(719) 633-2868

FAX (719) 633-5430
E-mail: Isc@lsctrans.com
Website: http://www.Isctrans.com

# Retreat at TimberRidge Filing No. 3 <br> Traffic Technical Memorandum <br> SF2241 <br> (LSC \#S224350) <br> September 28, 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.


## Developer's Statement

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


# Retreat at TimberRidge Filing No. 3 Traffic Technical Memorandum 

Prepared for:
Loren J. Moreland
Vice President / Project Manager
Classic Homes
6385 Corporate Drive, Suite 200

SEPTERMBER 28, 2023

LSC Transportation Consultants
Prepared by: Kirstin D. Ferrin, P.E.
Reviewed by: Jeffrey C. Hodsdon, P.E.
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LSC TRANSPORTATION CONSULTANTS, INC.
2504 East Pikes Peak Avenue, Suite 304
Colorado Springs, CO 80909
(719) 633-2868

FAX (719) 633-5430
E-mail: Isc@lsctrans.com
Website: http://www.Isctrans.com

September 28, 2023

Loren J. Moreland
Vice President / Project Manager
Classic Homes
6385 Corporate Drive, Suite 200
Colorado Springs, CO

RE: Retreat at TimberRidge Filing No. 3
El Paso County, CO
Traffic Technical Memorandum
LSC \#S224350

Dear Mr. Moreland:

LSC Transportation Consultants, Inc. has prepared this traffic technical memorandum for the Retreat at TimberRidge Filing No. 3. As shown in Figure 1, The Retreat at TimberRidge is located generally east of Vollmer Road and south of Arroya Lane in El Paso County, Colorado. LSC prepared a traffic impact study (TIS) for the entire Retreat at TimberRidge PUD development plan dated January 25, 2018 and a transportation memorandum that addressed phasing of that development dated April 5, 2018. LSC also completed a traffic technical memorandum for Filing No. 1 dated April 3, 2020 and for Filing No. 2 dated October 4, 2021. The lot and street plan has not changed since completion of those reports. This memorandum is intended as a site-specific, final-plat traffic report for the currently-proposed Filing No. 3.

## REPORT CONTENTS

This report presents:

- A description of Retreat at TimberRidge filings that are approved and under construction, currently proposed, and planned for the future;
- The current status of other subdivisions shown on the approved PUD 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 (2022) traffic-volume data;
- Projections of short-term and long-term background traffic volumes at the intersections of Vollmer Road/Poco Road and Vollmer Road/Arroya Lane;
- The projected average weekday and peak-hour vehicle trips to be generated by the Retreat at TimberRidge Filing No. 3;
- The assignment of the Filing No. 3 projected trips to the intersections of Vollmer Road/Poco Road and Vollmer Road/Arroya Lane;
- The projected short-term and long-term level of service at the intersections of Vollmer Road/Poco Road and Vollmer Road/Arroya Lane;
- The recommended street classifications for the internal streets within the currently-proposed Retreat at TimberRidge Filing No. 3;
- Improvements needed with Retreat at TimberRidge Filing No. 3; and
- The project's obligation to the County roadway improvement fee program.


## LAND USE AND ACCESS

The Retreat at TimberRidge Preliminary Plan area includes the 203 lots for single-family homes located east of Vollmer Road and two lots for single-family homes located west of Vollmer Road and south of Arroya Lane. Figure 2 shows the location of the approved Retreat at TimberRidge Filing Nos. 1 and 2, the approved Timber Ridge West the currently proposed Retreat at TimberRidge Filing No. 3, and future filings. The April 2018 transportation memorandum included analysis of the preliminary plan by phase. Figure 1 from that report shows the phasing plan. No changes have been made to the PUD plan since completion of that memorandum. The current status of subdivisions is discussed below.

## Current Status of Other Subdivisions Shown on the Approved PUD Plan

The Retreat at TimberRidge Filing No. 1 is approved and currently under construction. Filing 1 includes 70 lots for single-family homes. The location of the lots within this filing includes 11 of the 13 lots assumed in the Preliminary Plan Phase 2 plan and the 59 lots assumed in Preliminary Plan Phase 3 plan in the April 2018 transportation memorandum. Poco Road has been constructed east of Vollmer Road to provide access for Filing 1. The proposed easternmost north/south street segment connecting to Arroya Lane has been constructed as a gravel road to provide an interim secondary emergency access. No improvements are planned to Arroya Lane as part of the approved Retreat at TimberRidge Filing No. 1.

The Retreat at TimberRidge Filing No. 2 is approved and currently under construction. This filing includes 90 lots for single-family homes. The location of the lots within this filing includes 6 of the 33 lots assumed in the Preliminary Plan Phase 4, 12 of the 15 lots assumed in the Preliminary Plan Phase 5, and 72 of the 75 lots assumed in the Preliminary Plan Phase 6. No changes are proposed to the Filing 1 access plan with Filing 2.

The TimberRidge Estates Filing No. 1 (different from "Retreat at TimberRidge" Filing No. 1) was under review by El Paso County. However, it has now been withdrawn. This filing planned 10 lots for single-family homes located east of Vollmer Road and north of Arroya Lane with access to Arroya Lane only. These 10 lots remain part of the approved PUD plan and are shown as part of

Phase 1 of the Preliminary Plan. With the withdrawal of the subdivision plat, although part of Phase 1 of the Preliminary Plan, there is now no current plan to develop these lots in the short term.

Figure 2 shows the location of the Timber Ridge West filing on the west side of Vollmer Road. The April 2018 transportation memorandum assumed this area would be developed with nine lots for single-family homes with access to Vollmer Road aligning with Arroya Lane as part of a future preliminary plan. The approved Timber Ridge West filing includes 3 lots. Access for Lots 1 and 2 was approved at a shared location south of Arroya Lane and an existing home on Lot 3 has access to Vollmer Road north of Arroya Lane.

## Currently-Proposed Filing No. 3

The Retreat at TimberRidge Filing No. 3 is currently proposed to include 33 lots for single-family homes. The location of the lots within this filing includes 27 of the 33 lots assumed in the Preliminary Plan Phase 4, 3 of the 15 lots assumed in the Preliminary Plan Phase 5, and 3 of the 75 lots assumed in the Preliminary Plan Phase 6.

Arroya Lane is planned to be improved to a Rural Collector cross section as part of the currentlyproposed Filing No. 3. The intersection of Vollmer/Arroya is planned to be realigned so that Arroya intersects Vollmer at a right angle. The planned improvements at this intersection also include widening the shoulder on the east side of Vollmer Road approaching Arroya Lane. The easternmost north/south street segments connecting to Arroya Lane that were constructed as gravel roads to provide an interim secondary emergency access for Filing Nos. 1 and 2 will be paved and improved to their final cross sections as part of the currently-proposed Filing No. 3. Aspen Valley Road will also be extended north to Arroya Lane as part of this filing. Figure 2 shows the proposed intersection spacing to Arroya Lane.

## Sight Distance Analysis

Figure 3 shows a sight-distance analysis at the realigned intersection of Vollmer/Arroya. Based on a design speed of 60 miles per hour ( mph ) and the criteria contained in Table 2-21 of the El Paso County Engineering Criteria Manual (ECM), the required intersection sight distance at this intersection is calculated to be 665 feet. Based on the criteria contained in Table 2-17 of the ECM, the required stopping sight distance approaching this intersection is 570 feet. As shown in Figure 3 , the future intersection analyzed will meet the criteria.

Figure 4 shows a sight-distance analysis at the proposed access points to Arroya Lane. Based on a design speed of 40 mph and the criteria contained in Table 2-21 of the ECM, the required intersection sight distance at the future intersections is 445 feet. Based on the criteria contained in Table 2-17 of the ECM, the required stopping sight distance approaching these intersections is 305 feet. As shown in Figure 4, the future intersections analyzed will meet the criteria.

## Pedestrian and Bicycle Access

There are no existing schools within two miles of the site. However, there are planned future school sites within the Sterling Ranch Master Plan area south of Briargate Parkway. There are planned sidewalks on Vollmer Road south of Poco Road and Briargate Parkway. Pedestrian crossings will be needed on the east side of the intersection of Briargate Parkway/Vollmer Road.

## 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 each of 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 $40-\mathrm{mph}$ posted speed limit. The 2040 EI Paso County MTCP and the Sterling Ranch master traffic study show Vollmer Road as a four-lane Urban Minor Arterial adjacent to the site. Vollmer Road is planned to transition to a 2-lane Rural Minor Arterial north of Poco Road. Vollmer Road is planned to be improved to a four-lane Urban Minor Arterial Cross section between Sam Bass Drive and Poco Road by May 2024.

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 between Woodmen Road and Vollmer Road 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 Interstate 25 (I-25) to Grand Lawn Circle (about one-half mile east of Powers Boulevard). Briargate Parkway/Stapleton Road is planned ultimately to extend to Towner Drive. The section of Briargate Parkway between

Vollmer Road and the first Sterling Ranch access (Wheatland Drive) is planned to be constructed to its full section by the end of 2023 and the section from Wheatland Drive to Sterling Ranch Road is planned to be constructed to its full cross section by spring 2024.

Poco Road is an existing gravel road which extends east for about three quarters of a mile from Lochwinnoch Lane to Vollmer Road. Poco Road has recently been constructed east of Vollmer Road as an Urban Local Road to serve the Retreat at TimberRidge Filing No. 1 (PCD-SF-19-009). Poco Road and Arroya Lane provide two points of access to the Retreat at TimberRidge development.

## Existing Traffic Volumes

Figure 5 shows the existing (2022) peak-hour traffic volumes at the intersections of Poco/Vollmer and Arroya/Vollmer. The traffic volumes were based on traffic counts conducted by LSC in May and June 2022. At the time the traffic counts were conducted, only a few homes within the Retreat at TimberRidge were occupied. However, heavy construction activity was observed on the east leg of this intersection. The traffic count sheets are attached.

## LEVEL OF SERVICE ANALYSIS

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

Table 1: Intersection Levels of Service Delay Ranges

| Level of Service | Signalized Intersections | Unsignalized Intersections |
| :---: | :---: | :---: |
|  | Average Control Delay <br> (seconds per vehicle) | Average Control Delay <br> (seconds per vehicle) ${ }^{(1)}$ |
| A | 10.0 sec or less | 10.0 sec or less |
| B | $10.1-20.0 \mathrm{sec}$ | $10.1-15.0 \mathrm{sec}$ |
| C | $20.1-35.0 \mathrm{sec}$ | $15.1-25.0 \mathrm{sec}$ |
| D | $35.1-55.0 \mathrm{sec}$ | $25.1-35.0 \mathrm{sec}$ |
| E | $55.1-80.0 \mathrm{sec}$ | $35.1-50.0 \mathrm{sec}$ |
| F | 80.1 sec or more | 50.1 sec or more |

(1) For unsignalized intersections, if $\mathrm{V} / \mathrm{C}$ ratio is greater than 1.0 the level of service is LOS F , regardless of the projected average control delay per vehicle.

The intersections of Poco/Vollmer and Arroya/Vollmer have been analyzed to determine the existing intersection levels of service. The analysis was based on the unsignalized-intersection analysis procedures from the Highway Capacity Manual, 6th Edition. Figure 5 shows the level of service analysis results. The level of service reports are attached.

All movements at the intersections of Poco/Vollmer and Arroya/Vollmer are currently operating at LOS B or better during the peak hours.

## BACKGROUND (BASELINE) CONDITIONS

Background 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. Background traffic includes the through traffic and the traffic generated by nearby developments but assumes zero traffic generated by Retreat at TimberRidge Filing No. 3.

Figure 6 shows the projected short-term background traffic volumes at the key area intersections. The short-term background traffic includes the existing traffic volumes (from Figure 5 with the traffic on the east leg of the intersection of Vollmer/Poco removed as most of it was observed to be construction related), plus increases in through traffic due to regional growth, plus traffic estimated to be generated by buildout of the Homestead at Sterling Ranch Filing 2, Branding Iron at Sterling Ranch Filing 2, Sterling Ranch Filing No. 2, Sterling Ranch Phase 2, Homestead North Filings 1 through 3 located southeast of the intersection of Vollmer/Poco, and the Retreat at TimberRidge Filing Nos. 1 and 2. The short-term background volumes assume Aspen Valley Road and Hawks Hill Court have been constructed north to Arroya Lane.

Figure 7 shows the projected 2043 background traffic volumes at the key area intersections. 2043 background traffic-volume estimates were based on 2040 volume projections in the EI Paso County MTCP and previous work completed in the area by LSC. The 2043 background traffic volumes assume buildout of the land uses and street network within the Sterling Ranch Master Plan area, the Jaynes development located west of Vollmer Road, and future phases of the Retreat at TimberRidge.

## TRIP GENERATION

The Retreat at TimberRidge Filing No. 3 site-generated vehicle trips have been estimated using the nationally published trip-generation rates from Trip Generation, 11th Edition, 2021 by the Institute of Transportation Engineers (ITE). Table 2 (attached) shows the trip-generation estimates for Filing No. 3. Table 2 also shows estimates of the traffic expected to be generated by the approved Retreat at TimberRidge Filing Nos. 1 and 2 and by future Retreat at TimberRidge filings. The total trips generated by the Retreat at TimberRidge at buildout is consistent with the estimate shown in Table 1 of The Retreat at TimberRidge Preliminary Plan Transportation Memorandum dated April 5, 2018.

The Retreat at TimberRidge Filing No. 3 is expected to generate 311 vehicle trips on the average weekday, with about half entering and half exiting the site during a 24 -hour period. During the morning peak hour, which generally occurs for one hour between 6:30 and 8:30 a.m., about 6 vehicles would enter and 17 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 20 vehicles would enter and 11 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 specific short-term and long-term distribution estimates are shown in Figure 8. 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, the land uses proposed for the site, and the distribution of existing traffic volumes. The short-term distribution estimate assumes only the short section of Briargate Parkway between Vollmer Road and Wheatland Drive has been constructed in the vicinity of the site and the long-term distribution estimate assumes full buildout of the future roadway network in the vicinity of the site.

When the distribution percentages (from Figure 8) are applied to the trip-generation estimates (from Table 2), the resulting site-generated traffic volumes can be determined. Figures 9 and 10 show the short-term and long-term site-generated traffic-volume estimates for the Retreat at TimberRidge Filing 3, respectively.

## TOTAL TRAFFIC

Figure 11 shows the projected short-term total traffic volumes at the intersections of Vollmer Road/Poco Road and Vollmer Road/Arroya Lane. The short-term total traffic volumes are the sum of the short-term site-generated traffic volumes (from Figure 9) plus the short-term background traffic volumes (from Figure 6).

Figure 12 shows the projected 2043 total traffic volumes at the intersection of Vollmer Road/Poco Road. The 2043 total traffic volumes are the sum of the long-term site-generated traffic volumes (from Figure 10) plus the 2043 background traffic volumes (from Figure 7).

## LEVEL OF SERVICE

The intersections of Vollmer Road/Poco Road and Vollmer Road/Arroya Lane were analyzed using the unsignalized method of analysis procedures outlined in the Highway Capacity Manual, $6^{\text {th }}$ Edition by the Transportation Research Board. The results of the analysis are shown in Figures 6, 7, 11, and 12.

All movements at the stop-sign-controlled intersections of Vollmer Road/Poco Road and Vollmer Road/Arroya Lane are projected to operate at an acceptable level of service (LOS D or better) during the peak hours through 2043.

## SUBDIVISION STREET CLASSIFICATIONS

Figure 13 shows the recommended street classifications for the internal streets within the Retreat at TimberRidge plan.

## ROADWAY IMPROVEMENTS

The April 2018 memorandum contained a summary of needed improvements for the entire TimberRidge PUD plan by phase. Table 3 is an updated version of that table based on the information from traffic studies recently completed in the area, including the Sterling Ranch Sketch Plan Amendment Master Traffic Impact Study, dated March 17, 2023 (PCD File Number SKP-22-004). The approved Retreat at TimberRidge Filing Nos. 1 and 2, and the currentlyproposed Retreat at TimberRidge Filing No. 3 include 193 of the 195 lots identified in that memorandum as Phases 2 through 6. TimberRidge Filing Nos 1 through 3 do not include the two lots located west of Vollmer Road (now included as part of the approved West Timber Ridge), nor the 10 lots shown as Preliminary Plan Phase 1.

The improvements specially needed with the Retreat at Timber Ridge Filing No. 3 have been repeated below.

- Update Arroya Lane to a Rural Collector cross section. Arroya Lane could potentially need to be upgraded to an Urban cross section with curb and gutters if significant changes are made to the Sterling Ranch Sketch Plan located east of the Retreat at TimberRidge. The currently approved Sterling Ranch Master TIS assumes five-acre lots on the parcel adjacent to Arroya Lane. The previously approved Master TIS assumed Sterling Ranch Road would be constructed between Marksheffel Road and Arroya Lane. Sterling Ranch Road is now planned to terminate north of Briargate Parkway within the Sterling Ranch Sketch Plan area. A circuitous connection to Arroya Lane will be provided via a local street network. Arroya Lane will likely only need to be upgraded to an Urban standard if the density for the Sterling Ranch parcels adjacent to Arroya Lane are significantly increased or if Sterling Ranch Road is constructed to provide a direct connection to Arroya Lane.
- Realign Arroya Lane at the intersection of Vollmer Road so Arroya intersects Vollmer at a right angle and improve the shoulders on the east side of Vollmer Road approaching the intersection per the attached Retreat at TimberRidge Filing No. 3 Construction Plans.
- Based on the criteria contained in the El Paso County Engineering Criteria Manual (ECM) and the projected 2043 total traffic volumes shown in Figure 12, a southbound left-turn lane is not projected to be required on Vollmer Road approaching Arroya Lane.


## ROADWAY IMPROVEMENT FEE PROGRAM

This project will be required to participate in the El Paso County Road Improvement Fee Program. The Retreat at TimberRidge Filing No. 3 will join the ten-mil PID. The 2019 ten-mil PID building permit fee portion associated with this option is $\$ 1,221$ per single-family dwelling unit. Based on 33 lots, the total building permit fee would be $\$ 40,293$.

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

Respectfully Submitted,

LSC TRANSPORTATION CONSULTANTS, INC.

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

JCH/KDF:jas

## Enclosures: Tables 2-3

Figures 1-13
Traffic Count Reports
Level of Service Reports
MTCP Maps
Retreat at TimberRidge Filing No. 3 Construction Plans

Tables


| Table 3 <br> Roadway Improvements Retreat at TimberRidge Filing No. 3 Preliminary Plan |  |  |
| :---: | :---: | :---: |
| Improvement | Timing | Responsibility ${ }^{(1)}$ |
| Upgrade Arroya Lane to a Rural Collector cross section | With the Retreat at TimberRidge Filing No. 3 | The Retreat at TimberRidge |
| Realign Arroya Lane at the intersection of Vollmer Road/Arroya Lane so Arroya intersects Vollmer at a right angle | With the Retreat at TimberRidge Filing N. 3 | The Retreat at Timber Ridge |
| Extend Poco Road to the east including the creek crossing | This improvement has been completed |  |
| Construct a gravel road to provide secondary emergency access to Arroya Lane | This improvement has been completed |  |
| Replace the secondary emergency access gravel road with subdivision streets | With the Retreat at TimberRidge Filing No. 3 | The Retreat at TimberRidge |
| Construct a northbound right-turn deceleration lane on Vollmer Road approaching Poco Road. | This improvement has been completed |  |
| Potential improvement: Southbound left-turn lane on Vollmer Road at Arroya Lane | Evaluation with final plats. [Not antitipated to be needed with the currently proposed Filing No. 3] Although the long term anticipated traffic counts do not warrant it, the County Engineer may require a southbound left-turn lane at Arroyo based on unanticipated traffic patterns [from Staff Comments]. | The Retreat at Timber Ridge and/or possible-but-not-currently-anticipated-future development with access via Arroya Lane |
| Improve the shoulders on the east side of Vollmer Road approaching Arroya Lane per the attached Retreat at TimberRidge Filing No. 3 Construction Plans. | With the Retreat at TimberRidge Filing No. 3 | The Retreat at TimberRidge |
| As shown on the County MTCP: Vollmer Road upgrade between Poco Road and Shoup Road to a county-standard, two-lane Rural Minor Arterial. | Traffic volume estimates indicate this improvement will not be needed in the short term horizon. The 2040 MTCP indicates the Vollmer project will be needed by 2040. The 2040 MTCP shows the Vollmer upgrade "project" as Project ID U-12. | The Retreat at Timber Ridge will dedicate right-of-way to accommodate the future upgrade to Rural Minor Arterial standards (As shown in the MTCP and the Fee Study); The applicant will be required to participate in the County Road Impact Fee program. |
| Upgrade Vollmer Road between future Stapleton Drive and Poco Road to an Urban Minor Arterial cross section (five lanes) | This improvement is planned to be completed by May 2024 |  |
| Upgrade Vollmer Road generally between the south boundary of Sterling Ranch and future Briargate Parkway to an Urban Minor Arterial cross section (five lanes) | $\begin{gathered} \text { Designed } \\ \text { MTCP Project ID C-13 } \end{gathered}$ | Stering Ranch Metro District |
| Upgrade Vollmer Road generally between Cowpoke Road and the south boundary of Sterling Ranch to an Urban Minor Arterial cross section (five lanes) | Designed MTCP Project ID C-13 | Woodmen Heights Metro District |
| Construct section of Briargate Parkway between Vollmer Road and the first Sterling Ranch access point (Wheatland Drive) | This improvement is planned to be completed by the end of 2023 |  |
| Construct a northbound right-turn deceleration lane on Vollmer Road approaching Briargate Parkway | This improvement is planned to be completed by May 2024 |  |
| Construct Briargate Parkway (four-lane Principal Arterial) between Black Forest Road and Vollmer Road. | Future - TBD <br> TBD with PPRTA ${ }^{(2)}$ Corridor Study | TBD with PPRTA ${ }^{(2)}$ Corridor Study MTCP Project N-5 |
| Construct Stapleton Drive between Vollmer Road and Towner | Future <br> TBD with PPRTA ${ }^{(2)}$ Corridor Study | TBD with PPRTA ${ }^{(2)}$ Corridor Study MTCP Project N-5 |
| Southbound left-turn lanes on Vollmer Road approaching Burgess Road ${ }^{(3)}$ | Existing Deficiency | Existing Deficiency - Others (This development will not add volume to this turning movement.) |
| Northbound left-turn lane at Burgess/Vollmer ${ }^{(3)}$ | Projections indicate after 2020 but prior to 2040 the turning volume threshold warranting the turn lane ( 25 northbound left turns per hour) would be exceeded. | Based on the PUD plan (which the existing Filings 1 and 2 and the currently proposed Filing No 3 are consistent with), the afternoon peak-hour traffic impact from the Retreat at TimberRidge PUD on the northbound approach to this intersection is projected to be below 10 percent. The site volume on the roadway link (both directions of travel) south of the intersection is more than 10 percent, however the turn lane thresholds are shown to be exceeded on the northbound approach during the afternoon peak hour when the impact of this project is below 10 percent on this approach. This project will be participating in the Fee Progam and the MTCP Project ID is U-12. |
| Northbound right-turn lane at Burgess/Nolimer ${ }^{(3)}$ | Projections indicate by 2020 the turning volume threshold warranting the turn lane ( 50 northbound right turns per hour) would be exceeded. | Based on the PUD plan (which the existing Filings 1 and 2 and the currently proposed Filing No 3 are consistent with), the afternoon peak-hour traffic impact from this project on the northbound approach to this intersection is projected to be below 10 percent. The site volume on the roadway link (both directions of travel) south of the intersection is more than 10 percent, however the turn lane thresholds are shown to be exceeded on the northbound approach during the afternoon peak hour when the impact of this project is below 10 percent on this approach. This project will be participating in the Fee Progam and the <br> MTCP Project ID is U-12. |
| Future trafic signal at Briargate/Vollmer ${ }^{(3)}$ | Once warrants are met; analysis to be included with final plat traffic reports; projections indicate by 2043 the intersection would be signalized. | Escrow a fair-share amount toward the cost the signal (to be determined with final plats). Once the signal is constructed, a portion of the escrow amount used to fund the installation of the signal may have become creditable under the Fee Program (if this signal is added to the fee program list of signals eligible for credit (County signals not currently programmed in Fee Program). |
| Notes: <br> (1) Preliminary concept of responsibility; the actual construction responsibility would be determined through subdivision applications and cost recovery if applicable agreements. <br> (2) PPRTA = Pikes Peak Rural Transportation Authority. <br> (3) This improvement will not be needed if the intersectin of Burgess/Vollmer is reconstructed as a modern roundbout as shown in the Sterling Ranch Sketch Plan Amendment Master Traffic Impact Study dated March 17, 2023 (SKP224) |  |  |
| Source: LSC Transporataion Consultants, hnc. |  | [ |

Figures





```
LEGEND:
    L= ECM Required Intersection Sight Distance (445' based on
KKK== ECM Required Stopping Sight Distance (305' based on a
```


## Arroya Ln












## Traffic Counts

# LSC Transportation Consultants, Inc. <br> 2504 E. Pikes Peak Ave, Suite 304 <br> Colorado Springs, CO 80909 <br> 719-633-2868 

File Name : Vollmer rd - Poco rd Am
Site Code : S224250
Start Date: 5/11/2022
Page No : 1

Groups Printed- Unshifted

|  | Vollmer Rd Southbound |  |  |  |  | Poco Rd Westbound |  |  |  |  | Vollmer Rd Northbound |  |  |  |  | Poco Rd Eastbound |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Toal | Right | Thru | Left | Peds | App. Toal | Right | Thru | Left | Peds | App. Toal | Int. Total |
| 06:30 | 0 | 38 | 0 | 0 | 38 | 0 | 0 | 1 | 0 | 1 | 6 | 20 | 0 | 0 | 26 | 1 | 0 | 1 | 0 | 2 | 67 |
| 06:45 | 0 | 34 | 0 | 0 | 34 | 0 | 0 | 0 | 0 | 0 | 12 | 16 | 0 | 0 | 28 | 0 | 0 | 0 | 0 | 0 | 62 |
| Total | 0 | 72 | 0 | 0 | 72 | 0 | 0 | 1 | 0 | 1 | 18 | 36 | 0 | 0 | 54 | 1 | 0 | 1 | 0 | 2 | 129 |
| 07:00 | 1 | 28 | 1 | 0 | 30 | 0 | 0 | 2 | 0 | 2 | 8 | 15 | 0 | 0 | 23 | 0 | 0 | 1 | 0 | 1 | 56 |
| 07:15 | 0 | 38 | 0 | 0 | 38 | 0 | 0 | 3 | 0 | 3 | 2 | 24 | 3 | 0 | 29 | 0 | 1 | 1 | 0 | 2 | 72 |
| 07:30 | 2 | 64 | 1 | 0 | 67 | 3 | 0 | 3 | 0 | 6 | 8 | 19 | 0 | 0 | 27 | 3 | 0 | 0 | 0 | 3 | 103 |
| 07:45 | 0 | 41 | 2 | 0 | 43 | 0 | 0 | 2 | 0 | 2 | 13 | 39 | 0 | 0 | 52 | 0 | 0 | 0 | 0 | 0 | 97 |
| Total | 3 | 171 | 4 | 0 | 178 | 3 | 0 | 10 | 0 | 13 | 31 | 97 | 3 | 0 | 131 | 3 | 1 | 2 | 0 | 6 | 328 |
| 08:00 | 0 | 31 | 1 | 0 | 32 | 4 | 0 | 1 | 0 | 5 | 14 | 36 | 1 | 0 | 51 | 0 | 0 | 1 | 0 | 1 | 89 |
| 08:15 | 0 | 20 | 0 | 0 | 20 | 2 | 0 | 7 | 0 | 9 | 7 | 24 | 2 | 0 | 33 | 0 | 0 | 0 | 0 | 0 | 62 |
| Grand Total | 3 | 294 | 5 | 0 | 302 | 9 | 0 | 19 | 0 | 28 | 70 | 193 | 6 | 0 | 269 | 4 | 1 | 4 | 0 | 9 | 608 |
| Apprch \% | 1 | 97.4 | 1.7 | 0 |  | 32.1 | 0 | 67.9 | 0 |  | 26 | 71.7 | 2.2 | 0 |  | 44.4 |  | 44.4 | 0 |  |  |
| Total \% | 0.5 | 48.4 | 0.8 | 0 | 49.7 | 1.5 | 0 | 3.1 | 0 | 4.6 | 11.5 | 31.7 | 1 | 0 | 44.2 | 0.7 | 0.2 | 0.7 | 0 | 1.5 |  |

# LSC Transportation Consultants, Inc. 

2504 E. Pikes Peak Ave, Suite 304
Colorado Springs, CO 80909
719-633-2868
File Name : Vollmer rd - Poco rd Am
Site Code : S224250
Start Date : 5/11/2022
Page No : 2

|  | Vollmer Rd Southbound |  |  |  |  | Poco Rd Westbound |  |  |  |  | Vollmer Rd Northbound |  |  |  |  | Poco Rd Eastbound |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Start Time | Right | Thru | Left | Peds | App. Toal | Right | Thru | Left | Peds | App. Toal | Right | Thru | Left | Peds | App. Toal | Right | Thru | Left | Peds | App. Toal | 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 | 0 | 38 | 0 | 0 | 38 | 0 | 0 | 3 | 0 | 3 | 2 | 24 | 3 | 0 | 29 | 0 | 1 | 1 | 0 | 2 | 72 |
| 7:30:00 AM | 2 | 64 | 1 | 0 | 67 | 3 | 0 | 3 | 0 | 6 | 8 | 19 | 0 | 0 | 27 | 3 | 0 | 0 | 0 | 3 | 103 |
| 7:45:00 AM | 0 | 41 | 2 | 0 | 43 | 0 | 0 | 2 | 0 | 2 | 13 | 39 | 0 | 0 | 52 | 0 | 0 | 0 | 0 | 0 | 97 |
| 8:00:00 AM | 0 | 31 | 1 | 0 | 32 | 4 | 0 | 1 | 0 | 5 | 14 | 36 | 1 | 0 | 51 | 0 | 0 | 1 | 0 | 1 | 89 |
| Total Volume | 2 | 174 | 4 | 0 | 180 | 7 | 0 | 9 | 0 | 16 | 37 | 118 | 4 | 0 | 159 | 3 | 1 | 2 | 0 | 6 | 361 |
| \% App. Total | 1.1 | 96.7 | 2.2 | 0 |  | 43.8 | 0 | 56.2 | 0 |  | 23.3 | 74.2 | 2.5 | 0 |  | 50 | 16.7 | 33.3 | 0 |  |  |
| PHF | . 250 | . 680 | . 500 | . 000 | . 672 | . 438 | . 000 | . 750 | . 000 | . 667 | . 661 | . 756 | . 333 | . 000 | 764 | . 250 | . 250 | . 500 | . 000 | . 500 | 876 |



# LSC Transportation Consultants, Inc. <br> 2504 E. Pikes Peak Ave, Suite 304 <br> Colorado Springs, CO 80909 <br> 719-633-2868 

File Name : Vollmer Rd - Poco Rd PM Construction
Site Code : S224250
Start Date : 5/11/2022
Page No : 1

Groups Printed- Unshifted

|  | Poco Rd Southbound |  |  |  |  | Vollmer Rd Westbound |  |  |  |  | Poco Rd Northbound |  |  |  |  | Vollmer Rd Eastbound |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Toal | Right | Thru | Left | Peds | App. Toal | Right | Thru | Left | Peds | App. Toal | int. Total |
| 16:00 | 1 | 35 | 6 | 0 | 42 | 0 | 0 | 6 | 0 | 6 | , | 32 | 0 | 0 | 33 | 1 | 1 | 1 | 0 | 3 | 84 |
| 16:15 | 1 | 29 | 0 | 0 | 30 | 0 | 0 | 2 | 0 | 2 | 1 | 43 | 0 | 0 | 44 | 0 | 0 | 0 | 0 | 0 | 76 |
| 16:30 | 0 | 40 | 0 | 0 | 40 | 4 | 0 | 5 | 0 | 9 | 0 | 41 | 3 | 0 | 44 | 0 | 1 | 1 | 0 | 2 | 95 |
| 16:45 | 0 | 36 | 0 | 0 | 36 | 0 | 1 | 6 | 0 | 7 | 2 | 30 | 0 | 0 | 32 | 0 | 0 | 1 | 0 | 1 | 76 |
| Total | 2 | 140 | 6 | 0 | 148 | 4 | 1 | 19 | 0 | 24 | 4 | 146 | 3 | 0 | 153 | 1 | 2 | 3 | 0 | 6 | 331 |
| 17:00 | 0 | 33 | 1 | 0 | 34 | 0 | 0 | 1 | 0 | 1 | 1 | 45 | 0 | 0 | 46 | 0 | 0 | 0 | 0 | 0 | 81 |
| 17:15 | 1 | 31 | 0 | 0 | 32 | 0 | 0 | 3 | 0 | 3 | 2 | 39 | 2 | 0 | 43 | 2 | 0 | 1 | 0 | 3 | 81 |
| 17:30 | 0 | 37 | 0 | 0 | 37 | 0 | 0 | 6 | 0 | 6 | 2 | 37 | 0 | 0 | 39 | 1 | 0 | 0 | 0 | 1 | 83 |
| 17:45 | 0 | 34 | 0 | 0 | 34 | 0 | 0 | 1 | 0 | 1 | 1 | 35 | 1 | 0 | 37 | 0 | 0 | 0 | 0 | 0 | 72 |
| Total | 1 | 135 | 1 | 0 | 137 | 0 | 0 | 11 | 0 | 11 | 6 | 156 | 3 | 0 | 165 | 3 | 0 | 1 | 0 | 4 | 317 |
| Grand Total | 3 | 275 | 7 | 0 | 285 | 4 | 1 | 30 | 0 | 35 | 10 | 302 | 6 | 0 | 318 | 4 | 2 | 4 | 0 | 10 | 648 |
| Apprch \% | 1.1 | 96.5 | 2.5 | 0 |  | 11.4 | 2.9 | 85.7 | 0 |  | 3.1 | 95 | 1.9 | 0 |  | 40 | 20 | 40 | 0 |  |  |
| Total \% | 0.5 | 42.4 | 1.1 | 0 | 44 | 0.6 | 0.2 | 4.6 | 0 | 5.4 | 1.5 | 46.6 | 0.9 | 0 | 49.1 | 0.6 | 0.3 | 0.6 | 0 | 1.5 |  |

## LSC Transportation Consultants, Inc.

2504 E. Pikes Peak Ave, Suite 304
Colorado Springs, CO 80909
719-633-2868
File Name : Vollmer Rd - Poco Rd PM Construction
Site Code : S224250
Start Date : 5/11/2022
Page No : 3

|  | Poco Rd Southbound |  |  |  |  | Vollmer Rd Westbound |  |  |  |  | Poco Rd Northbound |  |  |  |  | Vollmer Rd Eastbound |  |  |  |  | Int. Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 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 |  |
| Peak Hour Analysis From 4:00:00 PM to 5:45:00 PM - Peak 1 of 1 Peak Hour for Each Approach Begins at: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 4:00:00 PM |  |  |  |  | 4:00:00 PM |  |  |  |  | 4:15:00 PM |  |  |  |  | 4:00:00 PM |  |  |  |  |  |
| +0 mins. | 1 | 35 | 6 | 0 | 42 | 0 | 0 | 6 | 0 | 6 | 1 | 43 | 0 | 0 | 44 | 1 | 1 | 1 | 0 | 3 |  |
| +5 mins. | 1 | 29 | 0 | 0 | 30 | 0 | 0 | 2 | 0 | 2 | 0 | 41 | 3 | 0 | 44 | 0 | 0 | 0 | 0 | 0 |  |
| +10 mins. | 0 | 40 | 0 | 0 | 40 | 4 | 0 | 5 | 0 | 9 | 2 | 30 | 0 | 0 | 32 | 0 | 1 | 1 | 0 | 2 |  |
| +15 mins. | 0 | 36 | 0 | 0 | 36 | 0 | 1 | 6 | 0 | 7 | 1 | 45 | 0 | 0 | 46 | 0 | 0 | 1 | 0 | 1 |  |
| Total Volume | 2 | 140 | 6 | 0 | 148 | 4 | 1 | 19 | 0 | 24 | 4 | 159 | 3 | 0 | 166 | 1 | 2 | 3 | 0 | 6 |  |
| \% App. Total | 1.4 | 94.6 | 4.1 | 0 |  | 16.7 | 4.2 | 79.2 | 0 |  | 2.4 | 95.8 | 1.8 | 0 |  | 16.7 | 33.3 | 50 | 0 |  |  |
| PHF | . 500 | . 875 | . 250 | . 000 | . 881 | . 250 | . 250 | . 792 | . 000 | . 667 | . 500 | . 883 | . 250 | . 000 | . 902 | . 250 | . 500 | . 750 | . 000 | . 500 |  |



# LSC Transportation Consultants, Inc. <br> 2504 E. Pikes Peak Ave, Suite 304 <br> Colorado Springs, CO 80909 <br> 719-633-2868 

File Name : Vollmer Rd - Arroya Ln AM
Site Code : S224350
Start Date : 6/8/2022
Page No : 1

Groups Printed- Unshifted

|  | Vollmer Rd Southbound |  |  |  |  | Arroya Ln Westbound |  |  |  |  | Vollmer Rd Northbound |  |  |  |  | Eastbound |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Start Time | Right | Thru | Left | Peds | App. Toal | Right | Thru | Left | Peds | App. Toal | Right | Thru | Left | Peds | App. Toal | Right | Thru | Left | Peds | App. Total | int. Total |
| 06:30 | 0 | 29 | 0 | 0 | 29 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 39 |
| 06:45 | 0 | 24 | 0 | 0 | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 34 |
| Total | 0 | 53 | 0 | 0 | 53 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 0 | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 73 |
| 07:00 | 0 | 26 | 0 | 0 | 26 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 0 | 0 | 19 | 0 | 0 | 0 | 0 | 0 | 45 |
| 07:15 | 0 | 33 | 0 | 0 | 33 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 0 | 0 | 25 | 0 | 0 | 0 | 0 | 0 | 58 |
| 07:30 | 0 | 41 | 0 | 0 | 41 | 0 | 0 | 0 | 0 | 0 | 0 | 32 | 0 | 0 | 32 | 0 | 0 | 0 | 0 | 0 | 73 |
| 07:45 | 0 | 24 | 0 | 0 | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 0 | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 42 |
| Total | 0 | 124 | 0 | 0 | 124 | 0 | 0 | 0 | 0 | 0 | 0 | 94 | 0 | 0 | 94 | 0 | 0 | 0 | 0 | 0 | 218 |
| 08:00 | 0 | 32 | 0 | 0 | 32 | 0 | 0 | 0 | 0 | 0 | 0 | 27 | 0 | 0 | 27 | 0 | 0 | 0 | 0 | 0 | 59 |
| 08:15 | 0 | 31 | 0 | 0 | 31 | 0 | 0 | 0 | 0 | 0 | 0 | 22 | 0 | 0 | 22 | 0 | 0 | 0 | 0 | 0 | 53 |
| Grand Total | 0 | 240 | 0 | 0 | 240 | 0 | 0 | 0 | 0 | 0 | 0 | 163 | 0 | 0 | 163 | 0 | 0 | 0 | 0 | 0 | 403 |
| Apprch \% | 0 | 100 | 0 | 0 |  | 0 | 0 | 0 | 0 |  | 0 | 100 | 0 | 0 |  | 0 | 0 | 0 | 0 |  |  |
| Total \% | 0 | 59.6 | 0 | 0 | 59.6 | 0 | 0 | 0 | 0 | 0 | 0 | 40.4 | 0 | 0 | 40.4 | 0 | 0 | 0 | 0 | 0 |  |

# LSC Transportation Consultants, Inc. <br> 2504 E. Pikes Peak Ave, Suite 304 <br> Colorado Springs, CO 80909 <br> 719-633-2868 

File Name : Vollmer Rd - Arroya Ln AM
Site Code : S224350
Start Date: 6/8/2022
Page No : 2

|  | Vollmer Rd Southbound |  |  |  |  | Arroya Ln Westbound |  |  |  |  | Vollmer Rd Northbound |  |  |  |  | Eastbound |  |  |  |  | int. Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Start Time | Right | Thru | Left | Peds | App. Toala | Right | Thru | Left | Peds | App. Toal | Right | Thru | Left | Peds | App. Toal | Right | Thru | Left | Peds | App. Toal |  |
| 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 | 0 | 33 | 0 | 0 | 33 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 0 | 0 | 25 | 0 | 0 | 0 | 0 | 0 | 58 |
| 7:30:00 AM | 0 | 41 | 0 | 0 | 41 | 0 | 0 | 0 | 0 | 0 | 0 | 32 | 0 | 0 | 32 | 0 | 0 | 0 | 0 | 0 | 73 |
| 7:45:00 AM | 0 | 24 | 0 | 0 | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 0 | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 42 |
| 8:00:00 AM | 0 | 32 | 0 | 0 | 32 | 0 | 0 | 0 | 0 | 0 | 0 | 27 | 0 | 0 | 27 | 0 | 0 | 0 | 0 | 0 | 59 |
| Total Volume | 0 | 130 | 0 | 0 | 130 | 0 | 0 | 0 | 0 | 0 | 0 | 102 | 0 | 0 | 102 | 0 | 0 | 0 | 0 | 0 | 232 |
| \% App. Total | 0 | 100 | 0 | 0 |  | 0 | 0 | 0 | 0 |  | 0 | 100 | 0 | 0 |  | 0 | 0 | 0 | 0 |  |  |
| PHF | . 000 | . 793 | . 000 | . 000 | . 793 | . 000 | . 000 | . 000 | . 000 | . 000 | . 000 | . 797 | . 000 | . 000 | . 797 | . 000 | . 000 | . 000 | . 000 | . 000 | 795 |

# LSC Transportation Consultants, Inc. <br> 2504 E. Pikes Peak Ave, Suite 304 <br> Colorado Springs, CO 80909 <br> 719-633-2868 

File Name : Vollmer Rd - Arroya Ln PM
Site Code : S224350
Start Date : 6/8/2022
Page No : 1

Groups Printed- Unshifted

|  | Vollmer Rd Southbound |  |  |  |  | Arroya Ln Westbound |  |  |  |  | Vollmer Rd Northbound |  |  |  |  | Eastbound |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Start Time | Right | Thru | Left | Peds | App. Toal | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Toal | Right | Thru | Left | Peds | App. Toal | int. Total |
| 16:00 | 0 | 27 | 0 | 0 | 27 | 2 | 0 | 0 | 0 | 2 | 0 | 36 | 0 | 0 | 36 | 0 | 0 | 0 | 0 | 0 | 65 |
| 16:15 | 0 | 28 | 0 | 0 | 28 | 0 | 0 | 0 | 0 | 0 | 1 | 45 | 0 | 0 | 46 | 0 | 0 | 0 | 0 | 0 | 74 |
| 16:30 | 0 | 32 | 0 | 0 | 32 | 0 | 0 | 1 | 0 | 1 | 0 | 36 | 0 | 0 | 36 | 0 | 0 | 0 | 0 | 0 | 69 |
| 16:45 | 0 | 31 | 0 | 0 | 31 | 0 | 0 | 0 | 0 | 0 | 0 | 46 | 0 | 0 | 46 | 0 | 0 | 0 | 0 | 0 | 77 |
| Total | 0 | 118 | 0 | 0 | 118 | 2 | 0 | 1 | 0 | 3 | 1 | 163 | 0 | 0 | 164 | 0 | 0 | 0 | 0 | 0 | 285 |
| 17:00 | 0 | 45 | 0 | 0 | 45 | 0 | 0 | 0 | 0 | 0 | 0 | 40 | 0 | 0 | 40 | 0 | 0 | 0 | 0 | 0 | 85 |
| 17:15 | 0 | 25 | 0 | 0 | 25 | 0 | 0 | 1 | 0 | 1 | 2 | 47 | 0 | 0 | 49 | 0 | 0 | 0 | 0 | 0 | 75 |
| 17:30 | 0 | 33 | 0 | 0 | 33 | 0 | 0 | 0 | 0 | 0 | 0 | 39 | 0 | 0 | 39 | 0 | 0 | 0 | 0 | 0 | 72 |
| 17:45 | 0 | 18 | 0 | 0 | 18 | 1 | 0 | 0 | 0 | 1 | 0 | 35 | 0 | 0 | 35 | 0 | 0 | 0 | 0 | 0 | 54 |
| Total | 0 | 121 | 0 | 0 | 121 | 1 | 0 | 1 | 0 | 2 | 2 | 161 | 0 | 0 | 163 | 0 | 0 | 0 | 0 | 0 | 286 |
| Grand Total | 0 | 239 | 0 | 0 | 239 | 3 | 0 | 2 | 0 | 5 | 3 | 324 | 0 | 0 | 327 | 0 | 0 | 0 | 0 | 0 | 571 |
| Apprch \% | 0 | 100 | 0 | 0 |  | 60 | 0 | 40 | 0 |  | 0.9 | 99.1 | 0 | 0 |  | 0 | 0 | 0 | 0 |  |  |
| Total \% | 0 | 41.9 | 0 | 0 | 41.9 | 0.5 | 0 | 0.4 | 0 | 0.9 | 0.5 | 56.7 | 0 | 0 | 57.3 | 0 | 0 | 0 | 0 | 0 |  |

# LSC Transportation Consultants, Inc. <br> 2504 E. Pikes Peak Ave, Suite 304 <br> Colorado Springs, CO 80909 <br> 719-633-2868 

File Name : Vollmer Rd - Arroya Ln PM
Site Code : S224350
Start Date: 6/8/2022
Page No : 2

|  | Vollmer Rd Southbound |  |  |  |  | Arroya Ln Westbound |  |  |  |  | Vollmer Rd Northbound |  |  |  |  | Eastbound |  |  |  |  | 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 4:45:00 PM |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4:45:00 PM | 0 | 31 | 0 | 0 | 31 | 0 | 0 | 0 | 0 | 0 | 0 | 46 | 0 | 0 | 46 | 0 | 0 | 0 | 0 | 0 | 77 |
| 5:00:00 PM | 0 | 45 | 0 | 0 | 45 | 0 | 0 | 0 | 0 | 0 | 0 | 40 | 0 | 0 | 40 | 0 | 0 | 0 | 0 | 0 | 85 |
| 5:15:00 PM | 0 | 25 | 0 | 0 | 25 | 0 | 0 | 1 | 0 | 1 | 2 | 47 | 0 | 0 | 49 | 0 | 0 | 0 | 0 | 0 | 75 |
| 5:30:00 PM | 0 | 33 | 0 | 0 | 33 | 0 | 0 | 0 | 0 | 0 | 0 | 39 | 0 | 0 | 39 | 0 | 0 | 0 | 0 | 0 | 72 |
| Total Volume | 0 | 134 | 0 | 0 | 134 | 0 | 0 | 1 | 0 | 1 | 2 | 172 | 0 | 0 | 174 | 0 | 0 | 0 | 0 | 0 | 309 |
| \% App. Total | 0 | 100 | 0 | 0 |  | 0 | 0 | 100 | 0 |  | 1.1 | 98.9 | 0 | 0 |  | 0 | 0 | 0 | 0 |  |  |
| PHF | . 000 | . 744 | . 000 | . 000 | . 744 | . 000 | . 000 | . 250 | . 000 | . 250 | . 250 | . 915 | . 000 | . 000 | . 888 | . 000 | . 000 | . 000 | . 000 | . 000 | . 909 |




| Intersection |  |  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| Int Delay, s/veh | 0 |  |  |  |  |  |
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations | r |  | $\uparrow$ |  |  | $\uparrow$ |
| Traffic Vol, veh/h | 0 | 0 | 102 | 0 | 0 | 130 |
| Future Vol, veh/h | 0 | 0 | 102 | 0 | 0 | 130 |
| 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 | 85 | 85 | 80 | 80 | 79 | 79 |
| Heavy Vehicles, $\%$ | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 0 | 128 | 0 | 0 | 165 |


| Major/Minor M | Minor1 |  | Major1 |  | Major2 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Conflicting Flow All | 293 | 128 | 0 | 0 | 128 | 0 |
| Stage 1 | 128 | - | - | - | - | - |
| Stage 2 | 165 | - | - | - | - | - |
| 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 | 698 | 922 | - | - | 1458 | - |
| Stage 1 | 898 | - | - | - | - | - |
| Stage 2 | 864 | - | - | - | - | - |
| Platoon blocked, \% |  |  | - | - |  | - |
| Mov Cap-1 Maneuver | 698 | 922 | - | - | 1458 | - |
| Mov Cap-2 Maneuver | 698 | - | - | - | - | - |
| Stage 1 | 898 | - | - | - | - | - |
| Stage 2 | 864 | - | - | - | - | - |
|  |  |  |  |  |  |  |
| Approach | WB |  | NB |  | SB |  |
| HCM Control Delay, s | 0 |  | 0 |  | 0 |  |
| HCM LOS | A |  |  |  |  |  |
|  |  |  |  |  |  |  |
| Minor Lane/Major Mvmt |  | NBT | NBRWBLn1 |  | SBL | SBT |
| Capacity (veh/h) |  | - | - | - | 1458 | - |
| HCM Lane V/C Ratio |  | - | - | - | - | - |
| HCM Control Delay (s) |  | - | - | 0 | 0 | - |
| HCM Lane LOS |  | - | - | A | A | - |
| HCM 95th \%tile Q(veh) |  | - | - | - | 0 | - |


| Intersection |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Int Delay, s/veh | 1.3 |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |  |
| Lane Configurations |  | \& |  |  | $\uparrow$ |  |  | $\uparrow$ | 7 |  | * |  |  |
| Traffic Vol, veh/h | 3 | 1 | 2 | 15 | 1 | 4 | 5 | 155 | 5 | 1 | 140 | 1 |  |
| Future Vol, veh/h | 3 | 1 | 2 | 15 | 1 | 4 | 5 | 155 | 5 | 1 | 140 | 1 |  |
| Conflicting Peds, \#/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  |
| Sign Control Stap | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |  |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |  |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |  |
| Veh in Median Storage, \# | \# | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |  |
| Grade, \% | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |  |
| Peak Hour Factor | 78 | 78 | 78 | 56 | 56 | 56 | 87 | 87 | 87 | 89 | 89 | 89 |  |
| Heavy Vehicles, \% | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |  |
| Mvmt Flow | 4 | 1 | 3 | 27 | 2 | 7 | 6 | 178 | 6 | 1 | 157 | 1 |  |



| Intersection |  |  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| Int Delay, s/veh | 0 |  |  |  |  |  |
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations | Mr |  | $\uparrow$ |  |  | $\uparrow$ |
| Traffic Vol, veh/h | 1 | 0 | 172 | 2 | 0 | 134 |
| Future Vol, veh/h | 1 | 0 | 172 | 2 | 0 | 134 |
| 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 | 85 | 85 | 87 | 87 | 74 | 74 |
| Heavy Vehicles, \% | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 1 | 0 | 198 | 2 | 0 | 181 |


| Major/Minor | Minor1 |  | Major1 |  | Major2 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Conflicting Flow All | 380 | 199 | 0 | 0 | 200 | 0 |
| Stage 1 | 199 | - | - | - | - | - |
| Stage 2 | 181 | - | - | - | - | - |
| 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 | 622 | 842 | - | - | 1372 | - |
| Stage 1 | 835 | - | - | - | - | - |
| Stage 2 | 850 | - | - | - | - | - |
| Platoon blocked, \% |  |  | - | - |  | - |
| Mov Cap-1 Maneuver | 622 | 842 | - | - | 1372 | - |
| Mov Cap-2 Maneuver | 622 | - | - | - | - | - |
| Stage 1 | 835 | - | - | - | - | - |
| Stage 2 | 850 | - | - | - | - | - |
|  |  |  |  |  |  |  |
| Approach | WB |  | NB |  | SB |  |
| HCM Control Delay, s | 10.8 |  | 0 |  | 0 |  |
| HCM LOS | B |  |  |  |  |  |
|  |  |  |  |  |  |  |
| Minor Lane/Major Mvmt |  | NBT | NBRWBLn1 |  | SBL | SBT |
| Capacity (veh/h) |  | - | - | 622 | 1372 | - |
| HCM Lane V/C Ratio |  | - | - | 0.002 | - | - |
| HCM Control Delay (s) |  | - | - | 10.8 | 0 | - |
| HCM Lane LOS |  | - | - | B | A | - |
| HCM 95th \%tile Q(veh) |  | - | - | 0 | 0 | - |


| Intersection |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Int Delay, s/veh | 2.9 |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |  |
| Lane Configurations |  | \& |  |  | $\uparrow$ |  |  | $\uparrow$ | 「 |  | * |  |  |
| Traffic Vol, veh/h | 2 | 0 | 3 | 84 | 0 | 16 | 4 | 172 | 29 | 5 | 201 | 2 |  |
| Future Vol, veh/h | 2 | 0 | 3 | 84 | 0 | 16 | 4 | 172 | 29 | 5 | 201 | 2 |  |
| Conflicting Peds, \#/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  |
| Sign Control Stap | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |  |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |  |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |  |
| Veh in Median Storage, \# | \# | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |  |
| Grade, \% | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |  |
| Peak Hour Factor | 50 | 50 | 50 | 85 | 85 | 85 | 87 | 87 | 87 | 67 | 67 | 67 |  |
| Heavy Vehicles, \% | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |  |
| Mvmt Flow | 4 | 0 | 6 | 99 | 0 | 19 | 5 | 198 | 33 | 7 | 300 | 3 |  |



| Intersection |  |  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| Int Delay, s/veh | 0.1 |  |  |  |  |  |
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations | r |  | $\uparrow$ |  |  | $\uparrow$ |
| Traffic Vol, veh/h | 2 | 2 | 166 | 0 | 1 | 194 |
| Future Vol, veh/h | 2 | 2 | 166 | 0 | 1 | 194 |
| 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 | 85 | 85 | 87 | 87 | 67 | 67 |
| Heavy Vehicles, $\%$ | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 2 | 2 | 191 | 0 | 1 | 290 |


| Major/Minor | Minor1 |  | ajor1 |  | Major2 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Conflicting Flow All | 483 | 191 | 0 | 0 | 191 | 0 |
| Stage 1 | 191 | - | - | - | - | - |
| Stage 2 | 292 | - | - | - | - | - |
| 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 | 542 | 851 | - | - | 1383 | - |
| Stage 1 | 841 | - | - | - | - | - |
| Stage 2 | 758 | - | - | - | - | - |
| Platoon blocked, \% |  |  | - | - |  | - |
| Mov Cap-1 Maneuver | 541 | 851 | - | - | 1383 | - |
| Mov Cap-2 Maneuver | 541 | - | - | - | - | - |
| Stage 1 | 841 | - | - | - | - | - |
| Stage 2 | 757 | - | - | - | - | - |
|  |  |  |  |  |  |  |
| Approach | WB |  | NB |  | SB |  |
| HCM Control Delay, s | 10.5 |  | 0 |  | 0 |  |
| HCM LOS | B |  |  |  |  |  |
|  |  |  |  |  |  |  |
| Minor Lane/Major Mvmt |  | NBT | NBRWBLn1 |  | SBL | SBT |
| Capacity (veh/h) |  | - | - | 661 | 1383 | - |
| HCM Lane V/C Ratio |  | - | - | 0.007 | 0.001 | - |
| HCM Control Delay (s) |  | - | - | 10.5 | 7.6 | 0 |
| HCM Lane LOS |  | - | - | B | A | A |
| HCM 95th \%tile Q(veh) |  | - | - | 0 | 0 | - |




| Intersection |  |  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| Int Delay, s/veh | 0.1 |  |  |  |  |  |
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations | Mr |  | $\uparrow$ |  |  | $\uparrow$ |
| Traffic Vol, veh/h | 1 | 1 | 189 | 2 | 2 | 194 |
| Future Vol, veh/h | 1 | 1 | 189 | 2 | 2 | 194 |
| 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 | 85 | 85 | 87 | 87 | 89 | 89 |
| Heavy Vehicles, \% | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 1 | 1 | 217 | 2 | 2 | 218 |


| Major/Minor | Minor1 |  | Major1 |  | Major2 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Conflicting Flow All | 440 | 218 | 0 | 0 | 219 | 0 |
| Stage 1 | 218 | - | - | - | - | - |
| Stage 2 | 222 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | - | - | 4.12 | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | - | - | 2.218 | - |
| Pot Cap-1 Maneuver | 574 | 822 | - | - | 1350 | - |
| Stage 1 | 818 | - | - | - | - | - |
| Stage 2 | 815 | - | - | - | - | - |
| Platoon blocked, \% |  |  | - | - |  | - |
| Mov Cap-1 Maneuver | 573 | 822 | - | - | 1350 | - |
| Mov Cap-2 Maneuver | 573 | - | - | - | - | - |
| Stage 1 | 818 | - | - | - | - | - |
| Stage 2 | 813 | - | - | - | - | - |
|  |  |  |  |  |  |  |
| Approach | WB |  | NB |  | SB |  |
| HCM Control Delay, s | 10.4 |  | 0 |  | 0.1 |  |
| HCM LOS | B |  |  |  |  |  |
|  |  |  |  |  |  |  |
| Minor Lane/Major Mvmt |  | NBT | NBRWBLn1 |  | SBL | SBT |
| Capacity (veh/h) |  | - | - | 675 | 1350 | - |
| HCM Lane V/C Ratio |  | - | - | 0.003 | 0.002 | - |
| HCM Control Delay (s) |  | - | - | 10.4 | 7.7 | 0 |
| HCM Lane LOS |  | - | - | B | A | A |
| HCM 95th \%tile Q(veh) |  | - | - | 0 | 0 | - |




| Intersection |  |  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| Int Delay, s/veh | 0.4 |  |  |  |  |  |
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations | r |  | $\uparrow$ |  |  | $\uparrow$ |
| Traffic Vol, veh/h | 8 | 5 | 166 | 2 | 2 | 194 |
| Future Vol, veh/h | 8 | 5 | 166 | 2 | 2 | 194 |
| 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 | 85 | 85 | 87 | 87 | 67 | 67 |
| Heavy Vehicles, $\%$ | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 9 | 6 | 191 | 2 | 3 | 290 |


| Major/Minor | Minor1 |  | Major1 |  | Major2 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Conflicting Flow All | 488 | 192 | 0 | 0 | 193 | 0 |
| Stage 1 | 192 | - | - | - | - | - |
| Stage 2 | 296 | - | - | - | - | - |
| 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 | 539 | 850 | - | - | 1380 | - |
| Stage 1 | 841 | - | - | - | - | - |
| Stage 2 | 755 | - | - | - | - | - |
| Platoon blocked, \% |  |  | - | - |  | - |
| Mov Cap-1 Maneuver | 537 | 850 | - | - | 1380 | - |
| Mov Cap-2 Maneuver | 537 | - | - | - | - | - |
| Stage 1 | 841 | - | - | - | - | - |
| Stage 2 | 753 | - | - | - | - | - |
|  |  |  |  |  |  |  |
| Approach | WB |  | NB |  | SB |  |
| HCM Control Delay, s | 10.9 |  | 0 |  | 0.1 |  |
| HCM LOS | B |  |  |  |  |  |
|  |  |  |  |  |  |  |
| Minor Lane/Major Mvmt |  | NBT | NBRWBLn1 |  | SBL | SBT |
| Capacity (veh/h) |  | - | - | 626 | 1380 | - |
| HCM Lane V/C Ratio |  | - | - | 0.024 | 0.002 | - |
| HCM Control Delay (s) |  | - | - | 10.9 | 7.6 | 0 |
| HCM Lane LOS |  | - | - | B | A | A |
| HCM 95th \%tile Q(veh) |  | - | - | 0.1 | 0 | - |




| Intersection |  |  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| Int Delay, s/veh | 0.3 |  |  |  |  |  |
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations | MF |  | 1 |  |  | $\uparrow$ |
| Traffic Vol, veh/h | 5 | 3 | 189 | 9 | 5 | 194 |
| Future Vol, veh/h | 5 | 3 | 189 | 9 | 5 | 194 |
| 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 | 85 | 85 | 87 | 87 | 89 | 89 |
| Heavy Vehicles, \% | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 6 | 4 | 217 | 10 | 6 | 218 |


| Major/Minor M | Minor1 |  | Major1 |  | Major2 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Conflicting Flow All | 452 | 222 | 0 | 0 | 227 | 0 |
| Stage 1 | 222 | - | - | - | - | - |
| Stage 2 | 230 | - | - | - | - | - |
| 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 | 565 | 818 | - | - | 1341 | - |
| Stage 1 | 815 | - | - | - | - | - |
| Stage 2 | 808 | - | - | - | - | - |
| Platoon blocked, \% |  |  | - | - |  | - |
| Mov Cap-1 Maneuver | 562 | 818 | - | - | 1341 | - |
| Mov Cap-2 Maneuver | 562 | - | - | - | - | - |
| Stage 1 | 815 | - | - | - | - | - |
| Stage 2 | 804 | - | - | - | - | - |
|  |  |  |  |  |  |  |
| Approach | WB |  | NB |  | SB |  |
| HCM Control Delay, s | 10.7 |  | 0 |  | 0.2 |  |
| HCM LOS | B |  |  |  |  |  |
|  |  |  |  |  |  |  |
| Minor Lane/Major Mvmt |  | NBT | NBRV | VBLn1 | SBL |  |
| Capacity (veh/h) |  | - | - | 637 | 1341 | - |
| HCM Lane V/C Ratio |  | - | - | 0.015 | 0.004 | - |
| HCM Control Delay (s) |  | - | - | 10.7 | 7.7 | 0 |
| HCM Lane LOS |  | - | - | B | A | A |
| HCM 95th \%tile Q(veh) |  | - | - | 0 | 0 | - |




| Intersection |  |  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| Int Delay, s/veh | 0.2 |  |  |  |  |  |
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations | Mi |  | $\uparrow$ |  |  | $\uparrow$ |
| Traffic Vol, veh/h | 7 | 4 | 285 | 3 | 2 | 421 |
| Future Vol, veh/h | 7 | 4 | 285 | 3 | 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 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, \% | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 8 | 4 | 310 | 3 | 2 | 458 |


| Major/Minor M | Minor1 |  | Major1 |  | Major2 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Conflicting Flow All | 774 | 312 | 0 | 0 | 313 | 0 |
| Stage 1 | 312 | - | - | - | - | - |
| Stage 2 | 462 | - | - | - | - | - |
| 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 | 367 | 728 | - | - | 1247 | - |
| Stage 1 | 742 | - | - | - | - | - |
| Stage 2 | 634 | - | - | - | - | - |
| Platoon blocked, \% |  |  | - | - |  | - |
| Mov Cap-1 Maneuver | 366 | 728 | - | - | 1247 | - |
| Mov Cap-2 Maneuver | 366 | - | - | - | - | - |
| Stage 1 | 742 | - | - | - | - | - |
| Stage 2 | 633 | - | - | - | - | - |
|  |  |  |  |  |  |  |
| Approach | WB |  | NB |  | SB |  |
| HCM Control Delay, s | 13.3 |  | 0 |  | 0 |  |
| HCM LOS | B |  |  |  |  |  |
|  |  |  |  |  |  |  |
| Minor Lane/Major Mvmt |  | NBT | NBRWBLn1 |  | SBL | SBT |
| Capacity (veh/h) |  | - |  | 447 | 1247 | - |
| HCM Lane V/C Ratio |  | - | - | 0.027 | 0.002 | - |
| HCM Control Delay (s) |  | - | - | 13.3 | 7.9 | 0 |
| HCM Lane LOS |  | - | - | B | A | A |
| HCM 95th \%tile Q(veh) |  | - | - | 0.1 | 0 | - |




| Intersection |  |  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| Int Delay, s/veh | 0.2 |  |  |  |  |  |
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations | Mi |  | $\uparrow$ |  |  | $\uparrow$ |
| Traffic Vol, veh/h | 6 | 3 | 570 | 9 | 5 | 385 |
| Future Vol, veh/h | 6 | 3 | 570 | 9 | 5 | 385 |
| Conflicting Peds, \#/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, \# | 0 | - | 0 | - | - | 0 |
| Grade, \% | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, \% | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 7 | 3 | 620 | 10 | 5 | 418 |


| Major/Minor | Minor1 |  | Major1 |  | Major2 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Conflicting Flow All | 1053 | 625 | 0 | 0 | 630 | 0 |
| Stage 1 | 625 | - | - | - | - | - |
| Stage 2 | 428 | - | - | - | - | - |
| 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 | 251 | 485 | - | - | 952 | - |
| Stage 1 | 534 | - | - | - | - | - |
| Stage 2 | 657 | - | - | - | - | - |
| Platoon blocked, \% |  |  | - | - |  | - |
| Mov Cap-1 Maneuver | 249 | 485 | - | - | 952 | - |
| Mov Cap-2 Maneuver | 249 | - | - | - | - | - |
| Stage 1 | 534 | - | - | - | - | - |
| Stage 2 | 652 | - | - | - | - | - |
|  |  |  |  |  |  |  |
| Approach | WB |  | NB |  | SB |  |
| HCM Control Delay, s | 17.5 |  | 0 |  | 0.1 |  |
| HCM LOS | C |  |  |  |  |  |
|  |  |  |  |  |  |  |
| Minor Lane/Major Mvmt |  | NBT | NBRWBLn1 |  | SBL | SBT |
| Capacity (veh/h) |  | - | - | 297 | 952 | - |
| HCM Lane V/C Ratio |  | - | - | 0.033 | 0.006 | - |
| HCM Control Delay (s) |  | - | - | 17.5 | 8.8 | 0 |
| HCM Lane LOS |  | - | - | C | A | A |
| HCM 95th \%tile Q(veh) |  | - | - | 0.1 | 0 | - |




| Intersection |  |  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| Int Delay, s/veh | 0.3 |  |  |  |  |  |
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations | r |  | $\uparrow$ |  |  | $\uparrow$ |
| 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 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, \% | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 14 | 5 | 310 | 5 | 2 | 458 |


| Major/Minor | Minor1 |  | Major1 |  | Major2 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Conflicting Flow All | 775 | 313 | 0 | 0 | 315 | 0 |
| Stage 1 | 313 | - | - | - | - | - |
| Stage 2 | 462 | - | - | - | - | - |
| 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 | 366 | 727 | - |  | 1245 | - |
| Stage 1 | 741 | - | - | - | - | - |
| Stage 2 | 634 | - | - | - | - | - |
| Platoon blocked, \% |  |  | - | - |  | - |
| Mov Cap-1 Maneuver | 365 | 727 | - | - | 1245 | - |
| Mov Cap-2 Maneuver | 365 | - | - | - | - | - |
| Stage 1 | 741 | - | - | - | - | - |
| Stage 2 | 633 | - | - | - | - | - |
|  |  |  |  |  |  |  |
| Approach | WB |  | NB |  | SB |  |
| HCM Control Delay, s | 13.9 |  | 0 |  | 0 |  |
| HCM LOS | B |  |  |  |  |  |
|  |  |  |  |  |  |  |
| Minor Lane/Major Mvmt |  | NBT | NBRWBLn1 |  | SBL | SBT |
| Capacity (veh/h) |  | - | - | 424 | 1245 | - |
| HCM Lane V/C Ratio |  | - | - | 0.046 | 0.002 | - |
| HCM Control Delay (s) |  | - | - | 13.9 | 7.9 | 0 |
| HCM Lane LOS |  | - | - | B | A | A |
| HCM 95th \%tile Q(veh) |  | - | - | 0.1 | 0 | - |




| Intersection |  |  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| Int Delay, s/veh | 0.3 |  |  |  |  |  |
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations | Mr |  | $\uparrow$ |  |  | $\neq$ |
| Traffic Vol, veh/h | 10 | 4 | 570 | 16 | 6 | 385 |
| Future Vol, veh/h | 10 | 4 | 570 | 16 | 6 | 385 |
| Conflicting Peds, \#/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, | 0 | - | 0 | - | - | 0 |
| Grade, \% | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, \% | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 11 | 4 | 620 | 17 | 7 | 418 |


| Major/Minor | Minor1 |  | Major1 |  | Major2 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Conflicting Flow All | 1061 | 629 | 0 | 0 | 637 | 0 |
| Stage 1 | 629 | - | - | - | - | - |
| Stage 2 | 432 | - | - | - | - | - |
| 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 | 248 | 482 | - | - | 947 | - |
| Stage 1 | 531 | - | - | - | - | - |
| Stage 2 | 655 | - | - | - | - | - |
| Platoon blocked, \% |  |  | - | - |  | - |
| Mov Cap-1 Maneuver | 246 | 482 | - | - | 947 | - |
| Mov Cap-2 Maneuver | 246 | - | - | - | - | - |
| Stage 1 | 531 | - | - | - | - | - |
| Stage 2 | 648 | - | - | - | - | - |
|  |  |  |  |  |  |  |
| Approach | WB |  | NB |  | SB |  |
| HCM Control Delay, s | 18.3 |  | 0 |  | 0.1 |  |
| HCM LOS | C |  |  |  |  |  |
|  |  |  |  |  |  |  |
| Minor Lane/Major Mvmt |  | NBT | NBRWBLn1 |  | SBL | SBT |
| Capacity (veh/h) |  | - | - | 286 | 947 | - |
| HCM Lane V/C Ratio |  | - | - | 0.053 | 0.007 | - |
| HCM Control Delay (s) |  | - | - | 18.3 | 8.8 | 0 |
| HCM Lane LOS |  | - | - | C | A | A |
| HCM 95th \%tile Q(veh) |  | - | - | 0.2 | 0 | - |

## MTCP Maps



Map 14: 2040 Roadway Plan (Classification and Lanes)


## Retreat at TimberRidge Filing No. 3 Construction Plans




