# Traffic Impact Study 

For

Falcon Kenshin Karate Studio
PCD File No. PPR-21-067
El Paso County, CO
August 2022

PREPARED FOR:
David A. \& Gretchen V. Caban 10308 Mount Evans Drive Peyton, CO 80831

PREPARED BY: Drexel, Barrell \& Co.
$180038^{\text {th }}$ Street Boulder, CO 80301

Contact:
Derek Schuler, P.E., PTOE

Drexel Barrell Project Number:
21496-00CSCV

## 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.
$\qquad$ 8/25/22
Derek Schuler, Colorado P.E. \#40125
Date


## Developer's Statement

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

Dave Caban, Owner
David A. \& Gretchen V. Caban
10308 Mount Evans Drive
Peyton, CO 80831

### 1.0 Introduction

This traffic impact study serves to summarize the land use, probable trip generation, and vehicular access to the proposed karate studio. The site is located in the southeast corner of Old Meridian Road and Chicago Avenue in Falcon, CO (not addressed yet). See Figure 1 in Appendix for vicinity map. The existing 0.82 -acre site is currently vacant and two new singlestory buildings are proposed. This infill type site is zoned as CC (Commercial Community) and is generally surrounded by commercial/industrial uses. The proposed site will contain 26 parking spaces including 2 handicap accessible spaces. There is one proposed access point to Chicago Ave.

The following streets and intersections have been analyzed in the study. Traffic data collection was completed and found in the Appendix. A response to checklist items in the Engineering Criteria Manual (ECM) is also in the Appendix.

1. Old Meridian Rd/Chicago Ave. (Intersection)
2. Chicago Avenue (NE leg)
3. Old Meridian Rd (SE leg)

### 2.0 Area Conditions

Old Meridian Road, in front of the subject site, is assumed to be classified as a collector. The county's 2040 Functional Classification Map (from 2040 Major Transportation Corridor Plan) was referenced but streets in Falcon could not be identified at the map's scale. This roadway was recently improved to a 3-lane section (striped as two travel lanes plus two way left turn lane) with curb \& gutter and sidewalk on both sides. The recent roadway improvement also modified the access to US-24 to right in/out. A new alignment for Meridian Road with signalized access to US-24 was recently constructed.

The existing 0.82-acre site is currently vacant. This infill type site is zoned as CC (Commercial Community) and is generally surrounded by commercial/industrial uses.

New traffic counts were obtained to analyze streets/intersections identified in the previous section. Average daily traffic (ADT) counts were obtained along Old Meridian Rd (SE leg) and Chicago Avenue (NE leg). A peak hour turning movement count (TMC) was obtained for the Old Meridian Rd/Chicago Ave intersection. All traffic data collected is in the Appendix. Level of Service (LOS) Analysis is presented in Table $\mathbf{2}$ later in the report text. Traffic diagrams summarizing all turning movements are in the Appendix.

The existing traffic conditions are summarized by the following. ADT on Old Meridian Road is 463 and 1,256 vehicles per day (vpd) in the northwest and southeast directions respectively. The current traffic is relatively low for a collector street. ADT on Chicago Avenue is 24 and 26 vpd in the southwest and northeast directions respectively. Chicago Ave is stop controlled at Old Meridian Rd. This intersection currently operates at LOS A for all movements.

There is existing sidewalk along the site frontage of Old Meridian Rd which connects to US24 and Meridian Rd. There are currently no sidewalks along Chicago Ave.

### 3.0 Proposed Development

A karate studio is proposed on the 0.82 -acre site in one building. The other building is to be used for warehousing purposes. This infill type site is zoned as CC (Commercial Community) and is generally surrounded by commercial/industrial uses. The proposed site will contain 26 parking spaces including 2 handicap accessible spaces. There is one proposed access point to Chicago Ave. A sidewalk is proposed between the two buildings connecting to the existing sidewalk along Old Meridian Rd.

Sight distance at the site access appears adequate and will be verified with the final site plans. The single proposed access is on Chicago Ave, an unposted local street (assumed speed limit is $25-\mathrm{mph}$ ). There is no access proposed on Old Meridian Rd which has a posted speed limit of 35-mph.

### 4.0 Projected Traffic

Trip Generation:
Table 1 below shows the trip generation values for both existing and proposed uses. The table shows the number of expected trips using the latest ITE trip rates. This manual is currently in its $11^{\text {th }}$ edition and is an industry accepted informational report published by the Institute of Transportation Engineers. Land use \#492 - Health/Fitness Club, is the best match for the proposed karate studio use as it includes training/exercise classes. Land use \#150, Warehousing, is the use of the second building. Using the ITE rates, the proposed site is expected to generate about 172 daily trips, 7 trips ( $4 \mathrm{in} / 3$ out) in the morning peak hour and 18 trips ( $10 \mathrm{in} / 8$ out) in the evening peak hour.

| Table 1 - Trip Generation Estimate for Falcon Kenshin Karate Studio, Falcon, CO |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ITE Code/ Land Use | Size | Trip Generation Rates ${ }^{1}$ |  |  |  |  |  |  | Trips | enerat |  |  |  |  |  |
|  |  |  |  |  | Average Weekd ay Trips | AM Peak-Hour (7-9) |  |  |  |  | PM Peak-Hour (4-6) |  |  |  |  |
|  |  |  |  |  | Inbound\% Trips Trips |  | $\begin{gathered} \text { Outbound } \\ \text { \%Trips Trips } \\ \hline \end{gathered}$ |  | Total | Inbound \% Trips Trips |  | Outbound\%Tips Trips |  | Total |
|  |  | Avg. Weekday | AM PEAK | PM PEAK |  |  |  |  |  |  |  |  |  |  |
| \#492-Health/Fitness Club | 4.95 KSF | 33 | 1.31 | 3.45 | 163 | 51\% | 3 | 49\% | 3 | 6 | 57\% | 10 | 43\% | 7 | 17 |
| \#150 - Warehousing | 4.95 KSF | 1.71 | 0.17 | 0.18 | 8 | 77\% | 1 | 23\% | 0 | 1 | 28\% | 0 | 72\% | 1 | 1 |
| Total Trips |  |  |  |  | 172 |  | 4 |  | 3 | 7 |  | 10 |  | 8 | 18 |

${ }^{\text {1S }}$ Source: "Trip Generation" Institute of Transportation Engineers, 11th Edition, 2021.
KSF $=1000$ Gross Floor Area

## Trip Distribution:

Site access is proposed only from Chicago Avenue, a local street. The anticipated distribution of site traffic is $100 \%$ onto Old Meridian Road via Chicago Ave. Then $75 \%$ to/from the north (full access to Meridian Road) and $25 \%$ to/from the south (right in/out access to US-24). The existing surrounding roadway network is adequate for site traffic distribution.

The traffic conditions will be analyzed for three study horizons: Existing, Site Buildout, and Future (assumed 2045). Traffic growth factors or forecasts are needed for the 2045 traffic models. A conservative $1 \%$ growth factor is recommended. This analysis will be provided with the second submission of this study if required.

The site build out opening year is expected to be 2023 and an associated Synchro V10 Traffic Software Model (synchro) was created. Trip generation/distribution from the site was added to this model. The resulting intersection LOS values are in a separate column in Table 2. "AM \&

PM" refer to the morning and afternoon peak hour periods. A traffic diagram (Figure 3) and synchro reports for this model are included in the Appendix.

### 5.0 Traffic Analysis

The intersection of Old Meridian Rd/Chicago Ave will have acceptable LOS in all columns of
Table 2. All movements are LOS A. The existing two-way stop control is appropriate to remain. The existing lane configuration (including existing signage/striping) on all approaches is also appropriate to remain. The single site access is on Chicago Ave, a local street with very low traffic. A stop sign should be added for exiting vehicles. LOS A is assumed for the site access. The 2045 future traffic columns will be completed with the second submission if required.

| Intersecfion | Table 2Level of Service Analysis / Average Delay in Seconds |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Movement | Traffic Control | 2022 |  | 2023 |  | 2045 |  | 2045 |  |
|  |  |  | Exisfing Traffic |  | Total Traffic, Site B uildout |  | Future BG Traffic |  | Future Total Traffic |  |
|  |  |  | AM | PM | AM | PM | AM | PM | AM | PM |
| Old Meridian Rd/ Chicago Ave. | Intersection <br> NW- RT <br> SE- LT <br> SW All | stop | $\begin{gathered} \text { A } \\ \text { A/O } \\ \text { A/O.3 } \\ \text { A/8.7 } \end{gathered}$ | $\begin{aligned} & \text { A } \\ & \text { A/O.1 } \\ & \text { A/O } \\ & \text { A/O } \end{aligned}$ | $\begin{gathered} \text { A } \\ \text { A/O } \\ \text { A/7.3 } \\ \text { A/8.9 } \end{gathered}$ | $\begin{gathered} \text { A } \\ \text { A/0.1 } \\ \text { A/7.3 } \\ \text { A/8.9 } \end{gathered}$ |  |  |  |  |

A crash analysis has not been conducted. If required, we request that the county provide crash data for this area. Neighborhood/pubic input issues are not expected. Both issues can be addressed as needed with the second submittal of this report if required.

### 6.0 Road Impact Fee

This site is subject to a county road impact fee. The specific land uses fall under the General Commercial category. The fee is calculated as 9.9 KSF $x \$ 4,958 / \mathrm{KSF}=\$ 49,084.20$. There are no fee credits associated with this development.

### 7.0 Conclusions and Recommendations

This report shows that the proposed site traffic can be accommodated by the surrounding street network. No additional traffic improvements are recommended.

## APPENDIX

1. ECM Appendix B Checklist Items/Responses
2. Traffic Figures

## 3. Traffic Counts

4. Synchro Reports

## Appendix: ECM Appendix B Checklist Items

## B.2.4.C Evaluation Elements for an Intermediate TIS

The key elements of the project impact assessment shall be specified by The ECM Administrator from the following list:

- Conformity with the adopted MTCP and ECM; YES - REPORT SECTIONS $2 \& 3$
- Peak hour link volume and LOS; YES - SECTION 5, FIGURES
- Peak hour intersection and access LOS; YES - SECT 5
- Appropriateness of access locations; YES - SECT 5
- Location and requirements for turn lanes or acceleration/deceleration lanes at accesses or intersections, including recommendations for taper lengths, storage length, acceleration/deceleration lengths, and other geometric design requirements; YES - SECT 5
- Sight distance evaluations and recommendations (intersection, stopping, passing); YES SECT 3
- Continuity and adequacy of pedestrian and bicycle facilities to the nearest attraction (existing or planned) within the study area; YES - SECT 2 \& 3
- Recommended traffic control devices for intersections, which may include two-way stop control, four-way stop control or yield signs, school flashers, school crossing guards, crosswalks, traffic signals, or roundabouts; YES - SECT 5
- Traffic signal and stop sign warrants; N/A
- Progression analysis for signalized intersections; N/A
- Appropriateness of the existing roadway signing and striping; YES - SECT 5
- Safety and accident analysis; SECT 5 - SAYS ADDRESS WITH $2^{\text {ND }}$ SUBMITTAL IF NEEDED.
- Other items as requested by the ECM Administrator in the Scoping Meeting; and
- Neighborhood and public input issues. SECT 5 - SAYS ADDRESS WITH $2^{\text {ND }}$ SUBMITTAL IF NEEDED.


## B.8. Traffic Report Standards

Proposed classifications of all proposed internal roadways (e.g. "rural local road", "rural local low volume road", "urban minor arterial", etc.) N/A

- Classification of all adjacent or impacted roadways per the MTCP. (e.g. "rural local road", "rural local low volume road", "urban minor arterial", etc.) YES - SECT 2
- Trigger points for the construction of all required future improvements including but not limited to turn lanes, signals, widenings, and openings or closings of accesses. ("Trigger points" are the conditions that, when met, will call for the construction of said improvements.) Cost estimates and escrow amounts can be determined at the final plat stage. N/A
- For final plats, state definitively what improvements the developer will be constructing with the project. YES - SECT 5
- Clearly state in text and in supporting documents what the ADT and peak hour traffic levels are at all accesses currently, at full development, and long term (twenty years out.) Include intermediate stages for phased development. YES - SECT 5, FIGURES
- State whether or not any improvements affected by the project are reimbursable under the current Major Transportation Corridors Plan (MTCP). DISCUSSED IN SECT 6
- State whether the MTCP or other approved corridor study calls for the construction of improvements in the immediate area. DISCUSSED IN SECT 6
- List ECM criteria for stacking, storage, and taper for every affected auxiliary lane and access and state whether this access can be met. If it cannot be met, state the required modifications so that it can be met. YES - SECT 5
- State what the sight distance is for every affected access and whether it can be met. If it cannot be met, state the required modifications so that it can be met. YES - SECT 3
- State what the current applicable Transportation Impact Fees are and what option the developer will be selecting for payment. If the site is in s special district, so state and summarize the applicable fees. YES - SECT 6
- List other traffic studies by the consultant in the area of study within the past five years, in addition to any reports identified by County staff or that the applicant is aware of. State whether the current study is consistent with those studies and explain any discrepancies. NONE BY DBC.
- List all deviations from the County Engineering Criteria that the applicant will be making. Include supporting information, together with a signed and stamped deviation request form. NOT APPLICABLE
- Include LOS for all affected intersections. YES, SECT 5
- Show total traffic generated by the proposed development using ITE trip generation figures. YES - SECT 4
- If an intersection does not meet LOS D or better, discuss what steps can be taken to bring the intersection to a satisfactory level. N/A
- Include an engineer's certification page with the engineer's stamp, signature, and date. The statement must read as follows: YES- REPORT $2^{\text {ND }}$ PAGE.
- "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."
- Include a developer's statement on the certification page. The statement must read as follows: OK
"I, the Developer, have read and will comply with all commitments made on my behalf within this report." Include a printed or typed developer name and address as well as a signature block.





| Start | 02-Mar-22 |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Time | Wed | NB | SB |  |  |  |  |  |  | Total |
| 12:00 AM |  | 1 | 3 |  |  |  |  |  |  | 4 |
| 01:00 |  | 0 | 1 |  |  |  |  |  |  | 1 |
| 02:00 |  | 2 | 1 |  |  |  |  |  |  | 3 |
| 03:00 |  | 0 | 0 |  |  |  |  |  |  | 0 |
| 04:00 |  | 1 | 4 |  |  |  |  |  |  | 5 |
| 05:00 |  | 1 | 14 |  |  |  |  |  |  | 15 |
| 06:00 |  | 5 | 60 |  |  |  |  |  |  | 65 |
| 07:00 |  | 13 | 79 |  |  |  |  |  |  | 92 |
| 08:00 |  | 19 | 75 |  |  |  |  |  |  | 94 |
| 09:00 |  | 39 | 113 |  |  |  |  |  |  | 152 |
| 10:00 |  | 44 | 75 |  |  |  |  |  |  | 119 |
| 11:00 |  | 49 | 106 |  |  |  |  |  |  | 155 |
| 12:00 PM |  | 61 | 121 |  |  |  |  |  |  | 182 |
| 01:00 |  | 42 | 84 |  |  |  |  |  |  | 126 |
| 02:00 |  | 29 | 96 |  |  |  |  |  |  | 125 |
| 03:00 |  | 45 | 104 |  |  |  |  |  |  | 149 |
| 04:00 |  | 49 | 102 |  |  |  |  |  |  | 151 |
| 05:00 |  | 39 | 90 |  |  |  |  |  |  | 129 |
| 06:00 |  | 14 | 44 |  |  |  |  |  |  | 58 |
| 07:00 |  | 4 | 29 |  |  |  |  |  |  | 33 |
| 08:00 |  | 1 | 14 |  |  |  |  |  |  | 15 |
| 09:00 |  | 3 | 16 |  |  |  |  |  |  | 19 |
| 10:00 |  | 1 | 19 |  |  |  |  |  |  | 20 |
| 11:00 |  | 1 | 6 |  |  |  |  |  |  | 7 |
| Total |  | 463 | 1256 |  |  |  |  |  |  | 1719 |
| Percent |  | 26.9\% | 73.1\% |  |  |  |  |  |  |  |
| AM Peak | - | 11:00 | 09:00 | - | - | - | - | - | - | 11:00 |
| Vol. | - | 49 | 113 | - | - | - | - | - | - | 155 |
| PM Peak | - | 12:00 | 12:00 | - | - | - | - | - | - | 12:00 |
| Vol. | - | 61 | 121 | - | - | - | - | - | - | 182 |
| Grand Total |  | 463 | 1256 |  |  |  |  |  |  | 1719 |
| Percent |  | 26.9\% | 73.1\% |  |  |  |  |  |  |  |
| ADT |  | ADT 1,719 |  |  |  |  |  |  |  |  |


| Start | 02-Mar-22 |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Time | Wed | EB | WB |  |  |  |  |  |  |  |
| 12:00 AM |  | 0 | 0 |  |  |  |  |  |  | 0 |
| 01:00 |  | 0 | 0 |  |  |  |  |  |  | 0 |
| 02:00 |  | 0 | 0 |  |  |  |  |  |  | 0 |
| 03:00 |  | 0 | 0 |  |  |  |  |  |  | 0 |
| 04:00 |  | 0 | 0 |  |  |  |  |  |  | 0 |
| 05:00 |  | 0 | 0 |  |  |  |  |  |  | 0 |
| 06:00 |  | 0 | 0 |  |  |  |  |  |  | 0 |
| 07:00 |  | 0 | 1 |  |  |  |  |  |  | 1 |
| 08:00 |  | 5 | 2 |  |  |  |  |  |  | 7 |
| 09:00 |  | 1 | 4 |  |  |  |  |  |  | 5 |
| 10:00 |  | 1 | 0 |  |  |  |  |  |  | 1 |
| 11:00 |  | 3 | 4 |  |  |  |  |  |  | 7 |
| 12:00 PM |  | 1 | 2 |  |  |  |  |  |  | 3 |
| 01:00 |  | 5 | 3 |  |  |  |  |  |  | 8 |
| 02:00 |  | 4 | 3 |  |  |  |  |  |  | 7 |
| 03:00 |  | 3 | 3 |  |  |  |  |  |  | 6 |
| 04:00 |  | 0 | 0 |  |  |  |  |  |  | 0 |
| 05:00 |  | 2 | 2 |  |  |  |  |  |  | 4 |
| 06:00 |  | 0 | 0 |  |  |  |  |  |  | 0 |
| 07:00 |  | 1 | 0 |  |  |  |  |  |  | 1 |
| 08:00 |  | 0 | 0 |  |  |  |  |  |  | 0 |
| 09:00 |  | 0 | 0 |  |  |  |  |  |  | 0 |
| 10:00 |  | 0 | 0 |  |  |  |  |  |  | 0 |
| 11:00 |  | 0 | 0 |  |  |  |  |  |  | 0 |
| Total |  | 26 | 24 |  |  |  |  |  |  | 50 |
| Percent |  | 52.0\% | 48.0\% |  |  |  |  |  |  |  |
| AM Peak | - | 08:00 | 09:00 | - | - | - | - | - | - | 08:00 |
| Vol. | - | 5 | 4 | - | - | - | - | - | - | 7 |
| PM Peak | - | 13:00 | 13:00 | - | - | - | - | - | - | 13:00 |
| Vol. | - | 5 | 3 | - | - | - | - | - | - | 8 |
| Grand Total |  | 26 | 24 |  |  |  |  |  |  | 50 |
| Percent |  | 52.0\% | 48.0\% |  |  |  |  |  |  |  |
| ADT |  | ADT 50 |  |  |  |  |  |  |  |  |

Location: 1 OLD MERIDIAN RD \& CHICAGO AVE AM
Date: Wednesday, March 2, 2022
Peak Hour: 07:45 AM - 08:45 AM
(303) 216-2439 www.alltrafficdata.net

Peak 15-Minutes: 08:00 AM - 08:15 AM

Peak Hour - All Vehicles


Peak Hour - Pedestrians/Bicycles on Crosswalk


Note: Total study counts contained in parentheses.
Traffic Counts


Location: 1 OLD MERIDIAN RD \& CHICAGO AVE PM
Date: Wednesday, March 2, 2022
Peak Hour: 04:00 PM - 05:00 PM
(303) 216-2439 www.alltrafficdata.net

Peak 15-Minutes: 04:00 PM - 04:15 PM


Peak Hour - Pedestrians/Bicycles on Crosswalk


Note: Total study counts contained in parentheses.
Traffic Counts



| Major/Minor | Major1 |  | Major2 |  |  | Minor1 |  |  | Minor2 |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Conflicting Flow All | 16 | 0 | 0 | 101 | 0 | 0 | 124 | 124 | 99 | 124 | 126 | 16 |  |
| Stage 1 | - | - | - | - | - |  | 108 | 108 | - | 16 | 16 | - |  |
| Stage 2 | - | - | - | - | - | - | 16 | 16 | - | 108 | 110 |  |  |
| Critical Hdwy | 4.12 | - | - | 4.12 | - |  | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 |  |
| Critical Hdwy Stg 1 | - | - | - | - | - |  | 6.12 | 5.52 | - | 6.12 | 5.52 | - |  |
| Critical Hdwy Stg 2 | - | - | - |  | - |  | 6.12 | 5.52 | - | 6.12 | 5.52 |  |  |
| Follow-up Hdwy | 2.218 | - |  | 2.218 | - |  | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 |  |
| Pot Cap-1 Maneuver | 1602 | - | - | 1491 | - | - | 850 | 766 | 957 | 850 | 764 | 1063 |  |
| Stage 1 | - | - | - | - | - |  | 897 | 806 | - | 1004 | 882 | - | - |
| Stage 2 | - | - | - | - | - |  | 1004 | 882 | - | 897 | 804 | - | - |
| Platoon blocked, \% |  | - | - |  | - | - |  |  |  |  |  |  |  |
| Mov Cap-1 Maneuver | 1602 | - | - | 1491 | - | - | 848 | 764 | 957 | 848 | 762 | 1063 |  |
| Mov Cap-2 Maneuver | - | - | - | - | - |  | 848 | 764 | - | 848 | 762 | - | - |
| Stage 1 | - | - | - | - | - |  | 895 | 804 | - | 1001 | 882 |  |  |
| Stage 2 | - | - | - | - |  |  | 1003 | 882 | - | 895 | 802 | - | - |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Approach | SE |  |  | NW |  |  | NE |  |  | SW |  |  |  |
| HCM Control Delay, s | 0.3 |  |  | 0 |  |  | 9.3 |  |  | 9 |  |  |  |
| HCM LOS |  |  |  |  |  |  | A |  |  | A |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Minor Lane/Major Mvmt |  | NELn1 | NWL | NWT | NWR | SEL | SET | SER | SWLn1 |  |  |  |  |
| Capacity (veh/h) |  | 848 | 1491 |  |  | 1602 |  | - | 909 |  |  |  |  |
| HCM Lane V/C Ratio |  | 0.003 | - | - |  | - 0.003 | - | - | 0.004 |  |  |  |  |
| HCM Control Delay (s) |  | 9.3 | 0 | - | - | 7.3 | - | - | 9 |  |  |  |  |
| HCM Lane LOS |  | A | A | - | - | A | A | - | A |  |  |  |  |
| HCM 95th \%tile Q(veh) |  | 0 | 0 | - | - | 0 | - | - | 0 |  |  |  |  |


| Intersection |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Int Delay, s/veh | 1 |  |  |  |  |  |  |  |  |  |  |  |
| Movement | SEL | SET | SER | NWL | NWT | NWR | NEL | NET | NER | SWL | SWT | SWR |
| Lane Configurations | ${ }^{*}$ | $\dagger$ |  |  | * |  |  | * |  |  | \$ |  |
| Traffic Vol, veh/h | 7 | 89 | 4 | 0 | 14 | 2 | 2 | 0 | 0 | 3 | 0 | 3 |
| Future Vol, veh/h | 7 | 89 | 4 | 0 | 14 | 2 | 2 | 0 | 0 | 3 | 0 | 3 |
| 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 | 100 | - | - | - | - | - | - | - | - | - | - | - |
| 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 | 8 | 97 | 4 | 0 | 15 | 2 | 2 | 0 | 0 | 3 | 0 | 3 |




| Major/Minor | Major1 |  | Major2 |  |  | Minor1 |  |  | Minor2 |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Conflicting Flow All | 52 | 0 | 0 | 111 | 0 | 0 | 164 | 164 | 110 | 165 | 165 | 52 |  |
| Stage 1 | - | - | - | - | - |  | 110 | 110 |  | 54 | 54 | - |  |
| Stage 2 | - | - | - | - | - | - | 54 | 54 | - | 111 | 111 | - |  |
| Critical Hdwy | 4.12 | - | - | 4.12 | - | - | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 |  |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |  |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |  |
| Follow-up Hdwy | 2.218 | - |  | 2.218 | - | - | - 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 |  |
| Pot Cap-1 Maneuver | 1554 | - | - | 1479 | - | - | 801 | 729 | 943 | 800 | 728 | 1016 |  |
| Stage 1 | - | - | - | - | - | - | 895 | 804 | - | 958 | 850 | - |  |
| Stage 2 | - | - | - | - | - | - | 958 | 850 | - | 894 | 804 | - |  |
| Platoon blocked, \% |  | - | - |  | - | - |  |  |  |  |  |  |  |
| Mov Cap-1 Maneuver | 1554 | - | - | 1479 | - | - | 800 | 728 | 943 | 798 | 727 | 1016 |  |
| Mov Cap-2 Maneuver | - | - | - | - | - |  | 800 | 728 |  | 798 | 727 | - |  |
| Stage 1 | - | - | - | - | - |  | 895 | 804 | - | 958 | 849 | - |  |
| Stage 2 | - | - | - | - | - | - | 957 | 849 | - | 893 | 804 | - |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Approach | SE |  |  | NW |  |  | NE |  |  | SW |  |  |  |
| HCM Control Delay, s | 0 |  |  | 0.2 |  |  | 9.5 |  |  | 0 |  |  |  |
| HCM LOS |  |  |  |  |  |  | A |  |  | A |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Minor Lane/Major Mvmt |  | NELn1 | NWL | NWT | NWR | SEL | SET | SERS | WLn1 |  |  |  |  |
| Capacity (veh/h) |  | 812 | 1479 | - | - | 1554 | - | - | - |  |  |  |  |
| HCM Lane V/C Ratio |  | 0.013 | 0.001 | - | - | - | - | - | - |  |  |  |  |
| HCM Control Delay (s) |  | 9.5 | 7.4 | 0 | - | 0 | - | - | 0 |  |  |  |  |
| HCM Lane LOS |  | A | A | A | - | A | - | - | A |  |  |  |  |
| HCM 95th \%tile Q(veh) |  | 0 | 0 | - | - | 0 | - | - | - |  |  |  |  |



| Major/Minor | Major1 |  | Major2 |  |  | Minor1 |  |  | Minor2 |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Conflicting Flow All | 54 | 0 | 0 | 111 | 0 | 0 | 187 | 185 | 110 | 183 | 183 | 53 |  |
| Stage 1 | - | - | - | - | - | - | 128 | 128 |  | 55 | 55 | - |  |
| Stage 2 | - | - | - | - | - | - | 59 | 57 | - | 128 | 128 | - |  |
| Critical Hdwy | 4.12 | - | - | 4.12 | - | - | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 |  |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |  |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |  |
| Follow-up Hdwy | 2.218 | - |  | 2.218 | - | - | - 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 |  |
| Pot Cap-1 Maneuver | 1551 | - | - | 1479 | - | - | 774 | 709 | 943 | 778 | 711 | 1014 |  |
| Stage 1 | - | - | - | - | - | - | 876 | 790 | - | 957 | 849 | - |  |
| Stage 2 | - | - | - | - | - | - | 953 | 847 | - | 876 | 790 | - |  |
| Platoon blocked, \% |  | - | - |  | - | - |  |  |  |  |  |  |  |
| Mov Cap-1 Maneuver | 1551 | - | - | 1479 | - | - | 765 | 704 | 943 | 773 | 706 | 1014 |  |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 765 | 704 |  | 773 | 706 | - |  |
| Stage 1 | - | - | - | - | - | - | 871 | 785 | - | 951 | 848 | - |  |
| Stage 2 | - | - | - | - | - | - | 946 | 846 | - | 870 | 785 | - |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Approach | SE |  |  | NW |  |  | NE |  |  | SW |  |  |  |
| HCM Control Delay, s | 0.5 |  |  | 0.1 |  |  | 9.7 |  |  | 8.9 |  |  |  |
| HCM LOS |  |  |  |  |  |  | A |  |  | A |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Minor Lane/Major Mvmt |  | NELn1 | NWL | NWT | NWR | SEL | SET | SERS | WLn1 |  |  |  |  |
| Capacity (veh/h) |  | 780 | 1479 | - | - | 1551 | - | - | 941 |  |  |  |  |
| HCM Lane V/C Ratio |  | 0.014 | 0.001 | - | - | 0.006 | - | - | 0.009 |  |  |  |  |
| HCM Control Delay (s) |  | 9.7 | 7.4 | 0 | - | 7.3 | - | - | 8.9 |  |  |  |  |
| HCM Lane LOS |  | A | A | A | - | A | - | - | A |  |  |  |  |
| HCM 95th \%tile Q(veh) |  | 0 | 0 | - | - | 0 | - | - | 0 |  |  |  |  |

