32	123	0	137	0	325	153	50	284	0
Future Vol, veh/h	38	18	32	123	0	137	0	325	153	50	284	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	0	0	-	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	129	0	144	0	342	161	53	299	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	900	908	299	774	-	342	-	0	0	503	0	0
Stage 1	405	405	-	342	-	-	-	-	-	-	-	-
Stage 2	495	503	-	432	-	-	-	-	-	-	-	-
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	262	269	865	333	0	701	0	-	-	1061	-	0
Stage 1	695	628	-	673	0	-	0	-	-	-	-	0
Stage 2	556	541	-	667	0	-	0	-	-	-	-	0
Platoon blocked, %	1	1	1	1				-	-		-	
Mov Cap-1 Maneuver	200	255	865	295	-	701	-	-	-	1061	-	-
Mov Cap-2 Maneuver	307	359	-	421	-	-	-	-	-	-	-	-
Stage 1	695	597	-	673	-	-	-	-	-	-	-	-
Stage 2	442	541	-	590	-	-	-	-	-	-	-	-

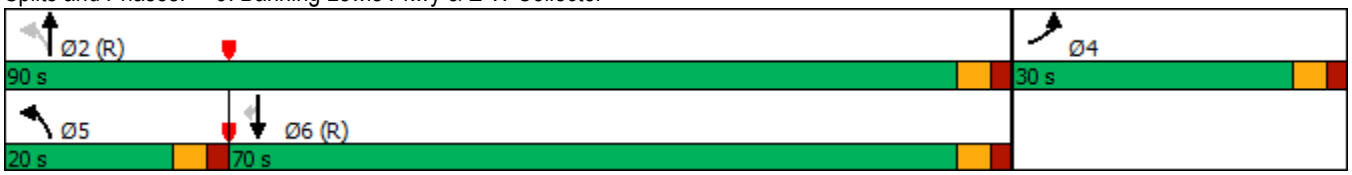
Approach	EB	WB	NB	SB
HCM Control Delay, s	14.6	14.2	0	1.3
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	307	359	865	421	701	1061	-
HCM Lane V/C Ratio	-	-	0.13	0.053	0.039	0.308	0.206	0.05	-
HCM Control Delay (s)	-	-	18.5	15.6	9.3	17.3	11.5	8.6	-
HCM Lane LOS	-	-	C	C	A	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.4	0.2	0.1	1.3	0.8	0.2	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	31	227	346	1034	888	74
Future Volume (vph)	31	227	346	1034	888	74
Turn Type	Prot	Free	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		Free	2			6
Detector Phase	4		5	2	6	6
Switch Phase						
Minimum Initial (s)	15.0		5.0	15.0	15.0	15.0
Minimum Split (s)	20.0		10.0	20.0	20.0	20.0
Total Split (s)	30.0		20.0	90.0	70.0	70.0
Total Split (%)	25.0%		16.7%	75.0%	58.3%	58.3%
Yellow Time (s)	3.0		3.0	3.0	3.0	3.0
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0		5.0	5.0	5.0	5.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None		None	C-Max	C-Max	C-Max
Act Effct Green (s)	15.0	120.0	103.0	105.0	85.6	85.6
Actuated g/C Ratio	0.12	1.00	0.86	0.88	0.71	0.71
v/c Ratio	0.15	0.15	0.67	0.35	0.37	0.07
Control Delay	48.8	0.2	9.2	2.9	18.7	6.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.8	0.2	9.2	2.9	18.7	6.9
LOS	D	A	A	A	B	A
Approach Delay	6.1			4.5	17.8	
Approach LOS	A			A	B	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.67	
Intersection Signal Delay: 9.6	Intersection LOS: A
Intersection Capacity Utilization 68.7%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 9: Banning Lewis Pkwy & E-W Collector



Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	97	582	18	3	382	10	11	1	2	4	1	67
Future Vol, veh/h	97	582	18	3	382	10	11	1	2	4	1	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	-	155	205	-	-	-	-	-	-	-	155
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	102	613	19	3	402	11	12	1	2	4	1	71

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	413	0	0	632	0	0	1267	1236	613	1242	1250	408
Stage 1	-	-	-	-	-	-	817	817	-	414	414	-
Stage 2	-	-	-	-	-	-	450	419	-	828	836	-
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	1146	-	-	951	-	-	146	176	492	152	173	643
Stage 1	-	-	-	-	-	-	370	390	-	616	593	-
Stage 2	-	-	-	-	-	-	589	590	-	365	382	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1146	-	-	951	-	-	120	160	492	140	157	643
Mov Cap-2 Maneuver	-	-	-	-	-	-	120	160	-	140	157	-
Stage 1	-	-	-	-	-	-	337	355	-	561	591	-
Stage 2	-	-	-	-	-	-	522	588	-	330	348	-

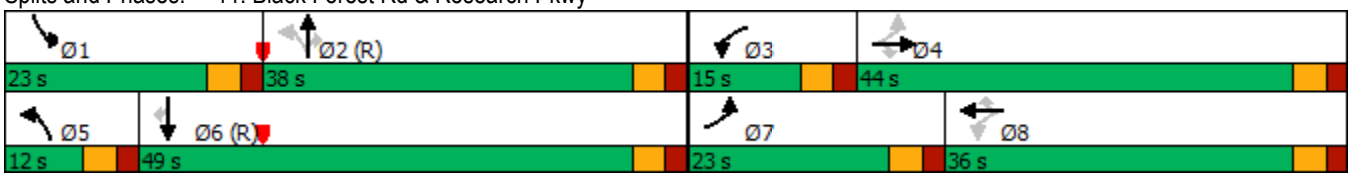
Approach	EB	WB	NB	SB
HCM Control Delay, s	1.2	0.1	34.4	12.7
HCM LOS			D	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	137	1146	-	-	951	-	-	143	643
HCM Lane V/C Ratio	0.108	0.089	-	-	0.003	-	-	0.037	0.11
HCM Control Delay (s)	34.4	8.4	-	-	8.8	-	-	31.1	11.3
HCM Lane LOS	D	A	-	-	A	-	-	D	B
HCM 95th %tile Q(veh)	0.4	0.3	-	-	0	-	-	0.1	0.4

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	250	935	100	100	704	499	125	786	100	398	334	270
Future Volume (vph)	250	935	100	100	704	499	125	786	100	398	334	270
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	15.0	5.0	15.0	15.0	5.0	15.0	15.0
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)	23.0	44.0	44.0	15.0	36.0	36.0	12.0	38.0	38.0	23.0	49.0	49.0
Total Split (%)	19.2%	36.7%	36.7%	12.5%	30.0%	30.0%	10.0%	31.7%	31.7%	19.2%	40.8%	40.8%
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	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	51.2	37.1	37.1	38.5	29.5	29.5	43.8	36.4	36.4	17.5	46.4	46.4
Actuated g/C Ratio	0.43	0.31	0.31	0.32	0.25	0.25	0.36	0.30	0.30	0.15	0.39	0.39
v/c Ratio	0.85	0.90	0.18	0.54	0.85	0.87	0.32	0.77	0.17	0.84	0.26	0.36
Control Delay	54.7	51.3	1.8	32.2	53.6	34.9	19.3	48.6	8.7	52.9	19.6	8.5
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	54.7	51.3	1.8	32.2	53.6	34.9	19.3	48.6	8.7	52.9	19.6	8.5
LOS	D	D	A	C	D	C	B	D	A	D	B	A
Approach Delay		48.2			44.8			41.0			29.8	
Approach LOS		D			D			D			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.90	
Intersection Signal Delay: 41.6	Intersection LOS: D
Intersection Capacity Utilization 83.1%	ICU Level of Service E
Analysis Period (min) 15	

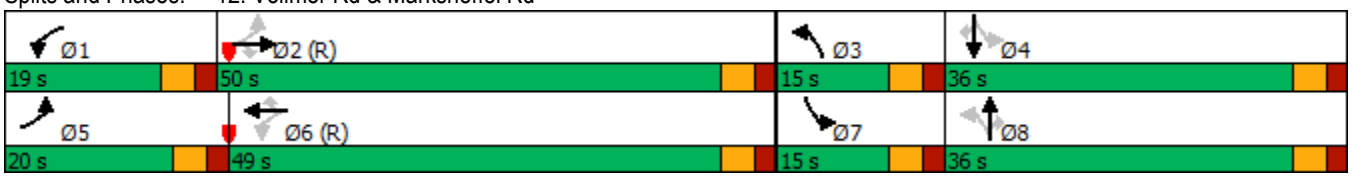
Splits and Phases: 11: Black Forest Rd & Research Pkwy



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	143	949	96	191	718	154	171	728	192	132	342	200
Future Volume (vph)	143	949	96	191	718	154	171	728	192	132	342	200
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)	57.5	46.7	46.7	60.5	48.2	48.2	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	0.44	0.73	0.15	0.73	0.53	0.23	0.50	0.83	0.39	0.68	0.39	0.37
Control Delay	18.8	35.3	4.5	53.1	22.5	5.5	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	18.8	35.3	4.5	53.1	22.5	5.5	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		30.8			25.6			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 80.9%	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	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	311	946	22	130	841	581	27	7	37	348	24	195
Future Volume (vph)	311	946	22	130	841	581	27	7	37	348	24	195
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8			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	5.0	15.0	15.0	5.0	10.0	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	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	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%	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	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	None	None	None	None	None
Act Effct Green (s)	80.7	69.1	69.1	69.5	62.6	62.6	11.0	10.0	10.0	20.0	23.0	23.0
Actuated g/C Ratio	0.67	0.58	0.58	0.58	0.52	0.52	0.09	0.08	0.08	0.17	0.19	0.19
v/c Ratio	0.76	0.49	0.02	0.41	0.48	0.55	0.20	0.05	0.12	0.64	0.07	0.44
Control Delay	40.4	10.5	0.0	12.9	20.9	3.6	37.8	51.4	0.8	52.4	39.2	8.5
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	40.4	10.5	0.0	12.9	20.9	3.6	37.8	51.4	0.8	52.4	39.2	8.5
LOS	D	B	A	B	C	A	D	D	A	D	D	A
Approach Delay		17.6			13.8			19.6			36.8	
Approach LOS		B			B			B			D	

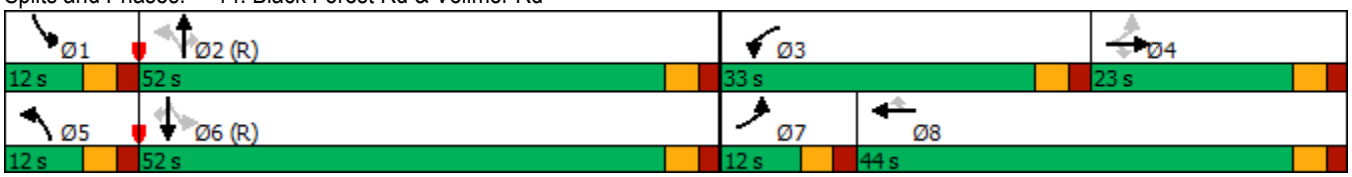
Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.76	
Intersection Signal Delay: 19.1	Intersection LOS: B
Intersection Capacity Utilization 74.0%	ICU Level of Service D
Analysis Period (min) 15	

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	22	21	502	23	195	58	1010	818	110	700	23
Future Volume (vph)	10	22	21	502	23	195	58	1010	818	110	700	23
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4			8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	15.0	15.0	5.0	15.0	15.0
Minimum Split (s)	10.0	15.0	15.0	10.0	15.0	15.0	10.0	20.0	20.0	10.0	20.0	20.0
Total Split (s)	12.0	23.0	23.0	33.0	44.0	44.0	12.0	52.0	52.0	12.0	52.0	52.0
Total Split (%)	10.0%	19.2%	19.2%	27.5%	36.7%	36.7%	10.0%	43.3%	43.3%	10.0%	43.3%	43.3%
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	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	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	12.1	10.0	10.0	23.4	30.0	30.0	70.7	63.5	63.5	75.3	67.5	67.5
Actuated g/C Ratio	0.10	0.08	0.08	0.20	0.25	0.25	0.59	0.53	0.53	0.63	0.56	0.56
v/c Ratio	0.07	0.15	0.08	0.79	0.05	0.37	0.14	0.57	0.70	0.39	0.37	0.03
Control Delay	29.9	53.5	0.6	54.9	31.5	6.5	6.9	19.1	11.2	17.1	24.0	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0
Total Delay	29.9	53.5	0.6	54.9	31.5	6.5	6.9	19.1	11.4	17.1	24.0	0.3
LOS	C	D	A	D	C	A	A	B	B	B	C	A
Approach Delay		28.1			41.0			15.4			22.5	
Approach LOS		C			D			B			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay: 22.5	Intersection LOS: C
Intersection Capacity Utilization 77.6%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 14: Black Forest Rd & Vollmer Rd



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	751	2613	360	221	1869	300	300	406	292	300	300	752
Future Volume (vph)	751	2613	360	221	1869	300	300	406	292	300	300	752
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	8.0	15.0		8.0	15.0		8.0	10.0		8.0	10.0	
Minimum Split (s)	13.0	20.0		13.0	20.0		13.0	15.0		13.0	15.0	
Total Split (s)	31.0	63.0		17.0	49.0		19.0	23.0		17.0	21.0	
Total Split (%)	25.8%	52.5%		14.2%	40.8%		15.8%	19.2%		14.2%	17.5%	
Yellow Time (s)	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	
Lost Time Adjust (s)	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	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max		None	C-Max		None	Max		None	Max	
Act Effct Green (s)	26.0	58.6	120.0	11.4	44.0	120.0	13.6	18.0	120.0	12.0	16.4	120.0
Actuated g/C Ratio	0.22	0.49	1.00	0.10	0.37	1.00	0.11	0.15	1.00	0.10	0.14	1.00
v/c Ratio	1.03	1.07	0.23	0.69	1.02	0.19	0.79	0.78	0.19	0.89	0.44	0.48
Control Delay	87.3	72.5	0.3	84.9	38.9	0.1	66.9	60.4	0.3	88.3	40.6	3.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	87.3	72.5	0.3	84.9	38.9	0.1	66.9	60.4	0.3	88.3	40.6	3.2
LOS	F	E	A	F	D	A	E	E	A	F	D	A
Approach Delay		68.5			38.3			44.7			30.4	
Approach LOS		E			D			D			C	

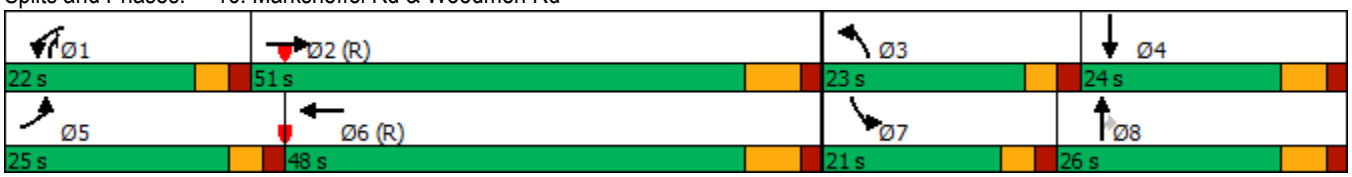
Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.07	
Intersection Signal Delay: 51.1	Intersection LOS: D
Intersection Capacity Utilization 94.0%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 15: Black Forest Rd & Woodmen Rd

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	527	2012	665	471	1689	339	491	512	500	419	381	210
Future Volume (vph)	527	2012	665	471	1689	339	491	512	500	419	381	210
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	pm+ov	Prot	NA	Free
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases			Free			Free			8			Free
Detector Phase	5	2		1	6		3	8	1	7	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	9.0	11.0		9.0	11.0		9.0	10.0	9.0	9.0	10.0	
Total Split (s)	25.0	51.0		22.0	48.0		23.0	26.0	22.0	21.0	24.0	
Total Split (%)	20.8%	42.5%		18.3%	40.0%		19.2%	21.7%	18.3%	17.5%	20.0%	
Yellow Time (s)	3.0	5.0		3.0	5.0		3.0	4.0	3.0	3.0	4.0	
All-Red Time (s)	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	
Total Lost Time (s)	5.0	7.0		5.0	7.0		5.0	6.0	5.0	5.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lead	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max		None	C-Max		None	None	None	None	None	
Act Effct Green (s)	20.1	44.0	120.0	17.3	41.2	120.0	18.0	19.7	43.0	16.0	17.7	120.0
Actuated g/C Ratio	0.17	0.37	1.00	0.14	0.34	1.00	0.15	0.16	0.36	0.13	0.15	1.00
v/c Ratio	0.94	1.10	0.43	0.97	0.99	0.22	0.97	0.90	0.82	0.94	0.75	0.14
Control Delay	59.8	72.5	0.2	85.6	58.1	0.3	84.9	68.9	41.8	80.7	58.7	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.8	72.5	0.2	85.6	58.1	0.3	84.9	68.9	41.8	80.7	58.7	0.2
LOS	E	E	A	F	E	A	F	E	D	F	E	A
Approach Delay		55.4			55.4			65.1			55.7	
Approach LOS		E			E			E			E	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green, Master Intersection	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.10	
Intersection Signal Delay: 57.2	Intersection LOS: E
Intersection Capacity Utilization 97.6%	ICU Level of Service F
Analysis Period (min) 15	

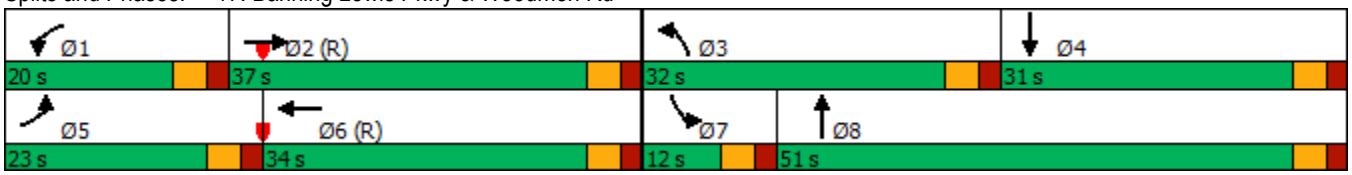
Splits and Phases: 16: Marksheffel Rd & Woodmen Rd



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	492	1331	893	437	1106	201	840	848	308	144	643	483
Future Volume (vph)	492	1331	893	437	1106	201	840	848	308	144	643	483
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0		5.0	10.0		5.0	10.0	
Minimum Split (s)	10.0	20.0		10.0	20.0		10.0	15.0		10.0	15.0	
Total Split (s)	23.0	37.0		20.0	34.0		32.0	51.0		12.0	31.0	
Total Split (%)	19.2%	30.8%		16.7%	28.3%		26.7%	42.5%		10.0%	25.8%	
Yellow Time (s)	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	
Lost Time Adjust (s)	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	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max		None	C-Max		None	Max		None	Max	
Act Effct Green (s)	18.0	32.0	120.0	15.0	29.0	120.0	27.0	46.0	120.0	7.0	26.0	120.0
Actuated g/C Ratio	0.15	0.27	1.00	0.12	0.24	1.00	0.22	0.38	1.00	0.06	0.22	1.00
v/c Ratio	0.98	1.00	0.58	1.04	0.92	0.13	1.11	0.64	0.20	0.73	0.86	0.31
Control Delay	85.3	68.9	1.5	105.0	57.1	0.2	110.1	32.8	0.3	77.1	57.4	0.5
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	85.3	68.9	1.5	105.0	57.1	0.2	110.1	32.8	0.3	77.1	57.4	0.5
LOS	F	E	A	F	E	A	F	C	A	E	E	A
Approach Delay		49.7			62.5			60.3			38.0	
Approach LOS		D			E			E			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.11	
Intersection Signal Delay: 53.4	Intersection LOS: D
Intersection Capacity Utilization 96.6%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 17: Banning Lewis Pkwy & Woodmen Rd



Crash History

TRANSPORTATION
CONSULTANTS, INC.

AccidentDate	TotalVehicles	ReferencePointName	ReferencePointAtName	AccidentNarrative
2019-09-29	1	VOLLMER RD	GLIDER LP	Vehicle # 1 was traveling northbound Vollmer Road .8 miles north of Glider Loop. Vehicle # 1's right side tires dropped off the right side of the roadway as it entered a sharp left curve. Vehicle #1 lost control on the roadway for approximately 131' before it traveled approximately 100' off the right side of the roadway. Vehicle # 1 collided its rear with a barbed-wire fence. Vehicle # 1 was moved prior to investigation.
2019-10-01	1	VOLLMER RD	S POCO RD	Vehicle #1 was northbound on Vollmer Road in a left hand curve. Vehicle #1 ran off the right side of the road for 107.3'. Vehicle over corrected, reentered the roadway, spinning counter clockwise. Vehicle #1 was out of control for 98.5'. Vehicle #1 ran off the left side of the road for 99.8', rolling 1 1/2 times. Vehicle #1 came to rest on its top facing west.
2019-11-14	1	VOLLMER RD	GLIDER PL	Vehicle 1 was southbound on Vollmer Road south of Burgess Road. Vehicle 1 was travelling in excessive speed, when it failed to negotiate a right hand bend in the roadway. Vehicle left heavy left side tire skids marks for 115.8 feet in the northbound lane, afterwhich it traveled for 59.4 across the southbound lane. Vehicle 1 ran off the right side of the road for 130.9 feet where it began to overturn, airborne for 20.7 feet, colliding with the ground, traveled another 25.9 feet and rolled another 52.2 feet where it came to final rest facing east on its right side 23.9 feet from the west road edge.
2020-04-23	1	VOLLMER RD	WILDFLOWER RD	Vehicle #1 was traveling south on Vollmer Rd approaching Wildflower Rd. Vehicle #1 failed to navigate the slight left curve in the roadway at which point it ran off the right side of the road. Vehicle #1 crashed through the fence on the right side of the road, traveled southwest into the yard of 8455 Wildflower Rd, rolled, crashed into a well, and came to rest on its wheels facing south.
2020-05-26	1	VOLLMER	WILD FLOWER	Vehicle #1 was southbound on Vollmer. Driver of vehicle #1 lost control and went off the right side of the road and overturned. Vehicle #1 was moved prior to investigation.
2020-07-25	1	VOLLMER RD	POCO RD	Vehicle 1 was traveling in an easterly direction on Vollmer Road approaching a left curve. Vehicle 1 drove on the wrong side of the road to avoid a deceased raccoon in the middle of its lane. Vehicle 1 returned to its lane while navigating the curve. Vehicle 1's right tires dropped off the right edge of the road. Driver 1 pulled the wheel to the left causing Vehicle 1 to spin out of control. Driver 1 overcorrected to the right and the vehicle rolled 3/4 times off the right side of the road. Vehicle 1 came to final rest on top of a fence facing south on its right side.
2021-03-24	1	VOLLMER RD	POCO RD	Vehicle #1 was southbound on Vollmer Road just south of Poco Road. Vehicle #1 lost control on the icy covered roadway and slid off of the west edge of the roadway for approximately 50 feet while rotating 1/4 times clockwise. Vehicle #1 then collided with a barbed wire fence approximately 15 feet west of the road edge and overturned 1/4 times onto it's left. Vehicle #1 came to final rest on its left side, approximately 15 feet west of the road edge facing west.
2021-09-13	3	VOLLMER RD	POCO RD	Vehicle #1 was traveling southbound on Vollmer Road. Vehicle #2 was parked on Poco Road, facing east, just west of the intersection of Vollmer Rd. and Poco Rd. Vehicle #2 was partially in the lane and partially on what would be a shoulder, as the entire road is dirt. Vehicle #3 was parked likewise, behind vehicle #2. Vehicle #1 made a right hand turn, to travel westbound on Poco Rd. The left front of vehicle #1 crashed into the left front of vehicle #2. Vehicle #2, being on dirt, slid backwards into the front of vehicle #3. Both vehicles #2 and #3 were unoccupied. Vehicle #1 pulled through and pulled over further down Poco Road to a safe location.
2021-11-11	1	VOLLMER RD	POCO RD	Vehicle #1 was travelling northbound on Vollmer Rd approaching Poco Rd. Vehicle #1 failed to negotiate a curve to the left and travelled off the right side of the road. Vehicle #1 overcorrected to the left, travelled across both lanes of traffic, and drove off the left side of the road. Vehicle #1 rotated counter-clockwise and hit a trip point in the soft dirt. Vehicle #1 rolled 1 and 3/4 times, coming to rest on its left side facing southwest approximately 30 feet off the road. The driver of the vehicle was ejected out of the passenger window during the rollover and came to rest in the field approximately 50 feet northwest of the vehicle.
2022-04-07	1	VOLLMER RD	WILDFLOWER RD	Vehicle 1 was traveling southbound on Vollmer Rd approaching the intersection of Wildflower Rd. Vehicle 1 failed to negotiate a curve and drove off the right side of the roadway at the intersection of Wildflower Rd. Vehicle 1 drove approximately 19 feet off of the right side of the roadway impacting an embankment and came to final rest 85 feet south of Wildflower Rd on the southwest side of the intersection facing south.
2022-06-19	2	VOLLMER RD	LOCHWINNOCH LN	VEHICLE 1 WAS NORTHBOUND ON VOLLMER ROAD. VEHICLE 2 WAS NORTHBOUND ON VOLLMER ROAD, IN FRONT OF VEHICLE 1. VEHICLE 2 BEGAN TO SLOW TO MAKE A LEFT TURN ONTO LOCHWINNOCH ROAD. VEHICLE 1 ATTEMPTED TO PASS VEHICLE 2 ON THE LEFT SIDE IN A MARKED NO PASSING ZONE. VEHICLE 2 BEGAN TO MAKE THE LEFT TURN WHERE VEHICLE 2 WAS STRUCK IN THE FRONT DRIVERS SIDE, BY THE FRONT PASSENGER SIDE OF VEHICLE 1. THE COLLISION OCCURRED WITHIN THE SOUTHBOUND LANE OF VOLLMER ROAD. VEHICLE 1 THEN ROTATED 1/2 TIME CLOCKWISE ACROSS THE NORTHBOUND LANE. VEHICLE 1 THEN DROVE OFF THE NORTHBOUND SIDE OF THE ROAD AND OVERTURNED 1/2 TIME, COMING TO FINAL REST ON ITS ROOF FACING SOUTH. VEHICLE 2 CAME TO A CONTROLLED FINAL REST ON LOCHWINNOCH LN.
2022-07-03	1	VOLLMER RD	POCO RD	Motorcycle was traveling on Vollmer Rd headed northbound. Motorcycle traveled off the right side of the road. Motorcycle lost control and rolled multiple times, the rider was ejected. Motorcycle came to rest on the left side. Rider came to rest on his back.

Sketch Plan Amendment

TRANSPORTATION
CONSULTANTS, INC.

STERLING RANCH SKETCH PLAN AMENDMENT

LAND USE LEGEND:

	44 AC. RESIDENTIAL: 0.2 DU/AC,	9 D.U.
	33 AC. RESIDENTIAL: 0.4 DU/AC,	13 D.U.
	35 AC. RESIDENTIAL: 1 DU/AC,	35 D.U.
	163 AC. RESIDENTIAL: 2 DU/AC,	326 D.U.
	790 AC. RESIDENTIAL: 3-5 DU/AC,	3,642 D.U.
	86 AC. RESIDENTIAL: 5-8 DU/AC,	600 D.U.
	47 AC. MIXED USE 8-25 DU/AC *	600 D.U.
	57 AC. ELEMENTARY / K-8 SCHOOL	
	18 AC. NEIGHBORHOOD PARK	
	25 AC. COMMUNITY PARK	
	62 AC. OPEN SPACE / PARK / GREENWAY	
	43 AC. OPEN SPACE / BUFFER	
	9 AC. UTILITY PARCEL	
	5 AC. INDUSTRIAL	

TOTAL: 1,444 AC. TOTAL: 4,800 D.U. Max

* COMMERCIAL/ MULTIFAMILY UP TO 25 DU/AC

LEGAL DESCRIPTION:

THE WEST HALF OF THE WEST HALF OF THE EAST HALF AND EAST HALF OF THE WEST HALF AND THE SOUTHWEST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 27; THE EAST HALF OF THE SOUTHEAST QUARTER AND THAT PORTION OF THE SOUTHWEST QUARTER OF THE SOUTHEAST QUARTER LYING SOUTH AND EAST OF THE COUNTY ROAD KNOWN AS VOLLMER ROAD, OF SECTION 28; THE WEST HALF OF THE EAST HALF AND THE WEST HALF OF SECTION 34; THE EAST HALF AND THE EAST HALF OF THE SOUTHWEST QUARTER AND THE SOUTHWEST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 33, AND ALL THAT PART OF THE NORTHWEST QUARTER OF SECTION 33 LYING SOUTH AND EAST OF THE COUNTY ROAD KNOWN AS VOLLMER ROAD, EXCEPT THAT PORTION OF THE SOUTHWEST QUARTER OF THE NORTHWEST QUARTER OF SAID SECTION 33 LYING SOUTH AND EAST OF SAID COUNTY ROAD AS DEEDED TO COLORADO INTERSTATE GAS COMPANY BY WARRANTY DEED RECORDED IN BOOK 1173 AT PAGE 359; AND THAT PORTION OF THE NORTHEAST QUARTER OF THE SOUTHEAST QUARTER AND THE SOUTHEAST QUARTER OF THE SOUTHEAST QUARTER LYING SOUTHEAST OF THE COUNTY ROAD KNOWN AS VOLLMER ROAD, OF SECTION 32, EXCEPT THAT PORTION OF THE NORTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SAID SECTION 32 DEEDED TO J. MARCUS BROWN BY TRUSTEES' DEED RECORDED IN BOOK 3292 AT PAGE 168; ALL IN TOWNSHIP 12 SOUTH, RANGE 65 WEST OF THE 6TH P.M., EL PASO COUNTY, COLORADO. ALL THAT PORTION OF THE NORTHWEST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 28, TOWNSHIP 12 SOUTH, RANGE 65 WEST OF THE 6TH P.M., EL PASO COUNTY, COLORADO LYING SOUTH AND EAST OF THE COUNTY ROAD (VOLLMER ROAD), ALSO: THE NORTHWEST QUARTER OF THE NORTHWEST QUARTER OF SECTION 4, TOWNSHIP 13 SOUTH, RANGE 65 WEST OF THE SIXTH PRINCIPAL MERIDIAN, LYING SOUTHERLY OF AN EXISTING EAST- WEST FENCE AS DESCRIBED IN SPECIAL WARRANTY DEED RECORDED DECEMBER 23, 2004 AT RECEPTION NO. 204209417, COUNTY OF EL PASO, STATE OF COLORADO, ALSO: THE SOUTHEAST QUARTER OF THE SOUTHWEST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 32, TOWNSHIP 12 SOUTH, RANGE 65 WEST OF THE 6TH P.M., LYING SOUTHEASTERLY OF THE PUBLIC ROAD KNOWN AS VOLLMER ROAD, EL PASO COUNTY, COLORADO, AND CONTAINING 1443.695 ACRES MORE OR LESS.

OWNERS:

SR LAND, LLC.
20 BOULDER CRESCENT STREET, SUITE 102
COLORADO SPRINGS, CO 80903-3300

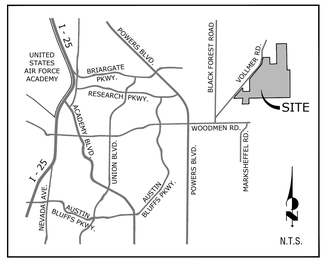
CLASSIC SRJ LAND, LLC
2138 FLYING HORSE CLUB DRIVE
COLORADO SPRINGS, CO 80921

CHALLENGER COMMUNITIES, LLC.
8605 EXPLORER DRIVE, SUITE 250
COLORADO SPRINGS, CO 80920-1013

SYMBOL LEGEND:

- ROAD
- FULL MOVEMENT ACCESS POINT
- 3/4 MOVEMENT
- RI/RO
- 100-YEAR FLOODPLAIN
- TRAIL
- BUFFER / OS TRAIL CORRIDOR / EASEMENT
- NEIGHBORHOOD PARK
- X,XXX' ACCESS SPACING (FEET)

VICINITY MAP:



Overall Development Dwelling Unit Table

	Homestead Fil 1 SF 04-029	Banding Iron Fil 1 SF-06-017	Homestead Fil 2 SF 19-004	Banding Iron Fil 2 SF-19-018	Sterling Ranch Fil 2 SF-20-015	Total Entitled Units	Remaining Developable Units	Maximum Dwelling Units
Dwelling Units	72	51	104	75	49	351	4449	4800

ROAD CLASSIFICATION TABLE

Roadway	Existing	2040 MTCP	2060 MTCP/CPP	Sterling Ranch Proposed
Vollmer Road	2 lane Collector - 60'	4 lane Minor - 100'	4 lane Minor - 100'	4 lane Minor - 100'
Briargate Parkway		4 lane Principal - 130'	4 lane Principal - 130'	4 lane Principal - 130'
Banning Lewis Ranch Parkway		4 lane Principal - 130'	4 lane Principal - 130'	4 lane Principal - 130'
Marksheffel Road	2 lane Principal	4 lane Principal - 130'	4 lane Principal - 130'	TBD *

* A deviation is approved for Marksheffel Road to be built to the City of Colorado Springs standards.

Land Planning
Landscape Architecture
Urban Design

NES

N.E.S. Inc.
619 N. Cascade Avenue, Suite 200
Colorado Springs, CO 80903

Tel. 719.471.0073
Fax 719.471.0267

www.nescolorado.com

STERLING RANCH

SKETCH PLAN AMENDMENT

MORLEY-BENTLEY INVESTMENTS, LLC.

DATE: OCTOBER 29, 2007
PROJECT MGR: J.MAYNARD/J.ROMERO
PREPARED BY: J.KURNEL/M.SWIFT

AMENDMENT

DATE:	BY:	DESCRIPTION:
05.22.2009	JLK	APPROVED SKETCH PLAN PER COUNTY - NOV. 2008
12.05.2018	BI	APPROVED SKETCH PLAN AMENDMENT- DEC. 2018
07.01.2022	BI	SKETCH PLAN AMEND 2022
08.30.2022	AL	SKETCH PLAN AMEND 2022
12.22.2022	JS	SKETCH PLAN AMEND 2022

SHEET NUMBER: 1 OF 1

DRAWING #: SKP 22-004

This sketch plan amendment (minor) for (Sterling Ranch) was approved for filing by the El Paso County, Colorado Planning and Community Development Department Director on the ____ day of _____, 20__, subject to any notes or conditions specified hereon. All previous Conditions of Approval and Notations apply.

_____
Planning and Community Development Director

NORTH

0 250' 500' 1000' 1500'

SCALE: 1"=500'

P:\Morley\Sterling Ranch Sketch Plan\Sketch Plan Amendment 2022\Drawings\Planning\MP\SR SKP AMEND 22.dwg [SKP] 12/22/2022 4:40:19 PM Jennifer Shagin