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# Settlers View Subdivision <br> Updated Transportation Memorandum <br> (LSC \#164720) 

February 14, 2018

## 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.

LSC TRANSPORTATION CONSULTANTS, INC.
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February 14, 2018
Mr. Jerry Hannigan
Jerome W. Hannigan and Associates, Inc.
19360 Spring Valley Road
Monument, CO 80132

RE: Settlers View Subdivision<br>El Paso County, CO<br>Transportation Memorandum<br>LSC \#164720

Dear Jerry:
LSC Transportation Consultants, Inc. has prepared this transportation memorandum for the proposed Settlers View subdivision. The site is located generally northwest of the intersection of Hodgen Road and Steppler Road in El Paso County, Colorado. The site's location is shown in Figure 1. Site access would be through adjacent subdivisions as the site is not directly adjacent to Steppler Road. This analysis has been prepared in conjunction with the proposed Abert Estates subdivision, which is adjacent to Settlers View. LSC has prepared a separate traffic report for Abert Estates.

## REPORT CONTENTS

The report contains the following:

- Existing roadway and traffic conditions in the vicinity of the site, including the intersection lane geometries, traffic controls, posted speed limits, functional classifications, intersection spacing and alignment, etc.
- Existing peak-hour turning movement traffic counts and/or estimates of future background traffic volumes at the intersections of:
o Steppler Road at Silver Nell Drive
o Steppler Road at Settler's Ranch Road (future)
- Description of the proposed land use
- Estimates of the average weekday and peak-hour vehicle-trips to be generated by the site
- Projected site-generated traffic volumes on roadways and intersections to provide access to the site
- Analysis of the resulting traffic impacts from the site including the development's relative average daily traffic volume impacts and intersection level of service analysis
- Findings and recommendations


## LAND USE AND ACCESS

## Site Land Use and Access

Settlers View is a proposed single-family residential subdivision consisting of 14 lots, each a minimum of 2.5 acres. The location of the site is shown in Figure 1. Figure 1 also shows the proposed adjacent Abert Ranch site. The existing Grandview subdivision is located to the north of the Settlers View and Abert Ranch sites and the eastern portion of Settlers Ranch is located to the south. The Settlers View site plan/subdivision plat is shown in Figure 2.

Site access to Steppler Road would be via a proposed extension of Silver Nell Drive. Future access is also planned through Abert Ranch to the planned future extension of Settlers Ranch Road. Settlers Ranch Road will ultimately connect to Steppler Road and will provide the secondary access for the Settlers View subdivision.

## Adjacent Subdivisions - Existing and Proposed

## Abert Ranch

Abert Ranch is a proposed single-family residential subdivision consisting of 10 lots, each a minimum of 2.5 acres. Site access to Steppler Road would initially be through the Settlers View subdivision and the extension of Silver Nell Drive. A second access would be available via the proposed future Settlers Ranch Road once constructed by the developer of Settlers Ranch.

## Settlers Ranch

Settlers Ranch is located south and southeast of the site. Filing 1 to the southwest has been developed. The Settlers Ranch Road extension to Steppler Road will be added with future Filing 2. This future road connection will provide secondary access to both Abert Ranch and this site (via the proposed Abert Ranch subdivision roads).

## Grandview

Grandview is located to the north of the Settlers View and Abert Ranch sites. It is partially developed, but Silver Nell Drive through Grandview has been completed and provides access to Steppler Road. Silver Nell Drive will provide the initial access to both the Settlers View and Abert Ranch subdivisions.

## EXISTING ROADWAY AND TRAFFIC CONDITIONS

## Area Roadways

Major roadways in the vicinity of the site are summarized below:
State Highway (SH) 83 extends from Colorado Springs north to Parker and areas of southeast Denver. In the vicinity of the site, SH 83 is classified as a Regional Highway (R-A). At this
location, SH 83 is a two-lane rural highway with two- to four-foot shoulders and a speed limit of 60 miles per hour (mph). The intersection with Hodgen Road is signalized.

Hodgen Road is a two-lane paved Rural Minor Arterial that extends east from the intersection of Roller Coaster Road/Baptist Road to Eastonville Road. The speed limit on Hodgen Road is generally 55 mph east of SH 83 .

Walker Road/SH 105. Highway 105 west of SH 83 is a Principal Arterial, while Walker Road east of SH 83 is a Collector roadway. Both are currently two-lane roadways, but the Major Transportation Corridors Plan (MTCP) shows a future four-lane cross section on SH 105 west of SH 83. The intersection with SH 83 is unsignalized.

Steppler Road is a local roadway extending north from Hodgen Road to Walker Road. The posted speed limit on Steppler Road is 30 mph .

## Traffic Volumes

Turning movement counts were conducted on Tuesday, August 30, 2016 from 4:00 to 6:00 p.m. and on September 1, 2016 from 6:30 to 8:30 a.m. at the intersection of Steppler Road at Silver Nell Drive. Count reports are attached. Based on these count data, existing morning and evening weekday peak-hour traffic volumes at this intersection are shown in Figure 3. Estimates of the average daily traffic volumes on Steppler Road based on these peak-hour counts are also shown in Figure 3.

## Level of Service

Level of service (LOS) is a quantitative measure of the level of congestion or delay at an intersection and is indicated on a scale from "A" to "F." LOS A is indicative of little congestion or delay. LOS F indicates a high level of congestion or delay. Table 1 shows the level of service delay ranges for signalized and unsignalized intersections.

Table 1: Intersection Levels of Service Delay Ranges

| Level of <br> Service | Signalized <br> Intersections | Unsignalized <br> Intersections |
| :---: | :---: | :---: |
|  |  |  |
| A | 10 sec or less | 10 sec or less |
| B | $10-20 \mathrm{sec}$ | $10-15 \mathrm{sec}$ |
| C | $20-35 \mathrm{sec}$ | $15-25 \mathrm{sec}$ |
| D | $35-55 \mathrm{sec}$ | $25-35 \mathrm{sec}$ |
| E | $55-80 \mathrm{sec}$ | $35-50 \mathrm{sec}$ |
| F | 80 sec or more | 50 sec or more |

The intersection of Steppler Road at Silver Nell Drive has been analyzed in Synchro to determine the current level of service using the unsignalized method of analysis procedures from the Highway Capacity Manual, 2010 Edition. The level of service is A.

## TRIP GENERATION

Estimates of the vehicle-trips projected to be generated by Settlers View have been made using the nationally published trip generation rates from Trip Generation, $9^{\text {th }}$ Edition, 2012 by the Institute of Transportation Engineers (ITE). Land use code 210 - Single-Family Detached Housing was categorized using the Trip Generation Manual, $9^{\text {th }}$ Edition, 2012 by the Institute of Transportation Engineers (ITE) and used for trip generation estimates. The proposed Settlers View subdivision is projected to generate about 133 total vehicle-trips on the average weekday during a 24-hour period, with about half entering the site and half exiting the site during the evening peak hour. The peak-hour trip generation is also summarized. A detailed trip generation estimate for the development, including ITE rates for the proposed land use, is presented in Table 6 (attached).

## Trip Distribution and Assignment

Distribution of the site-generated vehicle-trips to the study area streets and intersections is a necessary component in determining the site's traffic impacts. Figure 4 shows the directional distribution estimate for the site-generated trips. The figure shows the percentages of the sitegenerated vehicle-trips projected to be oriented to and from the site's major approaches. Estimates were based on the following factors: the proposed land use and access plan, the area street system, and anticipated area future development.

## Site-Generated Traffic

When the directional distribution percentages (from Figure 4) were applied to the trip generation estimates (from Table 6), the site-generated traffic volumes on the adjacent streets were determined. Figure 5 shows the projected site-generated traffic volumes.

## EXISTING VS. EXISTING PLUS SITE-GENERATED TRAFFIC/LOS

## Traffic Volumes

Figure 7 shows the sum of the existing weekday traffic volumes (from Figure 3) and site-generated weekday traffic volumes (from Figure 4). The existing plus site-generated trips identify the site's short-term traffic impacts assuming buildout of all three aforementioned subdivisions.

## Levels of Service

## Morning Peak Hour

All approaches at the intersections of Steppler Road at Silver Nell Drive currently operate at and are projected to remain at LOS A during the morning peak hour upon site buildout. A summary of existing and projected short-term background plus site-generated LOS and control delays during the morning peak hour is shown in Table 2.

Table 2: Projected Peak-Hour LOS and Control Delays by Intersection (2016 a.m.)

| Intersection | Traffic Control* | Scenario | NBL | EBL |
| :---: | :---: | :---: | :---: | :---: |
| LOS |  |  |  |  |
| Steppler Road @ | TWSC | Existing | A | A |
| Silver Nell Dr |  | Short-term BG + Site (short-term) | A | A |
| Control Delay (seconds) |  |  |  |  |
| Steppler Road @ Silver Nell Dr | TWSC | Existing | 7.3 | 8.5 |
|  |  | Short-term BG + Site (short-term) | 7.3 | 8.5 |
| * TWSC = two-way stop sign-control |  |  |  |  |

## Evening Peak Hour

All approaches at the intersections of Steppler Road at Silver Nell Drive currently operate at and are projected to remain at LOS A during the evening peak hour upon site buildout. A summary of existing and projected short-term background plus site-generated LOS and control delays during the morning peak hour is shown in Table 3.

Table 3: Projected Peak-Hour LOS and Control Delays by Intersection (2016 p.m.)

| Intersection | Traffic Control* | Scenario | NBL | EBL |
| :---: | :---: | :---: | :---: | :---: |
| LOS |  |  |  |  |
| Steppler Road @ | TWSC | Existing | A | A |
| Silver Nell Dr | TWS | Short-term BG + Site (short-term) | A | A |
| Control Delay (seconds) |  |  |  |  |
| Steppler Road @ | TWSC | Existing | 7.3 | 8.4 |
| Silver Nell Dr | TWSC | Short-term BG + Site (short-term) | 7.3 | 8.5 |

## 2040 BACKGROUND VS. 2040 TOTAL TRAFFIC/LOS

## Traffic Volumes

Figure 8 shows the projected 2040 background traffic volumes based on existing turning movement counts (from Figure 3), the historic growth rate, and projected future development. Projected 2040 background plus site-generated weekday traffic volumes are shown in Figure 9.

## Levels of Service

## Morning Peak Hour

All approaches at the intersections of Steppler Road/Silver Nell Drive and Steppler Road/Settlers Ranch Road are projected to operate at LOS A during the 2040 morning peak hour with and without considering site-generated trips. A summary of projected 2040 background plus sitegenerated LOS and control delays during the morning peak hour is shown in Table 4.

Table 4: Projected Peak-Hour LOS and Control Delays by Intersection (2040 a.m.)

| Intersection | Traffic Control* | Scenario | NBL | EBL |
| :---: | :---: | :---: | :---: | :---: |
| LOS |  |  |  |  |
| Steppler Road @ Silver Nell Dr | TWSC | 2040 Background | A | A |
|  |  | 2040 Background + Site | A | A |
| Steppler Road @ Settler's Ranch Rd | TWSC | 2040 Background | A | A |
|  |  | 2040 Background + Site | A | A |
| Control Delay (seconds) |  |  |  |  |
| Steppler Road @ Silver Nell Dr | TWSC | 2040 Background | 7.3 | 8.5 |
|  |  | 2040 Background + Site | 7.3 | 8.6 |
| Steppler Road @ Settlers Ranch Rd | TWSC | 2040 Background | 7.3 | 8.6 |
|  |  | 2040 Background + Site | 7.3 | 8.6 |
| * TWSC = two-way stop sign-control |  |  |  |  |

## Evening Peak Hour

All approaches at the intersections of Steppler Road/Silver Nell Drive and Steppler Road/Settlers Ranch Road are projected to operate at LOS A during the 2040 morning peak hour with and without considering site-generated trips. A summary of projected 2040 background plus sitegenerated LOS and control delays during the evening peak hour is shown in Table 5.

Table 5: Projected Peak-Hour LOS and Control Delays by Intersection (2040 p.m.)

| Intersection | Traffic Control* | Scenario | NBL | EBL |
| :---: | :---: | :---: | :---: | :---: |
| LOS |  |  |  |  |
| Steppler Road @ Silver Nell Dr | TWSC | 2040 Background | A | A |
|  |  | 2040 Background + Site | A | A |
| Steppler Road @ Settler's Ranch Rd | TWSC | 2040 Background | A | A |
|  |  | 2040 Background + Site | A | A |
| Control Delay (seconds) |  |  |  |  |
| Steppler Road @ Silver Nell Dr | TWSC | 2040 Background | 7.3 | 8.5 |
|  |  | 2040 Background + Site | 7.3 | 8.6 |
| Steppler Road @ Settler's Ranch Rd | TWSC | 2040 Background | 7.3 | 8.6 |
|  |  | 2040 Background + Site | 7.3 | 8.6 |
| * TWSC = two-way stop sign-control |  |  |  |  |

## CONCLUSIONS AND RECOMMENDATIONS

## Trip Generation

- The proposed Settlers View subdivision is projected to generate about 133 new vehicletrips on the average weekday with about half entering and half exiting the site. The projected morning peak-hour trip generation for the site (total "driveway" trips) is 3 entering and 8 exiting trips. The projected evening peak-hour trip generation for the site (total "driveway" trips) is 9 entering and 5 exiting trips.


## Level of Service Analysis

- Levels of service at the intersections analyzed are projected to be A. Please refer to the Level of Service sections above for detailed findings and results of the intersection level of service analysis.


## Auxiliary Turn Lanes

- Neither Silver Nell/Steppler nor Settlers Ranch Road/Steppler will exceed Engineering Criteria Manual thresholds requiring auxiliary left- and right-turn lanes.


## Street Classification

The streets within this proposed subdivision should be classified as Rural Local streets.

## County Road Improvement Fee Program

This project will need to participate in the County Road Improvement Fee Program.

Please contact me if you have any questions regarding this report.
Sincerely,
LSC TRANSPORTATION CONSULTANTS, INC.


Jeffrey C. Hodsdon, P.E., PTOE
Principal
JCH/JAB:bjwb
Enclosures: Table 6
Figure 1-Figure 9
Appendix Figures 1-3
Traffic Count Reports
Level of Service Reports

Table 6: Trip Generation Estimate and Comparison

|  |  |  |  |  | Trip | Gener | tion | ates ${ }^{(1)}$ |  | Total | rip | Gene | ated |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lots | Use | Land Use Description | Value | Units | Average |  | M. |  | M. | Average |  | M. |  | M. |
|  | Code |  |  |  | Weekday Traffic | In | Out | In | Out | Weekday Traffic | In | Out | In | Out |
| Abert Ranch Only |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1-10 | 210 | Single-Family Detached Housing | 10 | DU ${ }^{(2)}$ | 9.52 | 0.19 | 0.56 | 0.63 | 0.37 | 95 | 2 | 6 | 6 | 4 |
| Settler's View Only |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1-14 | 210 | Single-Family Detached Housing | 14 | DU | 9.52 | 0.19 | 0.56 | 0.63 | 0.37 | 133 | 3 | 8 | 9 | 5 |
| Total |  |  |  |  |  |  |  |  |  | 228 | 5 | 14 | 15 | 9 |

(1) Source: "Trip Generation, 9th Edition, 2012" by the Institute of Transportation Engineers (ITE)
(2) $\mathrm{DU}=$ dwelling units



Figure 2

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## Settlers View Site Plan

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* Includes buildout of the site plus Abert


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LSC Transportation Consultants, Inc.
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LSC Transportation Consultants, Inc. Colorado Springs, CO 809@3vame : Steppler Rd - Silver Nell Dr AM

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|  | Steppler Rd From North |  |  |  | From East |  |  |  | Steppler Rd From South |  |  |  | Silver Nell Dr From West |  |  |  |  |
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| 06:30 AM | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 | 1 | 0 | 1 | 0 | 4 |
| 06:45 AM | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 4 |
| Total | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 1 | 0 | 8 |


| 07:00 AM | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 2 | 0 | 1 | 0 | 10 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 07:15 AM | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 9 |
| 07:30 AM | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 8 |
| 07:45 AM | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 3 |
| Total | 1 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 5 | 0 | 5 | 0 | 1 | 0 | 30 |


| 08:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 0 | 1 | 0 | 2 | 0 |
| ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| 08:15 AM | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 1 | 0 | 1 | 0 |
| Grand Total | 1 | 21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 6 | 0 | 9 | 0 | 5 | 0 |
| Apprch \% | 4.5 | 95.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 62.5 | 37.5 | 0.0 | 64.3 | 0.0 | 35.7 | 0.0 |
| Total \% | 1.9 | 40.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 19.2 | 11.5 | 0.0 | 17.3 | 0.0 | 9.6 | 0.0 |

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| 04:00 PM | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 0 | 2 | 0 | 0 | 0 | 11 |
| 04:15 PM | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 1 | 0 | 1 | 0 | 0 | 0 | 10 |
| 04:30 PM | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 2 | 0 | 1 | 0 | 10 |
| 04:45 PM | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 0 | 1 | 0 | 0 | 0 | 7 |
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| Grand Total | 1 | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 27 | 9 | 0 | 9 | 0 | 3 | 0 | 66 |
| ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| Apprch \% | 5.6 | 94.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 75.0 | 25.0 | 0.0 | 75.0 | 0.0 | 25.0 | 0.0 |  |
| Total \% | 1.5 | 25.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 40.9 | 13.6 | 0.0 | 13.6 | 0.0 | 4.5 | 0.0 |  |

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| Intersection |  |  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| Int Delay, s/veh | 2.8 |  |  |  |  |  |
| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations | 1 |  |  | -1 | 1 |  |
| Traffic Vol, veh/h | 1 | 6 | 4 | 2 | 17 | 1 |
| Future Vol, veh/h | 1 | 6 | 4 | 2 | 17 | 1 |
| 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 | 1 | 7 | 4 | 2 | 18 | 1 |



| Intersection |  |  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| Int Delay, s/veh | 2.6 |  |  |  |  |  |
| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations | 1 |  |  | $\uparrow$ | 1 |  |
| Traffic Vol, veh/h | 1 | 6 | 6 | 15 | 11 | 1 |
| Future Vol, veh/h | 1 | 6 | 6 | 15 | 11 | 1 |
| 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 | 1 | 7 | 7 | 16 | 12 | 1 |



| Intersection |  |  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| Int Delay, s/veh | 4.9 |  |  |  |  |  |
| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations | r |  |  | $\neq 1$ | $\uparrow$ |  |
| Traffic Vol, veh/h | 3 | 18 | 9 | 2 | 17 | 1 |
| Future Vol, veh/h | 3 | 18 | 9 | 2 | 17 | 1 |
| 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 | 3 | 20 | 10 | 2 | 18 | 1 |



| Intersection |  |  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| Int Delay, s/veh | 4.3 |  |  |  |  |  |
| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations | r |  |  | $\mathbf{A}$ | $\uparrow$ |  |
| Traffic Vol, veh/h | 3 | 13 | 19 | 15 | 11 | 3 |
| Future Vol, veh/h | 3 | 13 | 19 | 15 | 11 | 3 |
| 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 | 3 | 14 | 21 | 16 | 12 | 3 |




| $\frac{\text { Major/Minor }}{\text { Conflicting Flow All }}$ | Minor2 | Major1 Major2 |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 44 | 27 | 27 | 0 | - | 0 |  |
| Stage 1 | 27 |  |  | - | - | - |  |
| Stage 2 | 17 |  |  | - | - | - |  |
| 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 | 967 | 1048 | 1587 | - | - | - |  |
| Stage 1 | 996 | - |  | - | - | - |  |
| Stage 2 | 1006 | - |  | - | - | - |  |
| Platoon blocked, \% |  |  |  | - | - | - |  |
| Mov Cap-1 Maneuver | 965 | 1048 | 1587 | - | - | - |  |
| Mov Cap-2 Maneuver | 965 | - |  | - | - | - |  |
| Stage 1 | 994 | - |  | - | - | - |  |
| Stage 2 | 1006 | - |  | - | - | - |  |
|  |  |  |  |  |  |  |  |
| Approach | EB |  | NB |  | SB |  |  |
| HCM Control Delay, s | 8.5 |  | 1.7 |  | 0 |  |  |
| HCM LOS | A |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
| Minor Lane/Major Mvm |  | NBL | NBT | EBLn1 | SBT | SBR |  |
| Capacity (veh/h) |  | 1587 |  | 1030 | - | - |  |
| HCM Lane V/C Ratio |  | 0.002 |  | 0.011 | - | - |  |
| HCM Control Delay (s) |  | 7.3 | 0 | 8.5 | - | - |  |
| HCM Lane LOS |  | A | A | A | - | - |  |
| HCM 95th \%tile Q(veh |  | 0 |  | 0 | - | - |  |


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



| Intersection |  |  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| Int Delay, s/veh | 1.8 |  |  |  |  |  |
| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations | Mr |  |  | $\uparrow$ | F |  |
| Traffic Vol, veh/h | 1 | 5 | 9 | 30 | 20 | 2 |
| Future Vol, veh/h | 1 | 5 | 9 | 30 | 20 | 2 |
| 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 | 1 | 5 | 10 | 33 | 22 | 2 |



| Intersection |  |  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| Int Delay, s/veh | 0.8 |  |  |  |  |  |
| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations | Mr |  |  | $\uparrow$ | $\mathbf{7}$ |  |
| Traffic Vol, veh/h | 1 | 3 | 3 | 40 | 25 | 2 |
| Future Vol, veh/h | 1 | 3 | 3 | 40 | 25 | 2 |
| 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 | 1 | 3 | 3 | 43 | 27 | 2 |



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



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



| Intersection |  |  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| Int Delay, s/veh | 1.7 |  |  |  |  |  |
| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations | r |  |  | - | 个 |  |
| Traffic Vol, veh/h | 2 | 5 | 9 | 31 | 21 | 3 |
| Future Vol, veh/h | 2 | 5 | 9 | 31 | 21 | 3 |
| 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 | 2 | 5 | 10 | 34 | 23 | 3 |



| Intersection |  |  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| Int Delay, s/veh | 1.3 |  |  |  |  |  |
| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations | Mr |  |  | -1 | F |  |
| Traffic Vol, veh/h | 2 | 5 | 6 | 40 | 25 | 3 |
| Future Vol, veh/h | 2 | 5 | 6 | 40 | 25 | 3 |
| 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 | 2 | 5 | 7 | 43 | 27 | 3 |








