# Traffic Impact Study 

Mayberry Communities
Filing 4 Traffic Impact Study
PCD File No. CS233 and SF2317

El Paso County, Colorado
Updated
October 19, 2023

## Traffic Impact Studies

## Traffic Engineer's Statement

The attached 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.

Joshua Hoffmann, P.E. \# 0062304
[Name, P.E. \#]

August 30, 2023
Date

## Developer's Statement

I, the Developer, have read and will comply with all commitments made on my behalf within this report.
[Name, Title]
Date
[Business Name]
[Address]

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## Introduction

Mayberry Communities have retained HDR Engineering, Inc. to perform a Traffic Impact Study (TIS) for the proposed Filing 4 development located in the southeast quadrant of Springs Road and SH 94, as shown in Figure 1. The development is currently a Planned Unit Development (PUD) and is being rezoned to commercial services (CS). This study serves as part of an update to the approved 2020 - June - Ellicott Town Center Commercial Rezone TIS Report (LSC 194060) (Ref 1) and uses assumptions and traffic data from the 2022 - September Mayberry Filing No. 3 (Ref 2) TIS.

Filing 4 is part of the broader proposed Mayberry Communities Development just west of Ellicott between Peyton Highway and Log Road. This community is being developed in phases, and this report details the traffic impacts only due to the Filing 4 development phase.

The project site is vacant, and the development is expected to be complete by 2026. The development will comprise eight lots totaling 88,000 square feet of light industrial space. Discussing with El Paso County and Mayberry, light industrial was selected because the type of land use will be warehouse-type facilities that share office/retail space. Typical business includes auto/boat storage, mini-warehouse, repair/rental shop, and recreational vehicle repair. These businesses fall outside manufacturing and closely align with light industrial. Any business that falls outside the anticipated land use type will go through the appropriate approvals to gain county conditional approval before building their business.

The current connections to the Mayberry Community Development are at Mayberry Drive (formerly New Log Road) and Springs Road. Mayberry Drive is the main entrance to the development, which provides full movement and is located on the west side of the development. Springs Road, located on the east side of the development, is a Right-In Right-Out connection. The impact that Filing 4 will have on the network is anticipated to be negligible and Cattlemen Run will remain as a Local Street.


## Analysis Assumptions

This traffic impact study uses the Highway Capacity Manual 6 (HCM) as a basis for the capacity analysis as well as primary data and engineering judgment, which is required to estimate background traffic, pass-by trips, and internal capture reductions. These assumptions and engineering judgments are further described in the following paragraphs. See Appendix A for a brief description of the HCM methods.

## Directional Distribution

Existing traffic projections are based on data collected for the development of the 2022 September - Mayberry Filing No. 3. Turning movement counts were collected for the Peyton Highway/SH 94 intersection (west of Mayberry Communities) and the Ellicott Highway/SH 94 intersection (east of Mayberry Communities).

This study follows the assumption established in the 2022 - September - Mayberry Filing No. 3 that $90 \%$ of vehicle trips go to and come from points west of the development, while $10 \%$ go to and come from points east of the development. Following the 90/10 assumption, future traffic is then assumed to be proportional to the turning movement counts collected at Peyton Highway and Ellicott Highway intersections. These counts provide the basis for the overall directional distribution of the generated traffic approaching and departing the project site at these two adjacent intersections, as summarized in Table 1.

Table 1: Forecasted Overall Directional Distribution Site-Oriented Traffic

| Direction/Roadway | AM \% Overall <br> Distribution | PM \% Overall <br> Distribution |
| :--- | :---: | :---: |
| SH 94 W | $82.4 \%$ | $76.6 \%$ |
| SH 94 E | $5.3 \%$ | $6.0 \%$ |
| Peyton Hwy S | $2.3 \%$ | $5.9 \%$ |
| Peyton Hwy N | $5.3 \%$ | $7.5 \%$ |
| Ellicott Hwy S | $4.0 \%$ | $2.3 \%$ |
| Ellicott Hwy N | $0.6 \%$ | $1.7 \%$ |

$\mathrm{N} / \mathrm{S}$ indicates the direction traffic is originating from or destine to for both Peyton Highway and Ellicott Highway.

Based on current land use at the site, this study takes a careful approach, assuming no use of pass-by, pedestrian, and bicycle reductions. Given the unique nature of the site and the desire to provide a comprehensive understanding of potential impacts, the analysis did not assume internal capture. HDR has not found other TIS in the project area, therefore, no cumulative projects are assumed in this analysis.

## Filing 3 Roadway Improvements

The Filing 4 analysis is based on the proposed improvements from 2022 - September Mayberry Filing No. 3. The roadway network proposed in Filing 3 is assumed to be in place at the time of completion for Filing 4.

Mayberry Drive and SH 94 will be an unsignalized intersection with stop control on the northbound approach. The approaches will be constructed according to the following parameters:

- One left-turn lane and one right-turn lane for the northbound approach on Mayberry Drive
- One through lane and one dedicated right-turn turn lane on the eastbound approach of SH 94
- One dedicated left-turn lane and one through lane on the westbound approach of SH 94

The ability of the roadway network to accommodate the generated traffic of Filing 4 is contingent upon the completion of an internal roadway network comprised of Village Main and Mayberry Drive, and the construction of Mayberry Drive and Springs Road.

Unresolved: Address internal trips also. This includes traffic traveling to Mayberry Road to make left turns. Provide a plan showing the internal streets and intersections. If this was provided in the previous report, add that to the appendix of this report.



FIGURE 3: FILING 4 CONCEPTUAL SITE PLAN

## Existing Thoroughfare System

As indicated on the area location map (Figure 1) and the conceptual site plan (Figure 3), the project is located in the southeast quadrant of Mayberry Drive and SH 94, near Ellicott, CO.

Average daily traffic estimates on SH 94 were obtained from the Colorado Department of Transportation (CDOT) Online Transportation Information System (OTIS) (Ref. 3) and turning movement counts provided in the previous TIAS dated September 2022. To adequately describe these roadways, further characterization is provided for each adjacent major roadway to the development.

## SH 94

CDOT classifies SH 94 as a functional type Minor Arterial and an access control type as a NonRural Principal Highway (NR-A) west of County Road 493 and a Regional Highway (R-A) east of County Road 493. The posted speed limit is 65 miles per hour near the development. An OTIS straight-line diagram of SH 94 near the project site is provided in Appendix A. According to CDOT's traffic volume database, the existing daily traffic volume on SH 94 is listed below:

- 4,000 vpd between Peyton Highway and Ellicott Highway
- 3,000 vpd east of Ellicott Highway


## Peyton Highway

The El Paso County 2040 Major Transportation Corridor Plan (MTCP)(Ref. 4) classifies Peyton Highway as a Minor Arterial and has a speed limit of 55 mph .

## Ellicott Highway

The El Paso County MTCP classifies Ellicott Highway as a Minor Arterial and has a speed limit of 55 mph .

## Site and Access Characteristics

As shown in Figure 4, access to Filing 4 will be provided via one full-movement driveway on Springs Road.


## Traffic Analysis

To assess the traffic impacts of the proposed development, two (2) time periods (AM Peak Hour and PM Peak Hour) and three (3) travel conditions were evaluated:

- 2026 Opening Year
- 2026 Forecasted plus Previous Filing 3 Background Traffic Conditions
- 2026 Background plus Site-Generated Traffic Conditions
- 2044 Background
- 2044 Forecasted plus Previous Filing 3 Background Traffic Conditions
- 2044 Background plus Site-Generated Traffic Conditions

Intersections in the vicinity of the site are considered to be the locations of principal concern because they are the locations of the highest traffic conflict and delay. The standard used to evaluate traffic conditions at intersections is level of service (LOS), which is a qualitative measure of the effect of a number of factors such as speed, the volume of traffic, geometric features, traffic interruptions, freedom to maneuver, safety, driving comfort, convenience, and operating cost.

## 2026 Forecasted Traffic Conditions

The analysis of existing traffic conditions required the collection of data on the major roadways and intersections. Traffic counts for the following study area intersections were collected in March and August 2022 on a typical weekday while schools were in session unless otherwise noted:

- Peyton Highway and SH 94
- Ellicott Highway and SH 94

The existing TMC values were grown by a one (1) percent per year as a growth rate provided by OTIS to reach a 2026 forecast year. This process used trends established by prior data for the major roadways and intersections near the project site. The 2026 existing turning movement volumes are provided in Figure 5. Descriptions of existing study intersections are discussed in the following sections as well as the forecasted LOS for the Year 2026. Table 2 provides the summary of both LOS and delay.

## Peyton Highway and SH 94

Peyton Highway and SH 94 is currently an unsignalized intersection with stop controls on the northbound and southbound approaches. The northbound and southbound approaches of Peyton Highway provide one left-turn/through/right-turn shared lane. The eastbound and westbound approaches of SH 94 provide one left-turn lane and one through/right-turn shared lane. The northbound leg of the intersection currently operates at LOS B under the existing traffic conditions during both the AM and PM peak periods.

## Ellicott Highway and SH 94

Ellicott Highway and SH 94 is currently an unsignalized intersection with stop controls on the northbound and southbound approaches. The northbound and southbound approaches of Ellicott Highway provide one left-turn/through/right-turn shared lane. The eastbound and westbound approaches of SH 94 provide one left-turn lane and onethrough/right-turn shared lane. The northbound leg of the intersection currently operates at LOS C under the existing traffic conditions during both the AM and PM peak periods.

Table 2: 2026 Existing Forecasted Level of Service Summary

| Intersection | 2026 Existing |  |
| :---: | :---: | :---: |
|  | PM |  |
| Peyton Highway and SH 94 | B <br> $(14.2)$ | B <br> $(13.6)$ |
| Ellicott Highway and SH 94 | C <br> $(16.4)$ | C <br> $(15.5)$ |



## 2026 Existing plus Previous Filing Conditions

The generated traffic from the previous Filings 1, 2, and 3 are assumed to be part of the background traffic. The proposed access roads that will accommodate this traffic are studied for the background traffic and the development traffic to follow. The additional intersections that will be built as part of Mayberry Filing 3 are listed below:

- Mayberry Drive and SH 94
- Spring Road and SH 94


## Filings 1, 2, and 3 Site-Generated Traffic

Determining the site-generated traffic, or the traffic generated due to the development of the previous Filings is the goal of this analysis. Unadjusted daily trips and the peak hour traffic associated with these Filings were estimated using recommendations and data contained in the Institute of Transportation Engineers Trip Generation Manual, 11th Edition (Ref. 6).

These previous Filings generate approximately 2,420 unadjusted daily trips upon build-out.
Table 3 provides a detailed traffic generation summary related to the assumed land use plan.
Table 3: Summary of Unadjusted Daily and Peak Hour Trip Generation from Previous Filings

| Site | Land Use | Land Use Code | Size | Trip <br> Generation <br> Method ${ }^{1}$ | 24-Hour <br> Two-Way <br> Volume | AM Peak Hour |  | PM Peak Hour |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  | Enter | Exit | Enter | Exit |
| $\begin{aligned} & \text { Filing } \\ & \text { 1/1A/3 } \end{aligned}$ | Single <br> Family Detached Housing | 210 | 240 DU | Fitted Curve | 2,257 | 43 | 123 | 143 | 84 |
| Filing 2 | General Light Industrial | 110 | 30 KSF | Fitted Curve | 163 | 21 | 3 | 2 | 15 |
| Total |  |  |  |  | 2,420 | 64 | 126 | 145 | 99 |

${ }^{1}$ Trip Generation is based on the higher of the ITE's average rate and fitted curve method for all land uses.
The LOS summary for the trips generated from the previous Filings are discussed below. Table 4 provides the summary of both LOS and delay. Background plus Filing 3 volumes are shown in Figure 5.

## Peyton Highway and SH 94

The intersection will operate at LOS C under 2026 Forecasted plus Previous Filing 3 Background Traffic Conditions during the AM and PM peak periods.

## Mayberry Drive and SH 94

Mayberry Drive and SH 94 will be an unsignalized intersection with stop controls on the northbound approach. The northbound approach of Mayberry Drive will provide one left-turn
lane and one right-turn lane. The eastbound approach of SH 94 will provide one through lane and one right-turn turn lane. The westbound approach of SH 94 will provide one left-turn lane and one through lane. These improvements will be built concurrently with Filings 1, 2, and 3 and will be in place by the time Filing 4 is occupied. The intersection will operate at LOS B under 2026 Forecasted plus the full build out of Filing 3 Background Traffic Conditions during the AM and PM peak periods.

## Springs Road and SH 94

Under CDOT's permitting requirements, a eastbound right-turn deceleration lane was constructed in 2022. Concurrently, CDOT has prohibited the left-turn movement from westbound SH 94 to Spring Road. With this intersection only being a right-in/right-out type facility, the intersection is anticipated to operate at LOS A and B under 2026 Forecasted plus Previous Filing 3 Background Traffic Conditions during the AM and PM peak periods, respectively.

## Ellicott Highway and SH 94

The intersection will operate at LOS C under 2026 Forecasted plus Previous Filing 3 Background Traffic Conditions during the AM and PM peak periods.

Table 4: Filing 1, 2 and 3 Level of Service Summary

| Intersection | 2026 Background + Filings $1,2 \&, 3$ |  |
| :---: | :---: | :---: |
|  | AM | PM |
| Peyton Highway and SH 94 | $\underset{(15.1)}{C}$ | $\begin{gathered} C \\ (18.4) \end{gathered}$ |
| Mayberry Drive and SH 94 | $\begin{gathered} B \\ (14.6) \end{gathered}$ | $\begin{gathered} C \\ (15.6) \end{gathered}$ |
| Springs Road and SH 94 | $\begin{gathered} \text { A } \\ (9.1) \end{gathered}$ | $\begin{gathered} B \\ (10.0) \end{gathered}$ |
| Ellicott Highway and SH 94 | $\begin{gathered} \text { C } \\ (17.0) \end{gathered}$ | $\begin{gathered} C \\ (16.7) \end{gathered}$ |



## 2026 Filing 4 Site-Generated Traffic Conditions

The proposed Filing 4 is anticipated to be completed in 2026. The forecasted traffic was projected using available information and was used to assess the major roadway impacts and evaluate potential improvements. All analysis assumes the completion of Mayberry Drive and Springs Road improvements upon which previous filings are contingent.

## Filing 4 Site Generated Traffic

Unadjusted total trips per day and the peak hour traffic associated with the project were estimated using recommendations and data contained in the Institute of Transportation Engineers Trip Generation Manual, 11th Edition.

As discussed in the Letter of Intent, found in Appendix B, Filing 4 is anticipated to consist of general light industrial development, which according to ITE, "has an emphasis on activities other than manufacturing" and supports activities such as "printing, material testing, and assembly of data processing equipment." Light industrial development generates more trips per floor area than related uses such as Industrial Park and Manufacturing, so light industrial is chosen as the most conservative choice given uncertainty about the commercial uses of Filing 4 land.

The proposed Filing 4 development will generate approximately 381 unadjusted daily trips upon build-out. Table 5 provides a detailed trip generation summary based on the land use plan.

Table 5: Summary of Unadjusted Daily and Peak Hour Trip Generation from Filing 4

| Site | Land Use | Land <br> Use <br> Code | Size | Trip <br> Generation <br> Method | 24-Hour <br> Two- | AM Peak <br> Way <br> Volume |  | PM Peak <br> Hour |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |

${ }^{1}$ Trip Generation is based on the higher of the ITE's average rate and fitted curve method for all land uses.
The LOS summary for the trips generated from Filing 4 are discussed below. Table 6 provides the summary of both LOS and delay. Filing 4 generated volumes are shown in Figure 7, and Background + Filing $3+$ Filing 4 volumes are shown in Figure 8.

## Peyton Highway and SH 94

The intersection will operate at LOS C under 2026 site plus forecasted traffic conditions during the AM and PM peak periods. There are no improvements recommended at this intersection as part of this TIS.

## Mayberry Drive and SH 94

The intersection will operate at LOS C under 2026 site plus forecasted traffic conditions during the AM and PM peak periods with the improvements identified in the previous section.

Assuming the connections at both Mayberry Drive and Springs Road are provided, there are no improvements recommended at this intersection as part of this TIS.

## Springs Road and SH 94

The intersection will operate at LOS A and B under 2026 site plus forecasted traffic conditions during the AM and PM peak periods, respectively. Assuming the connections at both Mayberry Drive and Springs Road are provided, there are no improvements recommended at this intersection as part of this TIS.

## Ellicott Highway and SH 94

The intersection will operate at LOS C under 2026 site plus forecasted traffic conditions during the AM and PM peak periods. There are no improvements recommended at this intersection as part of this TIS.

Table 6: Filing 4 Level of Service Summary

| Intersection | 2026 Background + Previous Filings + |
| :---: | :---: | :---: |
|  |  |$|$|  | AM | PM |
| :---: | :---: | :---: |
| Peyton Highway and SH 94 | C | C |
|  | $(17.0)$ | $(19.8)$ |
| Mayberry Drive and SH 94 | C | C |
| Springs Road and SH 94 | A | $(15.3)$ |
| Ellicott Highway and SH 94 | $(9.1)$ | B |
|  | C | $(10.2)$ |




## 2044 Forecasted Traffic Conditions

The proposed Filing 4 is anticipated to be completed in 2026. However, a horizon year 2044 analysis was performed in accordance with the Engineering Criteria Manual. The existing TMC values were grown by a one (1) percent per year growth rate provided by OTIS to reach a 2044 forecast year. This process used trends established by prior data for the major roadways and intersections near the project site. The 2044 forecasted turning movement volumes are provided in Figure 9. Descriptions of existing study intersections are discussed in the following sections as well as the forecasted LOS for the Year 2044. Table 7 provides the summary of both LOS and delay for Python Highway and Ellicott Highway.

Table 7: 2044 Forecasted Level of Service Summary

| Intersection | 2026 Existing |  |
| :---: | :---: | :---: |
|  | AM | PM |
| Peyton Highway and SH 94 | C <br> $(16.4)$ | C <br> $(15.4)$ |
| Ellicott Highway and SH 94 | C <br> $(21.1)$ | C <br> $(20.0)$ |



## 2044 plus Previous Filing Background Traffic Conditions

The 2044 plus previous filings background traffic was projected using the growth rate obtained from OTIS and traffic from previous project filings, and was used to assess the major roadway impacts and evaluate potential improvements. All analysis assumes the completion of Mayberry Drive and Springs Road improvements upon which previous filings are contingent.

## Peyton Highway and SH 94

The intersection will operate at LOS C under 2044 plus previous filing traffic conditions during the AM and PM peak periods. There are no improvements recommended at this intersection as part of this TIS.

## Mayberry Drive and SH 94

The intersection will operate at LOS C under 2044 plus previous filings traffic conditions during the AM and PM peak periods with the improvements identified in the previous section.
Assuming the connections at both Mayberry Drive and Springs Road are provided, there are no improvements recommended at this intersection as part of this TIS.

## Springs Road and SH 94

The intersection will operate at LOS A and B under 2044 plus previous filings traffic conditions during the AM and PM peak periods, respectively. Assuming the connections at both Mayberry Drive and Springs Road are provided, there are no improvements recommended at this intersection as part of this TIS.

## Ellicott Highway and SH 94

The intersection will operate at LOS C under 2044 plus previous filings traffic conditions during the AM and PM peak periods. There are no improvements recommended at this intersection as part of this TIS.

Table 8: 2044 Background plus Previous Filings

| Intersection | 2044 Background + Previous Filings |  |
| :---: | :---: | :---: |
|  | AM | PM |
| Peyton Highway and SH 94 | C | C |
| Mayberry Drive and SH 94 | C | $(22.1)$ |
| Springs Road and SH 94 | $(16.7)$ | C |
| Ellicott Highway and SH 94 | A | $(18.1)$ |
|  | $(9.4)$ | B |



## 2044 Conditions with Filing 4 Site-Generated Traffic

The forecasted traffic was projected using the 2044 plus previous filings background traffic, plus Filing 4 traffic, and was used to assess the major roadway impacts and evaluate potential improvements. All analysis assumes the completion of Mayberry Drive and Springs Road improvements upon which previous filings are contingent.

## Peyton Highway and SH 94

The intersection will operate at LOS C under 2044 background plus Filing 4 traffic conditions during the AM and PM peak periods. There are no improvements recommended at this intersection as part of this TIS.

## Mayberry Drive and SH 94

The intersection will operate at LOS C under 2044 background plus Filing 4 traffic conditions during the AM and PM peak periods with the improvements identified in the previous section. Assuming the connections at both Mayberry Drive and Springs Road are provided, there are no improvements recommended at this intersection as part of this TIS.

## Springs Road and SH 94

The intersection will operate at LOS A and B under 2044 background plus Filing 4 traffic conditions during the AM and PM peak periods, respectively. Assuming the connections at both Mayberry Drive and Springs Road are provided, there are no improvements recommended at this intersection as part of this TIS.

## Ellicott Highway and SH 94

The intersection will operate at LOS C under 2044 background plus Filing 4 traffic conditions during the AM and PM peak periods. There are no improvements recommended at this intersection as part of this TIS.

Table 9: Filing 4 Level of Service Summary

| Intersection | 2044 Background + Previous Filings + |
| :---: | :---: | :---: |
|  |  |$|$|  | AM | PM |
| :---: | :---: | :---: |
| Peyton Highway and SH 94 | C | C |
|  | $(20.2)$ | $(24.2)$ |
| Mayberry Drive and SH 94 | C | C |
| Springs Road and SH 94 | $(16.2)$ | $(18.3)$ |
| Ellicott Highway and SH 94 | $(9.4)$ | B |
|  | C | $(10.6)$ |
|  | $(22.7)$ | C |



## Summary of Findings

Intersections adjacent to the development on SH 94 will operate at LOS C or better for all scenarios analyzed in this TIS. Therefore, the infrastructure that is anticipated to be in place by the time Filing 3 and Filing 4 are developed and occupied will have the capacity to handle the generated traffic. No improvements are needed for the addition of Filing 4 to the Mayberry Communities Development. Intersection LOS and delay results are presented in Table 10.

Table 10: Level of Service Summary

| Intersection | 2026 Existing |  | 2026 Background + Filings 1,2 \& ,3 |  | 2026 Background + Filing 4 |  | 2044 Existing |  | 2044 <br> Background + Filings 1,2 \& ,3 |  | 2026 <br> Background + Filing 4 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | AM | PM | AM | PM | AM | PM | AM | PM | AM | PM | AM | PM |
| Highest delay minor street approach is reported for all unsignalized intersections. |  |  |  |  |  |  |  |  |  |  |  |  |
| Peyton Highway and SH 94 | $\begin{gathered} B \\ (14.2) \end{gathered}$ | $\begin{gathered} B \\ (13.6) \end{gathered}$ | $\begin{gathered} C \\ (15.1) \end{gathered}$ | $\begin{gathered} C \\ (18.4) \end{gathered}$ | $\underset{(17.0)}{C}$ | $\begin{gathered} C \\ (19.8) \end{gathered}$ | $\begin{gathered} C \\ (16.4) \end{gathered}$ | $\underset{(15.4)}{C}$ | $\underset{(17.6)}{C}$ | $\begin{gathered} C \\ (22.1) \end{gathered}$ | $\begin{gathered} C \\ (20.2) \end{gathered}$ | $\underset{(24.2)}{C}$ |
| Mayberry Drive and SH 94 | - | - | $\begin{gathered} B \\ (14.6) \end{gathered}$ | $\begin{gathered} B \\ (15.6) \end{gathered}$ | $\underset{(15.3)}{C}$ | $\begin{gathered} C \\ (16.4) \end{gathered}$ |  |  | $\underset{(16.7)}{C}$ | $\begin{gathered} C \\ (18.1) \end{gathered}$ | $\begin{gathered} C \\ (16.2) \end{gathered}$ | $\begin{gathered} C \\ (18.3) \end{gathered}$ |
| Springs Road and SH 94 | - | - | $\begin{gathered} A \\ (9.1) \end{gathered}$ | $\begin{gathered} B \\ (10.0) \end{gathered}$ | $\begin{gathered} A \\ (9.1) \end{gathered}$ | $\begin{gathered} B \\ (10.2) \end{gathered}$ |  |  | $\begin{gathered} \text { A } \\ (9.4) \end{gathered}$ | $\begin{gathered} B \\ (10.6) \end{gathered}$ | $\begin{gathered} \mathrm{A} \\ (9.4) \end{gathered}$ | $\begin{gathered} B \\ (10.6) \end{gathered}$ |
| Ellicott Highway and SH 94 | $\underset{(16.4)}{C}$ | $\underset{(15.5)}{C}$ | $\underset{(17.0)}{C}$ | $\underset{(16.7)}{\text { C }}$ | $\underset{(17.3)}{C}$ | $\begin{gathered} C \\ (16.5) \end{gathered}$ | $\begin{gathered} C \\ (21.1) \end{gathered}$ | $\begin{gathered} C \\ (20.0) \end{gathered}$ | $\begin{gathered} C \\ (22.3) \end{gathered}$ | $\begin{gathered} \text { C } \\ (21.6) \end{gathered}$ | $\begin{gathered} \text { C } \\ (22.7) \end{gathered}$ | $\begin{gathered} \mathrm{C} \\ (21.7) \end{gathered}$ |

Table 11: 2022 - September - Mayberry Filing No. 3 Table 12a

| Table 12a El paso County Roadway Improvements Revied August 2022 |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| Item | Improvement | Timing | Responsibility | Change |
| El Paso County Roadway Segment Improvements |  |  |  |  |
| 1 | New Log Road (Highway 94 south into the project) construct as an Urban Minor Arterial per the PUD | With Filing No. 1: Note: Phased half - section (northbound couplet) for Filing 1 and full couplet segments beyond Filing 1 per the PUD plans. | Applicant | No Change |
| 2a | Mayberry Drive (Garden Park Avenue to Springs Road) construct as a gravel, secondary access road | With Filing No. 1: Note: An interim gravel street connection (to be paved once ADT exceeds 200 vpd ) will be provided with Filing No. 1 | Applicant | No Change |
| 2b | Mayberry Drive - construct half - section | With Filing No. 3 | Applicant | See discussion |
| 2c | Mayberry Drive - Complete Full section (IE construct the remaining half - section | Future - To be determined w/Future PUD's beyond Phase 1 | Applicant | Mayberry Drive ADT threshold |
| 3 | Springs Road (Highway 94 south into the project) construct street with 65' ROW; design attributes to meet Urban Collector standards. | Future - To be determined w/Future PUD's beyond Phase 1 | Applicant | No Change |
| 4 | Cattlemen Run west of Springs Road into Filing Nos. 2 and 2A as a Local Street | With future Filing No. 4 commercial development east of Springs Road [For reference only - not part of the phase 1 PUD Amendment or the Filing 3 Plat application | Applicant | No Change |
| 5 | Cattlemen Run east of Springs Road (into future Filing No. 4 commercial development east of Springs Road) as a Local Street | With future Filing No. 4 commercial development east of Springs Road [For reference only - not part of the phase 1 PUD Amendment or the Filing 3 Plat application | Applicant | No Change |
| 6 | Mayberry Drive \& Springs Road Intersection | With Filing No. 3. - Construct as a one-lane roundabout intersection | Applicant | No Change |
| 7 | Besseyi \& Springs Road Intersection | With Filing No. 3. Construct as four leg, conventional, two-way, stop-sign controlled (TWSC) intersection. | Applicant | No Change |

## Mayberry ADT Threshold

The 2020 - June - Ellicott Town Center Commercial Rezone TIS Report (LSC 194060) stated that a volume of over 3,000 vehicles per day on Mayberry Drive would require the couplet southbound lanes built. Traffic generated from the previous Filing plus Filing 4 would remain under that threshold.

## CDOT Permits

Because the posted speed limit on SH 94 is greater than 40 MPH , auxiliary turn lanes may be necessary for public safety and traffic operations. These requirements have been explored in the previously submitted TIS and are currently being implemented at Mayberry Drive and SH 94 and have been completed in 2022 for Springs Road and SH 94.

## Road Impact Fees

The impact that Filing 4 will be addressed through the Road Impact Fee schedule. The following table provides the options that will be addressed before the final plat.

Table 12: Road Impact Fee Schedule

| Land Use | Unit | Development <br> Size | Full Fee | Upfront Fee in 5 <br> mill PID | Upfront Fee in <br> 10 mill PID |
| ---: | :---: | :---: | :---: | :---: | :---: |
| General Commercial | 1,000 sf | 88 K sf | $\$ 4,958$ | $\$ 3,851$ | $\$ 2,745$ |
| Cost per Option |  | $\$ 436,304$ | $\$ 338,888$ | $\$ 241,560$ |  |

## References

1. 2020 - June - Ellicott Town Center Commercial Rezone TIS Report, LSC, PCD File Nos. CS192 \& SF1910
2. 2022 - September - Mayberry Filing No. 3, LSC, PCD File No. SF2219
3. El Paso County 2016 Major Transportation Corridor Plan Update
4. El Paso County Engineering Criteria Manual Appendix B, October 14, 2020
5. Transportation Research Board 2016 Highway Capacity Manual, 6th Edition, Washington, D.C.
6. Trafficware Ltd 2017 Synchro 11, Sugar Land, Texas
7. Institute of Transportation Engineers 2017 Trip Generation Manual, An Informational Report, 11th Edition, Washington D.C.

## Appendix A: Highway Capacity Manual Description

## HCM Unsignalized Intersection Level of Service

Unsignalized intersections were analyzed for this study. Unsignalized intersection LOS is defined in terms of average control delay and, in some cases, volume to capacity ( $\mathrm{v} / \mathrm{c}$ ) ratio. Control delay is that portion of total delay attributed to traffic control measures, either traffic signals or stop signs. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay.

For two-way stop-controlled intersections, the analysis method assumes that major street-through traffic is not affected by minor street flows. Major street left-turning traffic and the traffic on the minor approaches will be affected by opposing movements. Stop or yield signs are used to assign the right-of-way to the major street, and this designation forces drivers on the controlled street to judgmentally select gaps in the major street flow through which to execute crossing or turning maneuvers. Thus, the capacity of the controlled legs is based on two factors:

- The distribution of gaps in the major street traffic stream.
- Driver judgment in selecting gaps through which to execute their desired maneuvers.

The LOS procedure computes a capacity for each movement based on the critical time gap required to complete the maneuver and the volume of traffic that is opposing the movement. The average control delay for any particular movement is calculated as a function of the capacity of the approach and the degree of saturation ( $\mathrm{v} / \mathrm{c}$ ratio). The degree of saturation is defined as the volume for a movement, expressed as an hourly flow rate, divided by the movement's capacity, expressed as an hourly flow rate. With the HCM 6 methodology (Ref. 5), overall intersection LOS is best quantified based on minor street movement average control delay. The HCM 6 methodology adjusts individual movement delay to account for a degree of saturation ( $\mathrm{v} / \mathrm{c}$ ratio) that is greater than 1.0. Those movements are assigned a LOS of F, regardless of the average control delay. Engineering judgment must be used to determine which minor street movement controls for overall intersection LOS and whether unacceptable LOS on minor street movements appropriately reflects unacceptable LOS for the overall intersection.
Table 2 shows the relationship between the average control delay and the LOS. The LOS range for unsignalized intersections is different than that for signalized intersections, and this difference is because drivers expect different levels of performance from other kinds of transportation facilities. Unsignalized intersections carry less traffic volume than signalized intersections, and delays at unsignalized intersections are variable. For these reasons, control delay would be less for an unsignalized intersection than for a signalized intersection. The overall approach LOS is computed as a weighted average of the vehicle delay for each movement; therefore, an approach may have an overall LOS of $C$ or D and have individual movements, which are LOS E or F .

Analysis was performed using the microcomputer program "Synchro 11" (Ref. 6), based on the procedures contained in the Highway Capacity Manual.

Table 1: Unsignalized Intersection: Level of Service Measurement

| Level of <br> Service | Control Delay <br> Per Vehicle (sec) |
| :---: | :---: |
| A | $<10$ |
| B | $>10$ and $<15$ |
| C | $>15$ and $<25$ |
| D | $>25$ and $<35$ |
| E | $>35$ and $<50$ |
| F | $>50$ |

## Appendix B: Letter of Intent

## APPLICANT-OWNER/ CONSULTANT INFORM ATION:

 OWNER/APPLCANTMAYBERRY COM M UNITIES, LLC 428 GARDEN PARK AVENUE, M AYBERRY, CO 80808
scottsouders@mayberrycoloradosprings.com
719-922-2181
PLANNING SUPPORT
KIM LEY-HORN AND ASSOCIATES, INC. 2 NORTH NEVADA AVENUE, SUITE 900
COLORADO SPRINGS, CO 80903
Larry.salazar@kimley-horn.com
719-284-7829
ENGINEERING/ SURVEYING
R\&R ENGINEERING AND SURVEYORS, INC.
1635 WEST $13^{\text {TH }}$ AVENUE, SUITE 310
DENVER, CO 80204
cdayton@rrengineers.com
720-390-5513

## Kimley»)Horn

## LOCATION, ACREAGE, PARCEL ID INFO, \& ZONING

The application for a map amendment (rezoning) includes Parcel No. 3414102015. The proposed rezoning is located near the southeast corner of the intersection of State Highway 94 and future Springs Road (see vicinity map insert and map exhibit for details). The total acreage of the proposed rezone is $\pm 4.28$. (Currently Zoned: Planned Unit Development [PUD]).


## REQUEST

The application is to Rezone 4.28 acres from the PUD zone to the Commercial Services zoning district (CS). The application includes the following request:

- Approval to rezone Parcel No. 3414102015 to CS to match adjacent Parcels, 3414102013 and 3414102014 , located west of said parcel.
- The Rezone process is projected to run concurrently with the site development plan of all three parcels for the purpose of being replated at a later date to include a total of eight (8) commercial lots.
- The rezone of will be for commercial use. Conditions of approval are guaranteed upon approval of the final plat, the traffic report shall be amended if alternative or intensive uses are proposed.


## Kimley»"Horn

## JUSTIFICATION

The applicant requests approval of the rezoning based on findings of compliance with the following Goals:

Goal 1.1 - Ensure compatibility with established character and infrastructure capacity.
Goal 1.3 - Encourage a range of development types to support a variety of land uses.

The proposed Rezone from the PUD district to the CS district provides opportunity for the developer to include additional commercial uses in this area, designating a CS zoned district creates a buffer from the residential use PUD development to the south from the State Highway 94 corridor. The proposed CS district and future plans to subdivide the parcels into eight (8) commercial lots allow the developer to maintain compliance with the previously approved Ellicott Town Center (SKP-05$005)$, soon to be amended to the proposed "Mayberry Communities Sketch Plan". In addition, the subject parcels directly abut State Highway 94 which is a busy corridor with vehicles traveling at high rates of speed creating above average noise. Providing commercial development directly adjacent to this expressway will act as a transition from this corridor into the $M$ ayberry development. Furthermore, this commercial development, with any buffering and code compliant landscaping, will buffer future and planned residential developments in the surrounding area that are located within the Suburban and Rural placetypes to the east, west, and south.


## Kimley»"Horn

## Key Areas:



## Key Areas



The property is not located within the ten (10) classifications of key areas.

# Kimley»Horn 

## Areas of Change:



Mayberry Filing No 4 Rezone is located in the area expected for "New Development". It is understood that these areas will be significantly transformed as new development takes place on lands currently largely designated as undeveloped or agricultural areas. Undeveloped portions of the County that are adjacent to a built out area will be developed to match the character of that adjacent development or to a different supporting or otherwise complementary one, such as an employment hub or business park adjacent to an urban neighborhood.

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M ayberry Filing No. 4 is located within the Suburban Residential type. This land use is designated for Suburban Residential, Traditional Residential neighborhoods with supporting commercial uses at key intersections. The Suburban place type generally supports the proposed development pattern and the support of limited accessory dwelling units as well.

- The rezone would be consistent with this placetype.
- The rezone and the code would protect the intent of the Placetype, by the procedures and standards intended to promote safe and orderly development.
- The proposal would provide for the land uses in relation to existing and predicted patterns of growth in the area.
- The proposal is consistent with available and necessary services.
- The rezone would have no impact on any currently approved sketch plans.


## Sec. 5.3.5.B Map Amendment (Rezoning)

## (B) Criteria for Approval. In approving a Map Amendment, the following findings shall be made:

- The application is in general conformance with the El Paso County Master Plan including applicable Small Area Plans or there has been a substantial change in the character of the neighborhood since the land was last zoned;

The site, and zone change are in conformance with the El Paso County Master Plan, the rezone is a minor portion of the overall Mayberry Communities Sketch Plan Amendment (SKP-05-005), adjacent properties are zoned CS and PUD.

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- The rezoning is in compliance with all applicable statutory provisions, including but not limited to C.R.S. § 30-28-111 § 30-28-113, and § 30-28-116;

The requested rezone is in compliance with applicable statutory provisions.

- The proposed land use or zone district is compatible with the existing and permitted land uses and zone districts in all directions;

The proposed land use of CS is adjacent to existing CS zones and is in compliance with the existing Sketch Plan (SKP-05-005) and proposed Mayberry Communities Sketch Plan Amendment, to be approved.

- The site is suitable for the intended use, including the ability to meet the standards as described in Chapter 5 of the Land Development Code, for the intended zone district.

Site is suitable for intended use.

## Water Master Plan:

Under the Colorado Revised Statutes, Title 32. This property is within the Ellicott Utilities district boundary and will consistently follow the rules and regulations per the El Paso County Water Master Plan,

- A sufficient water supply has been clarified or provided through existing private wells. The wells have been permitted per quantity and quality standards set forth in the State water supply standards.

Wastewater systems:

- Wastewater services will be provided by way of Ellicott Utilities district boundary. Electric
- Electric service will be provided through Mountain View Electric. Gas
- Gas service will be provided through Black Hills Energy.


## Natural or Physical site features:

The Zone Change will support the preservation of the natural features and drainages of the site and surrounding lands:

- Site Natural Features:
- Site is located within the Ellicott Consolidated drainage basin (CHWSO200). Data provided by Muller Engineering Company; (1988)


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- The topography of the site includes rolling hills with one drainage way, extending from north to south through the property. The existing drainage ways are wide and without a defined flow path; no erosion is anticipated.


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- The site consists of;
- An area of minimal flood hazard "Zone X" per the National Flood Hazard Layer FIRMette (08041C0820G)



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- Said Site is mapped as low to moderate-high per the wildfire risk public viewer.


Legend
https://co-pub.coloradoforestatlas.org

```
Burn Probability
    Non-Burnable
    Very Low
Very Low-Low
    Low
    Low-Moderate
    Moderate
    Moderate-High
    High
    High-Very High
    Very High
```

County Boundaries
r $<1: 1,500.000$

## Kimley»Horn

Wildlife:
Impacts are expected to be very low.
Community Outreach:
Summarizing any community outreach efforts by the applicant that have occurred or are planned as part of the request.

- Adjacent owner notification letters were sent out $3 / 24 / 2023$ informing neighbors that a rezone and replat of said property will be completed. No comments have been received at this time.
- No additional community outreach has been conducted on the zone change to date.

A Summary of anticipated traffic generation and access
A traffic study has been completed by HDR Engineering, Inc.

- The intersection will operate at LOS A and B under 2024 site plus forecasted traffic conditions during the AM and PM peak periods, respectively. Assuming the connections at both New Log Road and Springs Road are provided, there are no improvements recommended at this intersection as part of this TIS.
- Intersections adjacent to the development on SH 94 will operate at LOS C or better for all scenarios analyzed in this TIA. Therefore, the infrastructure that is anticipated to be in place by the time Filing 3 and Filing 4 are developed and occupied will have the capacity to handle the generated traffic. No improvements are needed for the addition of Filing 4 to the Mayberry Communities development. Intersection LOS and delay results are presented in Table 7 below.

Table 7: Level of Service Summary

| Intersection | 2024 Existing |  | 2024 <br> Background + <br> Filings 1,2 \& , 3 |  | 2024 Background <br> + Filing 4 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | AM | PM | AM | PM | AM | PM |
| Highest delay minor street approach is reported for all unsignalized intersections. |  |  |  |  |  |  |
| Peyton Highway and SH 94 | $\begin{gathered} B \\ (14.1) \end{gathered}$ | $\begin{gathered} B \\ (13.5) \end{gathered}$ | $\underset{(15.8)}{C}$ | $\underset{(18.7)}{C}$ | $\underset{(16.7)}{C}$ | $\begin{gathered} \mathrm{C} \\ (19.8) \end{gathered}$ |
| New Log Road and SH 94 | - | - | $\begin{gathered} \text { B } \\ (14.5) \end{gathered}$ | $\begin{gathered} \text { B } \\ (15.4) \end{gathered}$ | $\underset{(15.2)}{C}$ | $\begin{gathered} \mathrm{C} \\ (16.4) \end{gathered}$ |
| Springs Road and SH 94 | - | - | $\begin{gathered} \text { A } \\ (9.2) \end{gathered}$ | $\begin{gathered} B \\ (10.1) \end{gathered}$ | $\begin{gathered} \text { A } \\ (9.2) \end{gathered}$ | $\begin{gathered} \text { B } \\ (10.2) \end{gathered}$ |
| Ellicott Highway and SH 94 | $\underset{(16.0)}{C}$ | $\underset{(15.5)}{C}$ | $\underset{(16.7)}{C}$ | $\underset{(16.4)}{C}$ | $\begin{gathered} C \\ (16.9) \end{gathered}$ | $\underset{(16.5)}{C}$ |

## Kimley»>Horn

## Parks Master Plan



The site can is located in the "Candidate for Regional Park/Open Space Areas".
The Developer of the Mayberry Communities Sketch Plan Amendment has the intention to incorporate Filing No. 4 with trails for connectivity to parks throughout the Proposed Mayberry Communities Sketch Plan Amendment.

Connectivity throughout said sketch plan will help with the work live play aspect allowing individuals to live and work within 5 -minute walk.

The proposed Sketch Plan Amendment, to be recorded, incorporates the goals and objectives of the El Paso County Parks Master Plan.

Goal 1.B to provide and support large community events and provide visitor destinations and experiences between parks within the Sketch Plan Amendment, to be recorded.

Goal 2.A to provide regional parks, recreation areas, trails and open space

## Kimley»Horn

Goal 2.B to continue participation in development review for lang range planning within the El Paso County development services, transportation and public park needs to anticipate future growth.

Goal 3.A to refine the definition of active trails between residential and commercial uses.

## Regional Trails

Goal 1.A a regional trail is proposed along the State Highway 94 corridor, Mayberry Communities Sketch Plan Amendment, to be approved, acknowledges the proposed regional trail system and has incorporated an east/west trail within the community that ties into the adjacent proposed trail easement.

Additional Park and Open Space items are to be provided on the Proposed Mayberry Communities Sketch Plan Amendment (SKP-05-005).

## Appendix C: Synchro Outputs






| Intersection |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Int Delay, s/veh 6.3 |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | ${ }^{7}$ | $\uparrow$ |  | ${ }^{7}$ | $\uparrow$ |  |  | \& |  |  | * |  |
| Traffic Vol, veh/h | 46 | 164 | 64 | 3 | 77 | 14 | 109 | 34 | 16 | 24 | 20 | 23 |
| Future Vol, veh/h | 46 | 164 | 64 | 3 | 77 | 14 | 109 | 34 | 16 | 24 | 20 | 23 |
| 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 | 200 | - | - | 400 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, \# |  | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, \% | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, \% | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 51 | 182 | 71 | 3 | 85 | 16 | 121 | 38 | 18 | 27 | 22 | 26 |



| Intersection |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Int Delay, s/veh 2.8 |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | ${ }^{*}$ | $\uparrow$ |  | ${ }^{*}$ | $\uparrow$ |  |  | $\uparrow$ |  |  | $\uparrow$ |  |
| Traffic Vol, veh/h | 18 | 250 | 18 | 12 | 145 | 15 | 20 | 21 | 9 | 23 | 13 | 12 |
| Future Vol, veh/h | 18 | 250 | 18 | 12 | 145 | 15 | 20 | 21 | 9 | 23 | 13 | 12 |
| Conflicting Peds, \#/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 532 | - | - | 532 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, \# | \# | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, \% | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, \% | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 20 | 277 | 20 | 13 | 161 | 17 | 22 | 23 | 10 | 26 | 14 | 13 |



| Intersection |  |  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| Int Delay, s/veh | 3 |  |  |  |  |  |
| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations | 4 | $\mathbf{7}$ |  | 4 | l | $\mathbf{7}$ |
| Traffic Vol, veh/h | 169 | 52 | 10 | 299 | 122 | 8 |
| Future Vol, veh/h | 169 | 52 | 10 | 299 | 122 | 8 |
| Conflicting Peds, \#/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | 570 | 570 | - | 0 | 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 | 184 | 57 | 11 | 325 | 133 | 9 |



| Intersection |  |  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |



| Intersection |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Int Delay, s/veh 6.1 |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | ${ }^{7}$ | $\hat{F}$ |  | ${ }^{*}$ | $\uparrow$ |  |  | * |  |  | * |  |
| Traffic Vol, veh/h | 21 | 68 | 136 | 14 | 167 | 12 | 106 | 26 | 6 | 13 | 61 | 35 |
| Future Vol, veh/h | 21 | 68 | 136 | 14 | 167 | 12 | 106 | 26 | 6 | 13 | 61 | 35 |
| 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 | 200 | - | - | 400 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, \# | \# | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, \% | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, \% | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 23 | 74 | 148 | 15 | 182 | 13 | 115 | 28 | 7 | 14 | 66 | 38 |





| Intersection |  |  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |





| Intersection |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Int Delay, s/veh 6.4 |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | ${ }^{7}$ | $\dagger$ |  | ${ }^{*}$ | $\hat{\sigma}$ |  |  | * |  |  | * |  |
| Traffic Vol, veh/h | 50 | 174 | 67 | 3 | 86 | 14 | 117 | 35 | 16 | 24 | 20 | 24 |
| Future Vol, veh/h | 50 | 174 | 67 | 3 | 86 | 14 | 117 | 35 | 16 | 24 | 20 | 24 |
| 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 | 200 | - | - | 400 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, \# - |  | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, \% | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, \% | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 54 | 189 | 73 | 3 | 93 | 15 | 127 | 38 | 17 | 26 | 22 | 26 |



| Intersection |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Int Delay, s/veh 2.8 |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | ${ }^{*}$ | $\uparrow$ |  | ${ }^{*}$ | $\uparrow$ |  |  | $\uparrow$ |  |  | $\uparrow$ |  |
| Traffic Vol, veh/h | 18 | 364 | 18 | 19 | 267 | 15 | 20 | 21 | 12 | 29 | 13 | 12 |
| Future Vol, veh/h | 18 | 364 | 18 | 19 | 267 | 15 | 20 | 21 | 12 | 29 | 13 | 12 |
| Conflicting Peds, \#/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 532 | - | - | 532 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, \# | \# | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, \% | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, \% | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 20 | 396 | 20 | 21 | 290 | 16 | 22 | 23 | 13 | 32 | 14 | 13 |




| Major/Minor M | Major1 |  | Major2 | Minor1 |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Conflicting Flow All | 0 | 0 | 295 | 0 | 554 | 202 |  |  |
| Stage 1 | - | - | - | - | 202 | - |  |  |
| Stage 2 | - | - | - | - | 352 | - |  |  |
| Critical Hdwy | - | - | 4.12 | - | 6.42 | 6.22 |  |  |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 | - |  |  |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 | - |  |  |
| Follow-up Hdwy | - |  | 2.218 |  | 3.518 | 3.318 |  |  |
| Pot Cap-1 Maneuver | - | - | 1266 | - | 493 | 839 |  |  |
| Stage 1 | - | - | - | - | 832 | - |  |  |
| Stage 2 | - | - | - | - | 712 | - |  |  |
| Platoon blocked, \% | - | - |  | - |  |  |  |  |
| Mov Cap-1 Maneuver | - | - | 1266 | - | 489 | 839 |  |  |
| Mov Cap-2 Maneuver | - | - | - | - | 489 | - |  |  |
| Stage 1 | - | - | - | - | 832 | - |  |  |
| Stage 2 | - | - | - | - | 706 | - |  |  |
|  |  |  |  |  |  |  |  |  |
| Approach | EB |  | WB |  | NB |  |  |  |
| HCM Control Delay, s | 0 |  | 0.3 |  | 14.9 |  |  |  |
| HCM LOS |  |  |  |  | B |  |  |  |
|  |  |  |  |  |  |  |  |  |
| Minor Lane/Major Mvmt |  | NBLn1 | NBLn2 | EBT | EBR | WBL | WBT |  |
| Capacity (veh/h) |  | 489 | 839 | - | - | 1266 | - |  |
| HCM Lane V/C Ratio |  | 0.287 | 0.01 | - | - | 0.009 | - |  |
| HCM Control Delay (s) |  | 15.3 | 9.3 | - | - | 7.9 | - |  |
| HCM Lane LOS |  | C | A | - | - | A |  |  |
| HCM 95th \%tile Q(veh) |  | 1.2 | 0 | - | - | 0 |  |  |


| Intersection |  |  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |







| Intersection |  |  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| Int Delay, s/veh | 3 |  |  |  |  |  |
| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations | 4 | $\mathbf{7}$ |  | 4 | a | $\mathbf{7}$ |
| Traffic Vol, veh/h | 330 | 86 | 15 | 213 | 126 | 9 |
| Future Vol, veh/h | 330 | 86 | 15 | 213 | 126 | 9 |
| Conflicting Peds, \#/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | 570 | 570 | - | 0 | 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 | 359 | 93 | 16 | 232 | 137 | 10 |



| Intersection |  |  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |



| Intersection |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Int Delay, s/veh 6.4 |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | ${ }^{7}$ | $\dagger$ |  | ${ }^{*}$ | $\hat{\sigma}$ |  |  | * |  |  | * |  |
| Traffic Vol, veh/h | 50 | 174 | 68 | 3 | 86 | 14 | 117 | 35 | 16 | 24 | 20 | 24 |
| Future Vol, veh/h | 50 | 174 | 68 | 3 | 86 | 14 | 117 | 35 | 16 | 24 | 20 | 24 |
| 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 | 200 | - | - | 400 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, \# - |  | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, \% | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, \% | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 54 | 189 | 74 | 3 | 93 | 15 | 127 | 38 | 17 | 26 | 22 | 26 |



| Intersection |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Int Delay, s/veh 2.9 |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | ${ }^{*}$ | $\uparrow$ |  | ${ }^{*}$ | $\uparrow$ |  |  | $\uparrow$ |  |  | $\uparrow$ |  |
| Traffic Vol, veh/h | 18 | 367 | 18 | 17 | 292 | 17 | 20 | 21 | 13 | 33 | 13 | 12 |
| Future Vol, veh/h | 18 | 367 | 18 | 17 | 292 | 17 | 20 | 21 | 13 | 33 | 13 | 12 |
| Conflicting Peds, \#/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 532 | - | - | 532 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, \# | \# | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, \% | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, \% | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 20 | 399 | 20 | 18 | 317 | 18 | 22 | 23 | 14 | 36 | 14 | 13 |



| Intersection |  |  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| Int Delay, s/veh | 0 |  |  |  |  |  |
| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations | 个 | $\mathbf{T}$ |  | 4 | 1 | $\mathbf{T}$ |
| Traffic Vol, veh/h | 140 | 0 | 0 | 293 | 0 | 0 |
| Future Vol, veh/h | 140 | 0 | 0 | 293 | 0 | 0 |
| Conflicting Peds, \#/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | 570 | 570 | - | 0 | 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 | 183 | 0 | 0 | 382 | 0 | 0 |



| Intersection |  |  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| Int Delay, s/veh | 0 |  |  |  |  |  |
| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations | F |  |  | 个 |  | $\mathbf{r}$ |
| Traffic Vol, veh/h | 140 | 0 | 0 | 293 | 0 | 0 |
| Future Vol, veh/h | 140 | 0 | 0 | 293 | 0 | 0 |
| Conflicting Peds, \#/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | - | 0 |
| 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 | 155 | 0 | 0 | 382 | 0 | 0 |



| Intersection |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Int Delay, s/veh 7.3 |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | ${ }^{7}$ | $\uparrow$ |  | ${ }^{1}$ | $\uparrow$ |  |  | * |  |  | * |  |
| Traffic Vol, veh/h | 20 | 63 | 125 | 14 | 159 | 12 | 101 | 25 | 6 | 13 | 60 | 33 |
| Future Vol, veh/h | 20 | 63 | 125 | 14 | 159 | 12 | 101 | 25 | 6 | 13 | 60 | 33 |
| 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 | 200 | - | - | 400 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, \# |  | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, \% | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, \% | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 26 | 82 | 163 | 18 | 207 | 16 | 132 | 33 | 8 | 17 | 78 | 43 |



| Intersection |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Int Delay, s/veh 2.8 |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | ${ }^{*}$ | $\uparrow$ |  | ${ }^{7}$ | $\uparrow$ |  |  | $\uparrow$ |  |  | \& |  |
| Traffic Vol, veh/h | 7 | 119 | 12 | 10 | 332 | 22 | 28 | 16 | 10 | 11 | 7 | 35 |
| Future Vol, veh/h | 7 | 119 | 12 | 10 | 332 | 22 | 28 | 16 | 10 | 11 | 7 | 35 |
| 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 | 532 | - | - | 532 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, \# | \# | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, \% | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, \% | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 9 | 155 | 16 | 13 | 433 | 29 | 37 | 21 | 13 | 14 | 9 | 46 |





| Intersection |  |  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| Int Delay, s/veh | 0 |  |  |  |  |  |
| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations | $\boldsymbol{F}$ |  |  | 4 |  | $\mathbf{T}$ |
| Traffic Vol, veh/h | 282 | 0 | 0 | 209 | 0 | 0 |
| Future Vol, veh/h | 282 | 0 | 0 | 209 | 0 | 0 |
| Conflicting Peds, \#/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | - | 0 |
| 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 | 368 | 0 | 0 | 273 | 0 | 0 |


| Major/Minor M | Major1 | Major2 |  | Minor1 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Conflicting Flow All | 0 | 0 | - | - | - | 368 |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |
| Critical Hdwy | - | - | - | - | - | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - |
| Follow-up Hdwy | - | - | - | - | - | 3.318 |
| Pot Cap-1 Maneuver | - | - | 0 | - | 0 | 677 |
| Stage 1 | - | - | 0 | - | 0 | - |
| Stage 2 | - | - | 0 | - | 0 | - |
| Platoon blocked, \% | - | - |  | - |  |  |
| Mov Cap-1 Maneuver | - | - | - | - | - | 677 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |
|  |  |  |  |  |  |  |
| Approach | EB |  | B |  | B |  |
| HCM Control Delay, s | 0 |  | 0 |  | 0 |  |
| HCM LOS |  |  |  |  | A |  |
|  |  |  |  |  |  |  |
| Minor Lane/Major Mvmt |  | n1 |  |  |  |  |
| Capacity (veh/h) |  | - | - | - | - |  |
| HCM Lane V/C Ratio |  | - | - | - | - |  |
| HCM Control Delay (s) |  | 0 | - | - | - |  |
| HCM Lane LOS |  | A | - | - | - |  |
| HCM 95th \%tile Q(veh) |  | - | - | - | - |  |


| Intersection |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Int Delay, s/veh 7.5 |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | ${ }^{*}$ | $\uparrow$ |  | ${ }^{7}$ | $\uparrow$ |  |  | $\uparrow$ |  |  | \& |  |
| Traffic Vol, veh/h | 46 | 164 | 64 | 3 | 77 | 14 | 109 | 34 | 16 | 24 | 20 | 23 |
| Future Vol, veh/h | 46 | 164 | 64 | 3 | 77 | 14 | 109 | 34 | 16 | 24 | 20 | 23 |
| 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 | 200 | - | - | 400 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, \# |  | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, \% | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, \% | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 60 | 214 | 83 | 4 | 100 | 18 | 142 | 44 | 21 | 31 | 26 | 30 |



| Intersection |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Int Delay, s/veh 3.1 |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | ${ }^{*}$ | $\uparrow$ |  | ${ }^{*}$ | $\uparrow$ |  |  | $\uparrow$ |  |  | $\uparrow$ |  |
| Traffic Vol, veh/h | 18 | 250 | 18 | 12 | 145 | 15 | 20 | 21 | 9 | 23 | 13 | 12 |
| Future Vol, veh/h | 18 | 250 | 18 | 12 | 145 | 15 | 20 | 21 | 9 | 23 | 13 | 12 |
| Conflicting Peds, \#/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 532 | - | - | 532 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, \# | \# | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, \% | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, \% | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 23 | 326 | 23 | 16 | 189 | 20 | 26 | 27 | 12 | 30 | 17 | 16 |







| Intersection |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Int Delay, s/veh 7.5 |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | ${ }^{7}$ | $\uparrow$ |  | ${ }^{*}$ | $\uparrow$ |  |  | $\uparrow$ |  |  | \& |  |
| Traffic Vol, veh/h | 25 | 80 | 158 | 17 | 196 | 14 | 124 | 30 | 7 | 16 | 72 | 41 |
| Future Vol, veh/h | 25 | 80 | 158 | 17 | 196 | 14 | 124 | 30 | 7 | 16 | 72 | 41 |
| 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 | 200 | - | - | 400 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, \# | \# | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, \% | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, \% | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 27 | 87 | 172 | 18 | 213 | 15 | 135 | 33 | 8 | 17 | 78 | 45 |



| Intersection |  |  |  |  |  |  |  |  |  |  |  |  |
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| Int Delay, s/veh 3 |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | ${ }^{*}$ | $\uparrow$ |  | ${ }^{7}$ | $\uparrow$ |  |  | $\uparrow$ |  |  | $\uparrow$ |  |
| Traffic Vol, veh/h | 8 | 159 | 14 | 15 | 439 | 33 | 34 | 19 | 17 | 19 | 8 | 42 |
| Future Vol, veh/h | 8 | 159 | 14 | 15 | 439 | 33 | 34 | 19 | 17 | 19 | 8 | 42 |
| Conflicting Peds, \#/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 532 | - | - | 532 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, \# | \# | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, \% | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, \% | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 9 | 173 | 15 | 16 | 477 | 36 | 37 | 21 | 18 | 21 | 9 | 46 |



| Intersection |  |  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |



| Intersection |  |  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| Int Delay, s/veh | 0.1 |  |  |  |  |  |
| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations | $\widehat{子}$ |  |  | $\uparrow$ |  | $\mathbf{F}$ |
| Traffic Vol, veh/h | 294 | 41 | 0 | 228 | 0 | 5 |
| Future Vol, veh/h | 294 | 41 | 0 | 228 | 0 | 5 |
| Conflicting Peds, \#/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | - | 0 |
| Ven 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 | 383 | 45 | 0 | 297 | 0 | 5 |



| Intersection |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Int Delay, s/veh 7.9 |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | ${ }^{*}$ | $\uparrow$ |  | ${ }^{*}$ | $\uparrow$ |  |  | $\uparrow$ |  |  | \& |  |
| Traffic Vol, veh/h | 58 | 204 | 79 | 4 | 99 | 17 | 137 | 41 | 19 | 29 | 24 | 29 |
| Future Vol, veh/h | 58 | 204 | 79 | 4 | 99 | 17 | 137 | 41 | 19 | 29 | 24 | 29 |
| 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 | 200 | - | - | 400 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, \# |  | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, \% | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, \% | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 63 | 222 | 86 | 4 | 108 | 18 | 149 | 45 | 21 | 32 | 26 | 32 |



| Intersection |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Int Delay, s/veh 3.4 |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | ${ }^{*}$ | $\uparrow$ |  | ${ }^{*}$ | $\uparrow$ |  |  | $\uparrow$ |  |  | $\uparrow$ |  |
| Traffic Vol, veh/h | 22 | 409 | 22 | 21 | 293 | 18 | 24 | 25 | 14 | 34 | 16 | 14 |
| Future Vol, veh/h | 22 | 409 | 22 | 21 | 293 | 18 | 24 | 25 | 14 | 34 | 16 | 14 |
| 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 | 532 | - | - | 532 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, \# | \# | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, \% | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, \% | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 24 | 445 | 24 | 23 | 318 | 20 | 26 | 27 | 15 | 37 | 17 | 15 |



| Intersection |  |  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| Int Delay, s/veh | 3 |  |  |  |  |  |
| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations | 个 | $\mathbf{7}$ |  | 4 | I | $\mathbf{T}$ |
| Traffic Vol, veh/h | 288 | 86 | 15 | 213 | 126 | 9 |
| Future Vol, veh/h | 288 | 86 | 15 | 213 | 126 | 9 |
| Conflicting Peds, \#/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | 570 | 570 | - | 0 | 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 | 376 | 93 | 16 | 278 | 137 | 10 |







| Intersection |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Int Delay, s/veh 3.6 |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | ${ }^{*}$ | F |  | ${ }^{*}$ | $\uparrow$ |  |  | $\uparrow$ |  |  | $\uparrow$ |  |
| Traffic Vol, veh/h | 22 | 412 | 22 | 22 | 318 | 20 | 24 | 25 | 15 | 38 | 16 | 14 |
| Future Vol, veh/h | 22 | 412 | 22 | 22 | 318 | 20 | 24 | 25 | 15 | 38 | 16 | 14 |
| 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 | 532 | - | - | 532 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, \# | \# | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, \% | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, \% | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 24 | 448 | 24 | 24 | 346 | 22 | 26 | 27 | 16 | 41 | 17 | 15 |



| Intersection |  |  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |



| Intersection |  |  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |





| Intersection |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Int Delay, s/veh 3.1 |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | ${ }^{*}$ | $\uparrow$ |  | ${ }^{7}$ | $\uparrow$ |  |  | $\uparrow$ |  |  | \& |  |
| Traffic Vol, veh/h | 8 | 252 | 14 | 15 | 445 | 33 | 34 | 19 | 20 | 20 | 8 | 42 |
| Future Vol, veh/h | 8 | 252 | 14 | 15 | 445 | 33 | 34 | 19 | 20 | 20 | 8 | 42 |
| Conflicting Peds, \#/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 532 | - | - | 532 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, \# | \# | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, \% | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, \% | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 9 | 274 | 15 | 16 | 484 | 36 | 37 | 21 | 22 | 22 | 9 | 46 |



## V3_Traffic Impact Study_Comments.pdf Markup Summary

| Callout (2) |  |  |
| :---: | :---: | :---: |
|  | Subject: Callout <br> Page Label: 22 <br> Author: Carlos <br> Date: 11/7/2023 4:51:42 PM <br> Status: <br> Color: <br> Layer: <br> Space: <br> Closed: Unchecked | Please verify peak hour volume. |
|  | Subject: Callout <br> Page Label: 9 <br> Author: Carlos <br> Date: 11/7/2023 4:57:10 PM <br> Status: <br> Color: <br> Layer: <br> Space: <br> Closed: Unchecked | Unresolved: Address internal trips also. This includes traffic traveling to Mayberry Road to make left turns. Provide a plan showing the internal streets and intersections. If this was provided in the previous report, add that to the appendix of this report. |

